ISSUE CLASSIFICATION	Class	Subclass
	015	209.1

PATENT NUMBER
5983435
5983435

U.S. UTILITY PATENT APPLICATION

O.I.P.E.	PATENT DATE
SCANNED MC Q.A. JLL	NOV 16 1999

SECTOR	CLASS	SUBCLASS	ART UNIT	EXAMINER
	15	209.1	1744	CHIN

FILED WITH: ☐ DISK (CRF) ☐ FICHE
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PREPARED AND APPROVED FOR ISSUE

ISSUING CLASSIFICATION

ORIGINAL		CROSS REFERENCE(S)						
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
15	209.1	015	229.11	229.13				
INTERNATIONAL CLASSIFICATION		D28	63					
A47L	13/10	D32	40					
A47L	17/08							
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☐ Continued on Issue Slip Inside File Jacket

☐ TERMINAL DISCLAIMER	DRAWINGS			CLAIMS ALLOWED	
	Sheets Drwg.	Figs. Drwg.	Print Fig.	Total Claims	Print Claim for O.G.
	3	6	3A, 4A	13	1

☐ a) The term of this patent subsequent to ____ (date) has been disclaimed.

(Assistant Examiner) (Date)

☐ b) The term of this patent shall not extend beyond the expiration date of U.S Patent. No. ____

RANDALL E. CHIN
PRIMARY EXAMINER
7/9/99
(Primary Examiner) (Date)

☐ c) The terminal ____ months of this patent have been disclaimed.

(Legal Instruments Examiner) (Date)

NOTICE OF ALLOWANCE MAILED
7/29/99

ISSUE FEE

Amount Due	Date Paid
$605.00	11/16/99

ISSUE BATCH NUMBER
W38

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Form PTO-436A
(Rev. 10/97)

Formal Drawings (3 sht(s)) rec'd

(LABEL AREA)

B. COLE
QUERY

Issue Fee In File

(FACE)

PATENT APPLICATION

09135690

jc549 U.S. PTO
09/135690
08/18/98

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INITIALS ______

CONTENTS

	Date received (Incl. C. of M.) or Date Mailed		Date received (Incl. C. of M.) or Date Mailed
1. *Application* ______ *papers.*		42.	
1/19 2. Rejection 3 months	1-26-99	43.	
3. Amdt/A (4-26-99)	4-28-99	44.	
4. Prior Art	11/13/98	45.	
5. Interview	7/9/99	46.	
7/12 6. Exr Amdt/B	7/12/99	47.	
7. Notice of Allowed	7/28/99	48.	
7-98 8. Formal Drawings (3 shts) set 1	8-30-99	49.	
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SEARCHED

Class	Sub.	Date	Exmr.
15	209.1 229.11 229.12 229.13		
[redacted]	[redacted]		
D28	63		
D32	40 43	1/18/99	RC
UPDATED	SEARCH	7/8/99	RC

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	Date	Exmr.
C. RAMIREZ DESIGNS CROSS IN [redacted] D28/63 C. TABOR. D32	1/18/99 7/8/99	RC RC

INTERFERENCE SEARCHED

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SAME AS ABOVE		7/8/99	RC

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ISSUE S' STAPLE AREA (for additional cross ref s)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	JLR		8-20-98
O.I.P.E. CLASSIFIER		16	8-21-98
FORMALITY REVIEW		2601	9/1/98

INDEX OF CLAIMS

✔ ..... Rejected
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– (Through numeral) Canceled
÷ ..... Restricted
N ..... Non-elected
I ..... Interference
A ..... Appeal
O ..... Objected

Claim Final	Claim Original	Date
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US005983435A

United States Patent [19]

Osborne

[11] Patent Number: 5,983,435

[45] Date of Patent: Nov. 16, 1999

[54] **BATHING IMPLEMENT**

[75] Inventor: **James J. Osborne**, Ambler, Pa.

[73] Assignee: **Verve Ltd, LLC**, Spring House, Pa.

[21] Appl. No.: **09/135,690**

[22] Filed: **Aug. 18, 1998**

Related U.S. Application Data

[60] Provisional application No. 60/064,932, Nov. 7, 1997.

[51] **Int. Cl.**[6] **A47L 13/10**; A47L 17/08

[52] **U.S. Cl.** **15/209.1**; 15/229.11; 15/229.13; D28/63; D32/40

[58] **Field of Search** 15/209.1, 229.11, 15/229.12, 229.13; D28/63; D32/40, 43

[56] **References Cited**

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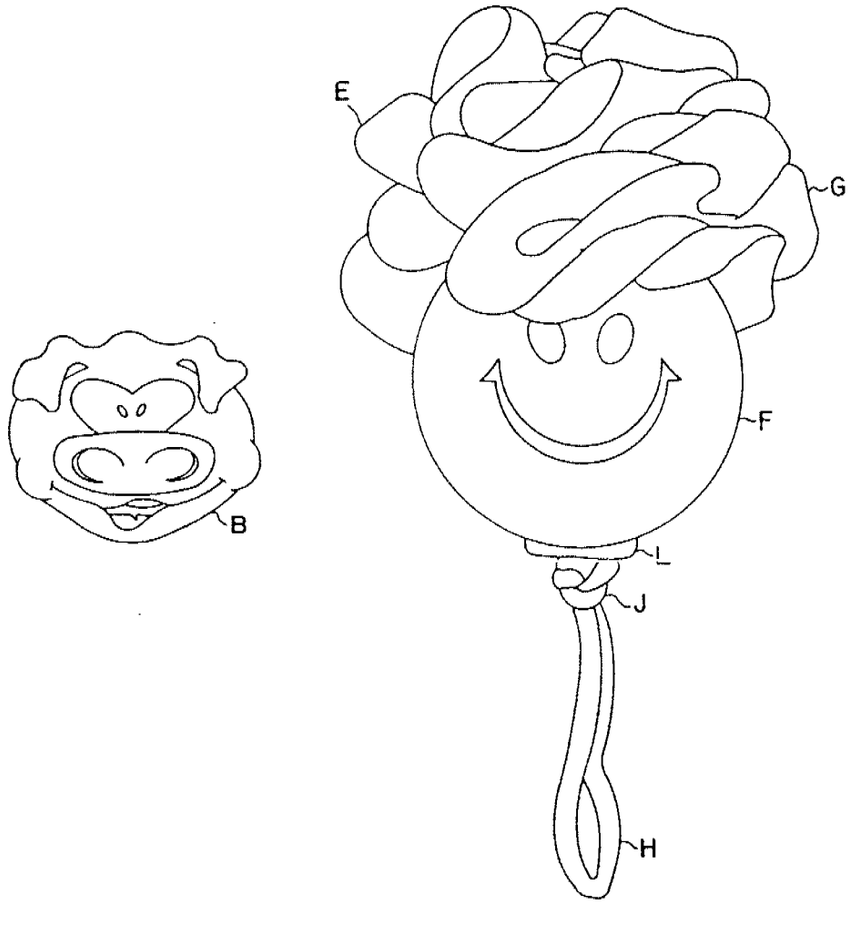
Primary Examiner—Randall E. Chin

Attorney, Agent, or Firm—Howson and Howson

[57] **ABSTRACT**

A bathing implement for use in cleansing and exfoliating skin which can also be utilized as a bath toy by a child or an adult. The bathing implement includes a washcloth component and a collar component which attaches about a portion of the washcloth so that at least one end portion of the washcloth flares outwardly from the collar. Preferably, the washcloth is a flexible mesh sponge and the collar is sleeve-shaped and made of foam or any number of other materials.

13 Claims, 3 Drawing Sheets



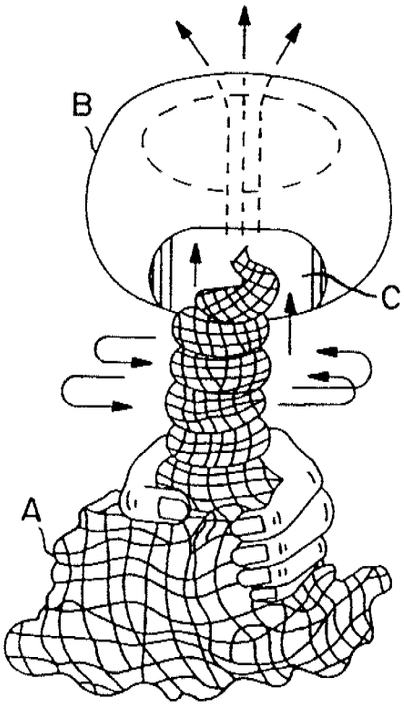


FIG. 1

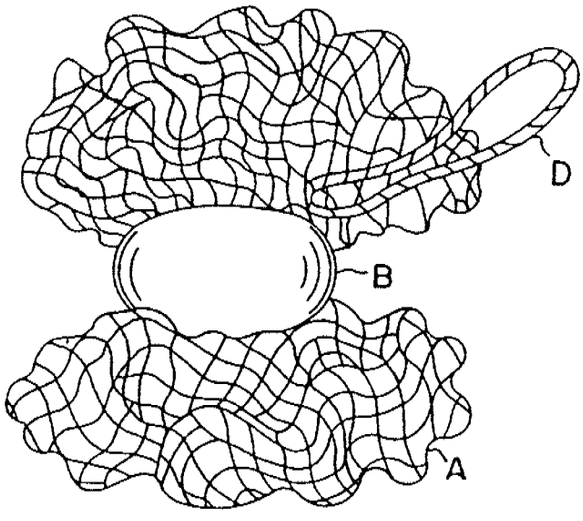


FIG. 2

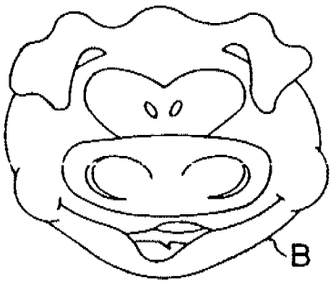


FIG. 3A

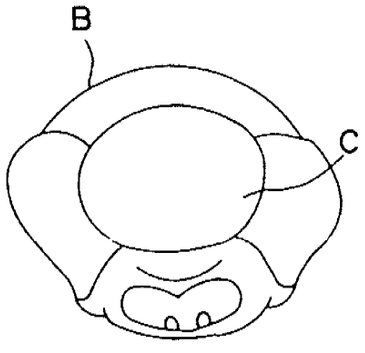


FIG. 3B

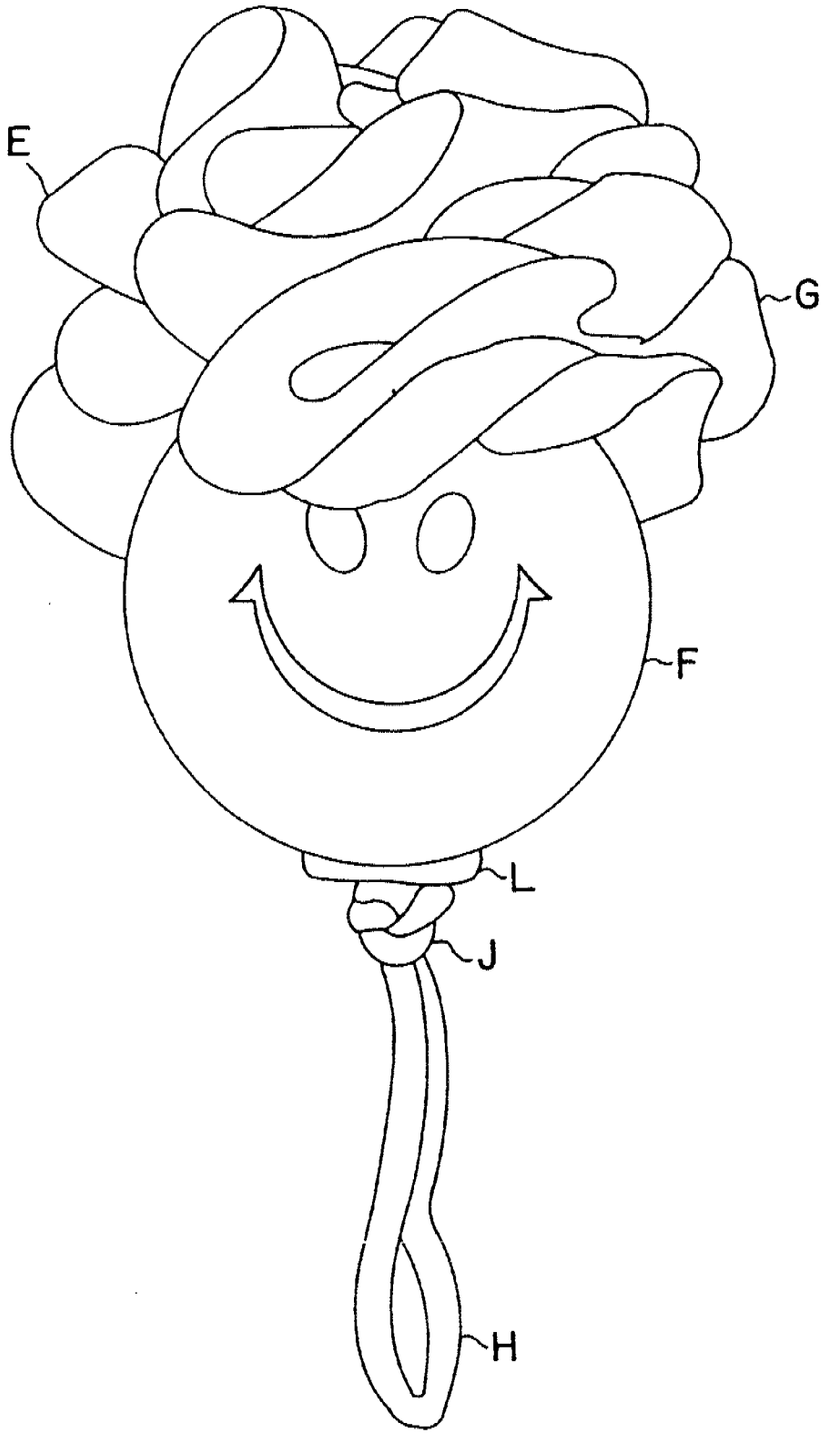


FIG. 4A

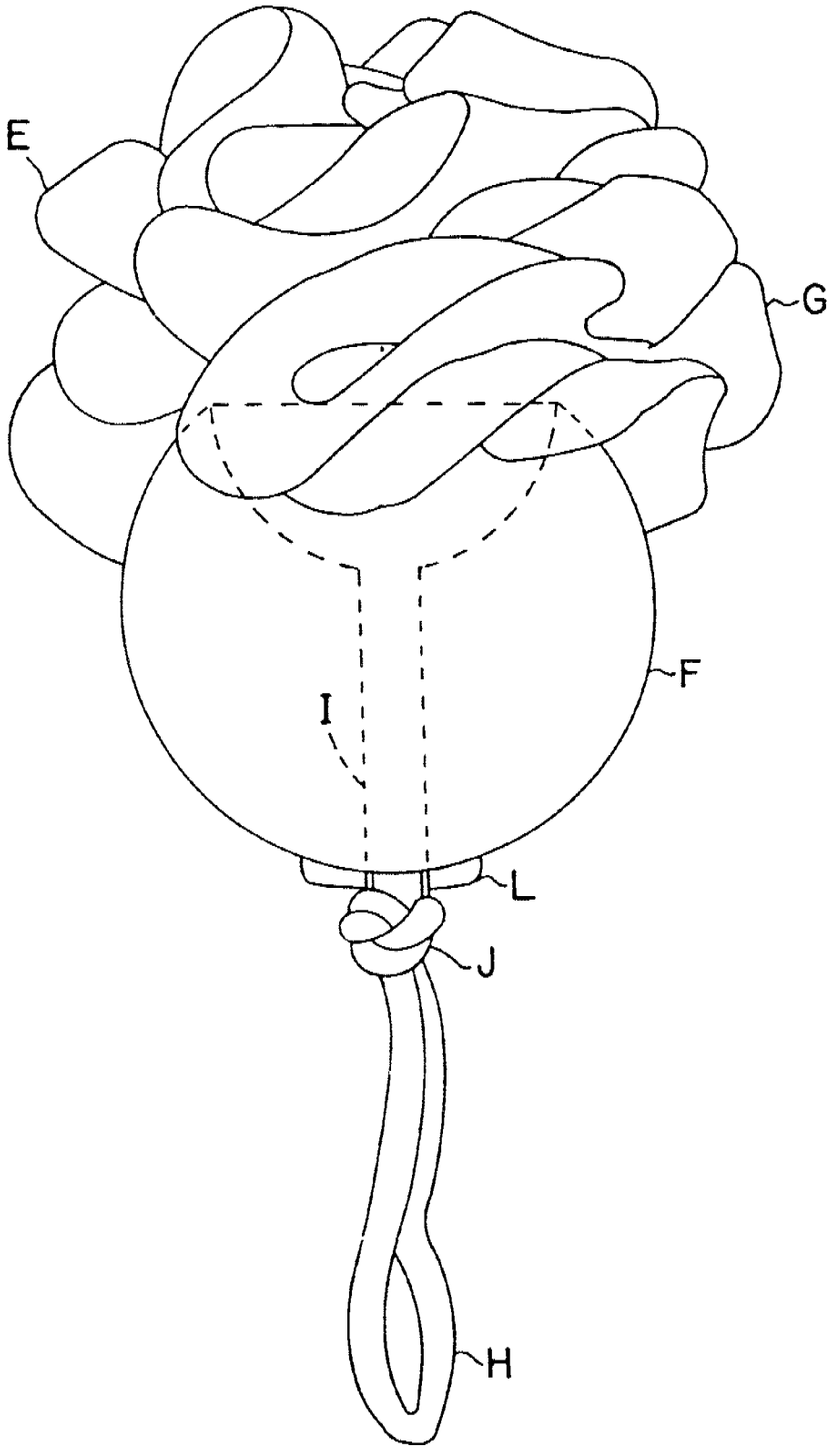


FIG. 4B

BATHING IMPLEMENT

This application claims benefit of provisional Ser. No. 60,064,932 filed Nov. 7, 1997.

FIELD OF THE INVENTION

The present invention relates to a bathing implement for use during a bath or shower, and more particularly, the present invention relates to a washcloth type of implement which is useful with soap to cleanse and exfoliate skin, and which includes decorative features so that it can be used as a bath toy.

BACKGROUND OF THE INVENTION

Most people utilize their hands, or a washcloth, to lather soap and apply the lathered soap to the body during bathing. More recently, sponges, netting or mesh material have been utilized as washcloths since they also provide an exfoliation function. Common mesh sponges are normally provided in a substantially ball-like shape and include a string which enables the sponges to be hung until further use.

A common problem experienced with children, particularly young children, is that they often dislike bathing. One solution to this problem is the use of bath toys which help make a bath more enjoyable for the child. Another common problem is that young children often do not apply, or find it difficult to apply, a sufficient amount of lathered soap on their own to their bodies.

Although known washcloths, particularly washcloths intended for use by children, may be satisfactory for their intended purposes, there is a need for an improved bathing implement which can be used with a soap product to clean and exfoliate skin and which is useful as a bath toy to make bathing fun and easy for young children.

OBJECTS OF THE INVENTION

With the foregoing in mind, a primary object of the present invention is to provide a bathing sponge which can be used by children and adults in a practical manner to cleanse and exfoliate skin, and in a playful manner as a toy.

Another object of the present invention is to provide a bathing implement which can be readily and effectively used by children, which can be easily grasped by the hand of a young child, and which is readily stored and dried by hanging it in the shower when not in use.

A still further object of the present invention is to provide a bathing implement and bath novelty item/toy which provides an aesthetically pleasing bathing-area decoration so that a child-inviting atmosphere is created.

SUMMARY OF THE INVENTION

More specifically, the present invention provides a bathing implement which comprises a washcloth, mesh sponge, or the like, and a collar which attaches about a portion of the washcloth so that one or both end portions of the washcloth flare outwardly from the collar. The washcloth is used during a bath or shower to apply lather to cleanse and/or exfoliate the skin of the bather. The collar enables the bathing implement to be utilized as a bath toy, particularly if the collar has decorative features, such as the face of a popular children's character.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, features and advantages of the present invention should become apparent from the following description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective exploded view of an unassembled bathing implement according to the present invention;

FIG. 2 is an elevational view of an assembled bathing implement embodying the present invention;

FIG. 3A is a front elevational view of the collar portion of the present invention;

FIG. 3B is a top plan view of the collar illustrated in FIG. 3A;

FIG. 4A is a front elevational view of an alternative embodiment of a bathing implement/novelty item according to the present invention; and

FIG. 4B is a partial cross-sectional view of the bathing implement/novelty item of FIG. 4A with an inner portion of the collar illustrated in dashed lines.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 2 illustrates a bathing implement embodying the present invention. The bathing implement includes a washcloth component, A, and a collar component, B. The washcloth component, A, can be any type of, but not limited to, sponge, mesh, netting, terry cloth, PVA, cotton or like material, but is preferably a mesh sponge having a flexible ball-like shape and a string, D, for hanging the mesh sponge. The collar component, B, can be made of, but not limited to, foam, plastic, PU, rubber, Rotocast, PVC, terry cloth, or like material. Preferably, the collar, B, is ring-shaped, or sleeve-shaped, and has a central hollow channel, C.

As illustrated in FIG. 1, and by way of example, the bathing implement can be assembled by manipulating one end of the mesh sponge, A, through the channel, C, in the collar, B, until the collar is located about a medial portion of the sponge so that the opposite end portions of the sponge flare outwardly from opposite sides of the collar. The collar, B, is maintained in position about the medial portion of the sponge, A, by the opposite end portions of the sponge which regain their expanded shape on opposite sides of the collar. The elasticity of the collar, B, also enables the collar to maintain its position on the sponge, A. Other methods of assembly, such as would be practiced in an automated assembly line, can be utilized.

As illustrated in FIGS. 3A and 3B, the collar, B, can be formed to provide decorative features which may be particularly attractive to young children. For instance, as illustrated, the collar is provided with a face of a pig. Alternatively, the collar could be molded to embody any other decorative feature which may be aesthetically pleasing to a child or an adult. For example, the collar could be molded in the shape of a popular children's cartoon character, or it could be molded in the shape of a football, baseball, or any other shape.

An alternative embodiment of the present invention is the bathing implement, E, illustrated in FIG. 4A. A collar, F, attaches about one end portion of a washcloth, such as a mesh sponge, G, so that the opposite end portion of the mesh sponge flares outwardly from the collar. As illustrated, the collar, F, has a happy face design, and the one end portion of the mesh sponge, G, which flares outwardly from the collar, F, provides the appearance of hair extending from the top of the happy face. Other designs, shapes, and materials can be utilized, and various means of attaching the washcloth to the collar can be utilized.

One example of a means to connect the sponge, G, to the collar, F, is illustrated in FIG. 4B. To this end, the mesh

sponge, G, is provided with a cord, H, and the collar, F, is provided with an inner channel, I. The cord, H, is extended through the channel, I, and is formed into a knot, J, to attach the mesh sponge, G, to the collar, F. Preferably, a washer, L, is located between the knot, J, and collar, F, to prevent the knot from extending through the channel. The channel, 1, as shown, can be provided with a widened portion, K, so that one end of the mesh sponge, G, extends within the collar F. Alternatively, the entire mesh sponge can extend exteriorly of the collar. Other means to connect the washcloth to the collar can be utilized.

Thus, the bathing implement according to the present invention provides a cleansing sponge and a toy. As a toy, the bathing implement can be tossed or floated on the surface of the bath water, and it can be submerged and allowed to pop up out of the bath water. The collar can be provided with the shape or face of a character which is particularly appealing to the specific bather. As a sponge, the bathing implement can be used with or without a soap product to cleanse and exfoliate the skin. Furthermore, the sponge is abrasive enough to dislodge dirt and grime from the body of the bather, yet at the same time, the sponge is soft enough to be used on sensitive skin. In addition, children can have their own personalized sponge for use during bathtime which will create in the children a greater awareness of cleanliness and of the need to throughly wash their bodies. Finally, the invention is not limited to use by children; rather, different sized and shaped bathing implements can be used to accommodate adults.

While preferred and alternate bathing implements have been described in detail, various modifications, alterations, and changes may be made without departing from the spirit and scope of the present invention as defined in the appended claims.

I claim:

1. A bathing implement comprising:

a washcloth capable of applying lather to cleanse a bather; and

a collar capable of attachment about a portion of said washcloth so that at least one end portion of said washcloth flares outwardly from said collar;

wherein said collar has a hollow channel formed therein which permits a portion of said washcloth to be inserted through said channel; and

wherein a decorative design is formed on said collar; whereby said collar enables said bathing implement to be utilized as a bath toy.

2. A bathing implement according to claim **1**, wherein said collar attaches about a medial portion of said washcloth so that opposite end portions of said washcloth flare outwardly from said collar.

3. A bathing implement according to claim **1**, wherein said washcloth is a mesh sponge made of a net-like material.

4. A bathing implement according to claim **3**, wherein said mesh sponge has a ball-like shape and has a string for hanging the mesh sponge.

5. A bathing implement according to claim **1**, wherein said collar is made of a foam-like material.

6. A bathing implement according to claim **1**, wherein said collar is sleeve-shaped and removable from said washcloth.

7. A bathing implement for use by a child during a bath, comprising:

a mesh sponge capable of applying lather to cleanse and exfoliate the skin of a child during a bath; and

a sleeve-shaped, collar capable of attachment about a medial portion of said mesh sponge so that opposite end portions of said mesh sponge flare outwardly from said collar, said collar being of a material which is more rigid than said mesh sponge and having an outer surface of a size capable of being readily grasped so that said mesh sponge is capable of being manipulated when said collar is grasped; and

wherein a decorative design is formed on said collar whereby said collar enables said bathing implement to be utilized as a bath toy and the relative rigidity and size of said collar enhances gripability and manipulation of the bathing implement.

8. A bathing implement comprising:

a washcloth having a cord extending therefrom; and

a collar capable of attachment to said washcloth so that said washcloth flares outwardly from only one side of said collar, said collar having a hollow channel formed therein which said cord can be inserted through and knotted to connect said washcloth to said collar;

wherein said hollow channel has a widened portion adjacent said washcloth so that one portion of the washcloth is located within said collar and the remaining portion of the washcloth flares outwardly from said collar; whereby said collar enables said bathing implement to be utilized as a bath toy.

9. A bathing implement according to claim **8**, wherein said washcloth is a mesh sponge.

10. A bathing implement according to claim **9**, wherein said collar has a decorative design formed thereon.

11. A bathing implement comprising:

a washcloth having a cord extending therefrom,

a collar capable of attachment to said washcloth so that said washcloth flares outwardly from only one side of said collar, said collar having a hollow channel formed therein which said cord can be inserted through and knotted to connect said washcloth to said collar, and

a washer located about said cord between said knot and said collar; whereby said collar enables said bathing implement to be utilized as a bath toy.

12. A hand-held implement, comprising:

a washcloth; and

a collar capable of attachment about a portion of said washcloth so that at least one end portion of said washcloth flares outwardly from said collar, said collar being of a material which is more rigid than said washcloth and having an outer surface of a size capable of being readily grasped by a user such that the user can manipulate the washcloth by grasping said collar and wherein a decorative design is formed on said collar.

13. A hand-held implement according to claim **12**, wherein said collar is sleeve-shaped and removable from said washcloth.

* * * * *

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

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SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
09/135,690	08/18/98	015	1744	VEX1AUSA

APPLICANT

JAMES J. OSBORNE, AMBLER, PA.

CONTINUING DOMESTIC DATA********
VERIFIED PROVISIONAL APPLICATION NO. 60/064,932 11/07/97

RC

371 (NAT'L STAGE) DATA********
VERIFIED

NONE RC

FOREIGN APPLICATIONS********
VERIFIED

NONE RC

FOREIGN FILING LICENSE GRANTED 09/01/98 ***** SMALL ENTITY *****

Foreign Priority claimed 35 USC 119 (a-d) conditions met	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☐yes ☑no ☐yes ☑no ☐Met after Allowance Verified and Acknowledged RC Examiner's Initials _____ Initials	PA	3	17	3

ADDRESS

HOWSON & HOWSON
SPRING HOUSE CORPORATE CENTER
P O BOX 457
SPRING HOUSE PA 19477

TITLE

BATHING IMPLEMENT

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PATENT APPLICATION TRANSMITTAL LETTER	ATTORNEY'S DOCKET NO. VEX1AUSA

TO THE ASSISTANT COMMISSIONER FOR PATENTS:

Transmitted herewith for filing is the patent application of JAMES J. OSBORNE

for BATHING IMPLEMENT

Enclosed are:

(XX) three (3) sheets of drawing.

( ) an assignment of the invention to ____________.

( ) a certified copy of a ________ application.

( ) associate power of attorney.

(XX) verified statement to establish small entity status under 37 C.F.R. 1.9 and 1.27.

For	No Filed	No Extra
Basic Fee		
Total Claims	17 -20*	0
Indep Claims	3 -3=	
Multiple Dependent Claims Present		

*If the difference in col. 1 is less than zero, enter "0" in col. 2

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X41=	0
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Rate	Fee
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X22=	
X82=	
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Total	

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( ) Any filing fees under 37 C.F.R. 1.16 for presentation of extra claims.
( ) Any patent application processing fees under 37 C.F.R. 1.17.
( ) The issue fee set in 37 C.F.R. 1.18 at or before mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Date 8-18-98 Signature William Bak

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BATHING IMPLEMENT

This application claims benefit of provisional 60,064,932 filed 11-7-97.

Field of the Invention

The present invention relates to a bathing implement for use during a bath or shower, and more particularly, the present invention relates to a washcloth type of implement which is useful with soap to cleanse and exfoliate skin, and which includes decorative features so that it can be used as a bath toy.

Background of the Invention

Most people utilize their hands, or a washcloth, to lather soap and apply the lathered soap to the body during bathing. More recently, sponges, netting or mesh material have been utilized as washcloths since they also provide an exfoliation function. Common mesh sponges are normally provided in a substantially ball-like shape and include a string which enables the sponges to be hung until further use.

A common problem experienced with children, particularly young children, is that they often dislike bathing. One solution to this problem is the use of bath toys which help make a bath more enjoyable for the child. Another common problem is that young children often do not apply, or find it difficult to apply, a sufficient amount of lathered soap on their own to their bodies.

Although known washcloths, particularly washcloths intended for use by children, may be satisfactory for their intended purposes, there is a need for an improved bathing implement which can be used with a soap product to clean and

exfoliate skin and which is useful as a bath toy to make bathing fun and easy for young children.

Objects of the Invention

With the foregoing in mind, a primary object of the present invention is to provide a bathing sponge which can be used by children and adults in a practical manner to cleanse and exfoliate skin, and in a playful manner as a toy.

Another object of the present invention is to provide a bathing implement which can be readily and effectively used by children, which can be easily grasped by the hand of a young child, and which is readily stored and dried by hanging it in the shower when not in use.

A still further object of the present invention is to provide a bathing implement and bath novelty item/toy which provides an aesthetically pleasing bathing-area decoration so that a child-inviting atmosphere is created.

Summary of the Invention

More specifically, the present invention provides a bathing implement which comprises a washcloth, mesh sponge, or the like, and a collar which attaches about a portion of the washcloth so that one or both end portions of the washcloth flare outwardly from the collar. The washcloth is used during a bath or shower to apply lather to cleanse and/or exfoliate the skin of the bather. The collar enables the bathing implement to be utilized as a bath toy, particulary if the collar has decorative features, such as the face of a popular children's character.

Brief Description of the Drawings

The foregoing and other objects, features and advantages of the present invention should become apparent from the following description when taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective exploded view of an unassembled bathing implement according to the present invention;

FIG. 2 is an elevational view of an assembled bathing implement embodying the present invention;

FIG. 3A is a front elevational view of the collar portion of the present invention;

FIG. 3B is a top plan view of the collar illustrated in FIG. 3A;

FIG. 4A is a front elevational view of an alternative embodiment of a bathing implement/novelty item according to the present invention; and

FIG. 4B is a partial cross-sectional view of the bathing implement/novelty item of FIG. 4A with an inner portion of the collar illustrated in dashed lines.

Detailed Description of the Preferred Embodiment

FIG. 2 illustrates a bathing implement embodying the present invention. The bathing implement includes a washcloth component, A, and a collar component, B. The washcloth component, A, can be any type of, but not limited to, sponge, mesh, netting, terry cloth, PVA, cotton or like material, but is preferably a mesh sponge having a flexible ball-like shape and a string, D, for hanging the mesh sponge. The collar component, B, can be made of, but not limited to, foam, plastic, PU, rubber,

Rotocast, PVC, terry cloth, or like material. Preferably, the collar, B, is ring-shaped, or sleeve-shaped, and has a central hollow channel, C.

As illustrated in FIG. 1, and by way of example, the bathing implement can be assembled by manipulating one end of the mesh sponge, A, through the channel, C, in the collar, B, until the collar is located about a medial portion of the sponge so that the opposite end portions of the sponge flare outwardly from opposite sides of the collar. The collar, B, is maintained in position about the medial portion of the sponge, A, by the opposite end portions of the sponge which regain their expanded shape on opposite sides of the collar. The elasticity of the collar, B, also enables the collar to maintain its position on the sponge, A. Other methods of assembly, such as would be practiced in an automated assembly line, can be utilized.

As illustrated in FIGs. 3A and 3B, the collar, B, can be formed to provide decorative features which may be particularly attractive to young children. For instance, as illustrated, the collar is provided with a face of a pig. Alternatively, the collar could be molded to embody any other decorative feature which may be aesthetically pleasing to a child or an adult. For example, the collar could be molded in the shape of a popular children's cartoon character, or it could be molded in the shape of a football, baseball, or any other shape.

An alternative embodiment of the present invention is the bathing implement, E, illustrated in FIG. 4A. A collar, F, attaches about one end portion of a washcloth, such as a mesh sponge, G, so that the opposite end portion of the mesh sponge flares outwardly from the collar. As illustrated, the collar, F, has a happy face design, and the one end portion of the mesh sponge, G, which flares outwardly from the collar, F,

provides the appearance of hair extending from the top of the happy face. Other designs, shapes, and materials can be utilized, and various means of attaching the washcloth to the collar can be utilized.

One example of a means to connect the sponge, G, to the collar, F, is illustrated in FIG. 4B. To this end, the mesh sponge, G, is provided with a cord, H, and the collar, F, is provided with an inner channel, I. The cord, H, is extended through the channel, I, and is formed into a knot, J, to attach the mesh sponge, G, to the collar, F. Preferably, a washer, L, is located between the knot, J, and collar, F, to prevent the knot from extending through the channel. The channel, I, as shown, can be provided with a widened portion, K, so that one end of the mesh sponge, G, extends within the collar F. Alternatively, the entire ~~mech~~ mesh sponge can extend exteriorly of the collar. Other means to connect the washcloth to the collar can be utilized.

Thus, the bathing implement according to the present invention provides a cleansing sponge and a toy. As a toy, the bathing implement can be tossed or floated on the surface of the bath water, and it can be submerged and allowed to pop up out of the bath water. The collar can be provided with the shape or face of a character which is particularly appealing to the specific bather. As a sponge, the bathing implement can be used with or without a soap product to cleanse and exfoliate the skin. Furthermore, the sponge is abrasive enough to dislodge dirt and grime from the body of the bather, yet at the same time, the sponge is soft enough to be used on sensitive skin. In addition, children can have their own personalized sponge for use during bathtime which will create in the children a greater awareness of cleanliness and of

the need to throughly wash their bodies. Finally, the invention is not limited to use by children; rather, different sized and shaped bathing implements can be used to accommodate adults.

While preferred and alternate bathing implements have been described in detail, various modifications, alterations, and changes may be made without departing from the spirit and scope of the present invention as defined in the appended claims.

Claims:

1. A bathing implement comprising:

a washcloth capable of applying lather to cleanse a bather; and

a collar capable of attachment about a portion of said washcloth so that at least one end portion of said washcloth flares outwardly from said collar;

whereby said collar enables said bathing implement to be utilized as a bath toy.

2. A bathing implement according to claim 1, wherein said collar attaches about a medial portion of said washcloth so that opposite end portions of said washcloth flare outwardly from said collar.

3. A bathing implement according to claim 1, wherein said washcloth is a mesh sponge made of a net-like material.

4. A bathing implement according to claim 3, wherein said mesh sponge has a ball-like shape and has a string for hanging the mesh sponge.

5. A bathing implement according to claim 1, wherein said collar is made of a foam-like material.

6. A bathing implement according to claim 1, wherein said collar has a hollow channel formed therein which permits a portion of said washcloth to be inserted through said channel.

7. A bathing implement according to claim 6, wherein said collar is sleeve-shaped and removable from said washcloth.

8. A bathing implement according to claim 6, wherein a decorative design is formed on said collar.

9. A bathing implement for use by a child during a bath, comprising:

a mesh sponge capable of applying lather to cleanse and exfoliate the skin of a child during a bath; and

a sleeve-shaped, collar capable of attachment about a medial portion of said mesh sponge so that opposite end portions of said mesh sponge flare outwardly from said collar;

whereby said collar enables said bathing implement to be utilized as a bath toy.

10. A bathing implement comprising:

a washcloth; and

a collar capable of attachment to said washcloth so that said washcloth flares outwardly from said collar;

whereby said collar enables said bathing implement to be utilized as a bath toy.

11. A bathing implement according to claim 10, wherein said washcloth flares outwardly from only one side of said collar.

12. A bathing implement according to claim 11, wherein said washcloth has a cord extending therefrom.

13. A bathing implement ~~according~~ to claim 12, wherein said collar has a hollow channel formed therein which said cord can be inserted through and knotted to connect said washcloth to said collar.

14. A bathing implement according to claim 13, wherein said hollow channel has a widened portion adjacent said washcloth so that one portion of the washcloth is located within said collar and the remaining portion of the washcloth flares outwardly from said collar.

9 8

15. A bathing implement according to claim 14, wherein said washcloth is a mesh sponge.

10 9

16. A bathing implement according to claim 15, wherein said collar has a decorative design formed thereon.

17. A bathing implement according to claim 13, further comprising a washer located about said cord between said knot and said collar.

BATHING IMPLEMENT

Abstract of the Invention

A bathing implement for use in cleansing and exfoliating skin which can also be utilized as a bath toy by a child or an adult. The bathing implement includes a washcloth component and a collar component which attaches about a portion of the washcloth so that at least one end portion of the washcloth flares outwardly from the collar. Preferably, the washcloth is a flexible mesh sponge and the collar is sleeve-shaped and made of foam or any number of other materials.

VEX1AUSA

DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship is as stated below next to my name, JAMES J. OSBORNE I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **BATHING IMPLEMENT**, the specification of which

(check one) **X** is attached hereto
was filed on _____ as
Application Serial No. _____
and was amended on _____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

			Priority Claimed	
_____	_____	_____		
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the

first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

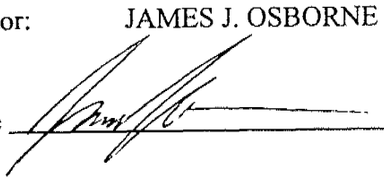
60/064,932	November 7, 1997	Pending
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby appoint the following individuals to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: STANLEY B. KITA, Registration No. 24,561; GEORGE A. SMITH, JR., Registration No. 24,442; WILSON OBERDORFER, Registration No. 17,379; MARY E. BAK, Registration No. 31,215, HENRY HANSEN, Registration No. 19,612, CATHY A. KODROFF, Registration Number 32,980, and WILLIAM BAK, Registration No. 37,277.

Address all telephone calls to William Bak at telephone no. (215) 540-9208. Address all correspondence to HOWSON AND HOWSON, Spring House Corporate Center, P. O. Box 457, Spring House, Pennsylvania 19477.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of inventor: JAMES J. OSBORNE

Inventor's signature  9/18/98 Date

Residence: 704 Abbeydale Court, Ambler, Pennsylvania 19002

Citizenship: U. S. A.

Post Office Address: Same

Applicant or Patentee: JAMES J. OSBORNE
Attorney's
Serial or Patent No. : _____ Docket No.: VEX1AUSA
Filed or Issued: Herewith
For: BATHING IMPLEMENT

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN

I hereby declare that I am

[ ] the owner of the small business concern identified below:
[**XX**] an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN VERVE LTD., LLC
ADDRESS OF CONCERN 748 Bethlehem Pike, Suite 209, POB 619
Spring House PA 19477

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third-party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled BATHING IMPLEMENT, inventor(s) James J. Osborne described in

[**XX**] the specification filed herewith
[ ] application serial no. _____, filed _____
[ ] patent no._____, issued

_____

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below* and no rights to

the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e). *NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME _____

ADDRESS _____

[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

NAME _____

ADDRESS _____

[ ] INDIVIDUAL [ ] SMALL BUSINESS CONCERN [ ] NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING JAMES J. OSBORNE

TITLE Chief Executive Officer

ADDRESS OF PERSON SIGNING 748 Bethlehem Pike, Suite 209, Box 619
Spring House, Pennsylvania 19477

SIGNATURE _____ DATE 3/18/98

PRINT OF DRAWINGS
AS ORIGINALLY FILE

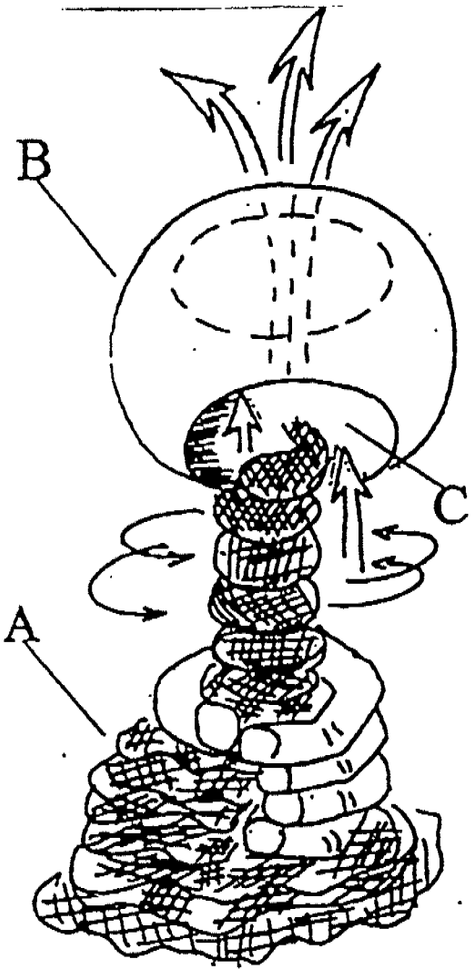


Figure 2

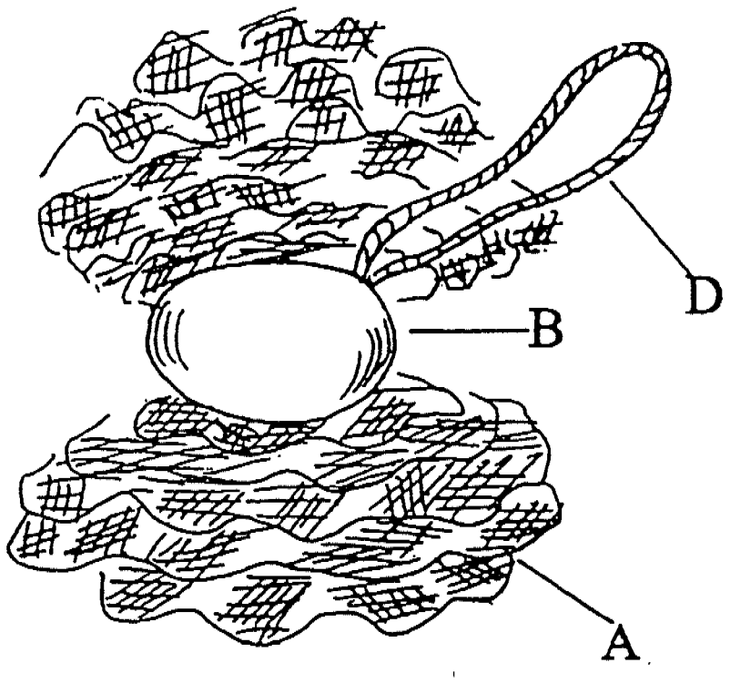
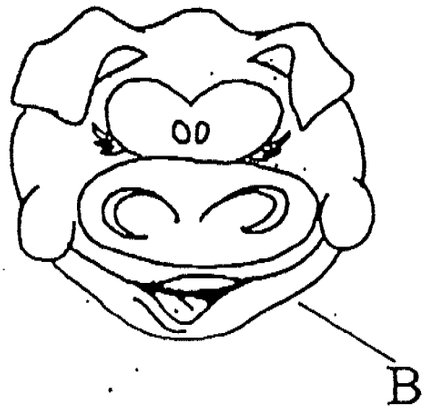


Figure 3A



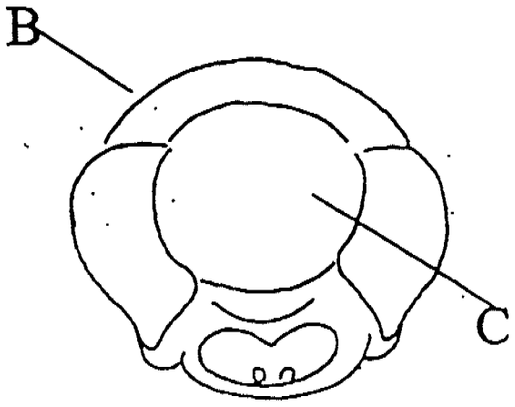


Figure 3 B

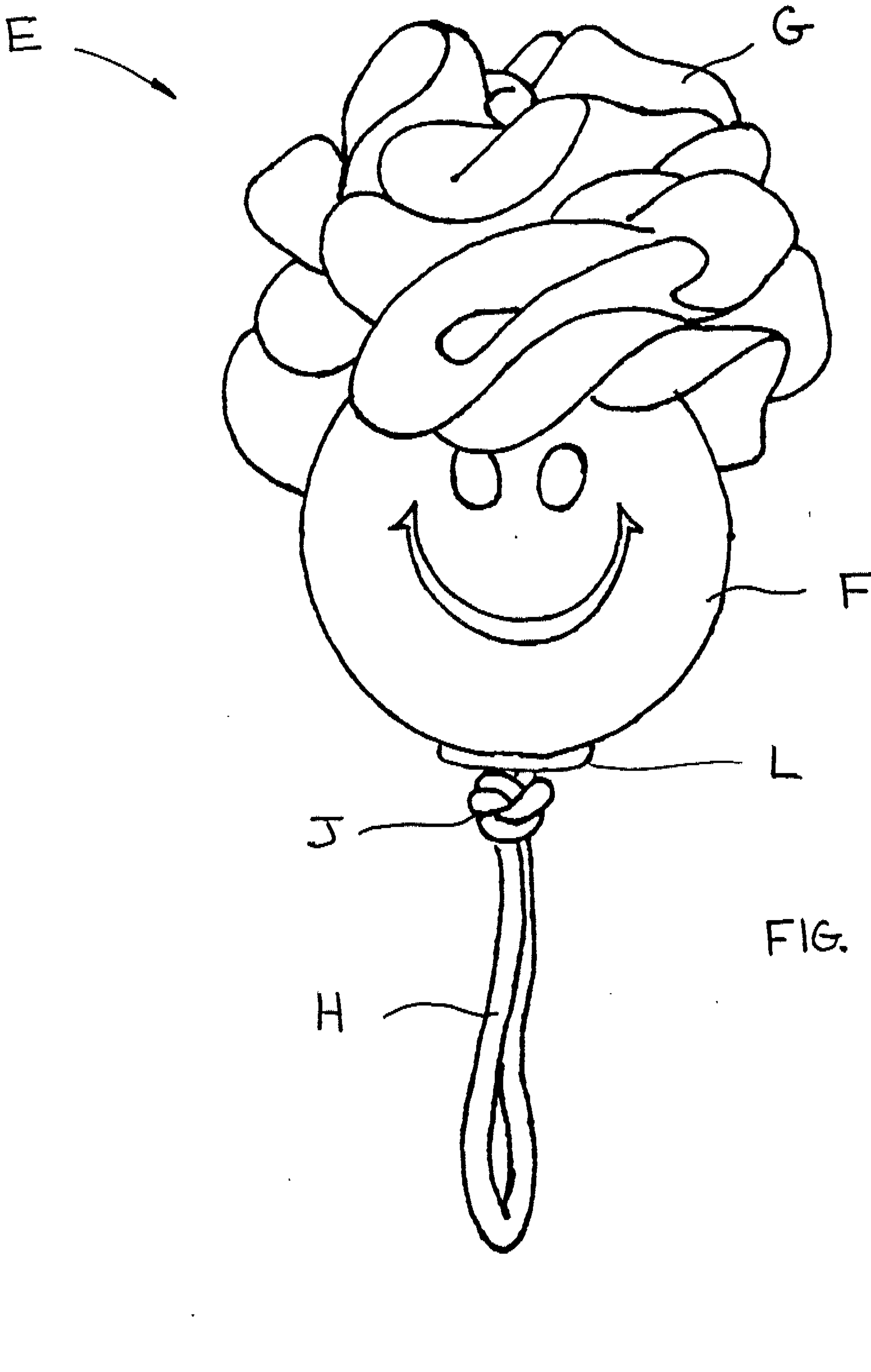


FIG. 4A

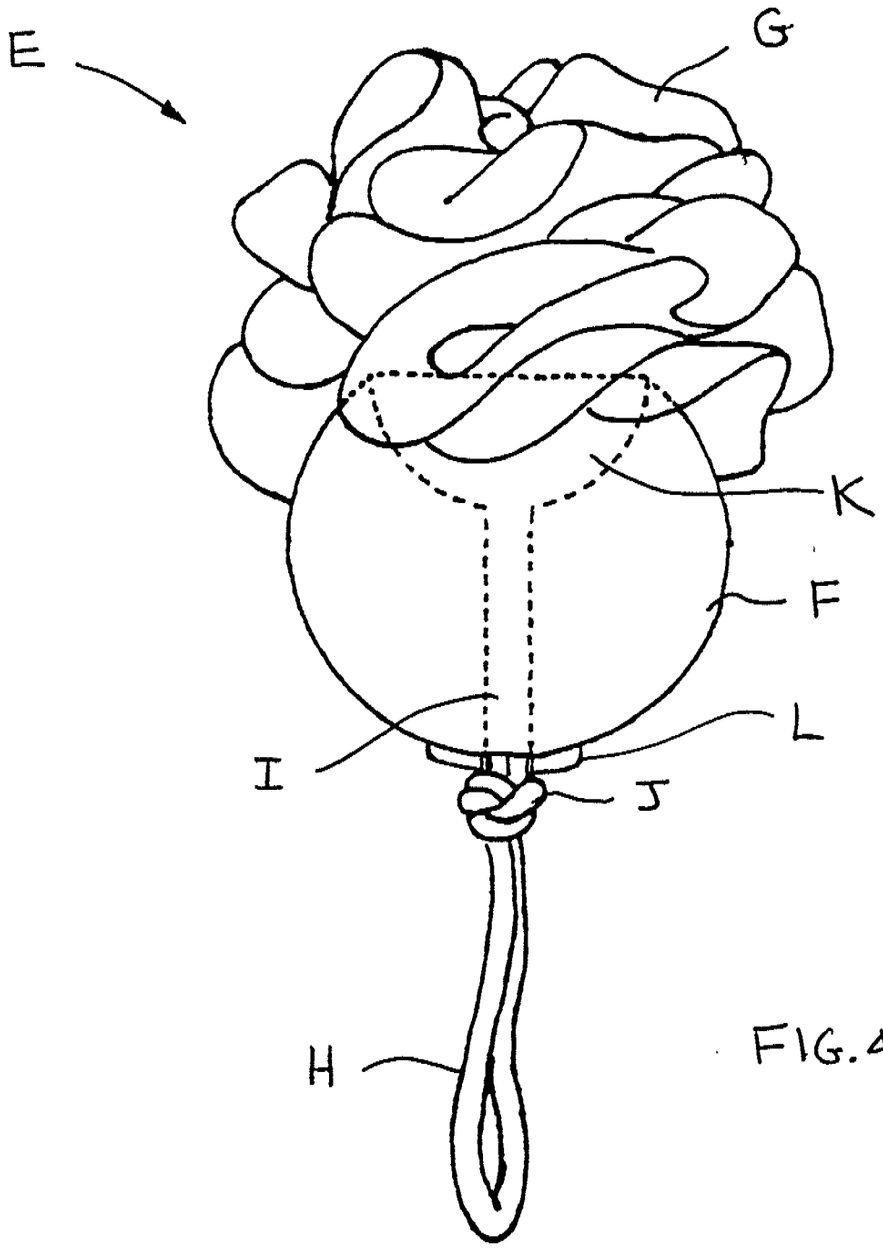


FIG.4B

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SAH
PM

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/[illegible]670	8/98	OSBORNE J	VEXIAUSA

IM41/0126

HOWSON & HOWSON
SPRING HOUSE CORPORATE CENTER
P O BOX 457
SPRING HOUSE PA 19477

EXAMINER	
CHIN, R	
ART UNIT	**PAPER NUMBER**
1744	2

DATE MAILED: 01/26/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)
	135,690	OSBORNE
	Examiner	Group Art Unit
	R. CHIN	1744

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☑ Claim(s) 1-17 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☑ Claim(s) 1-7, 9-13 is/are rejected.

☑ Claim(s) 8 and 14-17 is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☑ Notice of References Cited, PTO-892

☑ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Interview Summary, PTO-413

☐ Notice of Informal Patent Application, PTO-152

☐ Other _____

Office Action Summary

DETAILED ACTION

Drawings

1. The drawings are objected to because it does not appear figure 1 is label. Correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 7, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanford '135.

The patent to Sanford '135 discloses with respect to claims 1, 2 and 10, a bathing implement in Fig.1, for example (col.7, lines 40-43), comprising a washcloth 10 capable of applying lather to cleanse a person and a band or collar 13 capable of attachment about a medial portion of the washcloth so that opposite end portions of the washcloth "flare" outwardly from the collar. Clearly, a user, if desired, can use the implement as a bath toy. Such a recitation is of no patentable moment here. As for claim 6, the collar 13, after assembly, is or a circular ring-like form and clearly would have a "hollow channel" therein which permits a portion of the washcloth

to be inserted through the channel. As for claim 7, the collar 13 is sleeve-shaped and is removable from the washcloth.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanford '135.

As for the collar being of "foam-like" material, it is the Examiner's position that such a limitation is within the level of ordinary skill. In the art as a softer collar would be desirable to prevent injury to a bather. Collar material choice is not deemed to define patentable subject matter here.

6. Claims 3, 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanford '135 in view of Gordon '384.

Sanford discloses all of the recited subject matter with the exception of the washcloth being of a "sponge" material (note Sanford's device is already of net mesh and is of a "ball-like shape) and having a string for hanging the mesh sponge. Gordon '384 teaches a bathing implement of a mesh sponge material and a string 7 for hanging. It would have been obvious to one of ordinary skill in the art to have modified Sanford's implement such that it is of mesh

sponge for adding flexibility to the implement and has a string for hanging as suggested by Gordon.

7. Claims 10-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Girardot '452.

See Fig.13.

8. Claims 8 and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Rapson, Protz, Abraham, Per-Lee, and Chien are pertinent to various cleaning implements

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randall Chin whose telephone number is (703) 308-1613.

Any inquiry of a general nature concerning the status of this application should be directed to the receptionist of Group 1700 whose telephone number is (703) 308-0661.

Any responses made by facsimile should be addressed to Randall Chin at (703) 305-3599 or (703) 305-7719.

RANDALL E. CHIN
PRIMARY EXAMINER

R. Chin
January 19, 1999

Notice of References Cited

Application No.	Applicant(s)		
135,690	OSBORNE		
Examiner	Group Art Unit	Page	of
R CHIN	1744	1	1

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
	A	1047703	12/1912	RAPSON	15	209.1
	B	1963529	6/1934	PROTZ	15	229.12
	C	2581779	1/1952	ABRAHAM	15	229.11
	D	4462135	7/1984	SANFORD	15	209.1
	E	5465452	11/1995	GIRARDOT	15	209.1
	F	5650384	7/1997	GORDON	15	209.1
	G	5727278	3/1998	PER-LEE	15	229.11
	H	5787542	8/1998	CHIEN	15	209.1
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS
	N						
	O						
	P						
	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

*		DOCUMENT (Including Author, Title, Source, and Pertinent Pages)	DATE
	U		
	V		
	W		
	X		

* A copy of this reference is not being funished with this Office action.
(See Manual of Patent Examining Procedure, Section 707.05(a).)

Part of Paper No. 2

*U.S. GPO 1996-420-311/40176

FORM PTO 948 (REV. 11-97) U.S. DEPARTMENT OF COMMERCE-Patent and Trademark Office Application No 09/135690

NOTICE OF DRAFTPERSON'S PATENT DRAWING REVIEW

The drawing filied (insert date) 8/18/98 are:

A. _____ not objected to by the Draftperson under 37 CFR 1.84 or 1.152.

B. ✓ objected to by the Draftperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected drawings whe necessary. Corrected drawings must be submitted according to the instructions on the back of this notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color.
   - _____ Color drawing are not acceptable until petition is granted. Fig.(s) _____
   - _____ Pencil and non black ink is not permitted. Fig(s)_____
2. PHOTOGRAPHS. 37 CFR 1.84(b)
   - _____ Photographs are not acceptable until petition is granted,
   - _____ 3 full-tone sets are required. Fig(s)_____
   - _____ Photographs not properly mounted (must brystol board or photographic double-weight paper). Fig(s)_____
   - _____ Poor quailty (half-tone). Fig(s)_____
3. TYPE OF PAPER. 37 CFR 1.84(e)
   - _____ Paper not flexible, strong, white and durable. Fig.(s)_____
   - ✓ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not acceptable. ~~(too thin)~~
   - _____ Mylar, vellum paper is not acceptable (too thin). Fig(s)_____
4. SIZE OF PAPER. 37 CFR 1.84(F): Acceptable sizes:
   - _____ 21.0 cm by 29.7 cm (DIN size A4)
   - _____ 21.6 cm by 27.9 cm (8 1/2 x 11 inches)
   - _____ All drawings sheets not the same size. Sheet(s)_____
5. MARGINS. 37 CFR 18.4(g): Acceptable margins:
   - Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size
   - Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11
   - ✓ Margins not acceptable. Fig(s) 1
   - ✓ Top (T) ✓ Left (L)
   - _____ Right (R) _____ Bottom (B)
6. VIEWS. CFR 1.84(h)
   REMINDER: Specification may require revision to correspond to drawing changes.
   - _____ Views connected by projection lines or lead lines. Fig.(s)_____

   Partial views. 37 CFR 1.84(h)(2)
   - _____ Brackets needed to show figure as one entity. Fig.(s)_____
   - _____ Views not labeled separately or properly. Fig.(s)_____
   - _____ Enlarged view not labeled separately or properly. Fig.(s)_____
7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3)
   - _____ Hatching not indicated for sectional portions of an object. Fig.(s)_____
   - _____ Sectional designation should be noted with Arabic or Roman numbers. Fig.(s)_____
8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
   - _____ Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned, so that the top becomes the right side, except for graphs. Fig.(s)_____
   - _____ Views not on the same plane on drawing sheet. Fig.(s)_____
9. SCALE. 37 CFR 1.84(k)
   - _____ Scale not large enough to show mechansim without crowding when drawing is reduced in size to two-thirds in reproduction. Fig.(s)_____
10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l)
    - ✓ Lines, numbers & letters not uniformly thick and well defined, clean, durable and black (poor line quality). Fig.(s) 1-4
11. SHADING. 37 CFR 1.84(m)
    - _____ Solid black areas pale Fig.(s) _____
    - _____ Solid black shading not permitted. Fig.(s)_____
    - _____ Shade lines, pale, rough and blurred. Fig.(s)
12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.48(p)
    - _____ Numbers and reference characters not plain and legible. Fig.(s)_____
    - _____ Figure legends are poor. Fig.(s)_____
    - _____ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(3) Fig.(s)_____
    - _____ Engligh alphabet not used. 37 CFR 1.84(p)(3) Fig.(s)_____
    - _____ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig.(s)_____
13. LEAD LINES. 37 CFR 1.84(q)
    - _____ Lead lines cross each other. Fig.(s)_____
    - _____ Lead lines missing. Fig.(s)_____
14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.48(t)
    - _____ Sheets not numbered consecutively, and in Ababic numerals beginning with number 1. Fig.(s)_____
15. NUMBERING OF VIEWS. 37 CFR 1.84(u)
    - _____ Views not numbered consecutively, and in Abrabic numerals, beginning with number 1. Fig.(s)_____
16. CORRECTIONS. 37 CFR 1.84(w)
    - _____ Corrections not made from PTO-948 dated _____
17. DESIGN DRAWINGS. 37 CFR 1.152
    - _____ Surface shading shown not appropriate. Fig.(s)_____
    - _____ Solid black shading not used for color contrast. Fig.(s)_____

COMMENTS

REVIEWER ADE DATE 9/15/98 TELEPHONE NO. (703)305-8404

ATTACHMENT TO PAPER NO. 2

PTO COPY

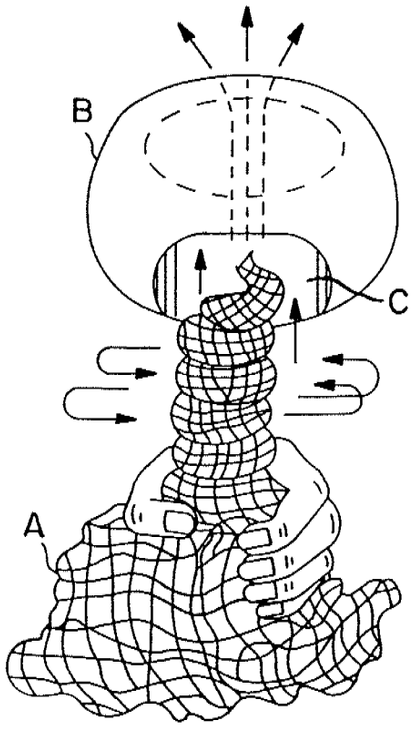


FIG. 1

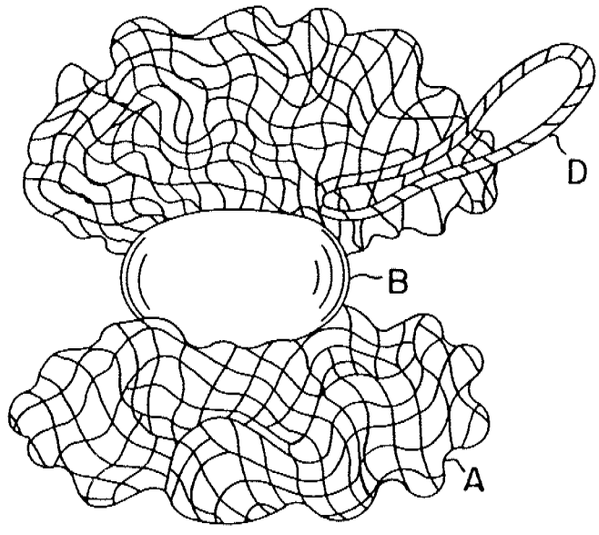


FIG. 2

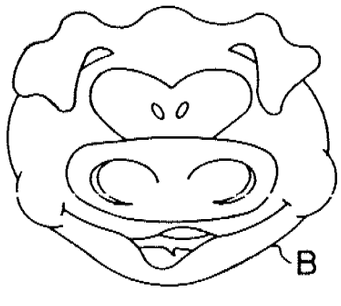


FIG. 3A

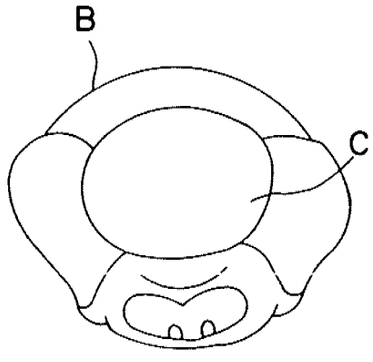


FIG. 3B

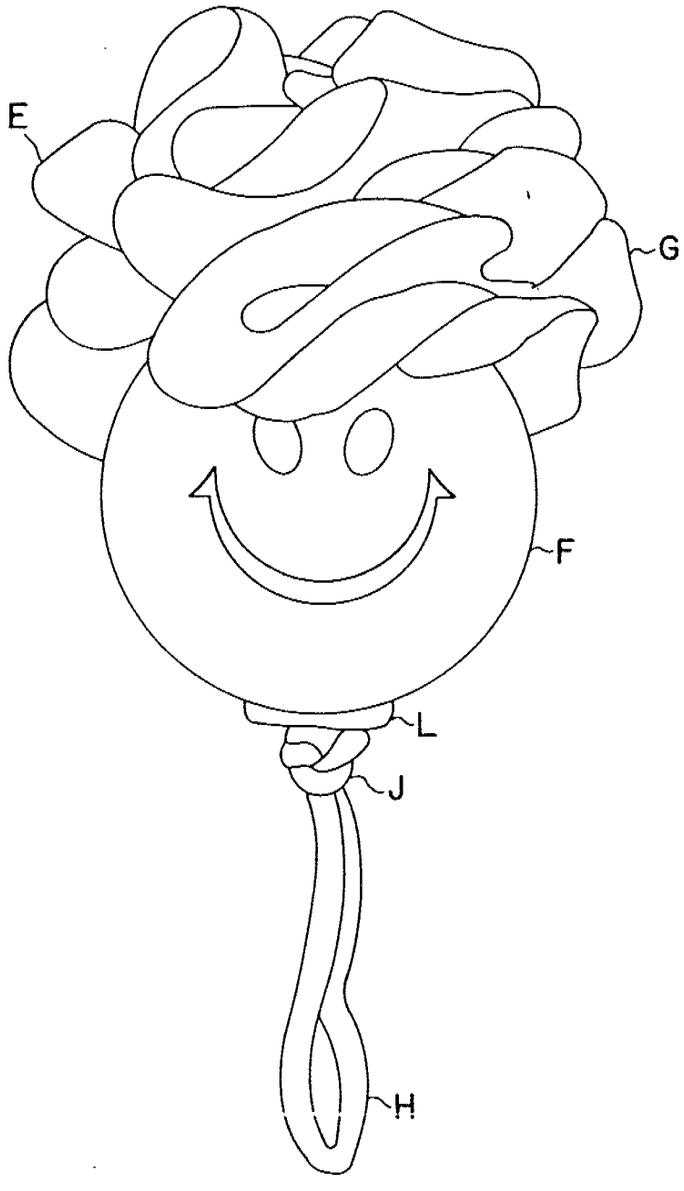


FIG. 4A

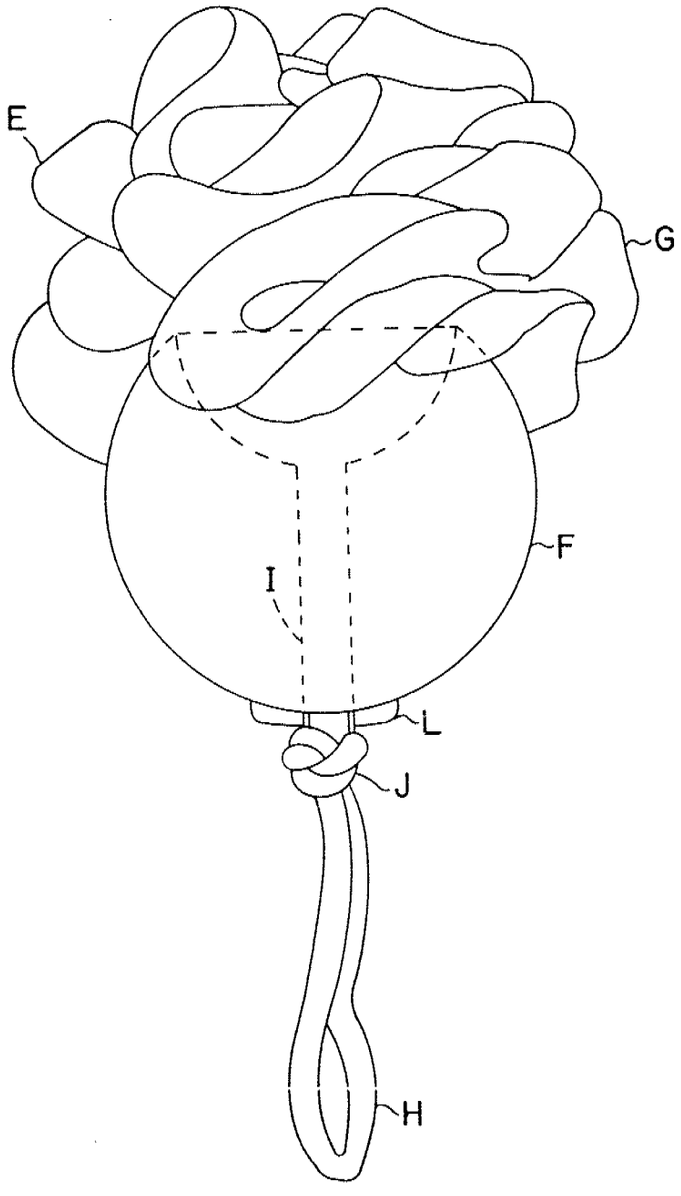


FIG. 4B

A. Figueroa
#3/a
5.3.99
VEX1AUSA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

James J. Osborne

Application No.: 09/135,690

Filed: August 18, 1998

For: BATHING IMPLEMENT

Examiner: Randall E. Chin

Group Art Unit: 1744

CERTIFICATE UNDER 37 CFR 1.8(a)
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope addressed to: Asst. Commissioner for Patents
Washington, DC 20231.

Signature C Palutsis
Date 4/26/99

Assistant Commissioner for Patents
Washington, DC 20231

AMENDMENT

Sir:

This is a timely response to the Office Action dated January 26, 1999. Please amend the application as set forth below.

In the Drawings:

Three (3) sheets of formal drawings are enclosed for the Examiner's approval and for substitution for the three sheets of informal drawings currently on file.

In the Claims:

Cancel claims 6, 8, and 10-13.

Amend claims 1, 7, 9, 14 and 17 as follows.

1 (Amended). A bathing implement comprising:

a washcloth capable of applying lather to cleanse a bather; and

a collar capable of attachment about a portion of said washcloth so that at least one end portion of said washcloth flares outwardly from said collar;

wherein said collar has a hollow channel formed therein which permits a portion of said washcloth to be inserted through said channel; and

wherein a decorative design is formed on said collar;

whereby said collar enables said bathing implement to be utilized as a bath toy.

In claim 7, line 1, replace "6" with --1--.

9 (Amended). A bathing implement for use by a child during a bath, comprising:

a mesh sponge capable of applying lather to cleanse and exfoliate the skin of a child during a bath; and

a sleeve-shaped, collar capable of attachment about a medial portion of said mesh sponge so that opposite end portions of said mesh sponge flare outwardly from said collar, said collar being of a material which is more rigid than said mesh sponge and having an outer surface of a size capable of being readily grasped so that said mesh sponge is capable of being manipulated when said collar is grasped;

whereby said collar enables said bathing implement to be utilized as a bath toy and the relative rigidity and size of said collar enhances gripability and manipulation of the bathing implement.

8 14 (Amended). A bathing implement [according to claim 13,] comprising:

a washcloth having a cord extending therefrom; and

a collar capable of attachment to said washcloth so that said washcloth flares outwardly from only one side of said collar, said collar having a hollow channel formed therein which said cord can be inserted through and knotted to connect said washcloth to said collar;

wherein said hollow channel has a widened portion adjacent said washcloth so that one portion of the washcloth is located within said collar and the remaining portion of the washcloth flares outwardly from said collar;

whereby said collar enables said bathing implement to be utilized as a bath toy.

11 17 (Amended). A bathing implement [according to claim 13,] comprising:

a washcloth having a cord extending therefrom;

a collar capable of attachment to said washcloth so that said washcloth flares outwardly from only one side of said collar, said collar having a hollow channel formed therein which said cord can be inserted through and knotted to connect said washcloth to said collar; and

a washer located about said cord between said knot and said collar;

whereby said collar enables said bathing implement to be utilized as a bath toy.

Add new claims 18-21 as follows.

18. A bathing implement according to claim 9, wherein a decorative design is formed on said collar.

19. A hand-held implement, comprising:

a washcloth; and

a collar capable of attachment about a portion of said washcloth so that at least one end portion of said washcloth flares outwardly from said collar, said collar being of a material which is more rigid than said washcloth and having an outer surface of a size capable of being readily grasped by a user such that the user can manipulate the washcloth by grasping said collar.

20. A hand-held implement according to claim 19, wherein said collar is sleeve-shaped and removable from said washcloth.

21. A hand-held implement according to claim 19, wherein a decorative design is formed on said collar.

REMARKS

Claims 6, 8, and 10-13 have been canceled, and claims 18-21 have been added. Claims 1-5, 7, 9 and 14-21 are pending. Independent claims 1, 14 and 17 have been amended

in a form which the Examiner previously stated would be allowable. Independent claim 9 has been amended to distinguish in a patentable manner over the prior art relied on by the Examiner. Accordingly, allowance of all the pending claims is respectfully requested.

I. Allowable Subject Matter

The Examiner stated in the Office Action that claims 8, 14 and 17 would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Claim 1 has been amended to include the limitations of dependent claims 6 and 8. Thus, Applicant submits that claim 1 is now in a condition for allowance. In addition, claims 2-5 and 7 are dependent directly or indirectly from claim 1, and therefore, are submitted as being in a condition for allowance for the same reasons as claim 1.

Claims 14 and 17 have both been amended to include the limitations of their base claims and any intervening claims. Thus, Applicant submits that claims 14 and 17 are in a condition for allowance. In addition, claims 15 and 16 are dependent directly or indirectly from claim 14, and therefore, are submitted as being in a condition for allowance for the same reasons as claim 14.

II. The Examiner's Rejections Based on 35 USC §102(b) and §103(a)

The Examiner's rejection of claims 1-7 and 10-13 are submitted as now being moot since claims 6 and 10-13 have been canceled and since claim 1 has been amended to include the allowable subject matter of claim 8.

Thus, the only rejection still standing is the rejection of claim 9 as being obvious under 35 USC §103(a) in view of the combination of disclosures of U.S. Patent No. 4,462,135 issued to Sanford and U.S. Patent No. 5,650,384 issued to Gordon et al..

The Sanford patent discloses a hand held abrasive scrubber for cleaning pots and pans and like articles. The scrubber includes a "cleaning section 10" and a separate "abrasive section 11" . The cleaning section is made from layers of mesh netting and the abrasive section is made from a plurality of metal coils, such as, steel, brass or copper coils. See column 6, line 46. The metal coils are covered with an outer layer of mesh netting "which is drawn over the abrasive section and securely tied to the cleaning section by band 13." See column 4, lines 51-53. The band 13 is disclosed as being a thin elongate nylon band which is secured to the scrubber with a fastening means as best illustrated in FIG. 10. The Sanford scrubber is grasped by a persons hand and manipulated as illustrated in FIGs. 2 and 3.

The Gordon patent discloses a ball-shaped mesh bath sponge with a cord. It discloses the use of a thin "security band 13" to hold the multilayered netting mesh together. (See FIG. 2 and column 2, lines 63-65.)

Claim 9 of the present application has been amended to distinguish in a patentable manner over the Sanford and Gordon references. Claim 9 includes the limitations that the collar component of the bathing implement be "of a material which is more rigid than said mesh sponge" and have "an outer surface of a size capable of being readily grasped so that said mesh sponge is capable of being manipulated when said collar is grasped".

No new matter has been added. The present application states on page 2, lines 8 and 9, that an object of the invention is to provide a bathing implement which "can be easily grasped by the hand of a young child". Various collar component materials are discussed on

page 3, line 22, to page 4, line 1. Several of the listed materials are more rigid than a mesh sponge. Of course, other non-listed materials more rigid than a mesh sponge could also be used, such as, a collar made of a solid soap product or the like. FIGs. 2 and 4A of the present application, clearly show that the collar component has an outer surface and that the outer surface is of a substantial size relative to the washcloth component. For example, the proportions illustrated in FIG. 2 disclose that the height of the collar component "B" is greater than about 25 % of the total height of the bathing implement, and the proportions illustrated in FIG. 4A disclose that the height of the collar component "F" is about 50% of the total height of the bathing implement. Thus, the collar component of the present invention, permits the bathing implement to be readily grasped without having to grasp the mesh sponge which a child may otherwise find difficult to grasp and control.

The Gordon patent and the Sanford patent only disclose the use of a very narrow band which functions to hold the sponge together or to secure a mesh netting around metal coils. The outer surfaces of the Gordon and Sanford bands are not of a size which could be solely grasped by the user to manipulate the sponge of Gordon or the cleaning and abrasive sections of the Sanford scrubber. As illustrated in FIGs. 2 and 3 of the Sanford patent, the majority of the mesh sponge of the Sanford scrubber is required to be grasped by the hand of the user in order to properly manipulate the scrubber. The same is true for the Gordon sponge as shown in FIG. 2 of the Gordon patent. Thus, the Sanford and Gordon bands do not provide the enhanced gripability function provided by the collar component of the present invention.

Therefore, the Applicant submits that claim 9 of the present application, as amended, is patentable over the Sanford and Gordon patents because their combined disclosures do not disclose, teach, or render obvious the use of a relatively large, gripable collar on a mesh

sponge to provide a bathing implement which is easy to grasp and manipulate, even by a young child.

III. New Claims 18-21

New claim 18 is dependent from independent claim 9. Therefore, it is submitted that claim 18 is patentable for the same reasons stated above that claim 9 is patentable.

New independent claim 19 includes similar limitations as that of claim 9. For instance, the collar component is stated as being of a material which is more rigid than the washcloth component and as having an outer surface of a size capable of being readily grasped by a user such that the user can manipulate the washcloth by grasping the collar. Thus, it is submitted that claim 19 is patentable for the same reasons that claim 9 is patentable.

Claims 20 and 21 are dependent from claim 19 and provide additional reasons for patentability. Claim 20 includes the limitation that the collar component is removable from the washcloth component, and therefore, reusable in association with another washcloth component. The prior art cited by the examiner does not disclose a reusable collar. Claim 21 requires the collar component to have a decorative design. For these, as well as the above stated reasons, claims 20 and 21 are submitted as being patentable.

Thus, Applicant submits that all of the pending claims are in a condition for allowance.

Applicant's invention is meritorious and warrants the scope of protection sought.

Respectfully submitted,
HOWSON AND HOWSON
Attorneys for Applicant

By _____

William Bak
Reg. No. 37,277
Spring House Corp. Center
Box 457
Spring House, PA 19477
(215) 540-9208

AMENDMENT TRANSMITTAL LETTER			Docket No. VEX1A
Serial No.: 9/135,690	Filing Date: 8/18/98	Examiner: R. Chin	Group Art Unit: 1744
Inventor(s): James J. Osborne			
Title: BATHING IMPLEMENT			

TO THE ASSISTANT COMMISSIONER FOR PATENTS:
Transmitted herewith is an amendment in the above-identified application

X Small entity status of this application under 37 CFR 1.27 has been established by a verified statement previously submitted.

☐ A verified statement to establish small entity status under 37 CFR 1.9 and 1.27 is enclosed.

X No additional fee is required.

☐ The fee has been calculated as shown below:

	(1) Claims Remain After Amend.		(2) Highest Previously Paid for	(3) Present Extras
Total	15		** 20	0
Ind.	3	-	*** 3	0
First Presentation of Multi. Dep. Claim				

Small Entity

Rate	Addtl. Fee
x 9=	$ 0
x 39=	$ 0
+ 130=	$ 0
Total	$ 0

Large Entity

Rate	Addtl. Fee
x 18=	$ 0
x 78=	$ 0
+260=	$ 0
Total	$ 0

* If the entry in Col. 1 is less than the entry in Col. 2 write "0" in Col. 3
** If the "Highest No. Previously Paid For" in this space is less than 20, enter "20".
*** If the "Highest No. Previously Paid For" inthis space is less than 3, enter 3

☐ Please charge my Deposit Account No. 08-3040 in the amount of $

☐ A Check in the amount of $ to cover the filing fee is enclosed.

✓ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 08-3040. A duplicate copy of this sheet is enclosed.

✓ Any additional filing fee required under 37 CFR 1.16
✓ Any patent application processing fees under 37 CFR 1.17.

Date 4/26/99 Signature _____
William Bak

Certificate under 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope address to: Asst. Commissioner for Patents, Washington, DC 20231.

Date 4/26/99 Signature _____

Exm 1744

VEX1AUSA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#4

In re the Application of:

James J. Osborne

Application No.: 09/135,690

Filed: August 18, 1998

For: BATHING IMPLEMENT

Examiner:

Group Art Unit: 1744

CERTIFICATE UNDER 37 CFR 1.8(a)
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope addressed to: Asst. Commissioner for Patents Washington, DC 20231.

Signature Lynn Bailey

Date Nov 10 1998

Assistant Commissioner for Patents
Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

In compliance with their duty to disclose under 37 CFR §1.56(a), Applicant and his attorney herewith submit a copy of each document identified on the attached Form PTO-1449, and request that they be considered in the examination of the above-identified patent application. This Information Disclosure Statement is being filed before the mailing date of the first office action on the merits pursuant to 37 CFR §1.97(b)(3).

U.S. Patent No. 5,144,744 issued to Campagnoli discloses a mesh bath sponge made from netting tubes.

The remaining U.S. patents disclose various cleaning and abrasive scrubbers used to scour dishware, kitchen utensils, floors, and other kitchen and bathroom surfaces.

No representation is made hereby that these documents provide all of the art and the Examiner is presumed to conduct an independent search of the art. However, these documents do form all of the relevant art of which the Applicant is presently aware. If Applicant becomes aware of additional relevant art during the prosecution of this application, Applicant will bring such art to the attention of the Examiner by means of a Supplemental Information Disclosure Statement.

The Examiner is respectfully requested to consider the enclosed documents and to make the same of record in the file of the present application.

In the event that a fee for the Information Disclosure Statement is required, please charge the fee to our Deposit Account No. 08-3040.

Respectfully submitted,
HOWSON AND HOWSON
Attorneys for Applicants

By /William Bak/

William Bak
Reg. No. 37,277
Spring House Corp. Center
Box 457
Spring House, PA 19477
(215) 540-9208

Form PTO-1449 U.S. Patent and Trademark Office INFORMATION DISCLOSURE STATEMENT	Atty. Docket No. **VEX1AUSA**	Serial No. **09/135,690**
	Applicant: Osborne	
	Filing Date: August 18, 1998	Group Art Unit: 1744

U.S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Name	Class	Subclass
RC		5,144,744	9/8/92	Campagnoli	—	—
~~—~~		~~2,581,779~~	~~1/8/52~~	~~Abraham~~		
RC		3,281,884	11/1/66	Feil		
RC		3,336,618	8/22/67	Day		
RC		3,345,668	10/10/67	Forrest		
RC		4,199,835	4/29/80	Heyer et al.	↓	↓
~~—~~		~~4,462,135~~	~~7/31/84~~	~~Sanford~~		

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Country	Translation Yes	Translation No

Other Documents (including Author, Title, Date, Pertinent Pages, Etc.)

Examiner R. CHIN Date Considered 7/8/99

*Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

UNITED S ES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARK
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.

EXAMINER

ART UNIT	PAPER NUMBER

5

DATE MAILED:

INTERVIEW SUMMARY

All participants (applicant, applicant's representative, PTO personnel):

(1) Mr. Bak (appl. rep) (3) _____

(2) R. Chin (PTO) (4) _____

Date of Interview 7/9/99

Type: ☑ Telephonic ☐ Televideo Conference ☐ Personal (copy is given to ☐ applicant ☐ applicant's representative).

Exhibit shown or demonstration conducted: ☐ Yes ☑ No If yes, brief description: _____

Agreement ☑ was reached. ☐ was not reached.

Claim(s) discussed: 9, 18, 19, 21

Identification of prior art discussed: Abraham '779 (Fig. 11)

Description of the general nature of what was agreed to if an agreement was reached, or any other comments: authorization given to amend claims 9 and 19 to define over Abraham '779 (Fig. 11)

(A fuller description, if necessary, and a copy of the amendments, if available, which the examiner agreed would render the claims allowable must be attached. Also, where no copy of the amendments which would render the claims allowable is available, a summary thereof must be attached.)

☐ It is not necessary for applicant to provide a separate record of the substance of the interview.

Unless the paragraph above has been checked to indicate to the contrary. A FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION IS NOT WAIVED AND MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has are ready been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW.

Examiner Note: You must sign this form unless it is an attachment to another form.

Randall E. Chin
RANDALL E. CHIN
PRIMARY EXAMINER

FORM **PTOL-413** (REV. 2-98)

☆U.S.GOVERNMENT PRINTING OFFICE 1998-433-211/87503

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
09/135,690	08/18/98	OSBORNE J	VEX1AUSA

IM62/0712

HOWSON & HOWSON
SPRING HOUSE CORPORATE CENTER
P O BOX 457
SPRING HOUSE PA 19477

EXAMINER	
CHIN, R	
ART UNIT	PAPER NUMBER
174.1	6

DATE MAILED: 07/12/99

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☑ This communication is responsive to the amendment filed 4/28/99.

☑ The allowed claim(s) is/are 1-5, 7, 9, 14-17, 19 and 20.

☐ The drawings filed on _____ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☑ Applicant MUST submit NEW FORMAL DRAWINGS

☐ because the originally filed drawings were declared by applicant to be informal.

☑ including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. ____.

☐ including changes required by the proposed drawing correction filed on _____, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

Attachment(s)

☑ Notice of References Cited, PTO-892

☑ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☑ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☐ Interview Summary, PTO-413

☐ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☐ Examiner's Statement of Reasons for Allowance

Randall E. Chin
RANDALL E. CHIN
PRIMARY EXAMINER

*U S GPO 1997 417-381/62707

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Bak on July 9, 1999.

2. The application has been amended as follows:

IN THE CLAIMS:

Cancel claims 18 and 21.

Claim 9, line 9, after ";", insert -and wherein a decorative design is formed on said collar-

B1

Claim 19, line 8, after "collar", insert -and wherein a decorative design is formed on said collar-

B2

The above changes were made to amend claims 8 and 19 to define over the patent to Abraham '779 (Fig.11).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randall Chin whose telephone number is (703) 308-1613.

Any inquiry of a general nature concerning the status of this application should be directed to the receptionist of Group 1700 whose telephone number is (703) 308-0661.

Any responses made by facsimile should be addressed to Randall Chin at (703) 305-3599 or (703) 305-7719.

RC

R. Chin
July 9, 1999

RANDALL E. CHIN
PRIMARY EXAMINER

TO SEPARATE, HOLD TOP AND BOTTOM EDGES, SNAP–APART AND DISCARD CARBON

FORM PTO-892 (REV. 2-92)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	SERIAL NO.	GROUP ART UNIT	ATTACHMENT TO PAPER NUMBER
NOTICE OF REFERENCES CITED		09/135,690	1744	6
		APPLICANT(S) OSBORNE		

U.S. PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	NAME	CLASS	SUB-CLASS	FILING DATE IF APPROPRIATE
X	A	D351285	10/1994	JOYNER	D32	40	
	B						
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

FOREIGN PATENT DOCUMENTS

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUB-CLASS	PERTINENT SHTS. DWG	PERTINENT PP. SPEC.
	L								
	M								
	N								
	O								
	P								
	Q								

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

	R	
	S	
	T	
	U	

EXAMINER	DATE
K. CHIN	7/9/99

* A copy of this reference is not being furnished with this office action.
(See Manual of Patent Examining Procedure, section 707.05 (a).)

Form PTO 948 (Rev. 8-98) U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office Application No. 09/135,690

NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

The drawing(s) filed (insert date) 4/28/99 are:

A. ☐ approved by the Draftsperson under 37 CFR 1.84 or 1.152.

B. ☒ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be sumitted according to the instructions on the back of this notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color.
   - ___ Color drawings are not acceptable until petiton is granted. Fig(s) _____
   - ___ Pencil and non black ink not permitted. Fig(s) _____
2. PHOTOGRAPHS. 37 CFR 1.84 (b)
   - ___ 1 full-tone set is required. Fig(s) _____
   - ___ Photographs not properly mounted (must use brystol board or photographic double-weight paper). Fig(s) _____
   - ___ Foor quality (half-tone). Fig(s) _____
3. TYPE OF PAPER. 37 CFR 1.84(e)
   - ___ Paper not flexible, strong, white, and durable. Fig(s) _____
   - ___ Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) _____
   - ___ Mylar, velum paper is not acceptable (too thin). Fig(s) _____
4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes:
   - ___ 21.0 cm by 29.7 cm (DIN size A4)
   - ___ 21.6 cm by 27.9 cm (8 1/2 x 11 inches)
   - ___ All drawing sheets not the same size. Sheet(s) _____
   - X Drawings sheets not an acceptable size. Fig(s) 1-4b
5. MARGINS. 37 CFR 1.84(g): Acceptable margins:

   Top 2.5 cm Left 2.5cm Right 1.5 cm Bottom 1.0 cm
   SIZE: A4 Size

   Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm
   SIZE: 8 1/2 x 11

   Margins not acceptable. Fig(s) _____
   - _____ Top (T) _____ Left (L)
   - _____ Right (R) _____ Bottom (B)
6. VIEWS. 37 CFR 1.84(h)

   REMINDER: Specification may require revision to correspond to drawing changes.

   Partial views. 37 CFR 1.84(h)(2)
   - ___ Brackets needed to show figure as one entity. Fig(s) _____
   - ___ Views not labeled separately or properly. Fig(s) _____
   - ___ Enlarged view not labeled separetely or properly. Fig(s) _____
7. SECTIONAL VIEWS. 37 CFR 1.84 (h)(3)
   - ___ Hatching not indicated for sectional portions of an object. Fig(s) _____
   - ___ Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____
8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)
   - ___ Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) _____
9. SCALE. 37 CFR 1.84(k)
   - ___ Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) _____
10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(i)
    - ___ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality). Fig(s) _____
11. SHADING. 37 CFR 1.84(m)
    - ___ Solid black areas pale. Fig(s) _____
    - ___ Solid black shading not permitted. Fig(s) _____
    - ___ Shade lines, pale, rough and blurred. Fig(s) _____
12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p)
    - ___ Numbers and reference characters not plain and legible. Fig(s) _____
    - ___ Figure legends are poor. Fig(s) _____
    - ___ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1) Fig(s) _____
    - ___ English alphabet not used. 37 CFR 1.84(p)(2) Figs _____
    - ___ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) _____
13. LEAD LINES. 37 CFR 1.84(q)
    - ___ Lead lines cross each other. Fig(s) _____
    - ___ Lead lines missing. Fig(s) _____
14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
    - ___ Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) _____
15. NUMBERING OF VIEWS. 37 CFR 1.84(u)
    - ___ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____
16. CORRECTIONS. 37 CFR 1.84(w)
    - ___ Corrections not made from prior PTO-948 dated _____
17. DESIGN DRAWINGS. 37 CFR 1.152
    - ___ Surface shading shown not appropriate. Fig(s) _____
    - ___ Solid black shading not used for color contrast. Fig(s) _____

COMMENTS

REVIEWER _____ DATE 7/9/99 TELEPHONE NO. 308-0011

ATTACHMENT TO PAPER NO. 6

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

[illegible]
HOWSON & HOWSON
[illegible]

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
First Named Applicant	[illegible]			

TITLE OF INVENTION [illegible]

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.

HOW TO RESPOND TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

A. Pay FEE DUE shown above, or

B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PATENT AND TRADEMARK OFFICE COPY

PART B—ISSUE FEE TRANSMITTAL

Complete and mail this form, together with applicable fees, to: **Box ISSUE FEE**
Assistant Commissioner for Patents
Washington, D.C. 20231

MAILING INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE. Blocks 1 through 4 should be completed where appropriate. All further correspondence including the Issue Fee Receipt, the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Legibly mark-up with any corrections or use Block 1)

HOWSON & HOWSON
SPRING HOUSE CORPORATE CENTER
P O BOX 457
SPRING HOUSE PA 19477

Note: The certificate of mailing below can only be used for domestic mailings of the Issue Fee Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing.

Certificate of Mailing

I hereby certify that this Issue Fee Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Box Issue Fee address above on the date indicated below.

C. Pahutski (Depositor's name)

C. Pahutski (Signature)

10/4/99 (Date)

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/135,690	08/18/98	017	CHIN, P	07/27/99

First Named Applicant: OSBORNE, 35 USC 154(b) term ext. 0 Days.

TITLE OF INVENTION: BATHING IMPLEMENT

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
3 VEX1AUSA	015-209.100	WAR	UTILITY	YES	$605.00	10/29/99

1. Change of correspondence address or indication of " Fee Address" (37 CFR 1.363). Use of PTO form(s) and Customer Number are recommended, but not required.

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" Indication (or "Fee Address" Indication form PTO/SB/47) attached.

2. For printing on the patent front page, list (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Howson and Howson
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)
PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. Inclusion of assignee data is only appropriate when an assignment has been previously submitted to the PTO or is being submitted under separate cover. Completion of this form is NOT a subsititue for filing an assignment.

(A) NAME OF ASSIGNEE: Verve Ltd, LLC

(B) RESIDENCE: (CITY & STATE OR COUNTRY): Spring House, PA

Please check the appropriate assignee category indicated below (will not be printed on the patent)

☐ individual ☒ corporation or other private group entity ☐ government

4a. The following fees are enclosed (make check payable to Commissioner of Patents and Trademarks):

☒ Issue Fee

☒ Advance Order - # of Copies 1

4b. The following fees or deficiency in these fees should be charged to:

DEPOSIT ACCOUNT NUMBER 8/3040
(ENCLOSE AN EXTRA COPY OF THIS FORM)

☒ Issue Fee

☐ Advance Order - # of Copies

The COMMISSIONER OF PATENTS AND TRADEMARKS IS requested to apply the Issue Fee to the application identified above.

(Authorized Signature) William Bak, Reg. 37,277 (Date) 10-4-99

NOTE; The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

10/07/1999 STEFERR1 00000097 083040 09135690
01 FC:242 605.00 OP
02 FC:561 3.00 CH

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending on the needs of the individual case. Any comments on the amount of time required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND FEES AND THIS FORM TO: Box Issue Fee, Assistant Commissioner for Patents, Washington D.C. 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMIT THIS FORM WITH FEE

HOWSON AND HOWSON
ATTORNEYS AT LAW
Established 1853 Philadelphia
SPRING HOUSE CORPORATE CENTER
321 NORRISTOWN ROAD
P.O. BOX 457
SPRING HOUSE, PA 19477

PATENTS TRADEMARKS COPYRIGHTS
TELEPHONE (215) 540-9200
FACSIMILE (215) 540-5818
e-mail howsonhowson@delphi.com

STANLEY B KITA
GEORGE ANTHONY SMITH, JR
MARY ELIZABETH BAK
CATHY A KODROFF
WILSON OBERDORFER
CHARLES M ALLEN
HENRY HANSEN
IRENE J FRANGOS
WILLIAM BAK

October 4, 1999

BOX ISSUE FEE
Asst. Commissioner for Patents
Washington, D.C. 20231

Re: U.S. Serial No. 09/135,690 - BATHING IMPLEMENT

Dear Sir:

We enclose our check in the amount of $605, together with the Issue Fee Transmittal Form (PTOL-85b), in payment of the issue fee for the above-identified patent application.

In the event that a check for the issue fee is missing or insufficient, please charge the fee to our Deposit Account No. 08-3040.

Respectfully,

HOWSON AND HOWSON
Attorneys for Applicant

By: _____
William Bak
Registration No. 37,277

CERTIFICATE UNDER 37 CFR 1.8(a)
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope addressed to: Asst. Commissioner for Patents Washington, DC 20231

Signature _____

Date October 4, 1999

7310 - 7530
9-4-99

VEX1AUSA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of	
James J. Osborne	Examiner: Randall E. Chin Group Art Unit: 1744
Appln. No.: **09/135,690**	**Issue Batch No.: W38**
Filed: August 18, 1998	CERTIFICATE UNDER 37 CFR 1.8(a) I hereby certify that this correspondence
For: BATHING IMPLEMENT	is being deposited with the United States Postal Service as first class mail on the date indicated below in an envelope addressed to: Asst. Commissioner for Patents Washington, DC 20231.

Box ISSUE FEE
Assistant Commissioner for Patents
Washington, DC 20231

Signature C. Pakutka
Date 8/26/99

Attn: Official Draftsperson

TRANSMITTAL OF FORMAL DRAWINGS

Sir:

In response to the Notice of Allowance dated July 29, 1999, kindly substitute the enclosed three (3) sheets of formal drawings (FIGs. 1-4B) for the informal drawings submitted in the above referenced application.

You are authorized to charge any fees for this substitution to our Deposit Account No. 08-3040.

Respectfully submitted
HOWSON AND HOWSON

By: William Bak

William Bak
Reg. No. 37,277
Spring House Corporate Center
Box 457
Spring House, PA 19477
(215) 540-9208

Encs.

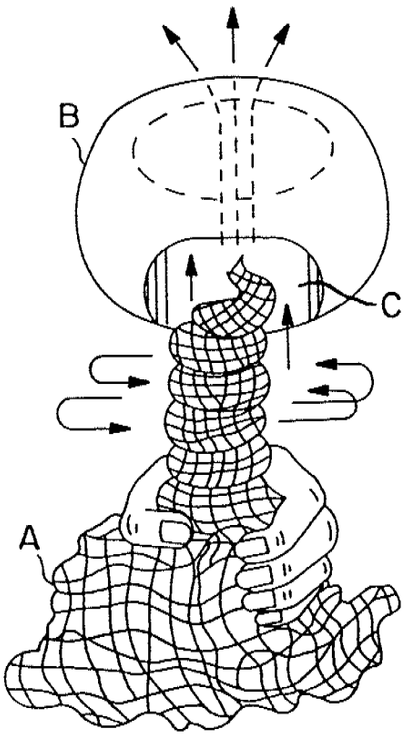


FIG. 1

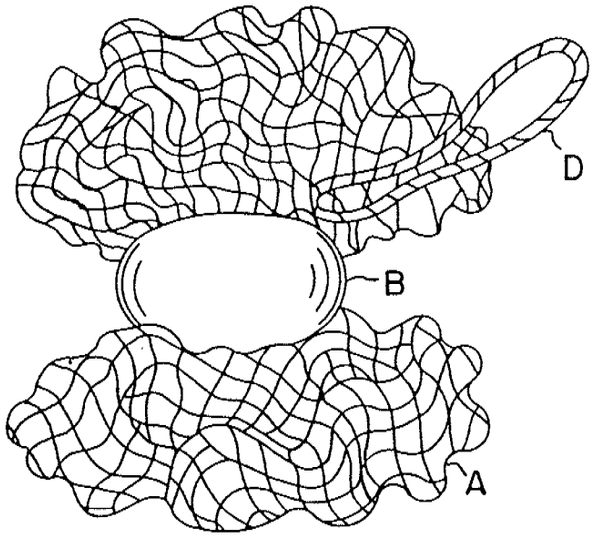


FIG. 2

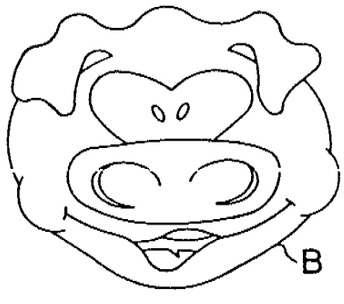


FIG. 3A

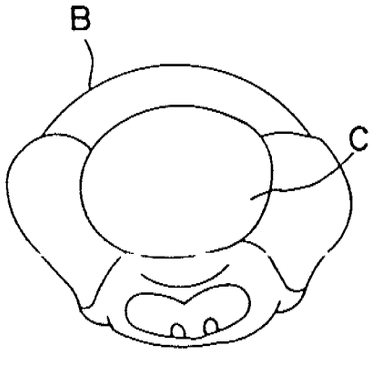


FIG. 3B

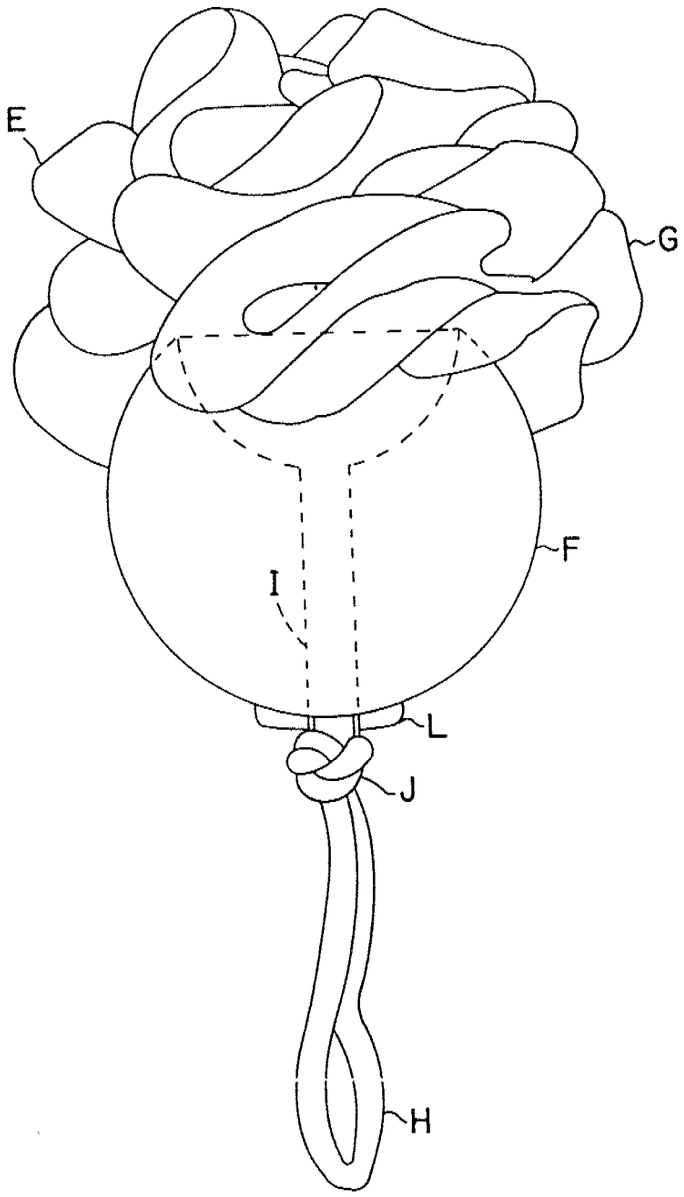


FIG. 4B

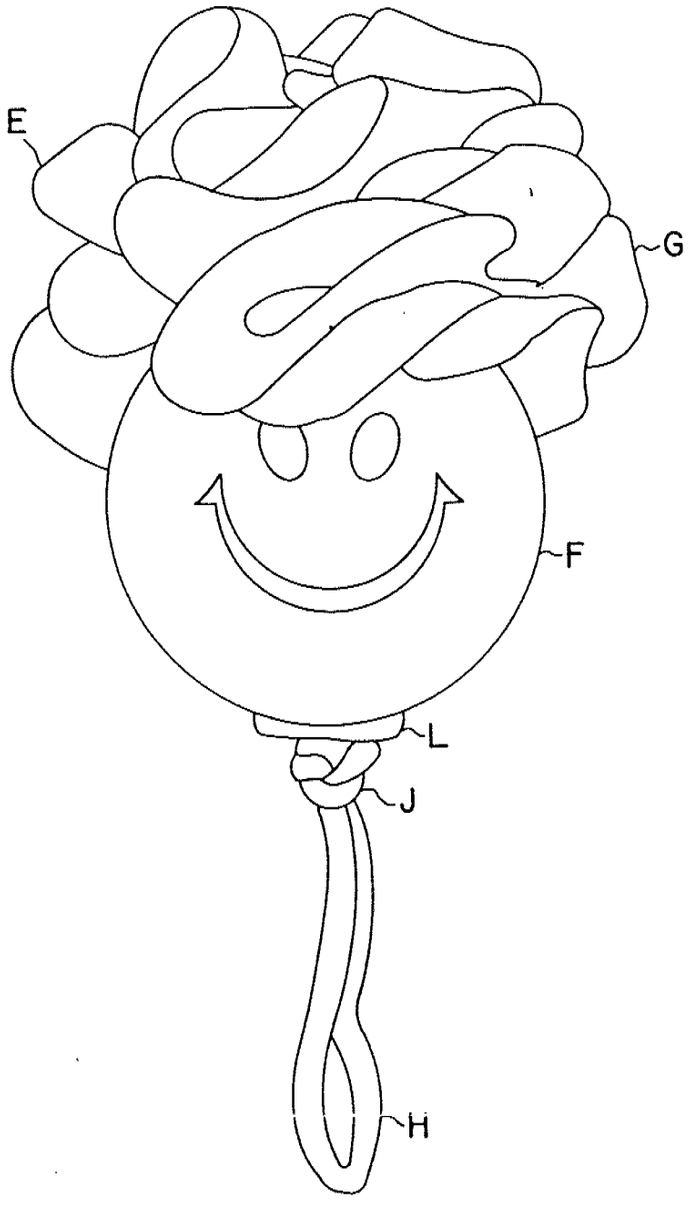


FIG. 4A

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 1997

Application or Docket Number: 09/135,690

1,9,10

CLAIMS AS FILED - PART I

	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA
FOR		
BASIC FEE		
TOTAL CLAIMS	17 minus 20 =	*
INDEPENDENT CLAIMS	3 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY TYPE 2		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
	395.00	OR		790.00
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL	395	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 15	Minus	** 20	=
Independent	* 5	Minus	*** 3	= 2
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
x$11=		OR	x$22=	
~~x41=~~ 39	78	OR	x82=	
+135=		OR	+270=	
TOTAL ADDIT. FEE	78	OR	TOTAL ADDIT. FEE	

AMENDMENT B	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT C	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
x$11=		OR	x$22=	
x41=		OR	x82=	
+135=		OR	+270=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

JL

MPI Family Report (Family Bibliographic and Legal Status)

In the MPI Family report, all publication stages are collapsed into a single record, based on identical application data. The bibliographic information displayed in the collapsed record is taken from the latest publication.

Report Created Date: 2006-04-04

Name of Report:

Number of Families: 1

Comments:

Table of Contents

1. **US5983435A** 19991116 VERVE LTD LLC US
Bathing implement 2

Family1

4 records in the family.

AU1303999A 19990531

[no drawing available]

(ENG) Bathing implement

Assignee: VERVE LTD LLC

Inventor(s): OSBORNE JAMES J

Application No: AU 1303999 D

Filing Date: 19981104

Issue/Publication Date: 19990531

Abstract: NotAvailable

Priority Data: US 6493297 19971107 P X; US 9823440 19981104 W V; US 13569098 19980818 A X;

IPC (International Class): A47L01310; A47L01708

Legal Status: There is no Legal Status information available for this patent

---

CN1249671A 20000405

(ENG) Bathing implement

Assignee: LONGXING ENTERPRISE CO LTD CN

Inventor(s): JAMES J CN

[no drawing available]

Application No: CN 98803103 A

Filing Date: 19981104

Issue/Publication Date: 20000405

Abstract: NotAvailable

Priority Data: US 6493297 19971107 P; US 13569098 19980818 A;

IPC (International Class): A47L01310; A47L01708

Legal Status: There is no Legal Status information available for this patent

---

US5983435A 19991116

(ENG) Bathing implement

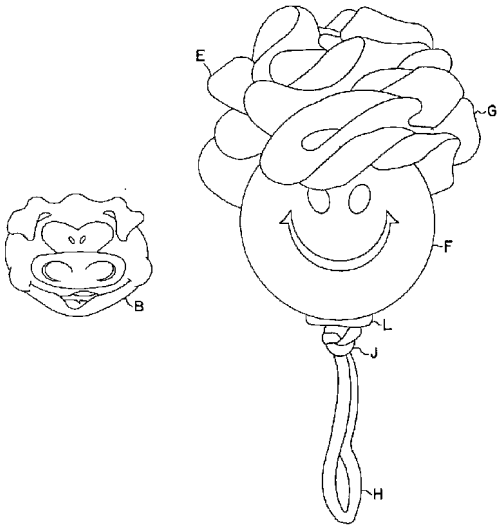
Assignee: VERVE LTD LLC US

Inventor(s): OSBORNE JAMES J US

Application No: US 13569098 A

Filing Date: 19980818

Issue/Publication Date: 19991116



Abstract: (ENG) A bathing implement for use in cleansing and exfoliating skin which can also be utilized as a bath toy by a child or an adult. The bathing implement includes a washcloth component and a collar component which attaches about a portion of the washcloth so that at least one end portion of the washcloth flares outwardly from the collar. Preferably, the washcloth is a flexible mesh sponge and the collar is sleeve-shaped and made of foam or any number of other materials.

Priority Data: US 6493297 19971107 P A; US 13569098 19980818 A A;

IPC (International Class): A47L01310; A47L01708

ECLA (European Class): A47K00702

US Class: 0152091; 01522911; 01522913; D28063; D32040

Agent(s): Howson and Howson

Examiner Primary: Chin, Randall E.

Assignments Reported to USPTO:

Reel/Frame: 09598/0037 **Date Signed:** 19980818 **Date Recorded:** 19981120
Assignee: VERVE LTD., LLC P.O. BOX 619 748 BETHLEHEM PIKE, SUITE 209 SPRING HOUSE PENNSYLVANIA 19477

Assignor: OSBORNE, JAMES J.

Corres. Addr: HOWSON AND HOWSON WILLIAM BAK BOX 457 SPRING HOUSE, PA 19477
Brief: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Reel/Frame: 10871/0399 **Date Signed:** 20000524 **Date Recorded:** 20000530
Assignee: OSBORNE, JAMES P.O. BOX 619 704 ABBEYDALE COURT AMBLER PENNSYLVANIA 19002; OSBORNE, KIMBERLEY P.O. BOX 619 704 ABBEYDALE COURT AMBLER PENNSYLVANIA 19002; TRADEWINDS ENTERPRISES, INC. P. O. BOX 619 748 BETHLEHEM PIKE, STE 209 SPRING HOUSE PENNSYLVANIA 19477

Assignor: VERVE, LTD.

Corres. Addr: HOWSON AND HOWSON WILLIAM BAK, ESQUIRE SPRING HOUSE CORPORATE CENTER BOX 457 SPRING HOUSE, PA 19477
Brief: SECURITY AGREEMENT

Reel/Frame: 11887/0786 **Date Signed:** 20010608 **Date Recorded:** 20010615
Assignee: TRADEWINDS, INC. P.O. BOX 619 748 BETHLEHEM PIKE, SUITE 209 SPRING HOUSE PENNSYLVANIA 19477

Assignor: VERVE LTD., LLC

Corres. Addr: HOWSON AND HOWSON WILLIAM BAK SPRING HOUSE CORPORATE CENTER BOX 457 SPRING HOUSE, PA 19477

Brief: ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).

Legal Status:

Date	+/-	Code	Description
20000530		AS	ASSIGNMENT New owner name: TRADEWINDS ENTERPRISES, INC. P.O. BOX 619 748 BETH; : SECURITY AGREEMENT;ASSIGNOR:VERVE, LTD.; REEL/FRAME:010871/0399; Effective date: 20000524;
20000530		AS	ASSIGNMENT New owner name: OSBORNE, JAMES P.O. BOX 619 704 ABBEYDALE COURT AM; : SECURITY AGREEMENT;ASSIGNOR:VERVE, LTD.; REEL/FRAME:010871/0399; Effective date: 20000524;
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20010615		AS	ASSIGNMENT New owner name: TRADEWINDS, INC. P.O. BOX 619 748 BETHLEHEM PIKE,; : ASSIGNMENT OF ASSIGNORS INTEREST;ASSIGNOR:VERVE LTD., LLC;REEL/FRAME:011887/0786; Effective date: 20010608;
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WO9923928A1 19990520

(ENG) BATHING IMPLEMENT

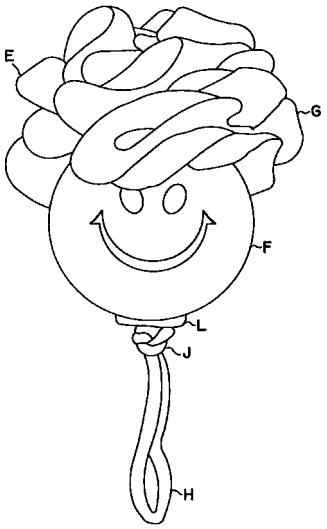
Assignee: VERVE LTD LLC US

Inventor(s): OSBORNE JAMES J

Application No: US 9823440 W

Filing Date: 19981104

Issue/Publication Date: 19990520



Abstract: (ENG) </patfig>A bathing implement for use in cleaning and exfoliating skin which can also be utilized as a bath toy by a child or an adult. The bathing implement includes a washcloth (A) component and a collar component (B) which attaches about a portion of the washcloth (A) so that at least one end portion of the washcloth (A) flares outwardly from the collar (B). Preferably, the washcloth (A) is a flexible mesh sponge (A) and the collar (B) is sleeve-shaped and made of foam or any number of other materials.

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ECLA (European Class): A47K00702

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Date	+/-	Code	Description
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19990520	(+)	AL	DESIGNATED COUNTRIES FOR REGIONAL PATENTS Kind code of corresponding patent document: A1; AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
19990721		121	EP: THE EPO HAS BEEN INFORMED BY WIPO THAT EP WAS DESIGNATED IN THIS APPLICATION
20000707		NENP	NON-ENTRY INTO THE NATIONAL PHASE IN: : CA;
20001025	(-)	122	EP: PCT APP. NOT ENT. EUROP. PHASE

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Patent Bibliographic Data			04/04/2006 03:22 PM		
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Title:	BATHING IMPLEMENT				
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Window Opens:	11/16/2006	Surcharge Date:	05/17/2007	Expiration:	N/A
Fee Amt Due:	Window not open	Surchg Amt Due:	Window not open	Total Amt Due:	Window not open
Fee Code:	2552	MAINTENANCE FEE DUE AT 7.5 YEARS.			
Surcharge Fee Code:					
Most recent events (up to 7):	2003/05/15 2003/05/06	Payment of Maintenance Fee, 4th Yr, Small Entity. Payor Number Assigned. --- End of Maintenance History ---			
Address for fee purposes:	COMPUTER PACKAGES, INC. 414 HUNGERFORD DRIVE ROCKVILLE, MD 20850				

Nov. 1, 1966

A. C. FEIL

3,281,884

CLEANING IMPLEMENT

Filed Oct. 20, 1965

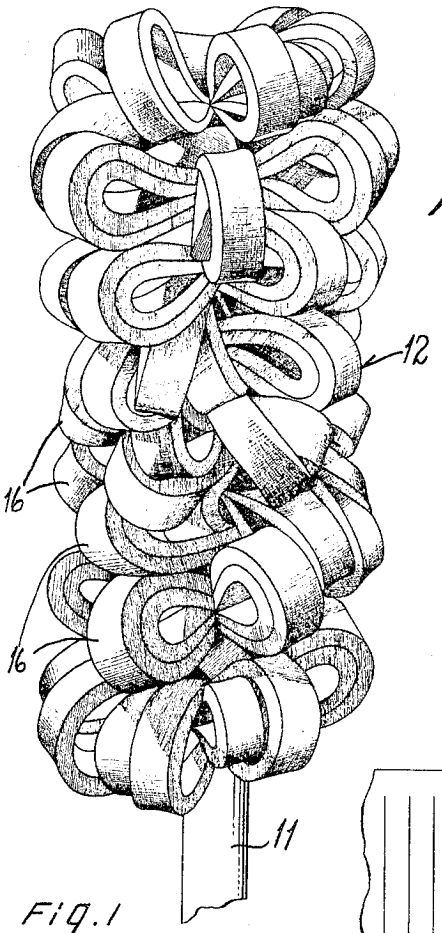

Fig. 1

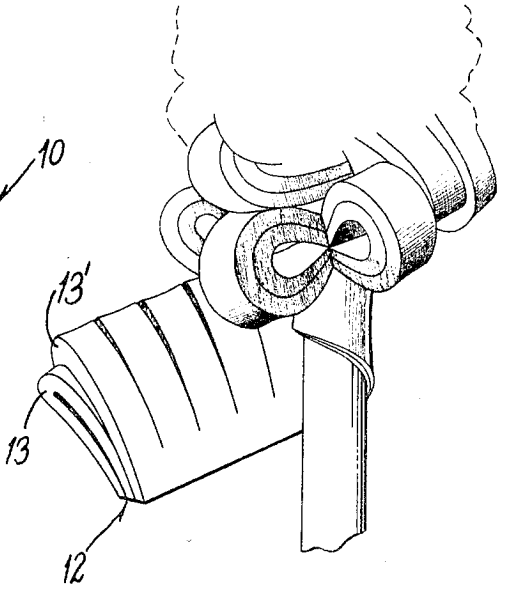

Fig. 4

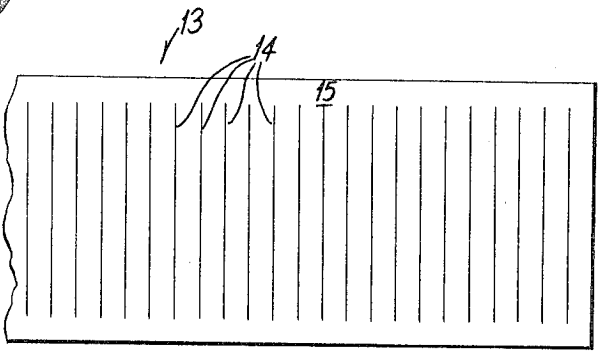

Fig. 2

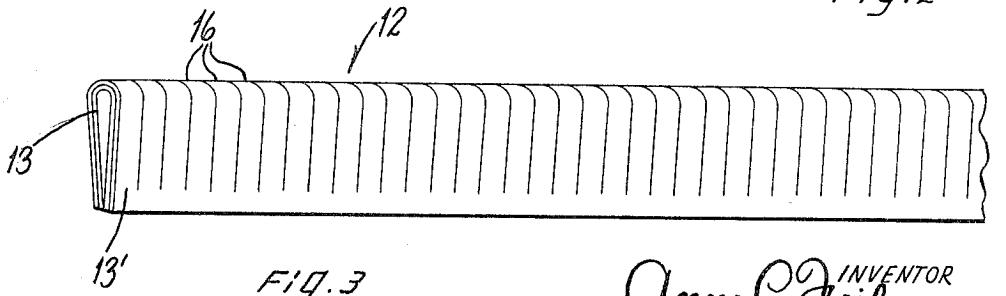

Fig. 3

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United States Patent Office

3,281,884

Patented Nov. 1, 1966

3,281,884

CLEANING IMPLEMENT

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Filed Oct. 20, 1965, Ser. No. 498,530
3 Claims. (Cl. 15—244)

This present invention relates to novel and improved cleaning implements and more particularly to novel and improved brush and mop constructions which can be rapidly and inexpensively manufactured in highly efficient esthetically pleasing forms.

A multitude of brush constructions are known most of which employ a plurality of rod-like bristles. These bristles are normally formed of hair, fiber and in some cases solid plastic monofilaments. Often the materials used and the manufacturing methods employed in conventional brush constructions of this type are relatively expensive and require relatively complex manufacturing procedures.

An important object of this invention is to provide a highly efficient brush suitable for a multitude of applications, and which can be rapidly and economically manufactured from a minimum of basic components.

Another important object of this invention is to provide a brush in accordance with the preceding object which is highly pleasing to the eye over long periods of usage.

According to the invention a cleaning instrument has an elongated support. An elongated flexible preferably cellular foam-like member is helically wound about the handle from one end thereof to a position short of the other end. The member is preferably made from a sheet having a series of slits extending from one side of the member in a direction transverse to its length to form a series of integrally connected projections and means secure the member to the handle.

Preferably the member is formed from a sheet of flexible, resilient, cellular foamed plastic such as polyurethane which is slit at spaced intervals with the slits extending laterally of the member short of opposing side edge portions thereof The sheet is folded over on itself to form looped projections and the sheet is then wound with opposing side edge portions lying adjacent each other preferably with the side edge portions helically wound tightly about the handle with adjacent turns of the member lying in overlapping relationship. It is a feature of this invention that the flexible, cellular foamed plastic member corresponds to conventionally used bristles and has sufficient rigidity to allow brushing of a surface for cleaning purposes. In addition, the flexible cellular foam-like projections make the cleaning implement useful as a lint remover if desired or for any of the conventional brush applications such as Venetian blind cleaners, toilet bowl cleaners, dust brooms and mops. The preferred looped construction greatly enhances the esthetic appeal of the brush particularly when the sheet from which the projections are formed are brightly colored.

These and other objects, advantages and features of the invention will be readily understood from the following description thereof when read in connection with the accompanying drawing of a preferred embodiment in which:

FIG. 1 is an elevational view thereof;

FIG. 2 is a plan view of a sheet used in the construction thereof;

FIG. 3 is a side view of the bristle-like member previous to application to the handle; and,

FIG. 4 is a fragmentary view showing the preferred winding of the bristle-like member.

With reference now to the drawing, a preferred embodiment of the brush is illustrated at **10** in FIG. 1 having a centrally located handle **11**. The handle **11** is preferably an integral wood dowel which has an upper portion extending to the upper end of the brush acting as a support for an elongated, flexible, cellular foamed plastic member **12**.

In some cases, the handle and its support portion can be plastic, metal or other material. It is also possible to employ a resilient or flexible handle including the support portion such as a stiff rubber rod to permit conformance of the brushing end with the surface to be cleaned or brushed.

The elongated, flexible member which forms the bristle-like portion of the brush **10** is preferably formed from an elongated strip of sheet material such as a resilient, cellular polyurethane foamed plastic sheet **13** illustrated at FIG. 2. The sheet **13** has a plurality of transverse or lateral slits **14** which extend laterally of the strip short of side marginal portions thereof to provide uninterrupted marginal edge portions **15** adjacent each side edge of the strip. The slits **14** are preferably parallel to each other and extend through the strip preferably equally distant apart.

The elongated member **12** is formed by superimposing a second sheet **13'** preferably identical to the first sheet **13** over the sheet **13** and folding both sheets with their marginal portions **15** into close adjacency as best seen in FIG. 3. This provides looped upper portions **16** extending along the length of the elongated member. The looped portions **16** have a spring-like action and have the function normally found in the bristles of a conventional brush. These loops will bend and spring back into position during use.

If desired, the marginal portions **15** may be secured together along the length of the elongated member although this is not necessary.

The elongated member **12** is preferably helically tightly wound on the handle **11** at the upper support portion thereof as best shown in FIG. 4. The elastic nature of the resilient foam aids in holding the member firmly in place about the handle. Preferably turns of the marginal edge portions **15** overlap one another about the handle and only the upper and lower ends of the member are secured to the handle by pins (not shown) or other conventional means. In some cases, a glue or adhesive can be spread on the handle before application of the elongated member and the member will be adhered thereto as it is wound or shortly thereafter. In the preferred embodiment, the elongated member is wound to form the loops adjacent to each other from end to end of the support portion of the handle in lines extending preferably substantially parallel to the axis of the handle. This provides a decorative highly pleasing esthetic effect to the completed brush. However, the loops can be randomly arranged on the support portion if desired and often separate slightly from each other after use to create a random effect.

In the preferred embodiment the sheets such as **13, 13'** are composed of a closed cell, foam polyurethane plastic haveing a thickness of approximately ⅛ inch. The handle is 9 inches long with the member **12** covering 5 inches thereof. The elongated strip **13** has a width of 3 inches and is folded over to have a width of 1½ inches with marginal portions **15** being approximately ½ inch wide. These dimensions provide a small hand brush particularly desirable for lint removal due to the inherent nature of the rough cellular surface of the foam polyurethane. The cellular structure of the foam provides a relatively rough abrasive-type surface which yields under pressure in use.

While a specific embodiment of the cleaning implement of this invention has been described and illustrated, it will be obvious that many variations thereof are pos-

sible. For example, the particular dimensions recited can vary considerably depending on the intended use of the brush. In some cases only a single sheet **13** can be folded on itself to form the looped bristle-like portions of the elongated member. Similarly more than two sheets can be employed. The slits **14** can be circular rather than straight or have other configurations. Varying width loop portions can be provided. The particular material of the elongated member can be varied. A circular support portion of a handle can be provided and in some cases the support portion can be joined to the hand gripping portion of the handle rather than being integral therewith. Therefore this invention is to be limited only by the spirit and scope of the appended claims.

What is claimed is:

1. A brush comprising an elongated handle,

an elongated flexible cellular foam-like member helically wound about said handle from one end to a position short of the other end,

and means securing said member to said handle,

said member comprising a plurality of superimposed strips of flexible cellular foam plastic,

each of said strips defining spaced slits extending laterally thereof short of opposing side edge portions thereof and being folded over longitudinally to form plural layered projections in loop form with opposed

side edge portions of said strips being superimposed on each other and helically tightly wound on said handle with adjacent turns thereof lying in overlapping relationship whereby said plural layers of said projections can separate from each other in use, said slits being of sufficient number to form projections substantially throughout the length of the strips.

2. A brush in accordance with claim **1** wherein said plastic is polyurethane.

3. A brush in accordance with claim **1** wherein said projections lie along lines substantially parallel to a longitudinal axis of said handle.

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DANIEL BLUM, *Primary Examiner.*

Aug. 22, 1967 A. L. DAY 3,336,618

MOP HAVING A HEAD OF GATHERED NET MATERIAL

Filed May 15, 1963

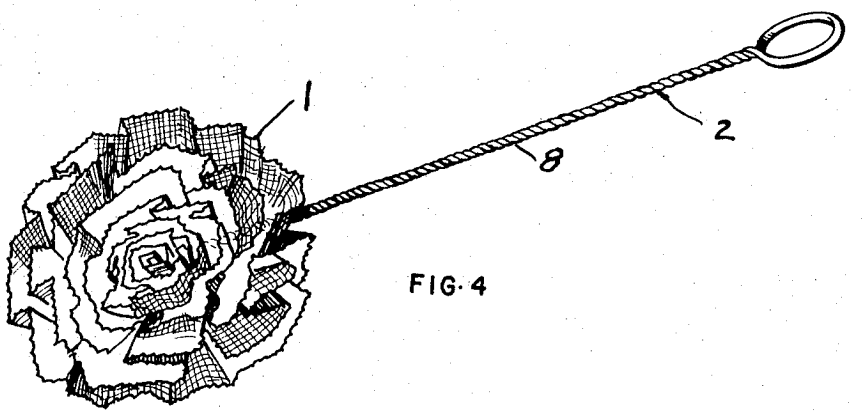

FIG. 4

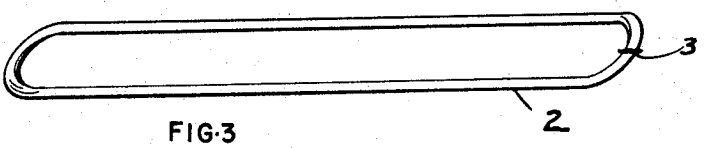

FIG. 3

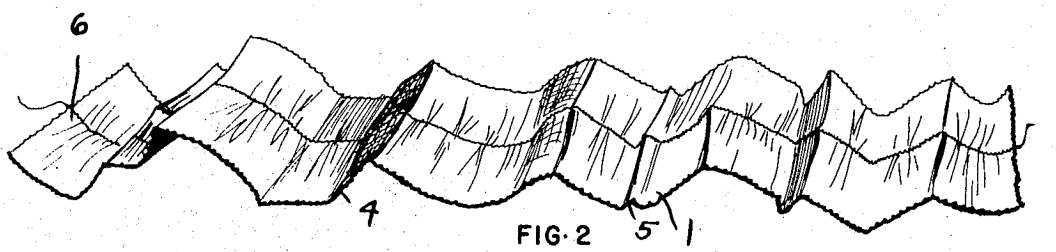

FIG. 2

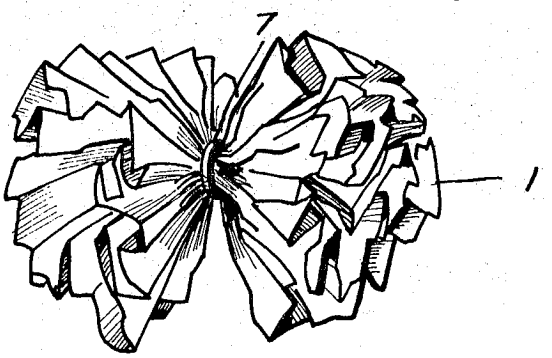

FIG. 1

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3,336,618

Patented Aug. 22, 1967

3,336,618

MOP HAVING A HEAD OF GATHERED NET MATERIAL

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Filed May 15, 1963, Ser. No. 280,552

1 Claim. (Cl. 15—209)

This invention relates to mops and, more particularly, to dish mops.

Previous types of mops have been made but none of them have been quite satisfactory for use in cleaning dishes.

It is, accordingly, an object of the present invention to provide an improved dish mop.

Another object of the invention is to provide a dish mop made of nylon net material having a handle attached.

A further object of the invention is to provide a mop which is simple in construction, economical to manufacture, and simple and efficient to use.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appended claim, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:

FIG. 1 shows a part of the mop according to the invention at one stage of making it;

FIG. 2 is a view of the fabric at the first step in making the mop;

FIG. 3 is a view of the wire handle for the dish mop; and

FIG. 4 is an isometric view of the mop.

Now with more particular reference to the drawing, the mop is made of two parts, a mop portion **1** and a wire handle **2**. The wire handle **2** is made of a continuous wire loop which may be welded together at **3**. The handle **2** may be made of aluminum wire of a suitable size to give proper rigidity. Aluminum would have the advantage of being non-rusting. The handle could be made of steel wire or any other suitable material. The ends of the handle **2** can also be connected together by inserting the ends of the handle in a small aluminum tube and crimping the tube to lock the ends of the handle thereon.

The body of the mop portion **1** is made from nylon net or material having similar properties. The threads of the net could, for example, have the size of Number

50 sewing thread and the meshes could be one-fourth inch openings.

The nylon net has the advantage that it will hold its shape after wetting and it is waterproof as well as being quite abrasive to dirty dishes. The nylon net may be cut into strips approximately six inches wide. Five and seven-eighth inches have been found suitable. The material used, for example, could be three yards long. Yard long pieces of material could be used and stitched together at **4** and **5**.

The net material is run through a gathering attachment on a conventional sewing machine so it is gathered along a line **6** which indicates the gathering stitches. Then this gathered material is bunched together as shown in FIG. 1 and tied by means of a thread **7** so that it has the appearance shown. Then the nylon material shown is inserted through the loop of the handle **2** and the handle is twisted as at **8** so that the finished twist in the handle holds the mop head in rigid position thereon. The mop portion **1** can have a dimension of four to six inches overall.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claim.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

A mop made of a strip of net material having the properties of resiliency and abrasion of nylon,

said strip being approximately six inches wide and three yards long,

said strip being gathered along the longitudinal centerline thereof,

said gathered strip being served with gathering stitches, the longitudinal centerline along which it is gathered being disposed at the center of said mop, said strip being bunched to form a mop head,

and a loop like wire receiving said mop head and twisted to form a handle.

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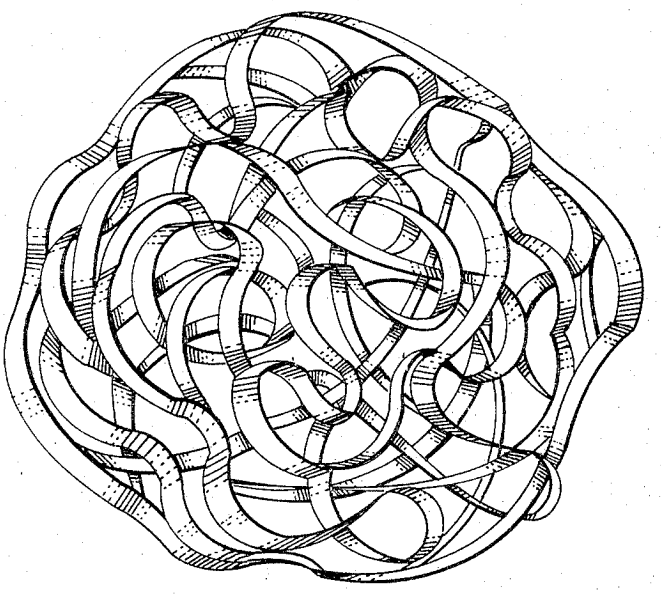
CHARLES A. WILLMUTH, *Primary Examiner.*

D. BLUM, *Examiner.*

Oct. 10, 1967 J. L. FORREST 3,345,668

ABRASIVE ARTICLE

Filed April 16, 1965



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United States Patent Office 3,345,668
Patented Oct. 10, 1967

3,345,668

ABRASIVE ARTICLE

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Filed Apr. 16, 1965, Ser. No. 448,789
2 Claims. (Cl. 15—209)

ABSTRACT OF THE DISCLOSURE

The invention is concerned with an abrasive article comprised of a highly porous, lofty, non-woven and uniform pad-type structure of unitary construction formed of a plurality of interlaced, randomly disposed, tri-dimensionally extending, narrow strips of a film-forming, pre-formed, organic plastic, the plastic exhibiting substantial resiliency, flexibility, and strength upon prolonged subjection to water and/or oil and the like, and wherein the plastic strips are firmly bonded at their many spaced points of mutual contact, thereby defining a three dimensional web type structure having a labyrinth of intercommunicating voids, the latter constituting at least about 50%, and preferably at least about 75%, of the total volume occupied by the entire pad-type structure.

The present invention relates, in general, to abrasive articles and, in particular, to non-woven abrasive articles comprising a highly porous pad structure having significant utility in a variety of cleaning applications wherein hand-scouring operations are performed to remove food and debris from food-handling equipment and utensils.

An object of this invention is to provide an abrasive article which is advantageously adapted for the hand-scouring requirements performed as a matter of course in kitchenware cleaning operations.

Other objects and advantages of this invention will become apparent from the following detailed description thereof.

In accordance with the foregoing objects of the invention abrasive articles have been devised comprising a highly porous, lofty, non-woven and uniform pad-type structure of unitary construction formed of a plurality of interlaced, randomly disposed tri-dimensionally extending, narrow strips of a film-forming, pre-formed, organic plastic, said plastic exhibiting substantial resiliency, flexibility and strength upon prolonged subjection to water and/or oils and the like, and wherein the said plastic strips are firmly bonded at their many-spaced points of mutual contact, thereby defining a three-dimensional web-type structure having a labyrinth of intercommunicating voids. the latter constituting at least about 50%, and preferably at least about 75%, of the total volume occupied by the entire pad-type structure.

Abrasive articles of the above-described type are of extremely low density owing to the presence therein of many relatively large intercommunicating voids. Such pads have been found to exhibit a remarkably effective abrasive action, contrary to what might normally be expected for abrasive articles so constructed. In fact, one of the highly distinctive features characterizing the abrasive articles of the present invention is their unique applicability for use in removing substantial quantities of food and other waste matter from the above-mentioned kitchenware articles, whether as part of or preliminary to the final washing operation, while eliminating substantially the disadvantages attendant upon the use of metallic scouring pads. Highly significant is the further discovery that such abrasive articles possess, in addition to the foregoing features, the distinct capacity for effectively performing substantially all of the scouring operations heretofore considered as requiring metallic scouring pads. Moreover, such results are obtained without in any way deleteriously affecting the structure and/or appearance of the surfaces of the kitchenware treated therewith, including fine glassware, porcelain and aluminum cookware. Moreover, the abrasive articles of the present invention are essentially non-clogging and non-filling in nature, particularly when used in conjunction with liquids such as water, as is the case with dishwashing and cookware cleaning operations; in any event, they can be readily cleaned by simply flushing same with water whereupon they can be left to stand for extended periods without in any way detracting from their usefulness.

Unlike scouring pads fabricated wholly or partly with metal, the abrasive articles of the present invention maintain their shape, resiliency and other physical characteristics over extended periods of time and use despite being subjected to relatively severe scouring operations. This is readily understood since the problems of particle shredding, oxidation, attrition and the like, which arise with the use of metallic scouring pads, are substantially non-existent with the abrasive articles of the present invention. The latter are characterized by substantial flexibility, toughness, durability and compressibility, and if compressed, as would be the case in actual use, recover substantially completely to their initially uncompressed form.

As pointed out hereinabove, the total volume of voids constitutes at least about 50%, and preferably about 75%, and more of the total volume occupied by the pad articles of the present invention. Accordingly, such pads are highly translucent to the extent that when held up to light, practically all of the light incident thereupon passes therethrough, thus registering on the eyes of the viewer.

The extreme porosity, and low density of the abrasive articles provided by the present invention are graphically illustrated in the accompanying drawing. The drawing is a schematic representation, greatly enlarged, depicting the mutual entanglement characterizing the intertwined ribbons of pre-formed organic plastic present in the low density abrasive articles of the present invention. As will be apparent upon reference to the drawing, the interstices or voids constitute a substantial portion of the total volume occupied by the pad structure. As will also be apparent, the mutual intertwining or entanglement of the plastic strips, which extend randomly throughout the pad volume, serves to define a tri-dimensionally extending network of relatively large intercommunicating voids. This high void-volume feature produces an abrasive article which is highly resilient and elastic whereby a highly effective and unique abrasive action is obtainable therewith.

In overall texture, the porous pad articles of the present invention are somewhat billowy, possessing considerable loft, and resemble a resilient spongy tuft. When held up to a stream of water, the stream is diverted only slightly in passing through the pad structure, clearly evidencing the extreme penetrability thereof.

Although not critical to the results obtainable in accordance with the present invention, it is nevertheless found that the best results are obtainable when the total void volume of the pad structure is maintained within the range of from about 75% to 90% and higher based on the total pad volume. Pad structures wherein the void volume is substantially below this preferred range, although useful for the purposes described herein, have proved to possess somewhat inferior performance characteristics. However, when the voil volume is decreased to values less than 50%, it s found that the outstanding and advantageous properties provided for by the pad structures of the present invention diminish relatively rapidly.

As pointed out previously, the abrasive articles of the present invention are completely devoid of metallic substances of any kind. In fact, it is essential to the results obtainable in accordance with the present invention that the pad be constructed solely of pre-formed organic plastic ribbon strips. Plastic materials suitable for use in fabricating the pad structures of the present invention are in general those capable of being drawn into self-supporting foils or films, i.e., so called film-forming plastics and which in addition possess to a significant extent the required properties of toughness, durability, resiliency, solvent resistance and the like, as more fully described hereinabove. As exemplary but by no means exhaustive thereof, there may be mentioned the following: regenerated cellulose esters, e.g., cellulose nitrate, cellulose acetate, cellulose tri-acetate, cellulose propionate, cellulose butyrate, cellulose acetate butyrate, cellulose acetate propionate and the like; cellulose ethers, e.g., ethyl or benzyl cellulose; synthetic linear polymeric condensation polyesters derived from glycols and dibasic acids such as polyethylene terephthalate (sold under the trade name "Mylar") and especially those polyesters which exhibit, as adduced from characteristic X-ray diffraction patterns, molecular orientation along the fiber axis; superpolyamides (e.g., nylon), polyesteramides, synthetic vinyl type resins, e.g., homopolymers and interpolymers of ethylene, propylene and the like, vinyl chloride, vinylidene chloride, vinyl acetate and the like, maleic anhydridevinyl methyl ether copolymers and the like.

It should be understood that the foregoing listing is partial only and is not in any sense intended to be limitative of the plastic materials contemplated for use in the invention described herein.

Although any suitable plastic material can advantageously be used in the structure provided by the present invention so long as they meet the requirements with respect to the properties enumerated hereinabove, particularly good results are obtained with pad structures fabricated in whole or in part of cellulose acetate, cellulose triacetate and/or polyethylene terephthalate. The sponge pad may, of course, be fabricated from two or more of the plastic materials contemplated herein which in some instances may be preferred. A particularly valuable source of the plastic materials is the photographic film industry which offers an ample supply of scrap film base in the form of edge trimmings and the like. Since the scrap film base as obtained therefrom is pre-fabricated in the required strip or ribbon form, the need for further trimming, cutting, or other shape-forming operations which might otherwise be required is reduced considerably. It is conventional practice in the photographic film industry to provide such film base material, which serves as a support for further overcoating layers, light-sensitive and otherwise, with so-called "subbing" layers. The latter function principally as adhesives, thereby enhancing the dimensional stability of the composite film structure and consequently its resistance against delamination. These "subbing" compositions are of varied constitution but in general employ as the essential ingredient a relatively tacky polymeric substance which may be synthetically derived, e.g., synthetic resin materials, or of animal origin, e.g., proteinaceous materials such as gelatin. As representative of the "subbing" compositions commonly employed with film bases of the type contemplated herein there may be mentioned, by way of example, copolymers of vinylidene chloride with other vinyl type monomers copolymerizable therewith such as vinyl acetate, vinyl chloride, vinyl bromide, acrylonitrile, styrene, ethyl vinyl ether, butyl vinyl ether, N-vinyl phthalimide, N-vinyl succinimide, N-vinyl carbazole, methylene diethyl malonate and the like, and mixtures of two or more of the foregoing. Particularly good results are obtained with film bases, e.g., Mylar, which have been coated with a subbing composition comprising a copolymer of vinylidene chloride and acrylonitrile containing at least 50% by weight of the former.

The dimensions of the plastic ribbon strips are not particularly critical, due regard being had to the resiliency and toughness ultimately desired in the pad structures fabricated therewith. In general, it is found that the porous pad structures constructed of organic plastic ribbon strips, the latter having an average thickness of from about .003 to about .007 inch and an average width of about 1/16 to 1/8 inch, are particularly conducive to the results contemplated herein. By and large, the length of the plastic strips is likewise not critical but should be selected so as to be consonant with the dimensional stability desirably characterizing the resultant pad structure. In general, it is found that lengths ranging from approximately ½ to 4 inches and more are eminently suitable for use in the present invention.

In the interest of obtaining a maximum loft, void volume and three-dimensionality, it is recommended that all or a substantial amount of the plastic strips be crimped-set prior to constructing the pad article therewith. However, the crimping expedient is not necessary where plastic strips are employed which readily interlace with one another to form and retain a highly open, lofty relationship in the resultant sponge structure.

The procedure observed in producing the sponge pads of the present invention is as follows. Assuming the availability of the plastic material in pre-fabricated strip or ribbon form, such as would be the case where photographic scrap film base and/or edge trimmings are employed, the said plastic strips are first twisted and entangled into a ball of a size easily and conveniently accommodated by the hand. This can be readily accomplished manually by hand-forming the plastic ribbon into a clump of the desired shape and size. When proceeding in this manner, however, it is recommended that the overall size of the hand-formed ball be somewhat larger than the ultimate size desired in the final pad product produced therefrom, this allowance being made for the size reduction attributable to the thermal compression molding operation employed in forming the final pad product. An alternative and more convenient method for transforming the plurality of plastic strips into the requisite entangled web of high porosity is available with the use of commercial apparatus designed specifically for such purpose. One such apparatus, generally known as the "Rando-Webber" machine, is commercially available from the Curlator Corporation of Rochester, N.Y. As a preliminary operation, the mass of plastic ribbon strips can be fed into a conventional Garnett machine which functions to loosen and thereby separate the plastic strips of suitable width from the micron-sized strands in which many exist as received from the supplier, this preliminary step being desirable but by no means essential. The strips obtained from the Garnett machine as such are then transferred to the feed box of the Rando-Webber machine. The latter is started and adjusted so as to produce a random web of extremely low density and high porosity. Following this operation, the web can conveniently be cut into sections of the desired size. The final sponge pad is then produced by a thermal molding operation utilizing a suitable mold, the cavity shape of which corresponds to the desired shape in the final pad product. The temperature employed in the thermal-molding operation should desirably approximate the softening point temperature of the particular plastic material employed. These values, if not otherwise known, are readily capable of determination by routine laboratory procedure if not by resort to standard reference works or manufacturers' specifications. However, the temperature employed should not substantially exceed the aforementioned values in order to avoid possible shape-distortion of the plastic ribbon elements with consequent diminution in the final product of such desired properties as porosity, resiliency, strength and the like.

The heat-treatment step can also be accomplished by

such other means as simple immersion of the pre-fabricated web of plastic ribbon strips in a suitable liquid medium, the latter being maintained at a temperature closely approximating the softening point of the plastic material. Alternatively, this operation can be effectively carried out by known induction-heating techniques.

Regardless of the particular method of heat-treatment employed, be it via thermal molding, immersion, or induction heating techniques, it should also be noted that the cutting of the plastic web to the ultimate size desired can just as easily be effected following the heat-treatment step. For example, the heat-treatment operation might well be carried out on bulk quantities of the plastic web material, i.e., prior to the actual step of producing the pad in final form. If the heat-treatment technique employed involves the use of forms, molds and the like, the latter can be readily obtained in sizes adapted to accommodate bulk quantities of feed material which would, of course, in this case be organic plastic in strip or ribbon form.

In some cases it may be desirable to further enhance the dimensional stability of the plastic web structure by some suitable operation which results in a firmer bonding of the plastic ribbon strips at their spaced contact points. This can be readily accomplished, for example, by merely immersing the web in a suitable media which is a solvent for the plastic material, thereby tackifying the surface of the said plastic strips rendering same highly susceptible of firmly bonded mutual contact. The foregoing, which might be termed a self-bonding technique is especially effective where the plastic strips employed are not otherwise provided with a suitable bonding agency such as non-subbed photographic plastic film base. However, improved results are also evidenced by the foregoing technique even in cases where the plastic film base as supplied includes as an integral part of its structure one or more subbing, i.e., adhesive layers.

The following examples are given for purposes of illustrating the present invention and are not to be regarded as limitative thereof.

Example I

Approximately 40 grams of photographic film base comprising a base layer of polyethylene terephthalate is hand-formed into a tangled sponge-like mass of a size and shape easily accommodated by the hand and closely approximating that of commercially available hand scouring pads, and thereafter transferred to a heated mold which is maintained at a temperature of 400° F. The shape of the cold cavity is such as to produce a molded product having a shape and form of commercially available hand scouring pads. The mold is then capped thereby enclosing and sealing the plastic ribbon strips completely within the cavity portion thereof. The temperature of 400° F. is maintained for a period of approximately 10 minutes. The mold is then allowed to cool to approximately room temperature whereupon it is opened and the heat-set plastic tangled mass which is now a unitary web-like structure is removed therefrom.

The sponge pad thus obtained when tested to determine its usefulness as a scraping and/or scouring agent is found to be substantially devoid of the undesirable features pointed out previously as inherent in the use of metallic scouring pads. For example when fine porcelain is subjected to vigorous scouring with the pad of Example I, there are no visible after effects such as dark metal stains, scratches, mars or other irregularities at the porcelain areas so treated. Like results are obtained when glassware, plastic ware and aluminum cookware are subjected to similarly vigorous scouring with the pad article of Example I.

However, when the foregoing tests are repeated in all particulars, but substituting steel wool for the plastic web of Example I, employing equally vigorous scouring action for an identical period of time, it is found that the surfaces of the fine porcelain may be darkened by embedded metallic particles from steel wool. Glassware, plastic ware and aluminum cookware, respectively, are as a result of such treatment, roughened to an extent easily detected by the naked eye.

Moreover, a close visual examination of such surfaces reveal the presence of embedded metal scratches, pocks and other surface irregularities clearly indicating the undesirably severe abrasiveness of steel wool pads even under relatively moderate conditions of use. Furthermore, the tendency of steel wool pads to shred in use is clearly manifested by the presence of metallic deposits, e.g., particles of steel wool fibers, in and around the scoured areas of the above-described kitchenware.

Although the foregoing examples illustrate the preparation of the pad structure of the present invention according to procedures involving the use of scrap film base as the starting material, it should be understood that the present invention is not necessarily limited thereto. In some instances, the plastic material may be obtained in the form of the raw bulk polymer. However, this presents no particular problem since such material may easily be converted to the desired strip or ribbon form by such purely mechanical operations as cutting, rolling, etc. For example, the plastic raw material can be rolled into sheet or foil form of the desired average thickness by the use of stainless steel rollers heated to temperatures approximating the softening point of the particular plastic, after which the resultant sheet product can be cut to size as desired. The plastic in ribbon form, of course, serves as the feed to the web-forming apparatus such as that particularly referred to hereinabove.

According to a further modification of the present invention, it is possible to produce sponge pad structures which are colored in one or more pleasing hues and shades. For example, multi-colored plastic strips may be used in order to obtain a mixed color scheme in the final sponge product or alternatively, singly-colored pads can be readily produced. In addition, the plastic strips may have the colorant applied thereto in the form of various ornamental designs, such as speckles, stripes and the like. The method by which the desired color is imparted to the plastic material depends to a great extent, of course, on the particular form in which the plastic is supplied. For example, the desired colored form may well be obtainable as such in the form of scrap film base and/or raw polymer product. In any event, it can readily be produced by the use of conventional dyeing techniques such as spraying, padding and/or immersion and the like. Furthermore, in those instances where the plastic polymer is especially produced for use in fabricating the abrasive articles of the present invention, the desired coloring result can be obtained by including the dye, pigment or other colorant agent in the solution of polymer. It is obvious, of course, that even where the plastic material is obtained in either bulk polymer form or as scrap film base, that solution dyeing techniques are equally operable. This would require merely dissolving the polymer in a suitable solvent in the presence of one or more coloring agents.

As mentioned hereinabove, in the appropriate circumstances it may be deemed desirable and/or necessary to provide the plastic sheet material with one or more adhesive coatings to insure the obtention of firmly bonded contact at those points where the plastic ribbons mutually intersect. Subbing composition of the type enumerated hereinbefore are excellent adhesives for the base materials contemplated herein and accordingly are recommended for use in the present invention. These subbing compositions may be deposited in layer form on the plastic sheet by any of the usual coating methods used in the plastics coating field, e.g., by immersion of the surfaces of the plastic sheet into a solution of the coating material; spraying; beading or coating from a hopper provided with a doctor blade, etc. Following this operation, the coated plastic is dried by conventional means such as by heating

same to moderately elevated temperatures and/or by passing a current of warm air thereover. The highly porous web of the present invention may also be used in conjunction with additional elements attached thereto such as backing elements, e.g., sheets and/or holding blocks, etc., thereby rendering such articles more efficiently adapted to hand use.

While the invention has been described in a preferred embodiment, variations and modifications will obviously become apparent to those skilled in the art. Accordingly, it is intended, by the appended claims, to cover all such variations and modifications as fall within the scope thereof.

What is claimed is:

1. A unitary pad structure of high-porosity comprising a uniform, non-woven, lofty, three-dimensional web-type structure having a plurality of randomly tri-dimensionally extending, durable, tough, resilient organic plastic ribbon strips,

said strips composed of a subbed photographic film base wherein the subbing material of said photographic film base constitutes the binder material whereby said strips are firmly bonded at their spaced points of contact; the mutual entanglement of said strips defining a labyrinth of tri-dimensionally extending intercommunicating voids,

said voids constituting at least about 50% of the total volume occupied by said pad structure, wherein said pad is additionally characterized by pronounced flexibility, elasticity and compressibility, and upon release of pressure applied thereto, said pad is capable of recovering substantially completely to its initial uncompressed form.

2. The unitary pad structure of claim 1 wherein the subbing composition comprises a synthetic polymeric material.

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CHARLES A. WILLMUTH, *Primary Examiner.*

L. G. MACHLIN, *Examiner.*

United States Patent [19]

Heyer et al.

[11] **4,199,835**

[45] **Apr. 29, 1980**

[54] **SCOURING BALL**

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[73] Assignee: **Minnesota Mining and Manufacturing Company**, St. Paul, Minn.

[21] Appl. No.: **11,521**

[22] Filed: **Feb. 12, 1979**

[51] **Int. Cl.**[2] **A47L 17/08**

[52] **U.S. Cl.** ..... **15/209 B**; D7/178; 15/244 R

[58] **Field of Search** ..... 51/397, 394, 400; D7/178, 179, 180; 15/118, 209 R, 209 B, 209 C, 209 D, 244 R, 244 A, 244 B, 244 C

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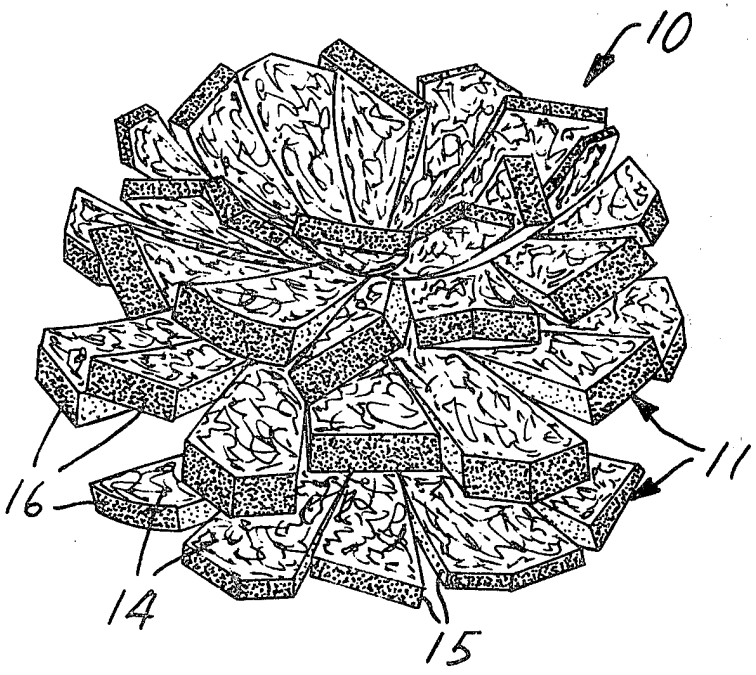
Primary Examiner—Billy J. Wilhite

Attorney, Agent, or Firm—Alexander Cruzan; Donald M. Sell; Richard Francis

[57] **ABSTRACT**

A scouring pad in the shape of a ball comprises a plurality of radially slit, regular-shaped, planar segments of conformable, lofty, low-density nonwoven abrasive product fastened together under compression at their centers with fastening means. The segments are slit from the outer edge toward the center to provide radially disposed, equally spaced slits which define radially aligned lobes, the total array of which defines the ball shape.

7 Claims, 6 Drawing Figures



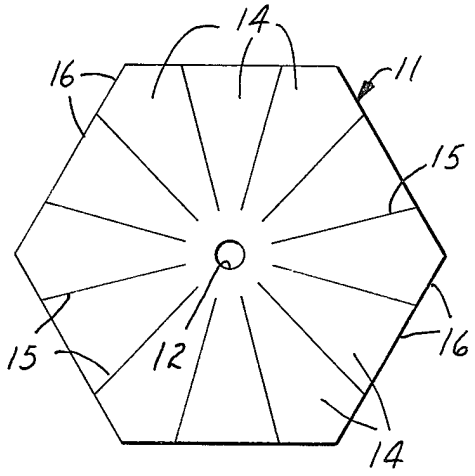


FIG. 3

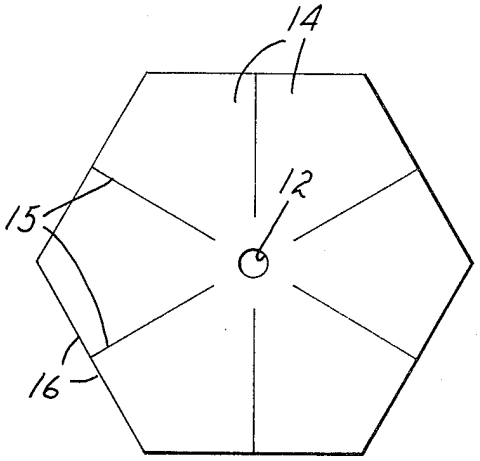


FIG. 4

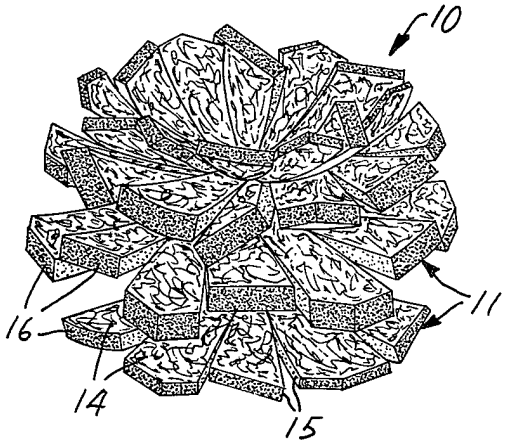


FIG. 1

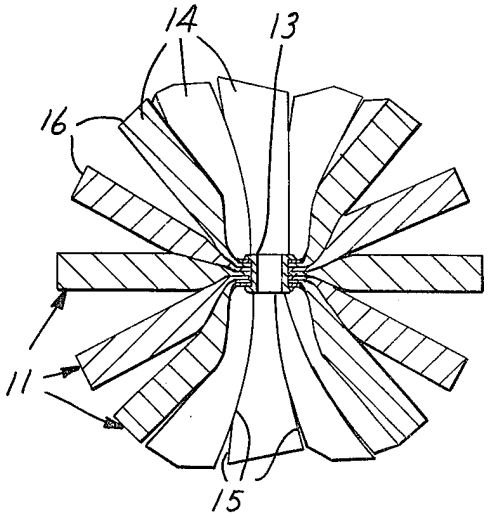


FIG. 2

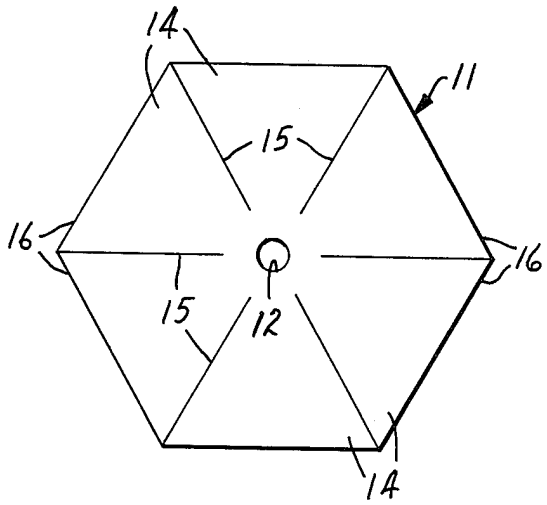


FIG. 5

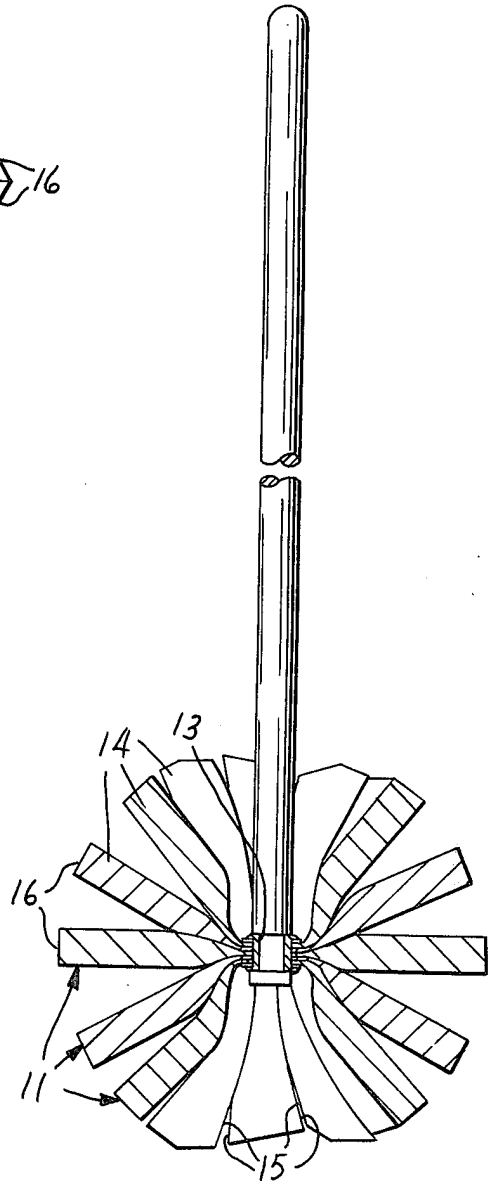


FIG. 6

SCOURING BALL

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to scouring articles formed of lofty, low-density, nonwoven abrasive product, and, more specifically, to a novel scouring ball formed of slit segments of such nonwoven abrasive product fastened together under compression at their centers.

2. Prior Art

The use of lofty, fibrous, nonwoven abrasive products for scouring pots and pans is well known. These products are typically lofty, nonwoven open mats formed from randomly disposed crimped staple fibers which are bonded at points where they intersect and contact each other with a binder which contains abrasive. One highly commercially successful embodiment of such a pad is sold under the trade designation "Scothch-Brite" by the 3M Company of St. Paul, Minn.

Lofty, nonwoven abrasive pads can be prepared by the method disclosed by Hoover et al (U.S. Pat. No. 2,958,593). These pads are especially suited for pot and pan scouring because of their ability under normal conditions to be used for relatively long periods of time without clogging or filling. After use, they can be readily cleaned upon simple flushing with water, dried and left for substantial periods of time, and then reused.

While these pads are available in any of a variety of shapes, e.g., rectangular, circular, dumb-bell and trapezoidal, they are generally planar, i.e., of uniform thickness. There has been expressed a desire by the consumer for a more bulky nonwoven abrasive product that would substantially completely fill the hand of the user. While certain references disclose forming cleaning and/or scouring articles from coiled segments or collected segments of cleaning materials such as segments of foam material, none has been completely satisfactory.

For example, Visman et al (U.S. Pat. No. 3,204,277) discloses a cleaning device made of segments of artificial sponge material cut in the form of a flower and stacked together under compression fastened at the end of an elongate handle to form a cleaning device which lacks the desired bulk that is obtained by the cleaning pad of the present invention. Similarly, Gesell et al (U.S. Pat. No. 2,732,574) discloses a combined brush and mop which employs unslit segments of sponge material fastened at their centers under compression to form a ball-shaped mopping element. Gesell et al's method would not, however, be particularly suited for forming a conformable ball of lofty, nonwoven abrasive product since it would cause severe buckling of segments of such product.

Steinmetz et al (U.S. Pat. No. 2,290,216) discloses a dishmop formed by slitting an elongate strip of sponge rubber material to provide equally spaced slits perpendicular to the long axis, rolling the slit strip on its short side and compressing and constricting mid-section of the resultant spriral in an appropriate element to cause the slits to be deployed as an array thereby providing a mop head with a certain degree of bulk. Matthews, U.S. patent application Ser. No. 878,701, filed Feb. 17, 1978, assigned to the assignee of the present application, discloses dumbbell shaped segments of perforated nonwoven abrasive product fastened together at their small portions to form a ball-shaped array unlike the scouring ball of the present invention which employs slit segments of nonwoven abrasive material fastened at their mid points.

SUMMARY OF THE PRESENT INVENTION

The present invention provides a scouring pad substantially in the shape of a highly conformable ball, providing a desirably bulky pad which may be grasped by the user to scour kitchen utensils and for other uses.

The pad of the invention is comprised of a plurality of radially slit, regular-shaped, planar segments of conformable, lofty, low-density, nonwoven abrasive product fastened together under compression at center points. Slitting is such that lobes in the same segment are capable of being alternatively positioned at least temporarily above and below the plane of the segment. The total array of lobes in the pad defines the ball shape.

DRAWING

The invention is further illustrated by reference to the accompanying drawing, wherein like reference numerals refer to like parts in the various views, in which:

FIG. **1** is a plan view of the scouring pad of the present invention;

FIG. **2** is a cross sectional view of the scouring pad shown in FIG. **1** taken through the center of the pad;

FIG. **3** is a plan view of one slit segment of lofty, nonwoven abrasive product employed to make the scouring pad depicted in FIGS. **1** and **2**;

FIG. **4** is a plan view of a slit segment of lofty, nonwoven abrasive material showing an alternative pattern of slitting,

FIG. **5** is a plan view of a slit segment of lofty nonwoven abrasive material showing an alternative pattern of slitting; and

FIG. **6** is a sectional view of the scouring pad shown in FIG. **1** including an elongate handle (not shown in section).

DETAILED DESCRIPTION OF THE PRESENTLY PREFERRED EMBODIMENTS

Referring now to the drawings, ball-shaped scouring pad **10** according to the present invention is provided by a stack of radially slit, regular-shaped, planar segments **11** fastened together under compression at their centers **12** by mechanical fastening device **13** which holds the center portions of the segments **11** in a compressed state, thereby permitting lobes **14** defined by slits **15** to expand and assume a generally spherical shape.

The method of making scouring pad **10** involves first cutting segments **11** from sheet stock of lofty, nonwoven abrasive material. The segments may be simultaneously slit or slitting may be done in a separate operation. Slitting provides a pattern of radially aligned slits extending from outer edge **16** of segment **11** and extending from about 10% to 80% (preferably 30% to 70%) of the average radius of the segment. Slits **15** define therebetween fingers or lobes **14** in a radial array around the segment center **12**. The number of slits may vary between about five to about twelve to provide a like number of lobes **14**. The slits in each segment preferably extend to a point on an imaginary circle having a center at the segment center, but the slits may also terminate at various distances on either side of such circle. Each of lobes **14** will be fastened to the central portion of segment **11** by its narrowest part because of the manner of slitting. The narrowest part should therefore provide adequate attachment for the lobes to provide for long

term scouring use. Preferably, the narrowest part which forms the point of attachment should be at least about 3/16 of an inch.

Several segments are stacked to form a stack or pile of segments **11** with centers **12** aligned. The stack is then compressed, at least at the center portion, and a suitable fastening means is inserted to permanently hold the center portion of the stack in a compressed state. Compression of from about 75% to aout 95% is preferred to obtain the optimum deployment of the lobes as a ball shape.

Some care is required in selecting the appropriate thickness and the average diameter to obtain the proper deployment of lobes **14** to form a ball shape. For this purpose, the stack of segments should preferably be selected to have a thickness to average diameter ratio in the range of 1:1 to about 1:3, most preferably 1:1.25 to 1:2.50. Upon slitting as herein specified, an appropriately compressed stack of segments will form lobes which in the same segment are capable of being alternatively positioned at least temporarily above and below the plane of such segment thereby to define the ball shape by the total array. This characteristic is obtained by the appropriate slitting of the segments which permits slight frictional engagement between adjacent lobes because no material has been removed from along the slit lines. If material were removed from the segment along the slit lines, as shown in Visman et al, U.S. Pat. No. 3,204,277, deployment of the lobes as described would not be possible.

Segments **11** will be regular-shaped and planar. That is, segments **11** may have a circular, polyahedron (e.g., square, hectagon, hexagon, heptagon, octagon, etc. shape), or other regular shape. The preferred shape for segment **11** is a hexagon, as shown in the drawing.

The lofty, nonwoven abrasive material from which segments **11** are formed is well known in the art and readily commercially available. Suitable lofty, nonwoven abrasive material is that sold under the trade designation "Scotch-Brite" by the 3M Company of St. Paul, Minn. Suitable lofty, nonwoven abrasive material will have a thickness on the order of $\frac{1}{8}$ inch to about 1 inch and may vary from mildly abrasive to coarsely abrasive, depending upon use. The thickness and the average diameter of the segment **11** will vary, of course, upon the particular use for which the pad will be put. Outer diameter of a segment on the order of 2 inches to about 6 inches will be typical.

The fastening means may be any mechanical fastening device which is capable of holding the segments together under compression in the particular environment of use. An adequate fastening means is provided by a metal or rigid plastic rivet or by bonding the segments together with a bonding material. Bonding materials which are adequate include liquid curable adhesive compositions, hot melt adhesives, ultrasonic bonding which causes the thermoplastic fibers forming the lofty, nonwoven abrasive product to soften and adhere to one another, and the like. Other conventional fastening means known in the art will also be suitable.

Various modifications may be made in the scouring ball of the present invention without departing from the scope of the claims. For example, the fastening means may be secured at one end of an elongate handle as depicted in FIG. **6** to provide a scouring brush which may be employed to scour the insides of bottles, various appliances, and for other uses. Additionally, the segments may be interleaved with layers of foam material to provide for specific properties. For example, the lofty, nonwoven abrasive segments may be interleaved with layers of hydrophilic foam material to provide a greater water retention since the nonwoven abrasive material has limited water retention.

EXAMPLES

The invention is further illustrated by the following examples.

EXAMPLE 1

Five hexagonal segments $1\frac{1}{2}$ inch on a side and $\frac{1}{4}$ inch thick were formed of lofty, nonwoven abrasive product (sold under the trade designation "Scotch-Brite" scouring pad by the 3M Company of St. Paul, Minn. were radially slit to provide a pattern of twelve equally spaced slits, as shown in FIG. **3** of the drawing. Each slit extended approximately 54% of the average radius of the segment from the edge toward the center. The slit segments were stacked, a rivet was inserted and the center segment of the stack was simultaneously compressed to about 12% of the uncompressed stack height. The rivet was secured to hold the center portion of the stack in the compressed state. Thereafter, the resultant lobes were deployed to form a ball-shaped scouring pad.

EXAMPLES 2–17

Examples 2–17 were prepared of the same lofty, nonwoven abrasive product as that described in Example 1 with variations in the number of slits, the length of each slit, the average diameter, and the ratio of total stack thickness to average diameter. The variations in each of the scouring balls is noted in the Table below, as are comments with respect to each example.

EXAMPLES 1–17

Example No.	% Average Slit Length of Average Radius	Ratio of Total Thickness Average Diameter	Number of Slits	Averge Diameter (in)	Comments
1	54	1/1	12	2.81	Excellent ball shape, extremely dense
2	54	1/1.25	12	2.81	Excellent ball
3	54	1/1.41	12	2.81	Excellent ball
4	54	1/1.87	12	2.81	Excellent ball
5	54	1/2.14	12	3.75	Good ball
6	56	1/2.25	12	3.09	Good ball
7	80	1/2.31	12	3.75	Good ball, lobes somewhat weak
8	32	1/2.31	12	3.09	Good ball, slits could be deeper
9	16	1/2.31	12	3.09	Fair ball, slits could be deeper
10	56	1/2.31	6	3.09	Good ball, could be more slits
11	54	1/2.41	12	3.75	Good ball, could be

-continued

Example No.	% Average Slit Length of Average Radius	Ratio of Total Thick-ness Average Diameter	Num-ber of Slits	Averge Diameter (in)	Comments
					thicker
12	11	1/2.73	12	3.75	Fair ball, total thickness could be increased
13	11	1/3	12	3.75	Fair ball, total thickness could be increased
14	56	1/4	12	3.09	Poor ball, needs to be thicker
15	32	1/2.31	6	3.09	Fair ball, slits could be deeper
16	70	1/2.31	12	3.75	Excellent ball
17	70	1/2.31	12	3.09	Excellent ball, lobes somewhat weak

What is claimed is:

1. A scouring pad substantially in the shape of a highly conformable ball comprising a plurality of radially slit, regular-shaped, planar segments of conformable, lofty, low-density, nonwoven abrasive product fastened together under compression at their centers with fastening means, wherein the stack of segments have in the uncompressed state a thickeness to average diameter ratio in the range of about 1:1 to about 1:3, each of said segments being slit along a line from the outer edge toward its center in the average range of about 10% to 80% of the distance of said line to provide from about 5 to about 12 radially disposed equally spaced slits which define a plurality of radially aligned lobes having a width at least 3/16 inch at the narrowest point, with lobes in the same segment being capable of being alternatively at least temporarily positioned above and below the plane of such segment, whereby the total array of lobes in said pad defines said ball shape.

2. The pad of claim 1 wherein said segments are in the shape of a hexagon.

3. The pad of claim 2 wherein said hexagon is slit from each corner toward the center.

4. The pad of claim 2 wherein said hexagon is slit from points on its outer edge midway between each corned toward the center.

5. The pad of claim 1 wherein said slit is in the range of about 30–70% of the distance along said line.

6. The pad of claim 1 wherein the thickness to average diameter ratio is in the range of about 1:1.25 to 1:2.5.

7. The pad of claim 1 also including an elongate handle fastened by one end to fastening means.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 4,199,835

DATED : April 29, 1980

INVENTOR(S) : RAYMOND F. HEYER and GARY J. KLECKER

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the Specification:

Col. 1, line 20, change "Scothch-Brite" to read --Scotch-Brite--

Col. 3, line 47, change "diameter" to read --diameters--

In the Claims:

Col. 6, line 24, change "corned" to read --corner--.

Signed and Sealed this

Fifth Day of *August 1980*

[SEAL]

Attest:

SIDNEY A. DIAMOND

Attesting Officer

Commissioner of Patents and Trademarks

United States Patent [19]

Sanford

[11] Patent Number: 4,462,135

[45] Date of Patent: Jul. 31, 1984

[54] **CLEANING AND ABRASIVE SCRUBBERS AND METHOD FOR THEIR PREPARATION**

[76] Inventor: **Howard R. Sanford,** 348 E. 400 South, Springville, Utah 84663

[21] Appl. No.: **460,171**

[22] Filed: **Jan. 24, 1983**

[51] **Int. Cl.**[3] **A47L 13/16**

[52] **U.S. Cl.** ..... **15/105;** 15/209 C

[58] **Field of Search** ..... 15/209 B, 209 C, 105

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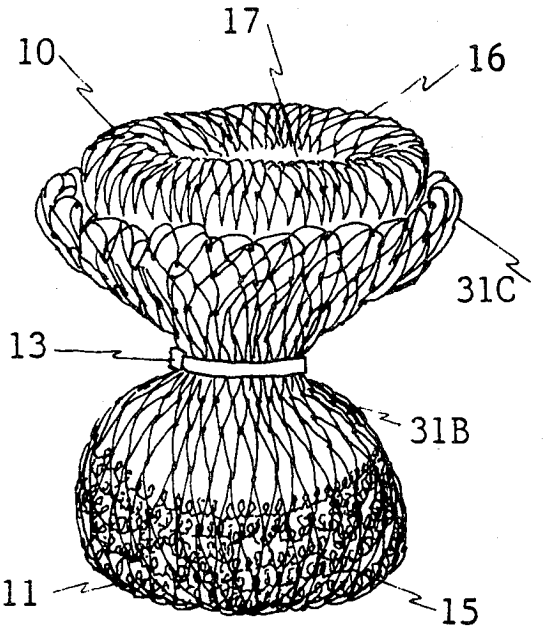
Primary Examiner—Chris K. Moore

[57] **ABSTRACT**

An improved exteriorally hand held cleaning and abrasive scrubber which is capable of providing both a cleaning and an abrasive action, comprising an instrument made up of a hollow cone shaped cleaning section joined at its apex to the apex of a hollow cone shaped abrasive section, said cleaning section being made up of numerous layers of netting mesh prepared from special polymeric material, said abrasive section being covered by a layer of said netting mesh and containing a plurality of coils of an abrasive solid.

20 Claims, 10 Drawing Figures



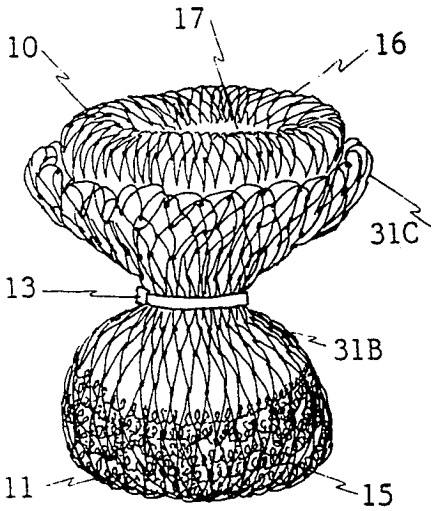


Fig. 1

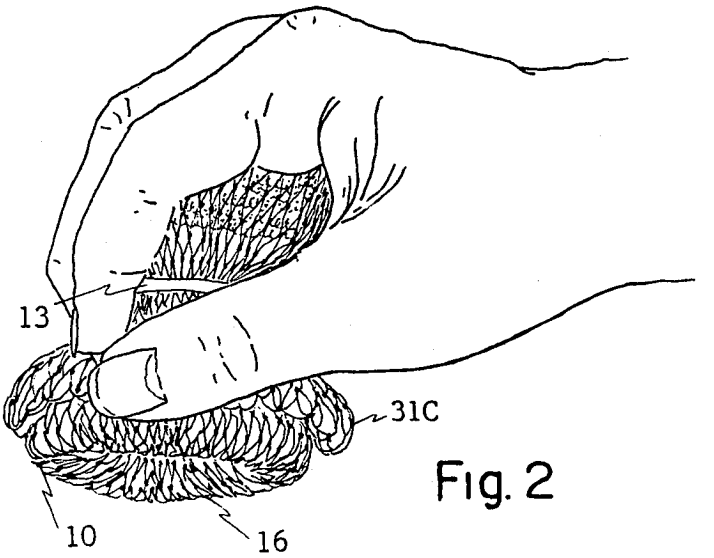


Fig. 2

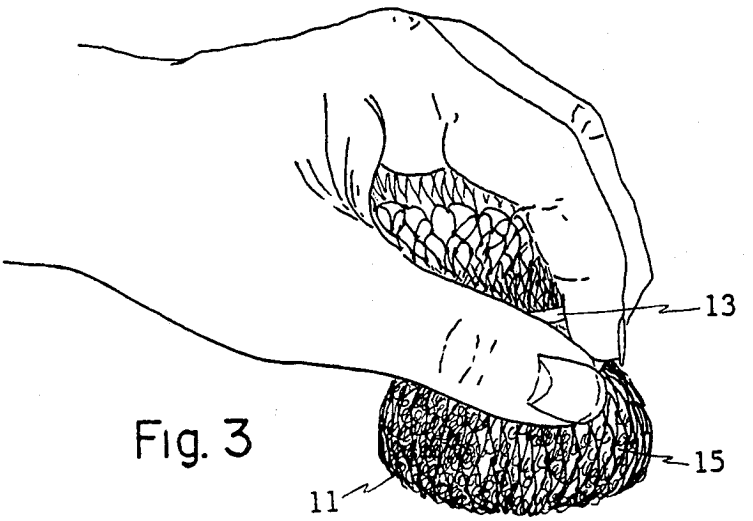


Fig. 3

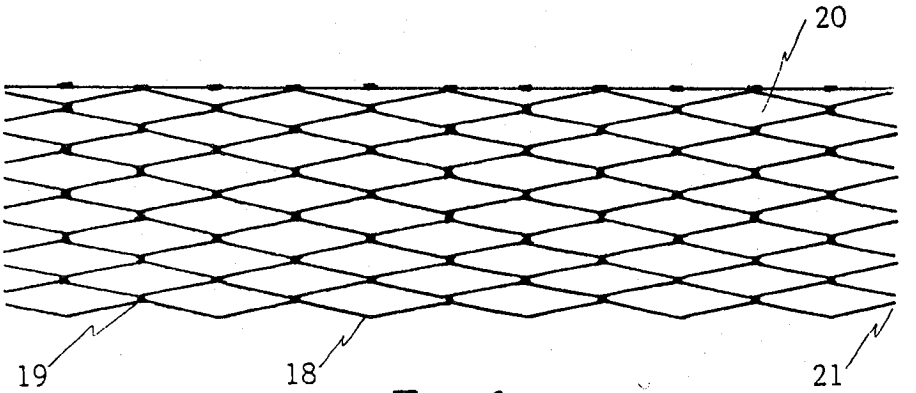


Fig. 4

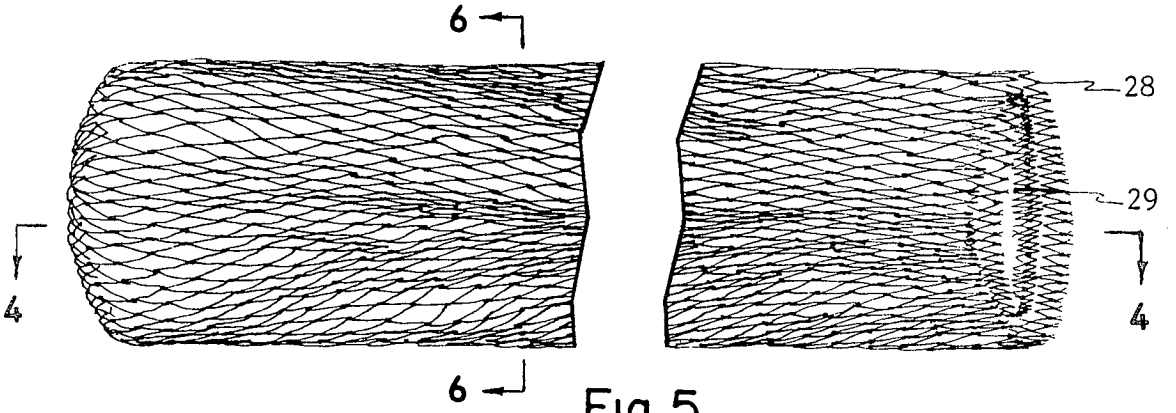


Fig. 5

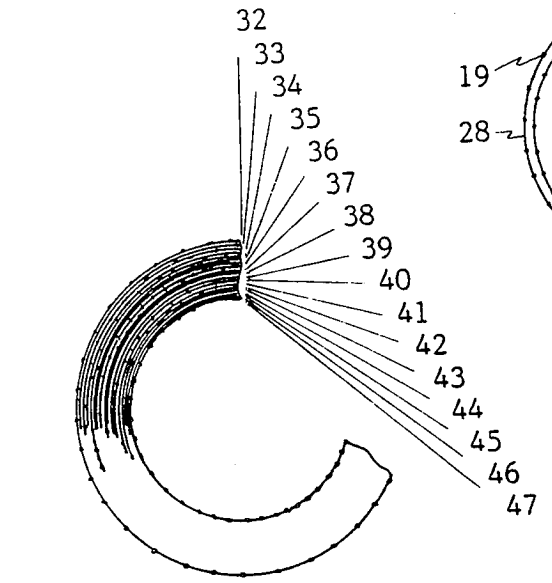


Fig. 8

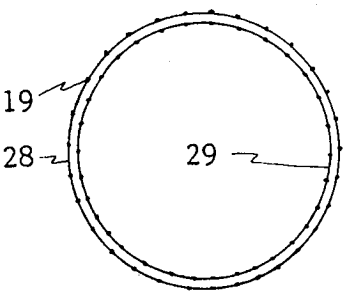


Fig. 6

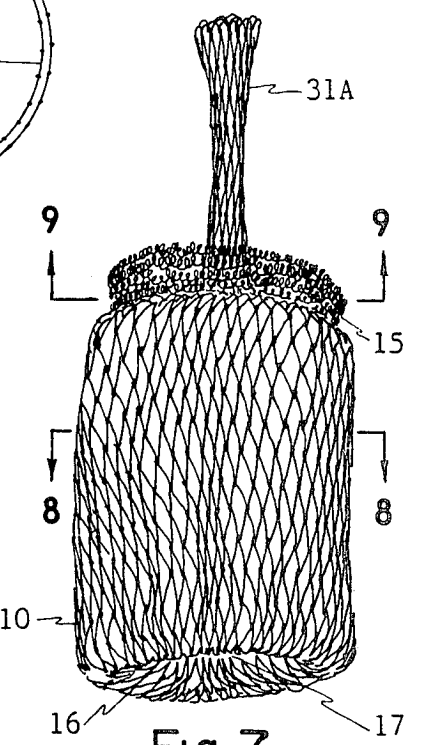


Fig. 7

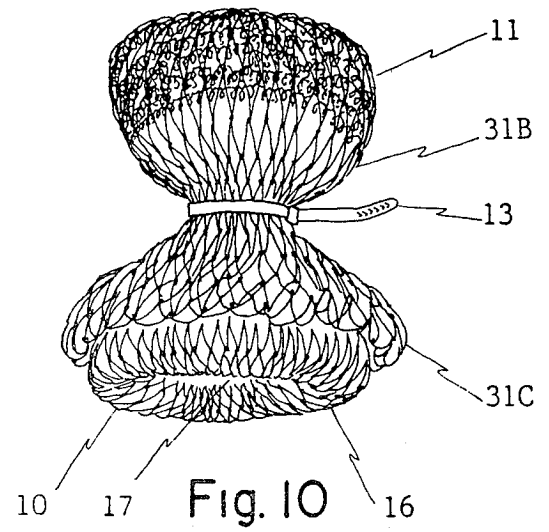


Fig. 10

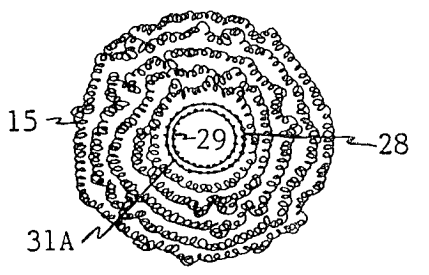


Fig. 9

CLEANING AND ABRASIVE SCRUBBERS AND METHOD FOR THEIR PREPARATION

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a new and improved cleaning and abrasive scrubber and its preparation. More particularly, the invention relates to a new type of exteriorally hand held cleaning and abrasive scrubber which provides both a cleaning and an abrasive action, and a method for its preparation from an extruded tubular netting mesh prepared from special polymeric material.

Specifically, the invention provides a new and improved hand held cleaning and abrasive scrubber which is capable of providing both a cleaning and an abrasive action, comprising an instrument made up of a hollow cone shaped cleaning section joined at its apex to the apex of a hollow cone shaped abrasive section, said cleaning section being made up of numerous layers of netting mesh prepared from special polymeric material, said abrasive section being covered by a layer of said netting mesh and containing a plurality of coils of an abrasive solid.

The invention further provides a process for preparing the said scrubber comprising forming a cleaning section by selecting an extruded tubular netting mesh prepared from a special polymeric material and having a tubular cross section and two open ends, drawing one end of the tubular netting mesh back over the center of the tubular mesh to form a multiple ply tubular netting mesh, then concentrically folding upon itself a plurality of times so as to form a soft cylindrical bun comprising the cleaning section, extending the multiple ply tubular mesh through the cylindrical cleaning section as a center core for the abrasive section, a coiled abrasive solid encircles the center core a plurality of times, then drawing the center core outwardly and around the said coiled abrasive solid and toward the cleanjng section, said center core being tightly secured to the mid to bottom portion of the cleaning section.

2. Prior Art

Heretofore a variety of cleaning and cleansing scrubbers have been used to remove dirt and unwanted surface material from body surfaces, walls, sinks, dishes, vegetables, fruits, etc. Such materials have included terry wash clothes, soft and brittle brushes for cleaning the human body while bathing or showering, and various cleaning pads, scouring pads, sponges, steel, brass and copper wool, etc. have been used to clean dirt and unwanted surface material from walls, sinks, dishes, pots, pans, and the like. Separate abrasive instruments, such as scouring pads and steel wool, have been used to remove dirt and debris from dishes, vegetables and the like, where the dirt and debri have been strongly attached or deeply embedded in the object to be cleaned.

The above-noted cleaning instruments have a great many disadvantages which have limited their use in many applications. Many of the products, for example, become water logged and it is difficult to remove the water containing the removed dirt from the scrubber. In addition, such products which retain the water often develop unpleasant odors, as well as become a place for breeding of bacteria, germs, mold, etc. In addition, many of the products have very low strength and are easily destroyed after they have been used several times. In addition, many of the products are difficult to hold and, after extensive periods of use, cause considerably strain in the hand and wrist. Furthermore, some of the said cleaning scrubbers are harmfully abrasive to modern surfaces, such as TEFLON coatings. Further, in many cases the cleaning problems have been such that a variety of different types of cleaning agents and abrasive agents must be kept on hand to effect the necessary cleaning.

It is an object of the invention, therefore, to provide a new and improved type of cleaning and abrasive scrubber which solves many of the above-noted problems. It is a further object to provide a new type of cleaning instrument which provides both cleaning and abrasive action in the same scrubber. It is a further object to provide a cleaning and abrasive scrubber which is easily held by the hand and operates without undue strain on the hand or fingers. It is a further object to provide a new type of cleaning and cleansing scrubber which does not retain water used in cleaning and scrubbing and is far less absorbent than prior known scrubbers. It is a further object to provide a new cleaning and abrasive scrubber which is very strong and tough and can be used repeatedly without undergoing deterioration. It is a further object to provide a new scrubber which provides a long lasting abrasive action and which can be used on all types of surfaces. It is a further object to provide a new scrubber which is harmless to the new type of plastic surfaces on pots and pans, such as the containers coated with TEFLON. It is a further object to provide a new scrubber which is decorative and can be used as part of the decore of the bathroom or kitchen, etc. These and other objects of the invention will be apparent from the following detailed description thereof.

SUMMARY OF THE INVENTION

It has now been discovered that these and other objects can be accomplished by the new cleaning and abrasive scrubbers of the present invention comprising an instrument made up of a hollow cone shaped cleaning section joined at its apex to the apex of a hollow substantially cone shaped abrasive section, said cleaning section comprising a hollow cone shaped soft bun the outer walls of which are made up of a plurality of plys of an extruded tubular netting mesh prepared from a strong flexible polymer, preferably of the group consisting of addition polymers of olefinic monomers, and polyamides of polycarboxylic acids and polyamines, said plys of tubular netting mesh being concentrically folded upon itself numerous times to form the said walls of the soft bun, said plys of tubular mesh being extended through the open center of the hollow bun to act as a center core to receive the abrasive section, said abrasive section comprising numerous coils of an abrasive solid encircled around the center core to form a hollow abrasive bun, the said center core being extended outwardly and around the abrasive solid and toward the cleaning section and being tightly and securely attached to the outer bottom portion of the cleaning section so as to form the cone shape of the cleaning and abrasive sections and to secure the abrasive section to the bottom of the cleaning section.

It has been found that these new cleaning and abrasive scrubbers provide many unexpected advantages over the prior known scrubbers. The new scrubbers, for example, possess ability to provide both cleaning action and abrasive action, and it is not necessary to utilize two separate instruments for both actions. In addition, the

new scrubbers possess a special mesh netting scrubbing surface which does not retain the water, soap and other cleaning solutions used in the cleaning and scrubbing action, but permits the easy removal of such materials as by shaking, squeezing or just allowing the solutions to drain therefrom. This special advantage allows the scrubbers to remain fresh and clean and free from bacteria growth which is known to accumulate in the prior known foam and cloth scrubbers. Because of the unique structural arrangement using the strong plastic mesh, the new scrubbers are extremely tough and durable and can be used numerous times without tearing or deteriorating as with many of the prior known cleaning and scouring materials. Further advantage is also found in the fact that the abrasive action originating in the use of the abrasive section of the scrubber, is also very long lasting and, despite its tough nature, can be used on many of the new types of plastic surfaces, such as the TEFLON coated pots and pans, without destroying that sensitive surface. The new scrubbers are also particularly attractive as they can be securely held by the hand for extended periods of time without undue strain on the hand or fingers. The new scrubbers can also be prepared, particularly by use of the netting skirts, to form very attractive instruments that can be used as part of the decor of the bathroom or kitchen and need not be hidden away after use as with the prior known scrubbers.

A further advantage of the present invention is that the new cleaning and abrasive scrubbers can be easily prepared from readily available raw materials and at an economic price. The new scrubbers are preferably prepared from extruded tubular netting mesh which has been prepared from special strong and flexible polymeric material. Extruded tubular netting mesh of this type, and particularly those prepared from polyethylene, have been used for the covering of meat and poultry carcasses and are readily available in industry.

In the preferred method of preparation, one first prepares a multilayered extruded tubular netting mesh which is open at both ends. This can be prepared by simply drawing one extruded tubular netting over another tubular netting mesh until the desired number of plys have been obtained. Preferably, the multi-layered extruded tubular netting mesh is prepared by selecting a given length of the desired extruded tubular netting mesh which is open at both ends, and then drawing one end of the netting mesh back over itself one half the length of the said tubular netting mesh to form the desired multi-layer tubular netting mesh. This can be repeated as often as desired to obtain the tubular netting mesh having the number of plys for the covering of the abrasive section and the decorative skirt.

The multi-layered extruded tubular netting mesh prepared as noted above is then concentrically folded upon itself a plurality of times so as to form a soft bun for the cleaning section. The remaining portion of the multi-layer tubular netting mesh is therefore extended through the hollow center of the soft bun to form a center core to receive the abrasive section.

The abrasive section is then prepared by placing the desired open mesh abrasive solid which has been coiled a plurality of times, around the center core so as to form a soft cylindrical abrasive bun. The end portion of the center core comprising the multi-layer tubular netting mesh is then extended outwardly and around the abrasive solid material and toward the cleaning section, and the center core is then extended outwardly and around the abrasive solid material and toward the cleaning section, and the center core is then drawn and securely attached to the outer portion of the cleaning section so as to form a cone shaped cleaning section and abrasive section and to secure the abrasive section to the bottom of the cleaning section, a decorative skirt is formed by the end portion of the extended center core. The multi-layer netting mesh skirt is securely attached to the cleaning section preferably by means of a nylon band or suitable closure.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a perspective representation of the new cleaning and abrasive scrubber of the present invention.

FIG. **2** is a perspective view of the new scrubber illustrating how the scrubber can be held in the hand to particularly utilize the cleaning section of the scrubber.

FIG. **3** is a perspective view of the new scrubber illustrating how the scrubber can be held in the hand to utilize the abrasive section of the scrubber.

FIG. **4** is an enlarged fragmentary cross section taken along line **4—4** of FIG. **5** illustrating a single sheet of the netting mesh stretched perpendicular to the filaments to show the bonding of the filaments and a representative spacing of the bonds.

FIG. **5** is a perspective view of the tubular netting mesh which has a portion of the tube drawn over itself to form two ply tubing netting mesh.

FIG. **6** is a cross sectional view taken along line **6—6** of FIG. **5** showing two layers of netting.

FIG. **7** is a perspective view of the two ply mesh which has been concentrically folded upon itself numerous times; the folded end of the two ply mesh extending through the center of the numerous layers to form the center core for the abrasive solid which is illustrated encircling the core.

FIG. **8** is a fragmentary cross sectional view taken along line **8—8** of FIG. **7** illustrating numerous plys.

FIG. **9** is a cross sectional view taken along line **9—9** of FIG. **7** illustrating coils of the abrasive solid encircling core.

FIG. **10** is a perspective view of the assembled cleaning and abrasive scrubber showing how the tubular netting mesh skirt has been tightly joined to the bottom of the cleaning section by means of the nylon band.

The assembled cleaning and abrasive scrubber shown in FIG. **1** is made up of the cleaning section **10** composed of a plurality of layers of netting mesh as represented by **16** in cone shape with the hollow of the cone at **17**. The abrasive section **11** contains abrasive coils **15** covered by the outer layer of netting mesh **31B** which is drawn over the abrasive section and securely tied to the cleaning section by band **13**.

The ease with which the new cleaning and abrasive scrubber can be held in the hand for utilization of the cleaning section is shown in FIG. **2**, and the ease with which the new cleaning and abrasive scrubber can be held in the hand for utilization of the abrasive section is illustrated in FIG. **3**.

The netting mesh that can be used in making the new products of the invention is illustrated in FIG. **4**, wherein **21** represents the mesh in stretched position. The fine polymeric filaments used in making the netting are represented by **18** with **19** representing the spot bonding of the filaments to form the open mesh **20**.

The tubular netting mesh wherein one end has been drawn over half the length of the tubular mesh to form a two ply tubular mesh is shown in FIG. **5**. The outer

layer of mesh is represented by **28** and the inner layer represented by **29**. FIG. **6** is a cross sectional view of the two ply tubular mesh. In FIG. **6**, line **28** represents the outer layer of filaments and **29** the inner layer with **19** representing the spot bonding of the filaments.

FIG. **7** illustrates the product formed by the concentric folding upon itself with the netting mesh extension through the center of the cleaning section to form the center core **31A**, with **10** representing the cleaning section, **16** the multi-layers of netting and **17** the hollow center of the cleaning section with abrasive solid **15**, encircling center core **31A**.

FIG. **8** is a fragmentary cross sectional view of FIG. **7** and represents the multi-layer tubular netting mesh obtained after the 2 ply netting mesh has been folded back upon itself numerous times, the 16 different layers of mesh being represented by lines **32** to **47**.

FIG. **9** illustrates the abrasive solid used in the abrasive section, **15** represents a section of the metallic shavings used as the abrasive solid, **31A** represents center mesh core.

FIG. **10** represents the assembled cleaning and abrasive scrubber with **31B** representing the center core netting that is drawn down over the abrasive section and tightly bound to the bottom of the cleaning section by means of nylon band **13**, with the extra center core netting passing down over the outside of the cleaning section to form a decorative skirt **31C**.

DETAILED DESCRIPTION OF THE INVENTION

The extruded tubular netting mesh or fabric used in the preparation of the new cleaning and abrasive scrubbers of the present invention can be of any suitable type. Preferably the tubular netting has a maximum transverse expanded diameter of about 8 to 16 inches with the contracted minimum diameter on the order of about ½ inch. The tubular netting is preferably open at both ends so that it can be easily utilized in making the multiply netting for the preparation of the cleaning section. The netting is prepared from fine filaments of polymeric material having a thickness preferably varying from about 10 to 18 mils. The netting is prepared from as many as 50 to 200 such filaments which appear to cross over each other at a 45° angle and are bonded at junction points at intervals varying from about 3/16 to ½ inch, depending upon the type of netting or fabric desired. It is important that the bonding of the filaments at the indicated intervals be of such a nature as to securely attach the filaments together and provide a strong netting for the cleaning action. The bonding is preferably accomplished by the extruding technique, heat sealing the filaments together or by use of appropriate adhesives. An example of netting that can be used in the process of the invention is illustrated in the drawing as FIG. **4**.

The polymeric material used to prepare the above-noted netting mesh should be strong and flexible and durable against the cleaning and abrasive action to which the new scrubbers will be subjected. Preferred polymeric materials to be used include the addition of thermoplastic polymers of olefinic monomers, such as ethylene, propylene, butylene, and the like. This includes their homopolymers and copolymers of these monomers with other ethylenically unsaturated monomers where the copolymer contains at least 25% of the olefinic monomer. A preferred member of this group includes DuPont polyethylene netting mesh indentified as VEXAR.

Other polymeric material that can be used include the nylon type products prepared from reaction polycarboxylic acids with polyamines and suitable modifications thereof.

As noted above, the extruded tubular netting mesh is first formed into a multiple ply tubular netting mesh by drawing one end of the tubular netting mesh over itself back to the other end, and repeating the process until the tubular netting mesh has the desired number of plys. The number of plys selected will depend upon the type of product desired and its intended use. If a very strong and tough cleaning section is desired, it is generally preferred to utilize a tubular netting mesh having from 4 to 16 plys. A softer and more flexible cleaning section may be obtained by using smaller numbers of plys, say from 2 to 4.

After the desired thickness of layers of the extruded tubular netting mesh has been obtained, it can be used to produce the cylindrical soft bun comprising the cleaning section. This is accomplished by concentrically folding the extruded netting mesh upon itself until the desired density of bun has been obtained. Here again, the number of folds will depend upon the type of cleaning section to be obtained and the intended use. A large number of folds provides a very strong cleaning section with ability to retain liquid cleaning solution for a longer period of time than those with fewer number of plys. In general, cylindrical buns having the desired properties are obtained by use of from two to twenty folds, and more preferably, from six to eight folds.

The size of the folds will depend upon the size of the cleaning section desired. In most cases, folds varying from about 3 to 8 inches are generally sufficient.

The folded end of the multi layer extruded netting mesh then extends through the open center of the cylindrical soft bun, comprising the cleaning section, to form a center core to receive the abrasive section.

As noted, the abrasive section comprises a plurality of coils of an open mesh abrasive solid. This solid is preferably from 1 to 1½ inches thick and 2 to 2½ inches in width. The material itself is preferably a coiled product such as may be obtained from shavings of metals, such as steel, brass and copper. The solid itself must be hard enough to give the necessary abrasive action but still flexible enough to be coiled around the center core. The solids may be prepared from a variety of material that meet this requirement, such as metal, wood, plastic, and the like.

The number of coils of the abrasive solid to be contained in the abrasive section may vary over a considerable range depending upon the material and intended use. In general, from 20 to 50 coils should be sufficient to give the necessary abrasive action.

After the coiled abrasive solid has been placed around the center core, the core is extended outwardly and around the abrasive solid and toward the cleaning section to thus provide a protective covering for the abrasive solid. The end of the center core is then securely attached to the outer mid to bottom portion of the cleaning section. The said core can be securely attached by any suitable means, such as by a metal or plastic band. The band is preferably tightly bound around the core covering the bottom of the cleaning section so as to force the cleaning section into a conical shape with the band being at the apex of the cone.

The preparation of the cleaning and abrasive scrubbers of the present invention as exemplified by the scrubber shown in FIG. 1 of the drawing is illustrated below.

The material used to make the cleaning section comprises orange colored DuPont tubular VEXAR polythylene netting identified as Style#136V130-CAOG, or Amoco #1363. The VEXAR mesh comprises parallel polyethylene filaments of about 10 mils in thickness spot sealed together about every ½ inch to form a netting with the tubular cross-section of the netting at maximum expansion being about 12 inches in diameter.

An approximate six foot length of the above described netting was selected and one end passed over the center tubular netting so as to form a two ply netting of approximately 3 feet in length. The open ends of the two ply netting was then repeatedly folded back on itself in lengths of about 2½ inches to form a soft cylindrical bun of 8 folds or about 16 ply. When both walls are pressed together the bun would possess 32 ply of the said netting.

The remaining portion of the tubular netting mesh which makes up about 6 inches extends through the center of the abovenoted bun to act as a center core for the abrasive section. A string of metal coiled shavings having a thickness of 1–2 mills and width of 20 mills and a coiled diameter of ⅛ inch, and length of about 40 feet are coiled around the center mesh core to form about 45 coils of the said material. The extended portion of the center mesh core is then drawn outwardly and around the abrasive coils and backward toward the cleaning section. The center core is then tightly bound around the bottom of the cleaning section by means of a nylon cable tie, thus converting the cleaning section and the abrasive section into cone shaped instruments. About two inches of the center core which extends beyond the nylon tie remains free to act as a decorative skirt around the scrubber.

The new cleaning and abrasive scrubbers of the present invention can be utilized for a great many different applications. They can be used, for example, for cleaning and scrubbing the various parts of the body, for the cleaning and scrubbing of various instruments, pots and pans, cleaning of fruits and vegetables, and for various other applications which require a strong but flexible cleaning or abrasive instrument.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is therefore considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. An improved exteriorally hand held cleaning and abrasive scrubber which is capable of providing both a cleaning and an abrasive action, comprising an instrument made up of a hollow cone shaped cleaning section joined at its apex to the apex of a hollow cone shaped abrasive section, said cleaning section being made up of numerous layers of netting mesh prepared from a strong, flexible and durable polymer, said abrasive section being covered by a layer of said netting mesh and containing a plurality of coils of an abrasive solid.

2. An exteriorally hand held cleaning and abrasive scrubber which is capable of providing both a cleaning and an abrasive action, comprising an instrument made up of a hollow cone shaped cleaning section joined at its apex to the apex of a hollow substantially cone shaped abrasive section, said cleaning section comprising a hollow cone shaped soft bun, the outer walls of which are made up of a plurality of plys of an extruded tubular netting mesh prepared form special polymeric material, said plys of tubular mesh being concentrically folded upon itself numerous times to form the said walls of the soft bun, the end of said plys of tubular mesh being extended through the open center of the hollow bun to act as a center core to receive the abrasive section, said abrasive section comprising numerous coils of an abrasive solid coiled around the center core to form a hollow abrasive bun, the said center core being extended outwardly and around the abrasive solid and toward the cleaning section and being tightly and securely attached to the outer bottom portion of the cleaning section so as to form the cone shapes of the cleaning and abrasive sections and to secure the abrasive section to the bottom portion of the cleaning section, the special polymeric material used in making the tubular netting mesh comprising a strong, flexible polymer of the group consisting of addition polymers of olefinic monomers, and polyamides of polycarboxylic acids and polyamides.

3. A cleaning and abrasive scrubber as defined in claim 2 wherein the extruded tubular netting mesh is prepared from polyethylene.

4. A cleaning and abrasive scrubber as defined in claim 2 wherein the extruded tubular netting mesh is prepared from polypropylene.

5. A cleaning and abrasive scrubber as defined in claim 2 wherein the extruded tubular netting mesh is prepared from a polyamide.

6. A cleaning and abrasive scrubber as defined in claim 2 wherein the number of plys of extruded netting mesh being concentrically folded upon itself varies from 2 to 20.

7. A cleaning and abrasive scrubber as defined in claim 2 wherein the plys of extruded netting mesh are concentrically folded upon itself from 2 to 20 times.

8. A cleaning and abrasive scrubber as defined in claim 2 wherein the extruded netting mesh has a mesh size varying from ¼ to ¾ inch.

9. A cleaning and abrasive scrubber as in claim 2 wherein the filaments in the extruded netting mesh have been bonded together about every ¼ to 1 inches.

10. A cleaning and abrasive scrubber as defined in claim 2 wherein the open mesh abrasive solid contained in the abrasive section comprises coils of metal shaving.

11. A cleaning and abrasive scrubber as defined in claim 2 wherein the open mesh abrasive solid contained in the abrasive section comprises coils of brass, steel and copper shavings.

12. A cleaning and abrasive scrubber as defined in claim 2 wherein the open mesh abrasive solid contained in the abrasive section comprises 20 to 50 coils of metal shavings having a thickness of between 1 and 2 mils.

13. A cleaning and abrasive scrubber as defined in claim 2 wherein the center core is securely attached around the bottom portion of the cleaning section by means of a nylon band.

14. A cleaning and abrasive scrubber as defined in claim 2 wherein the center core is extended beyond the point where it is securely attached to the cleaning sec-

tion so as to form a decorative skirt around the cleaning section of the scrubber.

15. A cleaning and abrasive scrubber as defined in claim **2** wherein the extruded tubular netting mesh is colored.

16. A process for preparing a cleaning and abrasive scrubber which comprises forming a cleaning section by providing a predetermined length of tubular netting mesh formed of a material of the group consisting of addition polymers of olefinic monomers, and polyamides of polycarboxylic acids and polyamides, said tubular netting mesh having a tubular cross section and two open ends, drawing one end of the tubular netting mesh back over the center of the tubular netting mesh to form a multiple ply tubular netting mesh, then concentrically folding the multiple ply mesh upon itself a plurality of times so as to form a soft cylindrical bun comprising the cleaning section, a portion of the tubular netting mesh extending through the cylindrical cleaning section as a center core a plurality of times, then drawing the center core outwardly and around a coiled abrasive solid and toward the cleaning section, said center core being tightly secured to the mid to bottom portion of the cleaning section.

17. A process as in claim **16** wherein the extruded tubular netting mesh is prepared from polyethylene.

18. A process as in claim **16** wherein the number of plys of extruded netting mesh being concentrically folded upon itself varies from 2 to 20 times.

19. A process as in claim **16** wherein the plys of extruded netting mesh are concentrically folded upon itself from 2 to 20 times.

20. A process as in claim **16** wherein the abrasive solid in the abrasive section comprises 20 to 50 coils of metal shavings.

* * * * *

US005144744A

United States Patent [19]

Campagnoli

[11] Patent Number: 5,144,744

[45] Date of Patent: Sep. 8, 1992

[54] MANUFACTURING METHOD OF A DIAMOND-MESH POLYETHYLENE NETTING SPONGE

[76] Inventor: Antonio Campagnoli, Via Sidoli 39, Piacenza, Italy

[21] Appl. No.: 785,875

[22] Filed: Nov. 1, 1991

Related U.S. Application Data

[62] Division of Ser. No. 413,277, Sep. 27, 1989, abandoned.

[30] Foreign Application Priority Data

Apr. 3, 1989 [IT] Italy 44804 A/89

[51] Int. Cl.[5] B23P 11/02

[52] U.S. Cl. 29/446; 29/452; 29/235; 100/2; 100/8

[58] Field of Search ..... 29/446, 450, 452, 235; 428/4, 135, 137, 36.1, 172, 223, 516, 913; 15/244.4, 244.1, 209 R, 208, 225, 226; 100/2, 8

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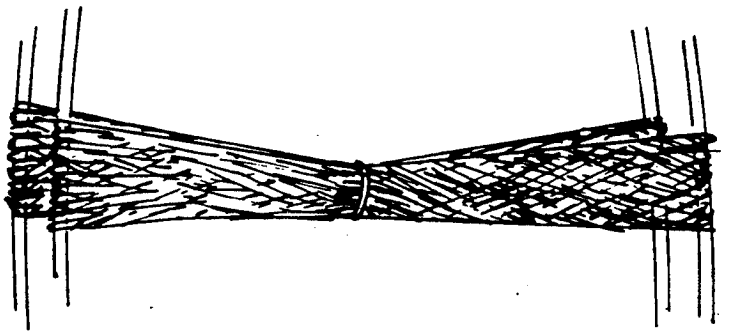
Primary Examiner—Timothy V. Eley

Attorney, Agent, or Firm—Notaro & Michalos

[57] ABSTRACT

A diamond-mesh polyethylene sponge is obtained from a number of netting tubes stretched over supports, joined and bound together at the center and then released from the supports.

6 Claims, 2 Drawing Sheets



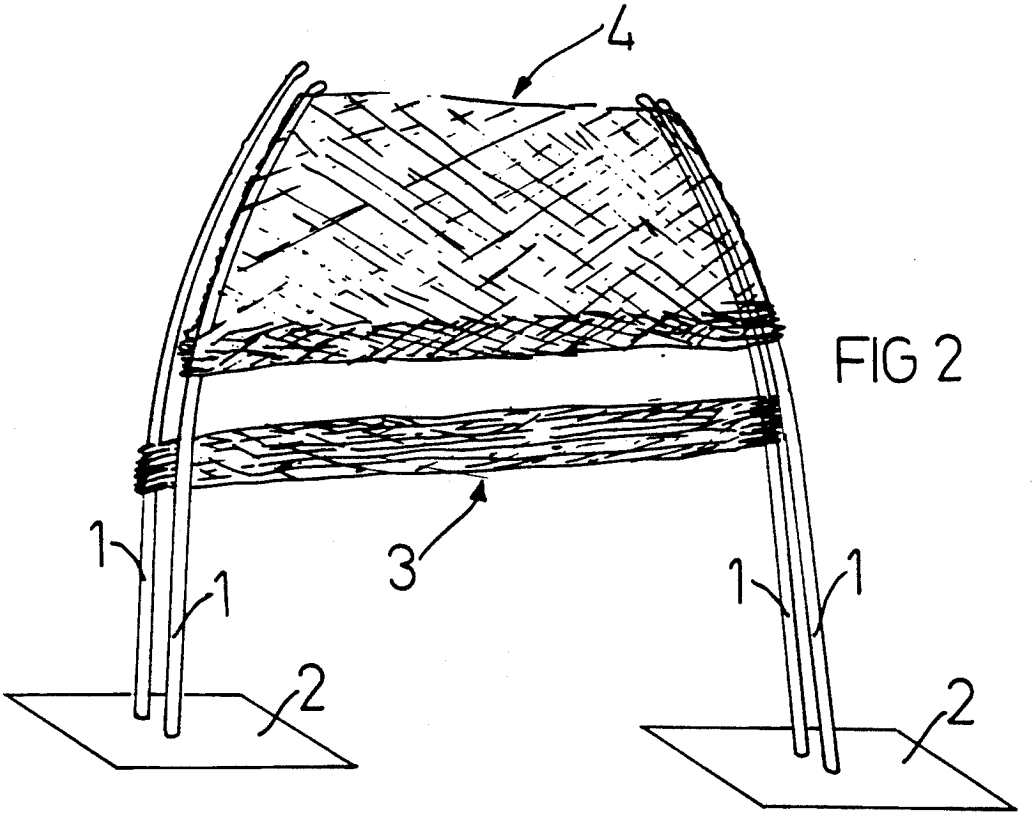


FIG 2

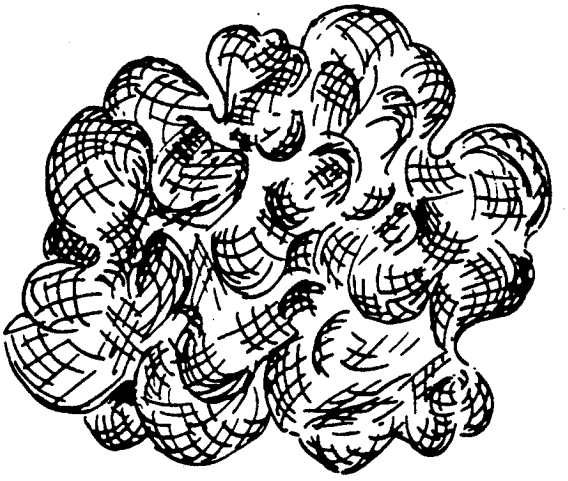
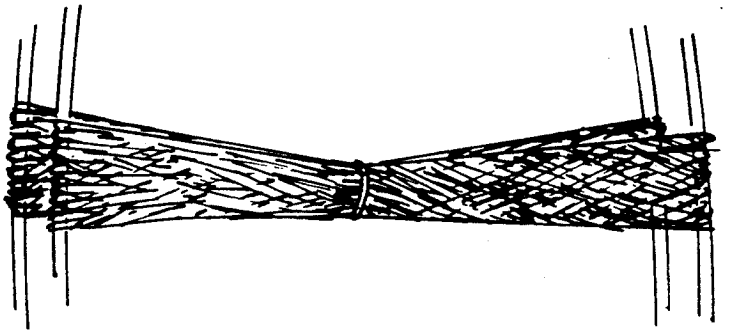


FIG 1

FIG 3



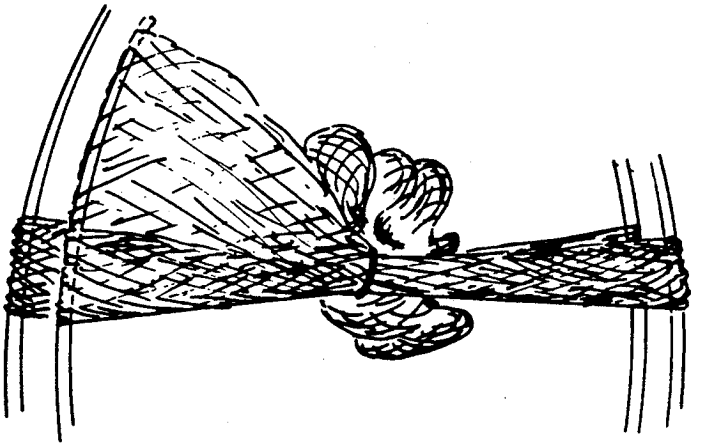


FIG 4

MANUFACTURING METHOD OF A DIAMOND-MESH POLYETHYLENE NETTING SPONGE

This application is a division, of application Ser. No. 413,277, filed Sep. 27, 1989, now abandoned.

FIELD AND BACKGROUND OF THE INVENTION

This invention relates to a polyethylene netting sponge. In particular, the sponge is made of diamond-mesh extruded polyethylene netting of the sort used to make fruit and vegetable bags.

The invention also relates to the method of manufacturing the said sponge.

Synthetic sponges are known which are made from a variety of materials, but all with semi-open cells, ie. sponges whose cells present a continuous wall.

These known sponges, whose absorption power depends on the cell size, present a number of drawbacks because, due to the cell structure they are difficult to clean thoroughly.

They need to be rinsed many times, and traces of deposits still remain on the cell walls. Known sponges are therefore difficult to dry and are unhygienic.

SUMMARY OF THE INVENTION

This invention proposes a sponge, specifically a bath sponge, which eliminates these drawbacks.

The sponge is made of diamond-mesh polyethylene netting; due to the characteristics of the material from which it is made it remains perfectly elastic, is very easy to clean and dries rapidly.

This netting is already known, but is used in other fields for totally different purposes from that covered by this invention. The sponge in accordance with the invention is made from netting tubes which are stretched over supports and bound together at the center.

BRIEF DESCRIPTION OF THE DRAWINGS

This invention will be described in detail, by way of example but not of limitation, by reference to the annexed figures in which:

FIG. **1** illustrates a sponge in accordance with the invention

FIG. **2** to **4** illustrates the various stages of manufacture of the sponge.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The sponge in accordance with the invention is made from a number of diamond-mesh polyethylene netting tubes which are stretched over a pair of supports designed to keep them taut.

FIG. **2** shows these supports **1** secured to a pair of bases **2**. The supports curve inwards at the top so that they come close together and the tubes can be stretched over them more easily.

FIG. **2** shows a netting tube **4** totally stretched over the supports Two or more tubes are stretched over the supports, then bound together at the center with a plastic strip or other known system.

This stage is shown in FIG. **3**.

When the tubes have been tied together, the ends are removed from supports **1** (FIG. **4**) to obtain the sponge as shown in FIG. **1**.

As shown in FIGS. **2** and **3**, each of the tubes of polyethylene netting are pre-stretched in a direction which is transverse to the axis of the tubes (the axis of the tubes would be vertical in FIGS. **2** and **3**) until they are in the condition of FIG. **3** and thereafter all of the tubes are connected to each other by a plastic strip which is wrapped around all of the tubes near the axis of the tubes.

The elasticity of polyethylene means that the sponge always maintains its original volume.

Due to the characteristics of the netting from which the sponge is made, it is very easy to clean. Short rinsing is sufficient to eliminate all trace of dirt, and the sponge then dries rapidly.

An expert in the field could devise numerous modifications and variations, all of which should be deemed to fall within the ambit of this invention.

I claim:

1. A method of manufacturing a bath sponge, comprising:

stretching a plurality of tubes made of diamond-mesh resilient synthetic netting, in a direction transverse to a longitudinal axis of the tubes;

binding all of the stretched tubes together near a common center of all of the stretched tubes; and

releasing all of the tubes from their stretched condition, whereby the tubes through their resiliency rebound into a rounded sponge shape around the binding of the tubes.

2. A method according to claim **1** including stretching each tube between a pair of supports, each tube being gathered on its respective pair of supports before all of the tubes are bound to each other.

3. A method according to claim **2** including binding all of the tubes to each other using a plastic strip.

4. A method according to claim **3** wherein each tube of netting is made of diamond-mesh polyethylene.

5. A method according to claim **4** wherein each pair of supports comprises a pair of elongated supports each having one end connected at a fixed location and an opposite free end, whereby the opposite free ends of each pair of supports can be bent toward each other for receiving a tube of netting, the tube of netting being gathered toward the fixed ends of each support pair, for stretching each tube of netting between each pair of supports.

6. A method according to claim **1** wherein each pair of supports comprises a pair of elongated pole supports each having one end connected at a fixed location and an opposite free end, whereby the opposite free ends of each pair of supports can be bent toward each other for receiving a tube of netting, the tube of netting being gathered toward the fixed ends of each support pair, for stretching each tube of netting between each pair of supports.

* * * * *

US005465452A

United States Patent [19]

Girardot et al.

[11] Patent Number: 5,465,452

[45] Date of Patent: Nov. 14, 1995

[54] **IMPLEMENT FOR PERSONAL CLEANSING MADE FROM EXTRUDED PLASTIC SCRIM**

[75] Inventors: **Richard M. Girardot; Eric J. Grosgogeat; Charles G. Yeazell; Richard G. Bausch**, all of Cincinnati, Ohio

[73] Assignee: **The Procter & Gamble Company**, Cincinnati, Ohio

[21] Appl. No.: **221,428**

[22] Filed: **Mar. 31, 1994**

[51] **Int. Cl.**[6] **A47L 13/07**; A46D 3/00

[52] **U.S. Cl.** **15/210.1**; 15/209.1; 15/229.11; 300/21

[58] **Field of Search** 15/209.1, 210.1, 15/229.11, 229.12, 208, 223, 225, 222; 29/419.1; 300/21

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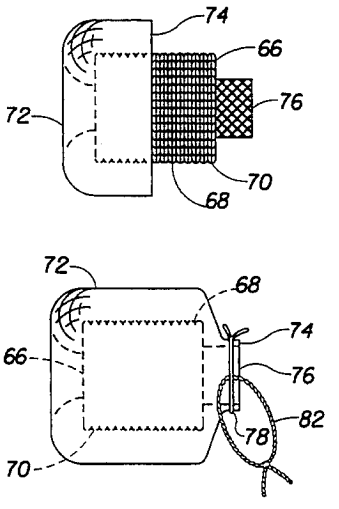
Primary Examiner—Gary K. Graham

Attorney, Agent, or Firm—Ronald W. Kock; Michael E. Hilton

[57] **ABSTRACT**

An extruded scrim having a diamond-mesh pattern is used to construct a personal cleansing implement. The diamond-mesh material is produced from a hydrophobic flexible polymer. The implement comprises a piece of tubular scrim having a longitudinal axis. The tubular scrim is stretched transversely to the longitudinal axis and is gathered parallel to the longitudinal axis to form circumferential pleats. In one embodiment the stretched and gathered tubular scrim is heat set in its expanded and pleated condition. A second piece of tubular scrim is placed inside the pleated and expanded scrim tubing. One end of the second piece is inverted over the outside of the pleats and connected to the other end to envelop the pleated and expanded scrim tubing. In another embodiment the pleats are not heat set and remain resilient. This embodiment has a means for confining the circumferential pleats from axial expansion. A band of material is looped through the scrim tubing and around its outer surface. Pleats are then evenly distributed around the loop to form a toroidal shaped implement. The personal cleansing implement of the present invention has a high open area, without a dense center core to inhibit rinsing and drying.

7 Claims, 3 Drawing Sheets



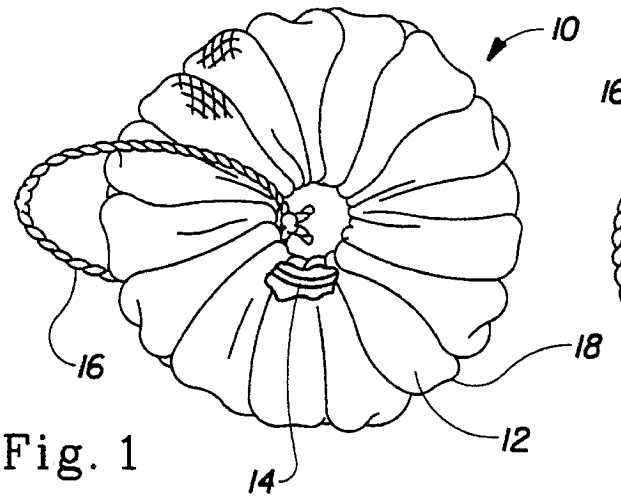


Fig. 1

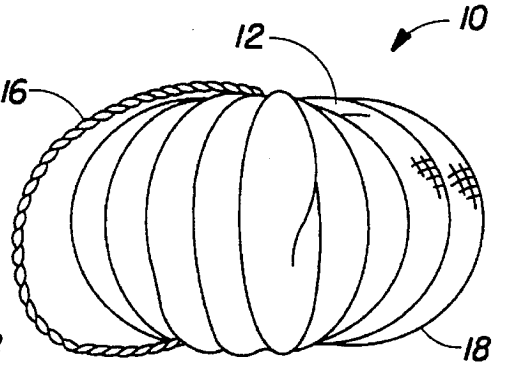


Fig. 2

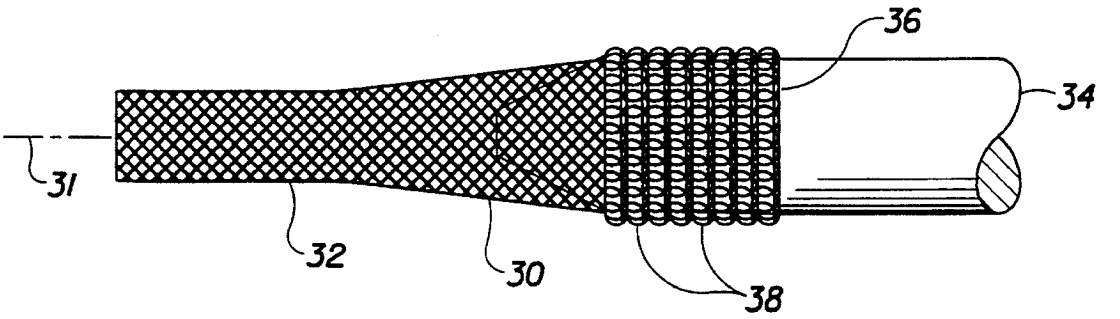


Fig. 3

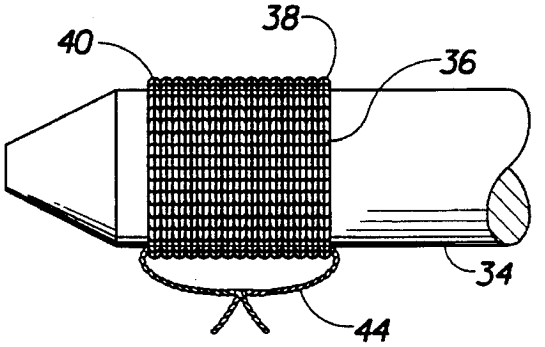


Fig. 4

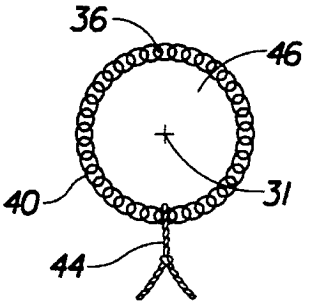


Fig. 5

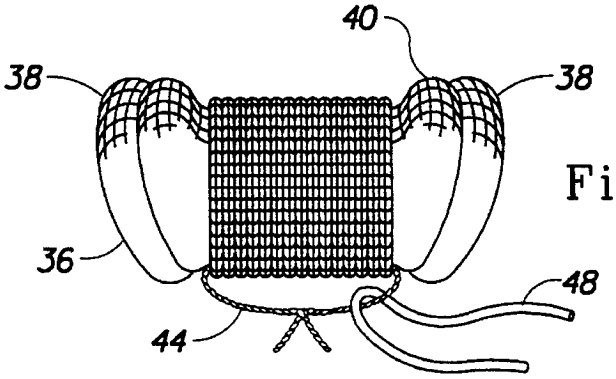


Fig. 6

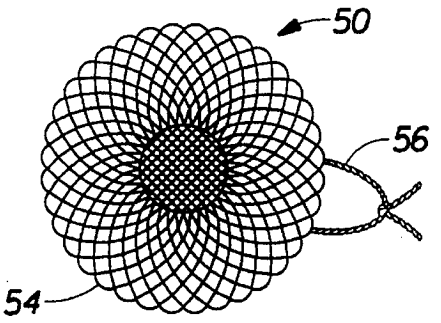


Fig. 7

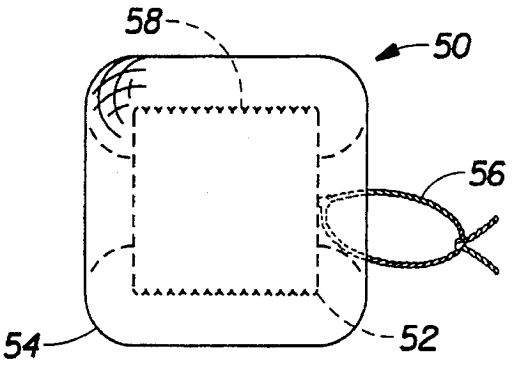


Fig. 8

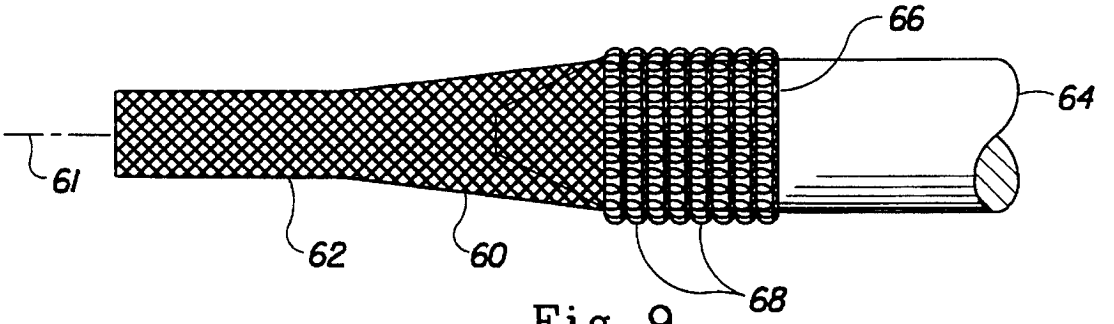


Fig. 9

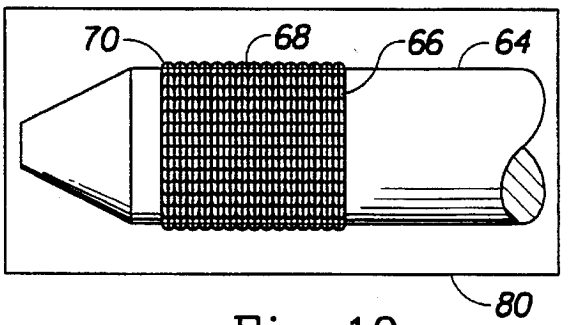


Fig. 10

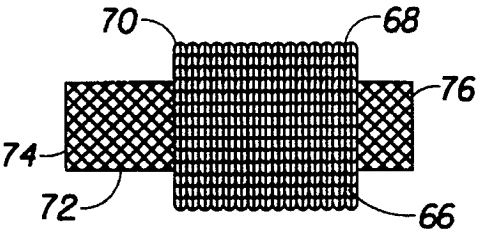


Fig. 11

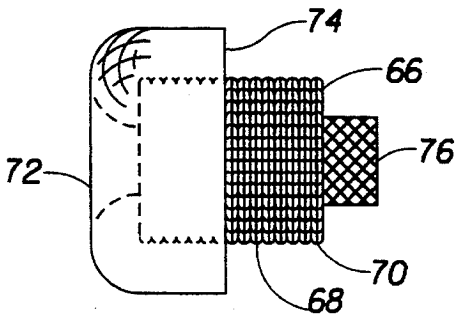


Fig. 12

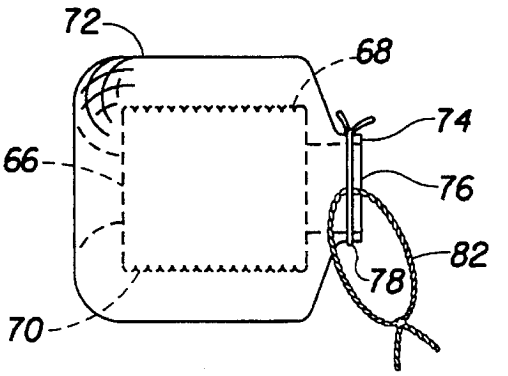


Fig. 13

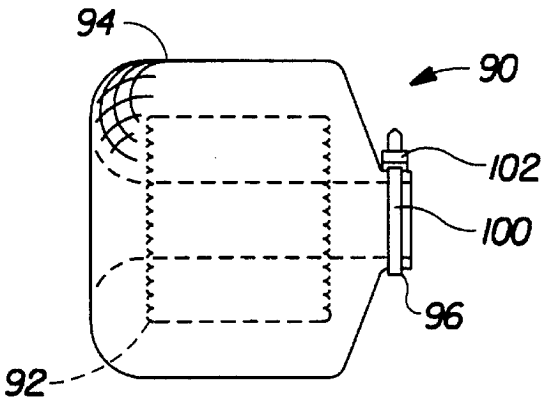


Fig. 14

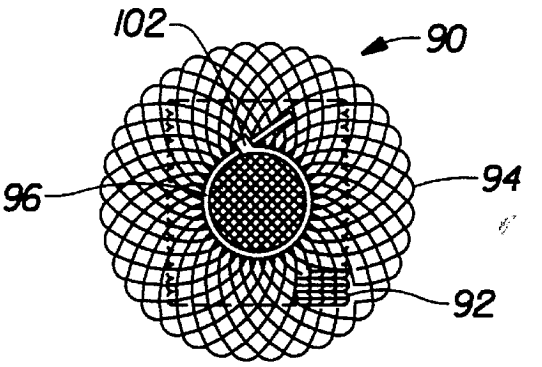


Fig. 15

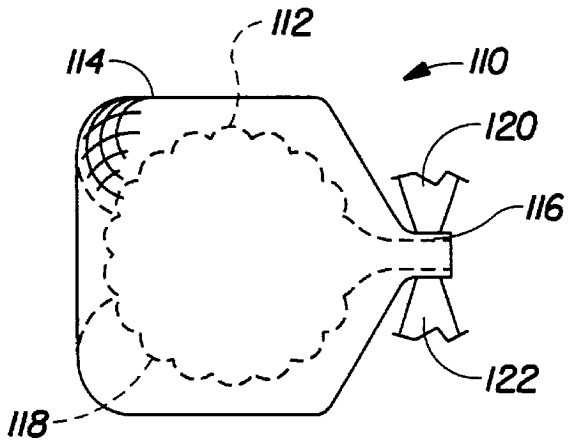


Fig. 16

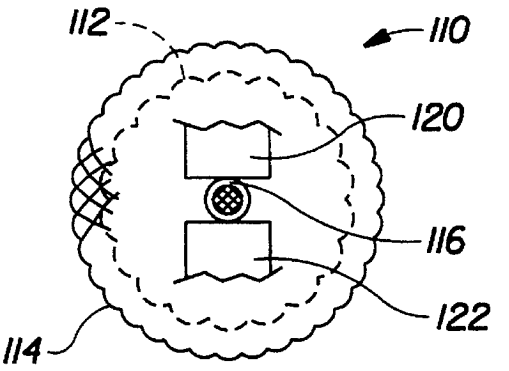


Fig. 17

IMPLEMENT FOR PERSONAL CLEANSING MADE FROM EXTRUDED PLASTIC SCRIM

FIELD OF THE INVENTION

The present invention relates to hand held implements used for personal cleansing, and more particularly to such implements made from hydrophobic diamond-mesh polymers.

BACKGROUND OF THE INVENTION

A variety of cleansing implements have been used to remove dirt and dead skin from the user's body during bathing or showering. Traditionally, hand held terry washcloths and natural and synthetic sponges have been used. Each of these has one or more significant deficiencies. For example, a sponge has pores which make it difficult to remove dirt from the implement once the dirt is transferred from the body. A washcloth often impedes lathering even though lathering is a primary function of a cleansing implement. Neither sponges nor washcloths can be dried quickly because they become water-logged. As a result they develop unpleasant odors and become a place for breeding bacteria, mold, etc.

More recently, ball-like structures made of polymer netting have been found in the prior art. An example is disclosed in U.S. Pat. No. 5,144,744 to Campagnoli, issued Sep. 8, 1992. This implement is made of diamond-mesh polyethylene. Diamond-mesh polyethylene is an extruded scrim material which is commonly found covering vegetables, meat, and poultry. The implement of Campagnoli is made by stretching multiple tubular pieces of diamond-mesh scrim transversely to their tubular axes and placing each piece over separate support posts. The supported pieces, held in a stretched condition, are arranged either parallel to or at different angles to each other. By tying together the stretched pieces at their centers, and then releasing the pieces from their support posts, each piece springs back toward the tied center to generate a ball-like shape. Commercially available implements of this type are sold by The Body Shop of London, England; and by Bilange of New York, N.Y.

Prior art structures similar to Campagnoli's have the stretched pieces of gathered diamond-mesh scrim cinched at their centers to produce hard dense cores, which hinder rinsing and drying. Campagnoli's structure is therefore difficult to rinse and dry for sanitary reuse.

SUMMARY OF THE INVENTION

In constructing the personal cleansing implement of the present invention, an extruded scrim having a diamond-mesh pattern is used. The diamond-mesh material is typically produced in tubular form from a hydrophobic flexible polymer.

In one preferred embodiment of the present invention a personal cleansing implement comprises a first piece of tubular scrim having a longitudinal axis, the first piece of tubular scrim having been stretched transversely to the longitudinal axis and gathered parallel to the longitudinal axis to form circumferential pleats. The first piece of tubular scrim has a center opening and an outer surface. A means for confining the resilient circumferential pleats from axial expansion passes through the center opening and around the outer surface of the first piece of tubular scrim. The confining means has a first end and a second end that are

connected together. The personal cleansing implement has a high open area without a dense center core to inhibit rinsing and drying. It may also have hanging means connected to the means for confining the circumferential pleats. In this embodiment the confining means comprises a band of hydrophobic material located in a plane substantially parallel to the longitudinal axis of the first piece of tubular scrim. The first and second ends of the band are connected to form a loop. The circumferential pleats are distributed substantially evenly around the loop. The result is an implement which is soft, yet resilient, so that it may be conveniently gripped and rubbed against dry skin without abrasion. Because it is made of hydrophobic material and it has a high open area throughout, it may be thoroughly rinsed and quickly dried for reuse.

In another preferred embodiment of the present invention, the personal cleansing implement has a first piece of stretched and gathered tubular scrim as in the first embodiment, except that the pleats are heat set rather than resilient. Instead of a band of material confining the pleats, a second piece of tubular scrim passes through the center opening in the first piece. The first end of the second piece of tubular scrim is stretched around the pleats until it is fully inverted over the outer surface of the first piece. The first end of the second piece of tubular scrim is then cinched to the second end of the second piece in order to envelop the first piece of tubular scrim. The personal cleansing implement has a high open area without a dense center core to inhibit rinsing and drying. It may also have hanging means connected to the means for confining the circumferential pleats.

In still another preferred embodiment of the present invention, the personal cleansing implement is constructed by a method comprising the steps of cutting a piece of tubular scrim from a source thereof. The piece of tubular scrim has an outer surface. Transversely stretching the piece of tubular scrim over a mandrel is another step. Additional steps include gathering the piece of tubular scrim on the mandrel to form circumferential pleats, and placing a cinching member between the piece of tubular scrim and the mandrel and around the outer surface of the piece of tubular scrim. Further steps include cinching the pleats together loosely, removing the piece of tubular scrim from the mandrel, and distributing the pleats substantially evenly around the cinching member.

In yet another preferred embodiment of the present invention, the personal cleansing implement is constructed by a method comprising the step of cutting first and second pieces of tubular scrim from a source thereof. The first piece has a center opening and an outer surface. Another step comprises stretching the first piece of tubular scrim transversely by placing it onto a mandrel. Additional steps include gathering the first piece of tubular scrim on the mandrel to form circumferential pleats in the first piece of tubular scrim, and exposing the first piece of tubular scrim and the mandrel to sufficient heat to heat set the first piece of tubular scrim in a stretched and pleated condition. Further steps include removing the mandrel from the first piece of tubular scrim to expose the center opening therein, and placing the second piece of tubular scrim through the center opening in the first piece of tubular scrim. The second piece has a first end and a second end. Finally, the method includes steps of transversely stretching the first end of the second piece of tubular scrim larger than the pleats of the first piece of tubular scrim, inverting the first end of the second piece over the circumferential pleats of the first piece of tubular scrim, and cinching the first end of the second piece to the second end of the second piece with a cinching member in

order to enclose the first piece of pleated tubular scrim therein.

In this and other embodiments there may also be a further step of tying a tether through the cinching member so that the personal cleansing implement may be hung from a support for drying.

In still another preferred embodiment of the present invention, the personal cleansing implement comprises diamond-mesh scrim expanded and heat set to form a permanently expanded scrim having a high open area. The expanded scrim is gathered in such a way that a three-dimensional structure is formed. This embodiment also comprises a means for containing the three-dimensional structure. The containing means is cinched closed by a cinching means. The cinching means cinches a minimum volume of the containing means so that the personal cleansing implement has a maximum of high open area throughout. The containing means comprises a piece of tubular scrim having a first end and a second end. The first end is stretched around the three-dimensional structure and inverted toward the second end and cinched to the second end.

Alternatives for the way in which the three-dimensional structure is gathered include: uniformly folding the permanently expanded scrim into a stack of layers to form a batt, forming a piece of tubing and gathering it to form circumferential pleats before the diamond-mesh scrim is heat set, and randomly crumpling the expanded diamond-mesh scrim to form a ball-like structure.

Alternatives for cinching the containing means closed include: a band of hydrophobic material having an interlocking surface and a means for engaging the interlocking surface, so that when the band is pulled tightly around material to be cinched, the means for engaging the interlocking surface engages the interlocking surface and prevents the band from loosening; and thermobonding.

BRIEF DESCRIPTION OF THE DRAWINGS

While the specification concludes with claims which particularly point out and distinctly claim the present invention, it is believed that the present invention will be better understood from the following description of preferred embodiments, taken in conjunction with the accompanying drawings, in which like reference numerals identify identical elements and wherein:

FIG. **1** is a top plan view of a preferred embodiment of the implement for personal cleansing of the present invention, disclosing a diamond-mesh tubular scrim member, which is pleated about a cinching means, and has a tether connected thereto;

FIG. **2** is a side elevation view thereof, showing the implement to have a toroidal shape;

FIG. **3** is a front elevation view of another preferred embodiment of the present invention, disclosing a piece of diamond-mesh tubular scrim partially pulled onto a cylindrical mandrel, the scrim being stretched transversely and gathered to form pleats;

FIG. **4** is a front elevation view thereof showing the entire piece of tubular scrim gathered on the mandrel and a loop of material tied through the tubing and around the gathered pleats;

FIG. **5** is a right side elevation view thereof showing the mandrel removed from the gathered tubular scrim;

FIG. **6** is a front elevation view thereof showing the pleats of the tubular scrim member being distributed about the loop of material;

FIG. **7** is a top plan view of another preferred embodiment of the implement for personal cleansing of the present invention, disclosing a first diamond-mesh tubular scrim member, which is pleated and enveloped by a second diamond-mesh tubular scrim member;

FIG. **8** is a side elevation view thereof, showing the implement to have a flattened ball-like shape, with a tether connected there to;

FIG. **9** is a front elevation view of another preferred embodiment of the present invention, disclosing a first piece of diamond-mesh tubular scrim partially pulled onto a cylindrical mandrel, the scrim being stretched transversely and gathered to form pleats;

FIG. **10** is a front elevation view thereof, showing the entire first piece of tubular scrim gathered on the mandrel and placed in an oven, where it is heat set;

FIG. **11** is a front elevation view thereof, showing the heat set first piece of tubular scrim removed from the oven and the mandrel removed from tubular scrim, and a second unstretched piece of tubular scrim placed inside the heat set first piece of tubular scrim;

FIG. **12** is a front elevation view thereof, showing the second piece of tubular scrim being stretched and inverted over the pleats of the first piece of tubular scrim;

FIG. **13** is a front elevation view thereof, showing the second piece of tubular scrim fully enveloping the first piece and the two ends of the second piece being cinched together along with a tether cord by a piece of twine;

FIG. **14** is a front elevation view of another preferred embodiment of the present invention, disclosing a personal cleansing implement similar to that of FIG. **7**, except that the first piece of scrim is folded rather than pleated, and the ends of the second piece of tubular scrim are cinched by a band of material having an interlocking surface and a means for engaging the interlocking surface;

FIG. **15** is a right side elevation view thereof, showing the second piece of tubular scrim passing through folds of the first piece of scrim, as well as around the three-dimensional folded structure;

FIG. **16** is a front elevation view of another preferred embodiment of the present invention, disclosing an implement similar to that of FIG. **7**, except that the first piece of scrim is randomly crumpled into a ball rather than pleated, and the ends of the second piece of tubular scrim are cinched by a pair of thermobonding dies; and

FIG. **17** is a right side elevation view thereof, showing the second piece of tubular scrim passing through the randomly crumpled ball of scrim, as well as around the three-dimensional crumpled structure.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, and more particularly to FIGS. **1** and **2**, there is shown a first preferred embodiment of the present invention, which provides a personal cleansing implement, which is generally indicated as **10**. The implement **10** has three components: a piece of tubular scrim **12**, having a diamond-mesh pattern; a band of material forming a loop **14**; and a tether **16**. Commercial diamond-mesh scrim **12** is extruded, chilled and rolled onto spools for storage, shipping, and handling. Alternatively, the diamond-mesh scrim could be formed and fed directly to an imple-

ment assembly process. Diamond-mesh tubular scrim stock is commercially available from NSW Corporation of Roanoke, Va.

In a particularly preferred embodiment diamond-mesh scrim tubing has a specification number SPR 387, and is described as polyethylene facial mesh having a density of 3.0 grams per foot. When personal cleansing implements are made, such material is cut to desired lengths for assembly. In the present invention a cut length of about 9 feet (274 cm) of hydrophobic, diamond-mesh tubular scrim is transversely stretched and gathered on a mandrel to form circumferential pleats **18**. While gathered on the mandrel, a band of material is placed between the mandrel and pleats **18** and then tied around the outer surface of the pleated tubular scrim to form a closed loop **14**. Closed loop **14** is about one inch (2.5 cm) in diameter. In an automated assembly system, the band of material could be placed in a groove in the mandrel prior to stretching the tubular scrim over the mandrel.

When the piece of scrim **12** and the loop **14** are removed from the mandrel, the pleats are manually distributed as evenly as possible around the loop **14** as shown in FIG. **1**. The band of material that forms loop **14** is preferably made of a hydrophobic material such as nylon twine. The closed loop **14** is formed by tying a knot in the twine. Alternatively, the twine could be made of cotton, which is not hydrophobic. Since the volume of such twine is so small, it will dry quickly even though it is not hydrophobic. Tether **16** is also preferably hydrophobic material, such as braided rope made of polypropylene. The preferred rope is commercially available from Maxi-Cord of Chicago, Ill. It has a specification number W-01, and it is 3.5 mm in diameter. Tether **16** is tied through loop **14** and forms a larger closed loop for the purpose of hanging the implement **10** after use so that it will air dry quickly. Alternatively, loop **14** and tether **16** could be the same piece of hydrophobic material tied into a figure-8, in order to serve as both the means for confining the pleats and as the tether.

Because implement **10** has a high open area, implement **10** helps to generate a significant amount of lather when used with a liquid, gel, or solid form of skin cleanser. The implement is held in one hand. Cleanser is preferably added to the implement rather than to the skin. The cleanser is then rubbed against the skin by the implement in the presence of water, lifting dirt and exfoliated skin into the implement. It is believed that lathering enhances the removal of dirt and exfoliated skin from the surface of the body. Implement **10** enables substantially more lather and better consistency lather to be developed than is generally possible with a washcloth or sponge. Once bathing or showering are completed, implement **10** may be thoroughly rinsed and quickly dried, thereby avoiding the slow drying of washclothes or sponges. The construction of implement **10** has pleats loosely confined within loop **14**. It has no hard, dense core, in contrast to implements similar to Campagnoli's, where a significant volume of the device is cinched together at the center of the implement. The structure of implement **10** is therefore believed to be more sanitary than prior art personal cleansing implements.

FIGS. **3–6** show a preferred method for constructing implement **10**. FIG. **3** shows a piece of diamond-mesh polyethylene scrim tubing **30**, which initially has an unstretched condition **32** of about 1.0 inch (2.5 cm) diameter and a longitudinal axis **31**. Tubing **30** is pulled over the tapered nose of a cylindrical mandrel **34**. Mandrel **34** has a diameter of about 2.5 inch (6.3 cm), in order to elastically stretch the tubing transverse to longitudinal axis **31**. The result of elastic stretching is that diamond-mesh tubing **30** is transformed to transversely stretched scrim tubing **36**. Scrim tubing **36** is gathered along longitudinal axis **31** to form circumferential pleats **38**.

FIG. **4** shows mandrel **34** and stretched scrim tubing **36** with pleats **38**. Pleats **38** have outer surface **40**. Twine placed between mandrel **34** and stretched scrim tubing **36** is tied around outer surface **40** of pleats **38** to form a closed loop **44**. When mandrel **34** is removed, as shown in FIG. **5**, stretched scrim tubing **36** contracts somewhat because it has not been heat set in the stretched condition. However, mechanical entanglement of adjacent pleats **38** is believed to maintain some transverse stretch in scrim tubing **36**. Mandrel **34** functions primarily as a tool for gathering and supporting tubular scrim **36** while loop **44** is formed. It is possible to construct implement **10**, without stretching tubular scrim **30** over a mandrel. Instead, one's fingers may be used as the mandrel.

Once mandrel **34** is removed, a center opening **46** is visible in scrim tubing **36**, centered around longitudinal axis **3 1**. FIG. **6** shows that pleats **38** of scrim tubing **36** are distributed around loop **44**. A piece of rope **48** may be passed through loop **44** before pleats are fully distributed around loop **44** so that rope **48** may be tied to form a tether for supporting implement **10**. Loop **44** in FIG. **6** is the same as loop **14** in FIG. **1**.

FIGS. **7** and **8** show another preferred embodiment of the present invention which provides a personal cleansing implement, which is generally indicated as **50**. The implement **50** has four components: a first piece of tubular scrim **52**, having a diamond-mesh pattern; a second piece of tubular scrim **54**, having a diamond-mesh pattern; a cinching means not visible in FIGS. **7** and **8**, but shown in FIG. **13**; and a tether **56**.

Commercial diamond-mesh scrim is extruded, chilled and rolled onto spools for storage, shipping, and handling. Alternatively, the diamond-mesh scrim could be formed and fed directly to an implement assembly process. When personal cleansing implements are made, such material is unwound and cut to desired lengths for assembly. In this particular embodiment of the present invention a cut length of about 11 feet (335 cm) of hydrophobic polyethylene, diamond-mesh tubular scrim **52** is transversely stretched and gathered on a mandrel to form circumferential pleats **58**. While gathered on the mandrel, tubular scrim **52** is placed in an oven to heat set the piece of tubular scrim in a pleated and expanded condition. When the first piece of scrim **52** is removed from the mandrel and the oven, it does not contract transversely or expand axially. It is instead a hollow pleated cylinder of expanded diamond-mesh scrim. In this condition first piece of scrim **52** forms a three-dimensional structure which provides the bulk of implement **50**.

The benefit of scrim expansion is that less material is needed per unit volume of implement. Less material per unit volume provides quicker drying and lower material cost. Alternatively, the diamond-mesh scrim could be stretched and heat set when formed and then provided in an expanded condition for implement assembly. However, it would not be pleated if stetched and then wound onto spools for shipping and handling. Pleating, which is preferably heat set into the scrim tubing, provides increased loft and resilience to the expanded scrim.

Second piece of tubular scrim **54**, also preferably cut from the same source as first piece **52**, to a length of about **14** inches (36 cm), is inserted inside the expanded first piece of tubular scrim. Second piece of scrim **54** is not expanded and heat set. It is instead soft and resilient. Similar to loop **14** of

implement **10**, second piece of scrim **54** serves as a means for confining the pleats of first piece of scrim **52**. One end of second piece **54** is stretched and inverted around pleats **58** of first piece **52** and then gathered at the opposite end of first piece **52** overlapping the other end of second piece **54**, thereby enveloping first piece **52** in a diamond-mesh scrim bag to form ball-like implement **50**. The two ends of second piece of tubular scrim **54** are cinched together as a means for confining first piece of tubular scrim **52** within the bag. Then about 5 inches (13 cm) of cinched piece of tubular scrim **54** is trimmed off the bag near the cinch point to minimize the volume of cinched material. Tether **56** is also connected to implement **50** by the same cinching means.

Alternatively, second piece of scrim **54** may be made of a different scrim material than first piece **52** in order to provide a softer outer surface to implement **50**. In a particularly preferred embodiment of implement **50**, first piece of tubular scrim **52** is made by NSW Corporation of Roanoke, Va. It has specification number PT 589-01, and is described as body mesh having a density of 2.3 grams per foot. Second piece of tubular scrim **54** is made by Masternet, Ltd., of Ontario, Canada. It has specification number BRIO W-3. Second piece **54** is just being developed. It is preferred because it has a very soft texture. In general, the softer the scrim texture, the lower the scrim strength. Therefore, two or more concentric pieces of scrim tubing may form second piece **54** in order to increase the durability of the outer surface of implement **50** when the softer textured scrim is used.

The cinching means is preferably a hydrophobic material such as nylon twine, which is wrapped tightly around both overlapping ends of piece of tubular scrim **54** and tied in a knot. Tether **56** is also preferably hydrophobic material, such as nylon rope. Tether **56** forms a closed loop for the purpose of hanging the implement **50** after use so that it will air dry quickly. Alternatively, the cinching means and tether **56** could be the same piece of hydrophobic material tied as a figure-8, in order to cinch the ends of second piece of scrim **54** as well as to serve as the tether.

Similar to implement **10**, implement **50** has a high open area. Thus, implement **50** helps to generate a significant amount of lather when used with a liquid, gel, or solid form of skin cleanser. The implement is held in one hand. Cleanser is preferably added to the implement rather than to the skin. The end of implement **50** opposite the cinched end is normally used as the body contact surface. As seen from FIG. **7**, there is a depression in the center of the body contact surface which leads to the cinch point at the opposite end of the implement. This depression ideally serves as a target for pouring cleanser into the implement. The cleanser is then rubbed against the skin by the implement in the presence of water, lifting dirt and exfoliated skin into the implement. It is believed that lathering enhances the removal of dirt and exfoliated skin from the surface of the body. Implement **50** enables substantially more lather and better consistency lather to be developed than is generally possible with a washcloth or sponge.

Once bathing or showering are completed, implement **50** may be thoroughly rinsed and quickly dried, thereby avoiding the slow drying of washclothes or sponges. The construction of implement **50** has no hard dense core, in contrast to implements similar to Campagnoli's, where a significant volume of ! the device is cinched together at the center of the implement. Instead, only two layers of the second piece of scrim **54** are cinched together. The central part of implement **50**, expanded scrim **52**, is loosely contained within the bag formed by second piece of scrim **54**. The structure of implement **50** is therefore believed to be more sanitary than prior art personal cleansing implements.

FIGS. **9–13** show a preferred method for constructing implement **50**. FIG. **9** shows a piece of diamond-mesh polyethylene scrim tubing **60**, which initially has an unstretched condition **62** of about 1.0 inch (2.5 cm) diameter and a longitudinal axis **61**. Tubing **60** is pulled over the tapered nose of a cylindrical mandrel **64**, mandrel **64** having a diameter of about 5.5 inches (14 cm), in order to elastically stretch the tubing transverse to longitudinal axis **61**. The result of elastic stretching is that diamond-mesh tubing **60** is transformed into transversely stretched scrim tubing **66**. The scrim tubing **66** is gathered along longitudinal axis **61** to form circumferential pleats **68** in stretched scrim tubing **66**.

FIG. **10** shows mandrel **64** and stretched tubing **66** with pleats **68**. Pleats **68** have outer surface **70**. Mandrel **64** and stretched, pleated tubing **66** are placed in an oven **80** for about **10** minutes at 140° F. The Mandrel is supported in oven **80** by a support not shown so that pleats **68** are not disturbed during heating. The result of heating the first piece of tubular scrim **66** to its softening temperature is that the transverse stretch is transformed into a permanent heat set condition. Also, pleats **68** are heat set to hold their form as well. After mandrel **64** is removed, as shown in FIG. **11**, a second piece of scrim tubing **72**, not subject to heat setting, is inserted into a center opening of first piece of expanded scrim tubing **66**, from which the mandrel was just removed. Second piece of diamond-mesh tubular scrim **72** has a first end **74** and a second end **76**.

FIG. **12** shows first end **74** of second piece of scrim tubing **72** being stretched and partially inverted over outer surface **70** of pleats **68**. FIG. **13** shows first end **74** fully inverted over outer surface **70** of pleats **68** and gathered to overlap second end **76** of second piece **72**. A means for cinching **78** cinches overlapping ends **74** and **76** of second piece of scrim tubing **72**. A piece of rope **82** is also preferably cinched by cinching means **78** to become a tether for supporting the resulting personal cleansing implement.

FIGS. **7** and **8** represent the assembled embodiment, whereas FIGS. **9–13** represent the steps in assembling the same embodiment. For example, FIG. **13** shows cinching means **78** before it is tightened and FIG. **8** shows the shape of the implement after the cinching means has been tightened.

FIGS. **14–17** show alternative embodiments for personal cleansing implement of the present invention. Different cinching means are also illustrated with different alternative embodiments. The cinching means shown for one embodiment may be used for another embodiment.

FIGS. **14** and **15** show another preferred embodiment of the present invention which provides a personal cleansing implement, which is generally indicated as **90**. Implement **90** has four components: a first piece of tubular scrim **92**, having a diamond-mesh pattern; a second piece of tubular scrim **94**, having a diamond-mesh pattern; a cinching means **96**; and a tether not shown, but which is cinched to implement **90** similarly to tether **56** of implement **50**. In this embodiment a cut length of about 11 feet (335 cm) of about 1 inch (2.5 cm) diameter, hydrophobic polyethylene, diamond-mesh tubular scrim **92** is transversely stretched and gathered on a mandrel to form circumferential pleats **98**. While gathered on the mandrel, tubular scrim **92** is placed in an oven to heat set the piece of tubular scrim in a pleated and expanded condition. When the first piece of scrim **92** is removed from the mandrel and the oven, it does not contract transversely or expand axially. It is instead a hollow pleated

cylinder of expanded diamond-mesh scrim. In this condition first piece of scrim **92** forms a three-dimensional structure which provides the bulk of implement **90**.

First piece of expanded scrim tubing **92** is then extended longitudinally and uniformly folded into a stack of layers. Although there is no structural reason for pleating first piece of scrim tubing **92** if it is later to be folded, less space is required on a mandrel when the tubing is gathered. A smaller mandrel can be used. A smaller mandrel permits use of a correspondingly smaller oven. Alternatively, pleats **98** could be avoided if scrim tubing **92** were received at assembly as pre-stretched and heat set material from a supplier.

Second piece of tubular scrim **94** is also preferably cut from the same source as first piece **92**, but it is not heat set. It is cut to a length of about 14 inches (36 cm), and is inserted between the centermost folds of the folded first piece of tubular scrim **92**. One end of second piece **94** is stretched and inverted around folded first piece **92** and then gathered at the opposite end of first piece **92** overlapping the other end of second piece **94**, and thereby enveloping first piece **92** in a diamond-mesh scrim bag to form ball-like implement **90**. The two ends of second piece of tubular scrim **94** are cinched together as a means for confining first piece of tubular scrim **92** within the bag. Then about 5 inches (13 cm) of cinched piece of tubular scrim **94** is trimmed off the bag near the cinch point to minimize the volume of cinched material.

The cinching means **96** is preferably a hydrophobic band of material which has an interlocking surface **100** and a means **102** for engaging the interlocking surface. When band **96** is pulled tightly around overlapping ends of second piece **94**, the means **102** for engaging the interlocking surface **100** prevents band **96** from loosening. Such bands are commonly used to bundle electrical wiring.

FIGS. **16** and **17** show another preferred embodiment of the present invention which provides a personal cleansing implement, which is generally indicated as **110**. Implement **110** has four components: a first piece of tubular scrim **112**, having a diamond-mesh pattern; a second piece of tubular scrim **114**, having a diamond-mesh pattern; a cinching means **116**; and a tether not shown, but which is similar to tether **56** of implement **50**. In this embodiment a cut length of about 11 feet (335 cm) of about 1 inch (2.5 cm) diameter, hydrophobic polyethylene, diamond-mesh tubular scrim **112** is transversely stretched and gathered on a mandrel to form circumferential pleats **118**. While gathered on the mandrel, tubular scrim **112** is placed in an oven to heat set the piece of tubular scrim in a pleated and expanded condition. When the first piece of scrim **112** is removed from the mandrel and the oven, it does not contract transversely or expand axially. It is instead a hollow pleated cylinder of expanded diamond-mesh scrim. In this condition first piece of scrim **112** forms a three-dimensional structure which provides the bulk of implement **110**.

First piece of expanded scrim tubing **112** is then extended longitudinally and randomly crumpled into a ball. Although there is no structural reason for pleating first piece of scrim tubing **112** if it is later to be crumpled, less space is required on a mandrel when the tubing is gathered. A smaller mandrel can be used. A smaller mandrel permits use of a correspondingly smaller oven. Alternatively, pleats **118** could be avoided if scrim tubing **112** were received at assembly as pre-stretched and heat set material from a supplier.

Second piece of tubular scrim **114** is also preferably cut from the same source as first piece **112**, but it is not heat set. It is cut to a length of about 14 inches (36 cm), and is inserted between randomly crumpled layers of first piece of tubular scrim **112**. One end of second piece **114** is stretched and inverted around crumpled first piece **112** and then gathered at the opposite end of first piece **112**, overlapping the other end of second piece **114**, and thereby enveloping first piece **112** in a diamond-mesh scrim bag to form ball-like implement **110**. The two ends of second piece of tubular scrim **114** are cinched together in order to confine first piece of tubular scrim **112** within the bag. Then about 5 inches (13 cm) of cinched piece of tubular scrim **114** is trimmed off the bag near the cinch point to minimize the volume of cinched material. The cinching means is preferably a thermobond, which is made by heated sealing jaws **120** and **122**. Such thermobonding is commonly known in the polymer film art.

Another means for containing the three-dimensional structures disclosed herein, which is contempleated by the present invention, is a piece of scrim tubing into which a three-dimensional structure is placed. The scrim tubing ends are cinched at both ends to envelop the three-dimensional structure. Having two cinch points is considered less attractive than having a single cinch point, from a performance standpoint, but such construction may have manufacturing advantages.

With any of the containing means disclosed herein, it may be beneficial for such means to be made from a different scrim material than that of the three-dimensional structure. The purpose would be to provide a softer feeling, skin contacting, implement surface. Alternatively, the containing scrim material could be the same as that of the three-dimensional structure, but it could be processed differently in order to provide a softer tactile sensation when rubbed against one's skin.

While particular embodiments of the present invention have been illustrated and described, it will be obvious to those skilled in the art that various changes and modifications may be made without departing from the spirit and scope of the invention, and it is intended to cover in the appended claims all such modifications that are within the scope of the invention.

What is claimed is:

1. A personal cleansing implement comprising:

a) a first piece of tubular extruded plastic scrim having a longitudinal axis, said first piece of tubular scrim being expanded transversely to said longitudinal axis and gathered parallel to said longitudinal axis, forming circumferential pleats, said first piece of tubular scrim having an elongated center opening and an outer surface; and

b) an elongated second piece of tubular scrim passing through said center opening in said first piece of tubular scrim, said second piece of tubular scrim having a first end and a second end, said first end of said second piece of tubular scrim being stretched around said pleats until said second piece of tubular scrim is fully inverted over said outer surface of said first piece of tubular scrim, said first end of said second piece of tubular scrim being cinched to said second end of said second piece of tubular scrim such that said second piece of tubular scrim envelops said first piece of tubular scrim, said second piece of tubular scrim confining said circumferential pleats from axial expansion.

2. A personal cleansing implement comprising:

a) expanded diamond-mesh scrim tubing forming a three-dimensional structure, said tubing gathered to form circumferential pleats, said three-dimensional structure having an outer surface and a center opening there-

through,

b) means for containing said three-dimensional structure, said containing means having a first end and a second end, said containing means passing through said opening in said three-dimensional structure and around said outer surface such that said containing means totally envelops said three-dimensional structure, said first end being cinched to said second end by a cinching means to close said containing means.

3. The personal cleansing implement of claim **2** wherein said containing means comprises a piece of diamond-mesh tubular scrim.

4. The personal cleansing implement of claim **2** wherein said cinching means comprises a band of hydrophobic material, said band having an interlocking surface and a means for engaging said interlocking surface so that when said band is pulled tightly around material to be cinched, said means for engaging said interlocking surface engages said interlocking surface and prevents said band from loosening.

5. The personal cleansing implement of claim **2** wherein said cinching means comprises thermobonding.

6. The personal cleansing implement of claim **2** wherein said diamond-mesh scrim, said containing means, and said cinching means are made of hydrophobic materials.

7. The personal cleansing implement of claim **2** further comprising means for hanging said personal cleansing implement, said hanging means connected to said cinching means.

* * * * *

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United States Patent [19]

Gordon et al.

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[45] Date of Patent: Jul. 22, 1997

[54] **PERSONAL CLEANSING SYSTEM COMPRISING A POLYMERIC DIAMOND MESH BATH SPONGE AND A LIQUID CLEANSER WITH MOISTURIZER**

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Related U.S. Application Data

[63] Continuation of Ser. No. 327,911, Oct. 25, 1994, abandoned, which is a continuation of Ser. No. 226,451, Apr. 21, 1994, abandoned, which is a continuation-in-part of Ser. No. 80,668, Jun. 18, 1993, abandoned.

[51] **Int. Cl.**[6] **C11D 1/02**; C11D 1/94; C11D 3/46

[52] **U.S. Cl.** **510/159**; 510/406; 510/417; 510/130; 510/155; 510/156; 510/466; 15/244.4; 15/209.1

[58] **Field of Search** 510/406, 417, 510/427, 130, 155, 156, 159, 466; 15/244.4, 209.1

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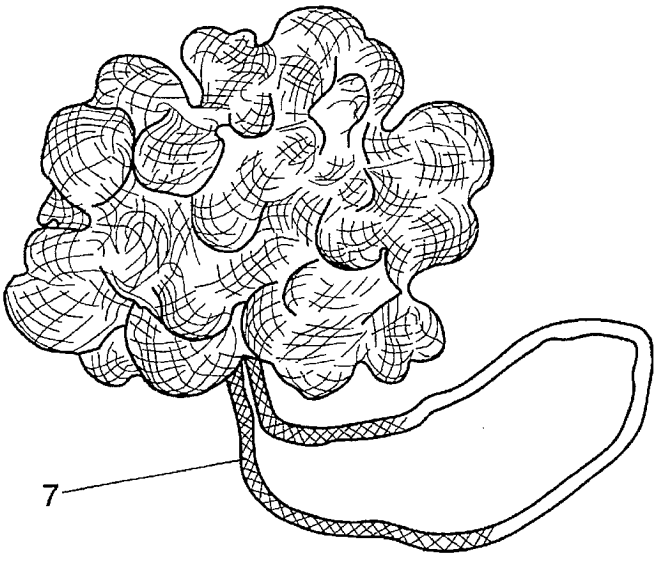
[57] **ABSTRACT**

This invention relates to a system for cleansing the skin comprising a hydrophobic diamond-mesh sponge and a liquid cleansing and moisturizing composition with excellent lather in the same washing and rinsing operation. The system provides improved lather and overall acceptability for mild liquid cleansing compositions which contain moisturizers and especially for those which would otherwise have marginal lather.

48 Claims, 1 Drawing Sheet



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5,412,830	5/1995	Girardot et al.	15/118
5,439,682	8/1995	Wivell et al.	724/401

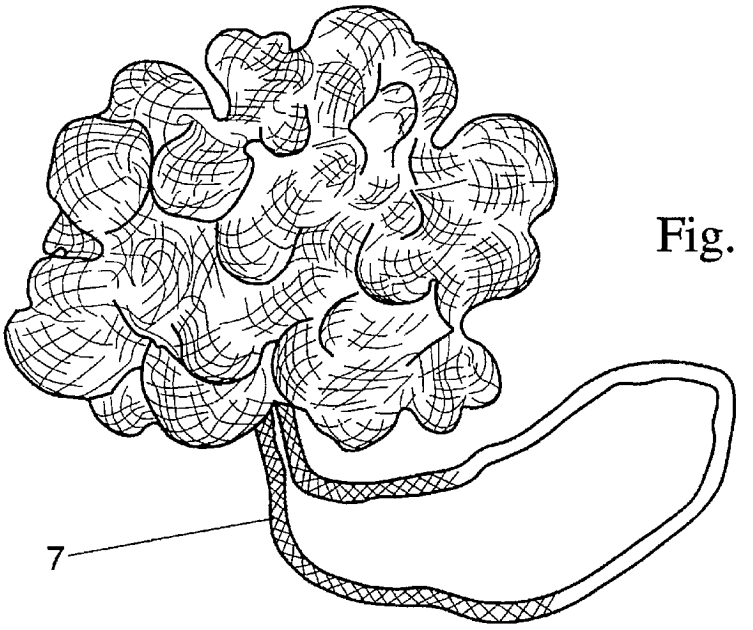

Fig. 1

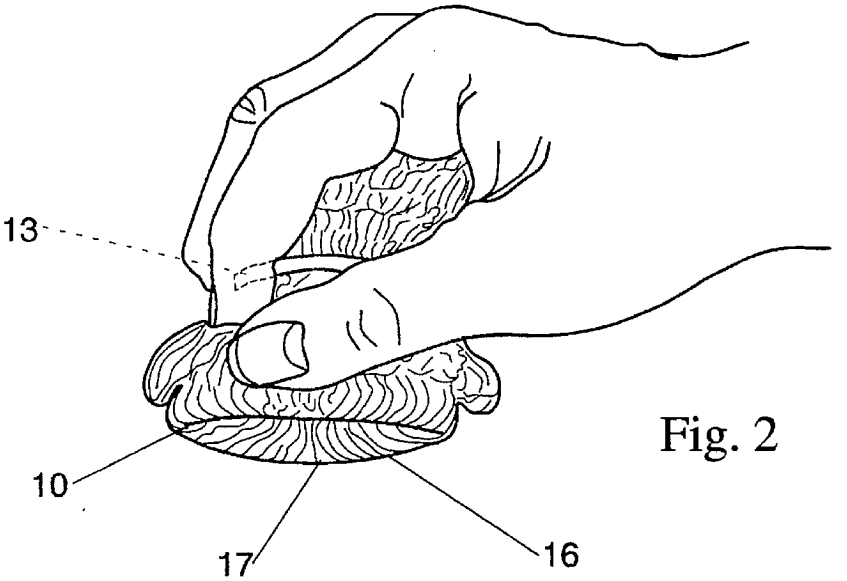

Fig. 2

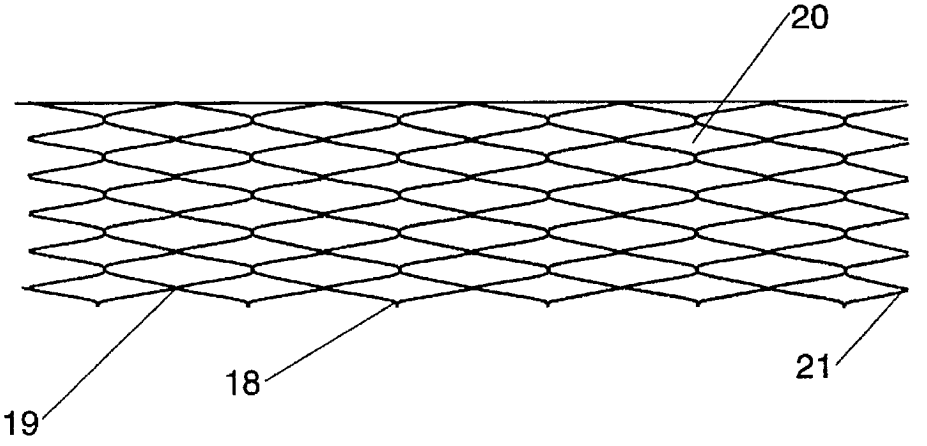

Fig. 3

PERSONAL CLEANSING SYSTEM COMPRISING A POLYMERIC DIAMOND MESH BATH SPONGE AND A LIQUID CLEANSER WITH MOISTURIZER

This is a continuation of application Ser. No. 08/327,911, filed on Oct. 25, 1994, now abandoned; which is a continuation of application Ser. No. 08/226,451, filed on Apr. 21, 1994, now abandoned; which is a continuation-in-part of application Ser. No. 08/080,668, filed on Jun. 18, 1993, now abandoned.

TECHNICAL FIELD

This invention relates to a kit comprising a personal cleansing hand held bath sponge and a personal liquid cleanser for bath or shower.

BACKGROUND OF THE INVENTION

A variety of cleansing systems have been used to remove dirt and dead skin from the body and moisturize the cleansed skin. Such systems include the use of moisturizing lotion after the use of a soap or surfactant in combination with a cleaning instrument such as terry wash clothes, soft and brittle, and various cleaning pads, scouring pads, natural and synthetic sponges, etc.

Prior art cleaning and moisturizing personal cleansing kits have some disadvantages which have limited their effectiveness in personal skin care. Many cleansers, for example, are in fact harsh. Most do not contain an effective amount of a moisturizer. Many mild liquid cleansers traditionally do not lather well. Likewise, some cleaning instruments do not lather well when used with liquid cleansers. This is particularly so when milder liquid cleansers are used. Other cleansing instruments become water logged. Some make it difficult to remove the water containing the removed dirt from the instrument. Some impede lather; which is especially true for liquid cleansing and moisturizing cleansers. Yet other instruments absorb the oil conditioner in cleansing and moisturizing products. Others retain the water and often develop unpleasant odors, as well as become a place for breeding of bacteria, germs, mold, etc. Yet other instruments absorb the oil conditioner in cleansing and moisturizing products and thereby compete with the skin.

In addition, many of the instruments have very low strength and are easily destroyed after they have been used several times.

The need for mild skin cleansing system is made more acute by the need to wash more often to reduce body odors in city crowds and by the aging of the human population and the ever-increasing environmental insult to which the skin is subject. The mildest skin cleansing products can, at best, produce cleansing without negatively affecting the skin condition. To achieve an improvement in skin condition, the consumer is forced to use a second, separate product often called a "moisturizer". The use of two separate products to achieve the desired skin state is inconvenient and often unpleasant due to the greasy skin feel resultant from many moisturizers. As a result, many persons suffer from the effects of poor skin condition rather than use two separate products.

There is a clear need for a system which is capable of delivering both mild skin cleansing and a skin conditioning benefit; since most people don't use a moisturizer daily. Some skin cleansing products contain humectant substances which, although effective in topical application, are ineffective in cleansing products. These humectants are ineffective because they are very water soluble and suffer from poor skin substantivity. Hydrophobic emollient materials are generally more substantive to the skin, but are more difficult to incorporate into an aqueous skin cleansing matrix and/or are absorbed into traditional cleansing instruments. There are also at least two other sources of difficulty typically encountered with such liquid cleansers: poor lather effects and physically unstable product.

The present invention allows for the use of a selected hydrophobic sponge with a lathering cleansing and moisturizing liquid cleanser containing an effective amount of a hydrophilic, oily or hydrophobic moisturizer and mixtures thereof.

The present invention allows for the use of higher levels of humectants in a "cleansing and moisturizing" lathering liquid to provide a cleansing system which is better lathering, milder and more effective than the prior art kits.

OBJECT OF THE INVENTION

One object of this invention is to provide a personal cleansing kit which cleans, lathers well, conditions and moisturizes the skin.

Another object of this invention is to provide an improved cleansing system which cleans the skin with lather and which moisturizes the skin in a single washing and rinsing step.

A further object is to provide an improved method of using a liquid cleansing and moisturizing cleanser system.

It is a further object of the present invention to provide a cleansing system which is milder to the skin with improved lather vs. the prior art.

These and other objects of the present invention will become obvious from the detailed description which follows.

SUMMARY OF THE INVENTION

This invention relates to an ultra-mild, good lathering cleansing system and kit for cleansing the skin comprising a hydrophobic diamond-mesh polymeric hand held bath sponge and a mild lathering cleansing and moisturizing liquid cleansing composition suitable for cleansing the skin with good lather and at the same time moisturizing of the skin in bath or shower.

The mesh sponge and the cleansing and moisturizing liquid cleanser are packaged together as in a kit or system. The liquid cleanser is preferably contained in its own container within the kit.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a perspective representation of a diamond-mesh polymeric hand held ball-like bath sponge showing a rope handle **7** used in the present invention.

FIG. **2** is a perspective view of another hand held bath polymeric mesh sponge illustrating how it can be held in the hand.

FIG. **3** is an enlarged fragmentary cross section illustrating a single sheet of a polymeric netting mesh stretched perpendicular to the filaments to show the bonding of the filaments and a representative spacing of the bonds.

The ease with which a cleaning polymeric mesh sponge can be held in the hand for cleaning is shown in FIG. **2**. A security band **13** holds the multi-layered netting mesh together to form the polymeric mesh sponge.

The netting mesh that can be used in making the polymeric mesh sponge is illustrated in FIG. **3** wherein **21**

represents the mesh in stretched position. The fine polymeric filaments used in making the netting are represented by **18** with **19** representing the spot bonding of the filaments to form the open mesh **20**.

DETAILED DESCRIPTION OF THE INVENTION

The Personal Cleansing System

This invention is a kit or system that includes a hydrophobic diamond-mesh hand held bath sponge and a cleansing and moisturizing liquid cleansing composition. The system is used for cleansing the skin with a mild liquid cleanser with good lather while "conditioning" or "moisturizing" the skin as it cleans in the bath or shower. The need to use a separate lotion or oil on the skin after the bath or shower is greatly reduced. Thus, the liquid is called a "cleansing and moisturizing" cleanser and the package with the mesh sponge is called herein a mild lathering cleansing and moisturizing personal cleansing kit. The mesh sponge and the cleansing and moisturizing cleanser are packaged together in a kit.

The liquid cleanser is usually contained in a separate container in an amount large enough for several uses with the mesh sponge.

The personal bath or shower body cleansing system comprising:

(A) a light weight polymeric meshed personal cleansing hand held sponge; said polymeric mesh sponge being in a form suitable for use as a hand held cleansing implement, said hand held sponge having a diameter of from about two (2) inches to about eight (8) inches (5.08 cm. to about 20.32 cm.); preferably the polymeric meshed personal cleansing hand held polymeric mesh sponge is made of polyethylene diamond mesh and has a diameter of from 3 to 5 inches (7.62 cm. to about 12.7 cm.) and

(B) a liquid cleanser having: (1) an effective amount of a skin conditioning and moisturizing ingredient; and (2) an effective amount of a surfactant selected from soap and synthetic surfactants and mixtures thereof, preferably the skin conditioning and moisturizing ingredient is selected from the group consisting of oils, cationic and nonionic polymers, and mixtures thereof, and said surfactant selected from mild soaps and mild synthetic surfactants and mixtures thereof; and preferably said cleansing and moisturizing liquid cleanser (1) also contains from about 0.5% to about 10% by weight of said liquid cleanser of a skin conditioner selected from the group consisting of esters of fatty acids; glycerin mono-, di-, and tri-esters; epidermal and sebaceous hydrocarbons such as cholesterol, cholesterol esters, squalene, squalane; lanolin and derivatives; mineral oil, silicone oil, silicone gum, and vegetable oil, and mixtures thereof; and preferably said liquid cleanser contains from about 0.7% to about 4% of an emulsified petrolatum which has a melting point of from about 50° C. to about 60° C.

The Polymeric Mesh Sponge and the Cleansing and Moisturizing Liquid Cleanser

The polymeric mesh sponge and the otherwise low lathering cleansing and moisturizing liquid cleanser together provide a superior cleansing skin care system vs. the prior art. The cleansing and moisturizing (2-in-1) liquid cleanser provides "moisturization" via deposition of a oily material in the 2-in-1 liquid cleanser on the skin surface which material is known to improve skin condition and at a level that surpasses the threshold for a noticeable benefit. It has now been discovered that this can be accomplished by the present invention.

It has been found that this cleaning system, comprising a polymeric diamond-mesh bath sponge used in combination with a cleansing and moisturizing liquid cleanser, provides many unexpected advantages over the prior known systems. The present system for example possesses the ability to provide both excellent lathering cleaning action and skin conditioning action in one step, so it is not necessary to utilize two separate products for both such actions. In addition, the polymeric mesh sponge possesses a hydrophobic mesh netting surface which allows the cleaning solutions used in the cleaning and gentle scrubbing action to rich lather, but also permits the moisturizing materials to deposit and thereby condition the skin. These special advantages allow the system to be mild with unexpectedly excellent lather vs. the known prior art cleansing kits. The present mild cleansing and moisturizing liquid cleanser with the mesh sponge is superior to the same cleansing and moisturizing liquid cleanser used with a regular sponge in terms of lather as well as over all acceptability by a majority of experimental users.

The cleaning polymeric mesh sponge can be prepared from readily available raw materials or with specially designed mesh materials. The polymeric mesh sponge is preferably prepared from extruded tubular netting mesh which has been prepared from special strong and flexible polymeric material. Extruded tubular netting mesh of this type, and particularly those prepared from polyethylene, have been used for the covering of meat and poultry and are readily available in industry.

The polymeric mesh sponge comprises a plurality of plys of an extruded tubular netting mesh prepared from a strong flexible polymer, preferably of the group consisting of addition polymers of olefin monomers, and polyamides of polycarboxylic acids and polyamines, said plys of tubular netting mesh are folded upon itself numerous times to form a soft ball-like polymeric mesh sponge.

The tubes or stripes of netted mesh polymer can be securely attached by means of a nylon band or suitable closure. This type of polymeric mesh sponge is disclosed in U.S. Pat. No. 4,462,135, Jul. 31, 1984, to Sanford, incorporated herein by reference.

An example of a hand-held ball-like polymeric mesh sponge is disclosed in U.S. Pat. No. 5,144,744, to Campagnoli, Sep. 8, 1992, incorporated herein by reference. It is a diamond-mesh polyethylene sponge obtained from a number of netting tubes stretched over supports, joined and bound together at the center and then released from the supports.

Commercially available "polymeric mesh sponges" are sold by The Body Shop and Bynum Concepts, Inc.

The following are some specifications for suitable bath polyethylene polymeric mesh sponges:

Size Dia.	Tubes	Ea. Length	Total Length	Wt gm.
3"	2	60 cm	120 cm	15
4"	4	50 cm	200 cm	23
5"	4	80 cm	320 cm	37

One (1") inch = 2.54 cm.; 3" = 3 × 2.54 = cm.; 4" = 4 × 2.54 = cm.; etc.

FIG. **1** is a perspective representation of a diamond-mesh polymeric hand held ball-like bath sponge showing a rope

handle **7** used in the present invention. The ease with which a cleaning polymeric mesh sponge can be held in the hand for cleaning is shown in FIG. **2**. A security band **13** holds the multi-layered netting mesh together to form the polymeric mesh sponge. The netting mesh that can be used in making the polymeric mesh sponge is illustrated in FIG. **3** wherein **21** represents the mesh in stretched position. The fine polymeric filaments used in making the netting are represented by **18** with **19** representing the spot bonding of the filaments to form the open mesh **20**.

Two **2** netting tubes at 60 cm length. each can be used to make a 3-inch ball sponge. They can be bundled manually with a loop or rope to form a ball-like polymeric mesh sponge. Other designs such and rectangular gloves and washings implements made with the mesh material also work very well in the system of the present invention by increasing the lather of normally lower lathering cleansing and moisturizing liquid cleansers. Some examples of such cleaning implements are the subjects of two U.S. Pat. application of Giradot et al., filed Mar. 31, 1994, via U.S. Express Mail EF296159777US and EF296154777, incorporated herein by reference.

The Cleansing and Moisturizing Liquid Cleanser

The term "cleansing and moisturizing liquid" or 2-in-1 liquid cleanser as used herein includes lathering liquids and semi-solid creams which contain both a lathering ingredient and a moisturizing agent.

A preferred cleansing and moisturizing personal cleansing liquid product comprises: (a) from about 0.1% to about 20% of anionic surfactant; (b) from about 0.1% to about 20% of amphoteric surfactant; (c) from about 0.5% to about 25% of a vegetable oil adduct, minors and; (d) balance water.

The anionic surfactant and amphoteric surfactant together can comprise from about 0.5% to about 30% by weight of the composition; a preferred weight ratio of anionic surfactant:amphoteric surfactant is in the range from about 1:5 to about 20:1.

A preferred vegetable oil adduct can be made by Dieis-Alder addition of a conjugated, elaidinized form of the vegetable oil with acrylic acid, fumaric acid or maleic anhydride. The preferred adduct is maleated soybean oil. The compositions provide excellent-in-use and efficacy benefits including cleansing and lathering as well as improved mildness and skin conditioning.

Another preferred cleansing and moisturizing cleansing composition can contain ingredients selected from the group consisting of: (a) 8% to 35% polyol; (b) 35% to 70%; preferably 40% to 65% water; (c) 5% to 20%, preferably 7% to 19%, of mostly insoluble saturated (low IV of zero to 15) C_8–C_{22} fatty acid potassium soap; (d) 0.1% to 7%, preferably 0.5 to 5%, of free C_8–C_{22} fatty acids; and (e) 0.5% to 5%, preferably 0.7% to about 4.5% petrolatum, and mixtures thereof.

The polyol is selected from the group consisting of: glycerin, glycerol, propylene glycol, polypropylene glycols, polyethylene glycols, ethyl hexanediol, hexylene glycols, and other aliphatic alcohols; and mixtures thereof. When propylene glycol is used as a moisturizer, it is used at a level of at least 5%. The polyols are preferably used at levels of from about 10–30%.

The liquid cleanser can contain from about 0.5% to about 15% of a lipophilic emollient moisturizer selected from the group consisting of: petrolatum; esters of fatty acids; glycerin mono-, di-, and tri-esters; epidermal and sebaceous hydrocarbons such as cholesterol, cholesterol esters, squalene, squalane; silicone oils and gums; mineral oil; lanolin and derivatives and the like; and mixtures thereof.

A preferred improved stable product with a moisturizing benefit is achieved with the incorporation of larger sized petrolatum particles into selected fatty acid/soap matrixes. The larger sized petrolatum particles will vary for a liquid or semi-solid. The key is to select the fatty acid and/or soap matrix as exemplified herein, and mix in the petrolatum using a minimal controlled amount of shear to maintain larger petrolatum particles and achieve a homogeneous stable product, e.g., an improved benefit is also achieved in a semi-solid cleansing cream.

Any fatty acid matter (free and neutralized) used in the liquid cleanser preferably has an Iodine Value (I.V.) of from zero to about 15, preferably below 10, more preferably below 3.

Lathering Soap and/or Synthstic Surfactant

The personal bath or shower body cleansing system preferably comprises from about 0.5% to about 30% of lathering surfactant having a lathering grade at least as well as C16 alkyl glyceryl ether sulfonate. The preferred cleansing and moisturizing composition contains from about 1% to about 25%, preferably from about 5 to about 25%, or 10–20% of a lathering soap and/or synthetic surfactant. A preferred surfactant is selected from mild soaps and mild synthetic surfactants and mixtures thereof. Examples of these are mild soaps and surfactants are shown in the Examples herein.

The soaps are preferably those derived from essentially saturated hydrocarbon having chain lengths of from about 8 to about 22. It is preferred that the soap be the potassium salt, but other soluble soaps can be used. Some sodium, ammonium, triethanolammonium, and/or mixtures thereof, are deemed acceptable, at least in potassium blends. The soaps are preferably prepared in-situ by neutralization of the corresponding fatty acids, but they may also be introduced as preformed soaps.

The preferred liquid soap is called a dispersoid because at least some of the fatty matter at the levels used herein is insoluble. The level of water in the compositions is typically from about 35% to about 70%, preferably from about 40% to about 65%.

Another important attribute of the preferred liquid soap of the present invention is it is phase stable, particularly after storage.

An important attribute of the preferred soap personal cleansing product of the present invention is its rich and creamy lather.

An important component of liquid cleansers is a lather boosting surfactant. The surfactant, which may be selected from any of a wide variety of anionic (soaps and nonsoap), amphoteric, zwitterionic, nonionic and, in certain instances, cationic surfactants, is present at said levels.

It is noted that surfactant mildness can be measured by a skin barrier destruction test which is used to assess the irritancy potential of surfactants. In this test the milder the surfactant, the lesser the skin barrier is destroyed. Skin barrier destruction is measured by the relative amount of radio-labeled water (^3H—H_2O) which passes from the test solution through the skin epidermis into the physiological buffer contained in the diffusate chamber. This test is described by T. J. Franz in the *J. Invest. Dermatol.*, 1975, 64, pp. 190–195; and in U.S. Pat. No. 4,673,525, Small et al., issued Jun. 16, 1987, incorporated herein by reference, and

which disclose a mild alkyl glyceryl ether sulfonate (AGS) surfactant based synbar comprising a "standard" alkyl glyceryl ether sulfonate mixture. Barrier destruction testing is used to select mild surfactants.

The liquid composition preferably comprises a lathering surfactant selected from the group consisting of artionic surfactants, nonionic surfactants, zwitterionic surfactants, amphoteric surfactants, and mixtures thereof.

The lathering surfactant is defined herein as a synthetic surfactant or mixes thereof that when combined have an equilibrium surface tension of between 15 and 50 dynes/cm, more preferably between 20 and 45 dynes/cm as measured at the CMC (critical micell concentration) at 25° C. Some surfactant mixes can have surface tensions lower than of its components.

Some examples of good lather-enhancing, mild detergent surfactants are e.g., sodium or potassium lauroyl sarcosinate, alkyl glyceryl ether sulfonate, sulfonated fatty esters, and sulfonated fatty acids. Thus, a high lathering surfactant is defined herein as one which lathers on the order of C16 alkyl glyceryl ether sulfonate or better. For a lather volume test, see U.S. Pat. No. 5,264,145, to French et al., Nov. 23, 1993, incorporated herein by reference.

Numerous examples of other surfactants are disclosed in the literature: they include other alkyl sulfates, anionic acyl sarcosinates, methyl acyl taurates, N-acyl glutamates, acyl isethionates, alkyl sulfosuccinates, alkyl phosphate esters, ethoxylated alkyl phosphate esters, trideceth sulfates, protein condensates, mixtures of ethoxylated alkyl sulfates and alkyl amine oxides, betaines, sultaines, and mixtures thereof. Included in the surfactants are the alkyl ether sulfates with 1 to 12 ethoxy groups, especially ammonium and sodium lauryl ether sulfates.

Many additional nonsoap surfactants are described in McCUTCHEON'S, DETERGENTS AND EMULSIFIERS, 1993 Edition, published by MC Publishing Co., which is incorporated here by reference.

The above-mentioned surfactants can be used in the cleansing bath/shower compositions of the present invention. The anionic surfactants, particularly the alkyl sulfates, the ethoxylated alkyl sulfates and mixtures thereof are preferred. More preferred are C_{12}–C_{14} alkyl anionic surfactants selected from the group consisting of sodium alkyl glycerol ether sulfonate, sodium lauroyl sarcosinate, sodium alkyl sulfate, sodium ethoxy (3) alkyl sulfate, and mixtures thereof.

Nonionic surfactants can be broadly defined as compounds produced by the condensation of alkylene oxide groups (hydrophilic in nature) with an organic hydrophobic compound, which may be aliphatic or alkyl aromatic in nature.

The pH of the neat cleansing bath/shower liquid soap compositions herein is generally from about 7.0 to about 9.5, preferably from about 7.5 to about 9 as measured at 25° C. The pH of the liquid synthetic surfactant composition is about 4 to 8, preferably 4.5 to 7.

The cleansing and moisturizing liquid cleanser preferably has an apparent or neat viscosity of from about 500 cps to about 60,000 cps at 26.7° C., preferably 5,000 to 30,000 cps. The term "viscosity" as used herein means the viscosity as measured by a Brookfield RVTDCP with a spindle CP-41 at 1 RPM for 3 minutes, unless otherwise specified. The "neat" viscosity is the viscosity of the undiluted liquid cleanser.

Skin Conditioner or Moisturizer

Skin conditioner or moisturizer deposition from a cleansing system is measured by one of two protocols, both are modeled after how skin cleansing products are typically used by consumers. One protocol is done "in vitro", while the second is done "in vivo".

In the in vitro protocol, a model skin substrate is used which is a collagen sheet that has a surface topography similar to human skin and has been prehydrated. Small pieces of the substrated are mounted over flask openings to secure them for exposure to lather. The lather is generated in the palms of hands, the polymeric mesh sponge or other cleansing implement, using the following controlled procedure: one gram of product plus 3 ml of water for 10 seconds. The mounted substrate is then exposed to the combined lather by overturning the flask and rubbing it on the palm of the hand, etc. This lathering process is continued for 10 seconds and, after allowing the lather to remain on the substrate for 5 seconds, it is rinsed with warm tap water for 10 seconds. The exposed skin substrate is then cut from the mount and dried prior to analysis. The analysis procedure is to submerge the substrate in 1:1 ethanol:heptane if petrolatum is measured or another solvent for other moisturizers and then analyze this extract by standard gas chromatographic methods.

The in vivo protocol is similar to the in vitro one described above, except the lather generated in the polymeric mesh sponge (or the palm of the hand) is applied to the opposite forearm. The time that the lather remains on the forearm is 30 seconds (compared to the 5 seconds on the collagen substrate). The deposited conditioner is then extracted by strapping an open-ended glass cylinder to the forearm and adding the appropriate solvent to this cylinder. As above, the extract is then analyzed according to standard gas chromatographic methods.

The cleansing bath/shower compositions can contain a variety of nonessential optional ingredients suitable for rendering such compositions more desirable. Such conventional optional ingredients are well known to those skilled in the art, e.g., preservatives such as benzyl alcohol, methyl paraben, propyl paraben and imidazolidinyl urea; other thickeners and viscosity modifiers such as C_8–C_{18} ethanolamide (e.g., coconut ethanolamide); pH adjusting agents such as citric acid, succinic acid, phosphoric acid, sodium hydroxide, etc.; suspending agents such as magnesium/aluminum silicate; perfumes; dyes; and sequestering agents such as disodium ethylenediamine tetraacetate.

If present, the optional components individually generally comprise from about 0.001% to about 10% by weight of the composition, but can be more or less.

Optional thickeners are categorized as cationic, nonionic, or artionic and are selected to provide the desired viscosity. Suitable thickeners are listed in the Glossary and Chapters 3, 4, 12 and 13 of the *Handbook of Water-Soluble Gums and Resins*, Robert L. Davidson, McGraw-Hill Book Co., New York, N.Y., 1980, incorporated by reference herein.

The liquid personal cleansing products can be thickened by using polymeric additives that hydrate, swell or molecularly associate to provide body (e.g., hydroxypropyl guar gum is used as a thickening aid in shampoo compositions).

A suitable thickener is hydroxy ethyl cellulose, e.g., NatrosolR 250 KR sold by The Aqualon Company.

Another thickener is acrylated steareth-20 methylacrylate copolymer sold as Acrysol ICS-1 by Rohm and Haas Company.

The amount of polymeric thickener found useful in the present compositions is about 0.1% to about 2%, preferably from about 0.2% to about 1.0%.

The liquid cleanser can be made with from about 0.1% to about 5%, preferably from about 0.3% to about 3%, of a skin moisturizing cationic polymer selected from the group consisting of: cationic polysaccharides and derivatives, cationic copolymers of saccharides and synthetic monomers, synthetic copolymers and cationic protein derivatives.

Making a Soap-Based Cleansing and Moisturizing Liquid Cleanser

Most methods of making cleansing and moisturizing liquid cleansers for the present invention use standard industry equipment. For example, a general process for a 6000 gram size batch using a 4.5 gallon jacketed tank agitated by a Lightning Mixer (Model TS2010) fitted with a three prong propeller size agitator with blades measuring one inch. However, mixing times will vary with equipment, batch size, etc.

1. The fatty acids (the oil phase), antimicrobial (if added), etc. is added to a sanitary agitated and jacketed stainless steel vessel;
2. The oil phase is heated to about 80° C.
3. Polyol liquids (e.g., propylene glycol) and some surfactant are added to the heated oil phase.
4. In a separate container, a water phase is prepared containing polymers, polyol liquids (e.g., glycerin), and water, and heated to 80° C. with agitation.
5. The appropriate base (e.g., potassium hydroxide) for an in situ soap formation is added and mixed into the oil phase.
6. Next, the water phase is added and mixed to the oil phase/soap vessel.
7. Glycol ester is melted and mixed into (6) at about 80° C.
8. Any additional surfactant is added to (7) at about 80° C.
9. The product of (8) is cooled to about 45° C. at which time other minors such as preservatives and perfumes can be added.
10. The conditioner, e.g., petrolatum is added and mixed to (9) at a temperature of between about 35° C. to about 45° C. or about or at a temperature below its melting point.

Alternatively, the product of Step 9 may stand prior to adding materials such as petrolatum. In case of the product standing, the product of Step 9 is reheated to about 35° C., before the petrolatum is added.

In the method of making the product of this invention, the large petrolatum particle size is controlled by mix time and addition temperature. The shorter the mix time and the lower the temperature, the higher the proportion of larger petrolatum emollient particles is achieved.

A preferred allowed mild liquid personal cleanser is disclosed in allowed U.S. patent application Ser. No. 07/909,834, filed Jul. 7, 1992, Dias, et at., incorporated herein by reference.

The cleansing bath/shower compositions can contain a variety of nonessential optional ingredients suitable for rendering such compositions more desirable. Such conventional optional ingredients are well known to those skilled in the art, e.g., preservatives such as benzyl alcohol, methyl paraben, propyl paraben and imidazolidinyl urea; other thickeners and viscosity modifiers such as C_8–C_{18} ethanolamide (e.g., coconut ethanolamide); pH adjusting agents such as citric acid, succinic acid, phosphoric acid, sodium hydroxide, etc.; suspending agents such as magnesium/aluminum silicate; perfumes; dyes; and sequestering agents such as disodium ethylenediamine tetraacetate.

Making a Preferred Cleansing and Moisturizing Liquid Cleanser

This method comprises the following steps:

a) Forming an aqueous phase comprising from about 0.1% to about 50% by weight of final composition of surfactant;

b) Forming a first oil phase comprising from about 0.5% to about 10% by weight of final composition of nonionic emollient oil or wax other than the vegetable oil adduct;

c) Forming a second oil phase comprising from about 0.5% to about 25%, preferably from about 0.5% to about 15% by weight of final composition of the vegetable oil adduct;

d) Premixing the first oil phase and the aqueous surfactant phase to form an emulsion of the first oil phase in water; and

e) Thereafter admixing the second oil phase with the oil-in-water emulsion of step (d), thereby forming an emulsion of the second oil phase in the preformed oil-in-water emulsion of the first oil phase.

The following personal bath or shower body cleanser kit is highly preferred one. The preferred 2-in-1 liquid cleanser comprises:

Ingredients in parts by wt. of the liquid cleanser:	from	to
Water	55	60
Cocoamphoacetate/Cocoamphodiacetate	4	8
Sodium Laureth-3 Sulfate	10	15
Alkylpolysaccharide	0	3
Coconut monoethanol amide	2	3
Soybean Oil	7	9
Maleated Soybean Oil	1	4
Polymer JR30	0.2	0.6
PEG(6) Caprylic/Caprylglycerate	3	5
Myristic Acid	0	3
Palm Kernel Acid	2	0
Glycerine	2	4
Titanium Dioxide	0	0.2
Perfume	1	2
Preservative	0.1	0.3

This liquid cleanser with moisturizer is contained in a separate dispenser for periodic dispensing a portion of the 2-in-1 cleanser onto a mesh sponge as shown in FIG. 1 for use in bath or shower.

EXAMPLES

The following examples of cleansing and moisturizing liquid cleansers and the specific meshed sponges are illustrative and are not intended to limit the scope of the invention(s). The preferred method of making the cleansing and moisturizing liquid cleansing compositions of the present invention is set out above. All levels, ranges, temperatures, results, etc., used herein are approximations, unless otherwise specified. All formula percentages are expressed as a weight percentage of the liquid cleanser unless otherwise specified.

EXAMPLES 1–6

Examples 1–6 are cleansing and moisturizing liquid compositions which demonstrate varying levels and types of conditioner(s) and varying levels of soap and/or surfactant. Example 6 is a highly preferred cleansing and moisturizing liquid cleanser. A polyethylene-meshed hand held sponge as shown in FIG. 1 is a preferred polymeric mesh sponge for the present system.

EXAMPLES	1	2	3	4
Ingredients:				
Water	42.36	49.0	40.6	49.0
Stearic Acid	0.67	0.22	0.67	0.22
Palmitic Acid	1.13	0.38	1.13	0.38
Myristic Acid	1.35	0.45	1.35	0.45
Lauric Acid	1.35	0.45	1.35	0.45
In Situ potassium soap	15.0	17.0	11.0	17.0
Glycerin	15.0	15.0	15.0	15.0
Propylene Glycol	10.0	7.0	10.0	7.0

-continued

EXAMPLES	1	2	3	4
Na_5Pentetate	0.02	0.02	0.02	0.02
Na_4Etidronate	0.02	0.02	0.02	0.02
Sodium Lauroyl Sarcosinate	6.0	6.0	6.0	6.0
Sodium Laureth Sulfate	0.67	—	2.0	—
CocoAmido Propyl Betaine	1.33	1.33	4.0	—
Cetyl Ricinoleate	—	—	—	0.75
Polyquaternium-10	0.8	0.6	1.0	0.6
Fragrance	0.5	0.6	0.6	0.6
Ethyleneglycol Distearate	1.5	1.0	1.5	1.0
Preservatives	0.8	0.8	0.8	0.8
Petrolatum	1.5	1.5	3.0	0.75

The stable liquid cleansers of Examples 1–4 are prepared in accordance with a method set out above. Care is taken to add the petrolatum in Step 10 at a temperature below its melting point (MP), using gentle mixing to ensure large petrolatum particles, preferably having weight average sizes over 45 microns.

EXAMPLES	5	6
Ingredients:		
Water	57.9	55.70
Cocoamphoacetate/Cocoamphodiacetate	6.0	6.0
Sodium Laureth-3 Sulfate	12.0	12.0
Alkylpolysaccharide	0.00	2.00
Coconut monoethanol amide	2.80	2.80
Soybean Oil	8.00	8.00
Maleated Soybean Oil	2.00	2.00
Polymer JR30	0.40	0.40
PEG(6) Caprylic/Caprylglycerate	4.00	4.00
Myristic Acid	0.00	2.00
Palm Kernel Acid	1.80	0.00
Glycerine	3.00	3.00
Titanium Dioxide	0.10	0.10
Perfume	1.80	1.80
Preservative	0.20	0.20

Mildness and Lather Results

The Mildness Protocol.

Human subjects precondition their legs with an all soap bar by washing twice a day for seven days. Treatments are applied daily for 5 consecutive days. On each day, skin dryness grades can be taken before treatment (to measure chronic effects) and 60 minutes after treatment (measure acute effects).

On each day of the test, three 12.5 cm^2 sites are treated on each of the subjects. Three treatments are assigned using a Latin square design, which takes into account baseline site-to-site differences in skin condition within each subject.

The treatments are:

I. A mild syndet bar.

II. A mild syndet bar plus a moisturizing lotion applied after washing.

III. A cleansing and moisturizing liquid cleanser, Example 6, used with a polymeric mesh sponge as shown in FIG. 1.

IV. A cleansing and moisturizing liquid cleanser, Example 6, used with a regular closed-cell sponge.

Mildness Results

Treatment III represents the "System" of the present invention. Treatment III is the 2-in-1 liquid cleanser Example 6 used with a "polymeric mesh sponge" as show in FIG. 1.

Treatment II is a mild syndet bar plus a lotion. It is a very mild treatment because the lotion is applied directly to the skin after washing. This is not a 2-in-1 cleansing and moisturizing treatment, but is used as a control. Note, however, that many people do not use a moisturizer after bathing or showering. The 2-in-1 cleanser is always milder than the mild syndet bar alone.

Treatment III, the 2-in-1 liquid cleanser, Example 6, used with the mesh sponge, is significantly milder than the mild syndet bar alone, i.e., without the lotion in chronic mildness and equal to it in acute mildness.

Treatment III has improved overall acceptability over Treatment IV, the cleansing and moisturizing liquid cleanser, Example 6, used with a regular sponge. See for example the comparative lather results below.

Lather Test Protocol for Mesh Sponge vs. Regular Sponge Systems

Expert lather graders are asked to successively lather a 2-in-1 formula (Example 6) with the mesh sponge (FIG. 1) and with a regular closed-cell sponge. The order is randomized. The expert lather graders are asked to rate the two systems for lather on a –3/+3 scale.

1. Start test on left forearm with sponge A (or B).
2. Wet cleansing sponge for 5 seconds under 95 degree running water.
3. Put one pump of product (3 cc) on to the wet sponge.
4. Squeeze sponge 10 times using both hands to generate lather.
5. Wet forearm under running water.
6. Lather forearm with sponge using an up and down motion for 10 seconds.
7. Evaluate the lather on forearm using a –3 to +3 scale.
8. Repeat entire procedure on right arm with sponge B (or A).

Lather Results

The results shown in the Table indicate that the 2-in-1 formula (Example 6) lathers more quickly and produces more lather when used in combination with the mesh sponge than it does with a regular closed-cell sponge.

Lather Results Table

	Regular Sponge	Mesh Sponge
Lather Quickly/Easily	–0.80	+2.50
Amount of Lather	–0.79	+2.25

The system of the present invention has improved lather grades as shown in the Lather Results Table. The significance is calculated at 95% confidence. In other words, the 2-in-1 liquid cleanser used with a meshed polymeric mesh sponge has unexpected and superior lather and overall acceptability over the 2-in-1 liquid cleanser used with a regular sponge.

The present system of cleansing body skin using a cleansing and moisturizing liquid cleanser and the polymeric mesh sponge has improved lather and overall unexpected and surprising advantages over prior art systems.

What is claimed is:

1. A personal bath or shower body cleansing and lathering product comprising:

(a) a personal cleansing implement comprising hydrophobic polymeric netted mesh; and

(b) a cleansing and moisturizing liquid emulsion having at least two phases, wherein said liquid emulsion comprises:

(1) a moisturizing phase comprising from about 0.5% to about 33.5% by weight of the liquid emulsion of a skin conditioner ingredient selected from the group consisting of esters of fatty acids, glycerin monoesters, glycerin di-esters, glycerin tri-esters, epidermal and sebaccous hydrocarbons, lanolin, mineral oil, silicone oil, silicone gum, vegetable oil, petrolatum, vegetable oil adduct, cationic polymers and mixtures thereof; and

(2) an aqueous cleansing phase comprising i) from about 0.5% to about 30% by weight of the liquid emulsion of a lathering surfactant selected from the group consisting of anionic surfactants and mixtures of anionic surfactants; wherein the surfactant or mixture of surfactants has an equilibrium surfacc tension ranging from about 15 to about 50 dynes/cm as measured at the critical miscelle concentration at 25° C.; and ii) water.

2. A personal bath or shower body cleansing and lathering product according to claim **1** comprising a kit, wherein said kit comprises the hydrophobic polymeric netted mesh personal cleansing implement and the cleansing and moisturizing liquid emulsion.

3. The personal bath or shower body cleansing and lathering kit of claim **2** wherein the cleansing and moisturizing liquid emulsion comprises from 0.5% to 25% of the skin conditioner ingredient within the moisturizing phase.

4. The personal bath or shower body cleansing and lathering kit of claim **3** wherein said liquid cleansing and moisturizing liquid emulsion has a neat viscosity of from about 500 cps to about 60,000 cps at 26.7° C.

5. The personal bath or shower body cleansing trod lathering kit of claim **4** wherein the cleansing and moisturizing emulsion additionally comprises a skin conditioner ingredient within the aqueous cleansing phase, wherein the skin conditioner ingredient within the aqueous phase includes ingredients selected from the group consisting of cationic and nonionic polymers, polyols selected from the group consisting of glycerin, propylene glycol, polypropylene glycols, polyethylene glycols, ethyl hexanediol, hexylene glycols and mixtures thereof.

6. The personal bath or shower body cleansing and lathering kit of claim **5** wherein said liquid cleansing: and moisturizing liquid emulsion has a neat viscosity of from about 5,000 cps to about 30,000 cps at 26.7° C.

7. The personal bath or shower body cleansing and lathering kit of claim **6** wherein the lathering surfactant comprising the cleansing and moisturizing liquid emulsion comprises from about 0.1% to about 20% of anionic surfactant and from about 0.1% to about 20% of amphoteric surfactant; wherein the anionic surfactant and amphoteric surfactant together comprise from about 0.5% to about 30% by weight of the emulsion; and wherein the weight ratio of anionic surfactant: amphoteric surfactant ranges from about 1:5 to about 20:1.

8. The personal bath or shower body cleansing and lathering kit of claim **7** wherein the emulsion is selected from the group consisting of oil-in-water emulsions, silicone-in-water emulsions, and mixtures thereof.

9. The personal bath or shower body cleansing and lathering kit of claim **8** wherein the skin conditioning ingredient within the moisturizing phase of said cleansing and moisturizing liquid emulsion comprises a skin conditioner ingredient selected from the group consisting of vegetable oil, vegetable oil adduct and mixtures thereof.

10. The personal bath or body cleansing and lathering kit of claim **2** wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters.

11. The personal bath or body cleansing and lathering kit of claim **8** wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand held sponge hating a diameter of from about 5 centimeters to about 20 centimeters.

12. A personal bath or shower body cleansing and lathering product according to claim **1** wherein the cleansing and moisturizing liquid emulsion is combined with the hydrophobic polymeric netted mesh personal cleansing implement.

13. The personal bath or shower body cleansing and lathering product of claim **12** wherein the cleansing and moisturizing liquid emulsion comprises from 0.5% to 25% of the skin conditioner ingredient within the moisturizing phase.

14. The personal bath or shower body cleansing and lathering product of claim **13** wherein said liquid cleansing and moisturizing liquid emulsion has a neat viscosity of from about 500 cps to about 60,000 cps at 26.7° C.

15. The personal bath or shower body cleansing and lathering product of claim **14** wherein the cleansing and moisturizing emulsion additionally comprises a skin conditioner ingredient within the aqueous phase, wherein the skin conditioner ingredient within the aqueous cleansing phase includes ingredients selected from the group consisting of cationic and nonionic polymers, polyols selected from the group consisting of glycerin, propylene glycol, polypropylene glycols, polyethylene glycols, ethyl hexanediol, hexylenc glycols and mixtures thereof.

16. The personal bath or shower body cleansing and lathering product of claim **15** wherein said liquid cleansing and moisturizing liquid emulsion has a neat viscosity of from about 5,000 cps to about 30,000 cps at 26.7° C.

17. The personal bath or shower body cleansing and lathering product of claim **16** wherein the lathering surfactant comprising the cleansing and moisturizing liquid emulsion comprises from about 0.1% to about 20% of anionic surfactant and from about 0.1% to about 20% of amphoteric surfactant; wherein the anionic surfactant and amphoteric surfactant together comprise from about 0.5% to about 30% by weight of the emulsion; and wherein the weight ratio of anionic surfactant:amphoteric surfactant ranges from about 1:5 to about 20:1.

18. The personal bath or shower body cleansing and lathering product of claim **17** wherein the emulsion is selected from the group consisting of oil-in-water emulsions, silicone-in-water emulsions, and mixtures thereof.

19. The personal bath or body cleansing and lathering product of claim **12** wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters.

20. The personal bath or body cleansing and lathering product of claim **18** wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters.

21. A personal bath or shower body cleansing and lathering kit comprising:

(a) a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters; and

(b) a cleansing and moisturizing liquid emulsion comprising:

(1) a moisturizing phase comprising from about 1.0% to about 15% by weight of the liquid emulsion of a skin conditioner ingredient selected from the group consisting of esters of fatty acids, glycerin monoesters glycerin di-esters, glycerin tri-esters, epidermal and sebaccous hydrocarbons, lanolin, mineral oil, silicone oil, silicone gum, vegetable oil, petrolatum, vegetable oil adduct, cationic polymer and mixtures thereof; and

(2) an aqueous cleansing phase comprising i) from about 10% to about 30% by weight of the liquid emulsion of a lathering surfactant wherein the lathering surfactant comprises from about 0.1% to about 20% of anionic surfactant and from about 0.1% to about 20% of amphoteric surfactant; wherein the anionic surfactant and amphoteric surfactant together comprise from about 0.5% to about 30% by weight of the emulsion; and wherein the weight ratio of anionic surfactant:amphoteric surfactant ranges from about 1:5 to about 20:1; and ii) water; and

wherein said liquid cleansing and moisturizing liquid emulsion has a neat viscosity of from about 5,000 cps to about 30,000 cps at 26.7° C.

22. A method of cleaning and moisturizing the skin comprising applying a cleansing and moisturizing liquid emulsion to the skin and using a personal cleansing implement comprising hydrophobic polymeric trotted mesh personal cleansing implement to create a lather; wherein said cleansing and moisturizing liquid emulsion has at least two phases comprising: (1) a moisturizing phase comprising from about 0.5% to about 33.5% by weight of the liquid emulsion of a skin conditioner ingredient selected from the group consisting of esters of fatty acids, glycerin monoesters, glycerin di-esters glycerin tri-esters, epidermal and sebaceous hydrocarbons, lanolin, mineral oil, silicone oil, silicone gum, vegetable oil, petrolatum, vegetable oil adduct, cationic polymer and mixtures thereof; and (2) an aqueous cleansing phase comprising: i) from about 0.5% to about 30% by weight of the liquid emulsion of a lathering surfactant selected from the group consisting of anionic surfactants and mixtures of anionic surfactants; wherein the surfactant or mixture of surfactants has an equilibrium surface tension ranging from about 15 to about 50 dynes/cm as measured at the critical miscelle concentration at 25° C.; and ii) water.

23. A method of cleaning and moisturizing the skin according to claim 22 wherein the cleansing and moisturizing liquid emulsion comprises from about 0.5% to about 25% of the skin conditioner ingredient within the moisturizing phase.

24. The method of claim 23 wherein said liquid cleansing and moisturizing liquid oil-in-water emulsion has a neat viscosity of from about 500 cps to about 60,000 cps at 26.7° C.

25. The method of claim 24 wherein the cleansing and moisturizing emulsion additionally comprises a skin conditioner ingredient within the aqueous phase, wherein the skin conditioner ingredient within the aqueous cleansing phase includes ingredients selected from the group consisting of cationic and nonionic polymers, polyols selected from the group consisting of glycerin, propylene glycol, polypropylene glycols, polyethylene glycols, ethyl hexanediol, hexylene glycols and mixtures thereof.

26. The method of claim 25 wherein the lathering surfactant comprising the cleansing and moisturizing liquid oil-in-water emulsion comprises from about 0.1% to about 20% of anionic surfactant and from about 0.1% to about 20% of amphoteric surfactant; wherein the anionic surfactant and amphoteric surfactant together comprise from about 0.5% to about 30% by weight of the emulsion; and wherein the weight ratio of anionic surfactant:amphoteric surfactant ranges from about 1:5 to about 20:1.

27. A method of cleaning and moisturizing the skin according to claim 26 wherein the cleansing and moisturizing liquid emulsion is selected from the group consisting of oil-in-water emulsions, silicone-in-water emulsions, and mixtures thereof.

28. The method of claim 27 wherein the skin conditioning ingredient within the moisturizing phase of said cleansing and moisturizing liquid emulsion comprises a skin conditioner ingredient selected from the group consisting of vegetable oil and vegetable oil adduct and mixtures thereof.

29. The method of claim 27 wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters.

30. A method of cleansing and moisturizing the skin comprising applying a cleansing and moisturizing liquid emulsion to a personal cleansing implement comprising hydrophobic polymeric netted mesh, working the cleansing and moisturizing liquid emulsion into a lather, and applying the lathered emulsion to the skin with the personal cleansing implement; wherein said cleansing and moisturizing liquid emulsion has at least two phases comprising: (1) a moisturizing phase comprising from about 0.5% to about 33.5% by weight of the emulsion of a skin conditioner ingredient selected from the group consisting of esters of fatty acids, glycerin mono-esters, glycerin di-esters, glycerin tri-esters, epidermal and sebaceous hydrocarbons, lanolin, mineral oil silicone oil, silicone gum, vegetable oil, petrolatum, vegetable oil adduct, cationic polymer and mixtures thereof; and (2) an aqueous cleansing phase comprising: i) from about 0.5% to about 30% by weight of the emulsion of a lathering surfactant selected from the group consisting of anionic surfactants and mixtures of anionic surfactants; wherein the surfactant or mixture of surfactants has an equilibrium surface tension ranging from about 15 to about 50 dynes/cm, as measured at the critical miscelle concentration at 25° C.; and ii) water.

31. A method of cleaning and moisturizing the skin according to claim 30 wherein the cleansing and moisturizing liquid emulsion comprises from about 0.5% to about 25% of the skin conditioner ingredient within the moisturizing phase.

32. The method of claim 31 wherein said liquid cleansing and moisturizing liquid oil-in-water emulsion has a neat viscosity of from about 500 cps to about 60,000 cps at 26.7° C.

33. The method of claim 32 wherein the cleansing and moisturizing emulsion additionally comprises a skin conditioner ingredient within the aqueous cleansing phase, wherein the skin conditioner ingredient within the aqueous phase includes ingredients selected from the group consisting of cationic and nonionic polymers, polyols selected from

the group consisting of glycerin, propylene glycol, polypropylene glycols, polyethylene glycols, ethyl hexanediol, hexylene glycols, and mixtures thereof.

34. The method of claim **33** wherein the lathering surfactant comprising the cleansing and moisturizing liquid oil-in-water emulsion comprises from about 0.1% to about 20% of anionic surfactant and from about 0.1% to about 20% of amphoteric surfactant; wherein the anionic surfactant and amphoteric surfactant together comprise from about 0.5% to about 30% by weight of the emulsion; and wherein the weight ratio of anionic surfactant:amphoteric surfactant ranges from about 1:5 to about 20:1.

35. A method of cleaning and moisturizing the skin according to claim **34** wherein the cleansing and moisturizing liquid emulsion is selected from the group consisting of oil-in-water emulsions, silicone;-in-water emulsions, and mixtures thereof.

36. The method of claim **35** wherein the skin conditioning ingredient within the moisturizing phase of said cleansing and moisturizing liquid emulsion comprises a skin conditioner ingredient selected from the group consisting of vegetable oil, vegetable oil adduct and mixtures thereof.

37. The method of claim **35** wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters.

38. A method of cleansing and moisturizing the skin comprising applying a cleansing and moisturizing liquid emulsion to a personal cleansing implement comprising hydrophobic polymeric netted mesh and applying the emulsion to the skin with the personal cleansing implement in a manner to create a lather; wherein said cleansing and moisturizing liquid emulsion has at least two phases comprising: (1) a moisturizing phase comprising from about 0.5% to about 33.5% by weight of the emulsion of a skin conditioner ingredient selected the group consisting of esters of fatty acids, glycerin mono-esters, glycerin di-esters, glycerin tri-esters, epidermal and sebaceous hydrocarbons, lanolin, mineral oil, silicone oil, silicone gum, vegetable oil, petrolatum, vegetable oil adduct, cationic polymer and mixtures thereof; and (2) an aqueous cleansing phase comprising: i) from about 0.5% to about 30% by weight of the emulsion of lathering surfactant selected from the group consisting of anionic surfactants and mixtures of anionic surfactants; wherein the surfactant or mixture of surfactants has an equilibrium surface tension ranging from about 15 to about 50 dynes/cm, as measured at the critical miscelle concentration at 25° C.; and ii) water.

39. A method or cleaning and moisturizing the skin according to claim **38** wherein the cleansing and moisturizing liquid emulsion comprises from about 0.5% to about 25% of the skin conditioner ingredient within the moisturizing phase.

40. The method of claim **39** wherein said liquid cleansing and moisturizing liquid oil-in-water emulsion has a neat viscosity of from about 500 cps to about 60,000 cps at 26.7° C.

41. The method of claim **40** wherein the cleansing and moisturizing emulsion additionally comprises a skin conditioner ingredient within the aqueous cleansing phase, wherein the skin conditioner ingredient within the aqueous cleansing phase includes ingredients selected from the group consisting of cationic and nonionic polymers, polyols selected from the group consisting of glycerin, propylene glycol, polypropylene glycols, polyethylene glycols, ethyl hexanediol, hexylene glycols and mixtures thereof.

42. The method of claim **41** wherein the lathering surfactant comprising the cleansing and moisturizing liquid oil-in-water emulsion comprises from about 0.1% to about 20% of anionic surfactant and from about 0.1% to about 20% of amphoteric surfactant; wherein the anionic surfactant and amphoteric surfactant together comprise from about 0.5% to about 30% by weight of the emulsion; and wherein the weight ratio of anionic surfactant:amphoteric surfactant ranges from about 1:5 to about 20:1.

43. A method of cleaning and moisturizing the skin according to claim **42** wherein the cleansing and moisturizing liquid emulsion is selected from the group consisting of oil-in-water emulsions, silicone-in-water emulsions, and mixtures thereof.

44. The method of claim **43** wherein the skin conditioning ingredient within the moisturizing phase of said cleansing and moisturizing liquid emulsion comprises a skin conditioner ingredient selected from the group consisting of vegetable oil, vegetable oil adduct and mixtures thereof.

45. The method of claim **44** wherein the hydrophobic polymeric netted mesh personal cleansing implement comprises a light weight, hydrophobic, polymeric, netted, diamond mesh, hand-held personal cleansing sponge; said hand-held sponge having a diameter of from about 5 centimeters to about 20 centimeters.

46. A method of providing improved moisturization benefits to the skin by following the method of claim **22** on a substantially daily basis.

47. A method of providing improved moisturization benefits to the skin by following the method of claim **30** on a substantially daily basis.

48. A method of providing improved moisturization benefits to the skin by following the method of claim **38** on a substantially daily basis.

* * * * *

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United States Patent [19]

Per-Lee

[11] **Patent Number: 5,727,278**

[45] **Date of Patent: Mar. 17, 1998**

[54] **CLEANSING DEVICE WITH HAND STRAP AND METHOD OF MAKING SAME**

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[21] Appl. No.: **634,786**

[22] Filed: **Apr. 19, 1996**

[51] **Int. Cl.**[6] **A47L 17/08**; A47K 7/02

[52] **U.S. Cl.** **15/229.11**; 15/209.1; 15/223; 300/21

[58] **Field of Search** 15/208, 209.1, 15/223, 229.11, 229.12, 229.14; 29/525.01; 300/21

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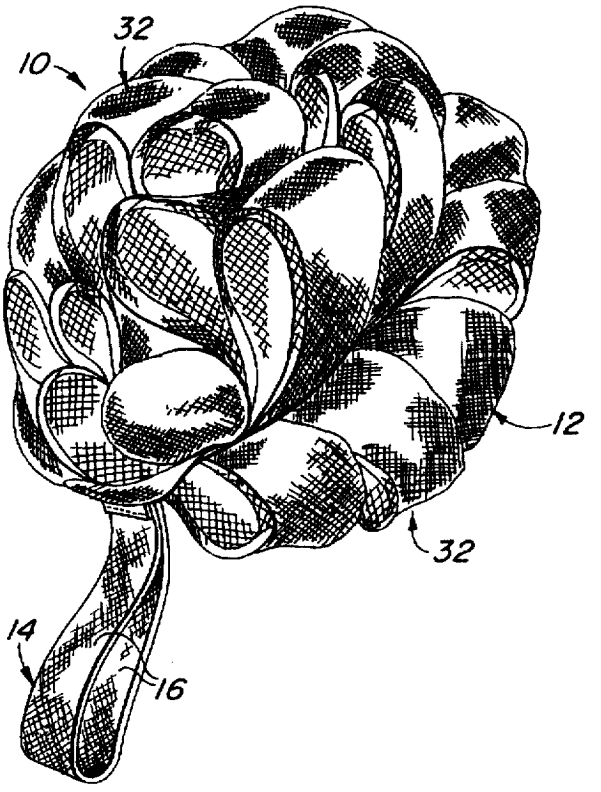
Primary Examiner—Mark Spisich

Attorney, Agent, or Firm—Flanagan & Flanagan; John K. Flanagan; John R. Flanagan

[57] **ABSTRACT**

A cleansing device includes a body formed by at least one sheet of inelastic flexible netting-like material folded upon itself to provide a multiplicity of ruffles bunched together so as to define the body, an elongated flat and narrow strap comprised of interwoven strands of flexible material and provided in the form of a loop, and an elongated string inserted at least one time through the loop of the strap and wound about a circumferential portion of the body and drawn inwardly toward the center of the body to form a winding of the string having a substantially smaller circumference than that of the body which secures an inner end of the loop of the strap to the body at an interior of the body such that the inner end of the strap is substantially hidden from an exterior of the body and the strap extends from the body to an outer end spaced from the body to provide a looped handle for a user to insert one hand through and thereby place the body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

30 Claims, 2 Drawing Sheets



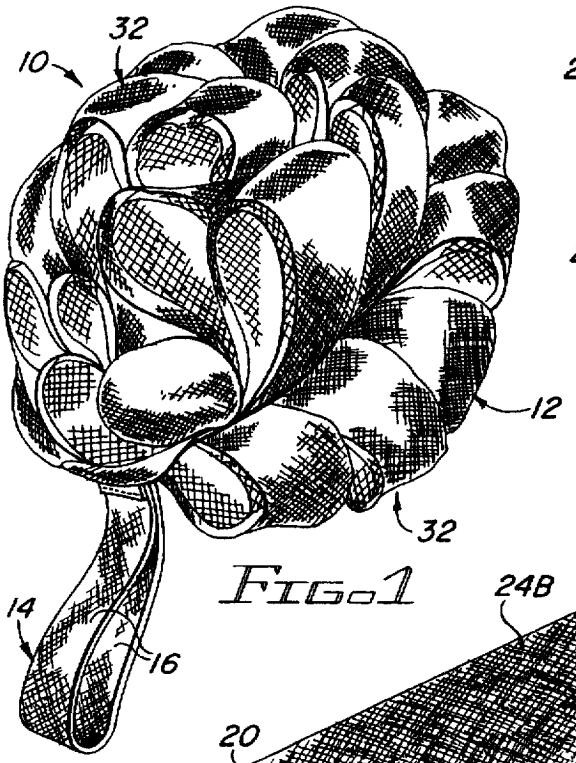


FIG. 1

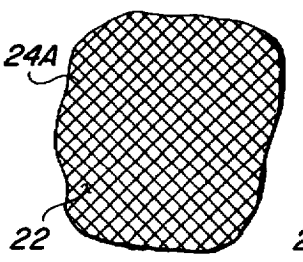


FIG. 4

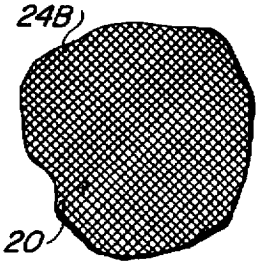


FIG. 5

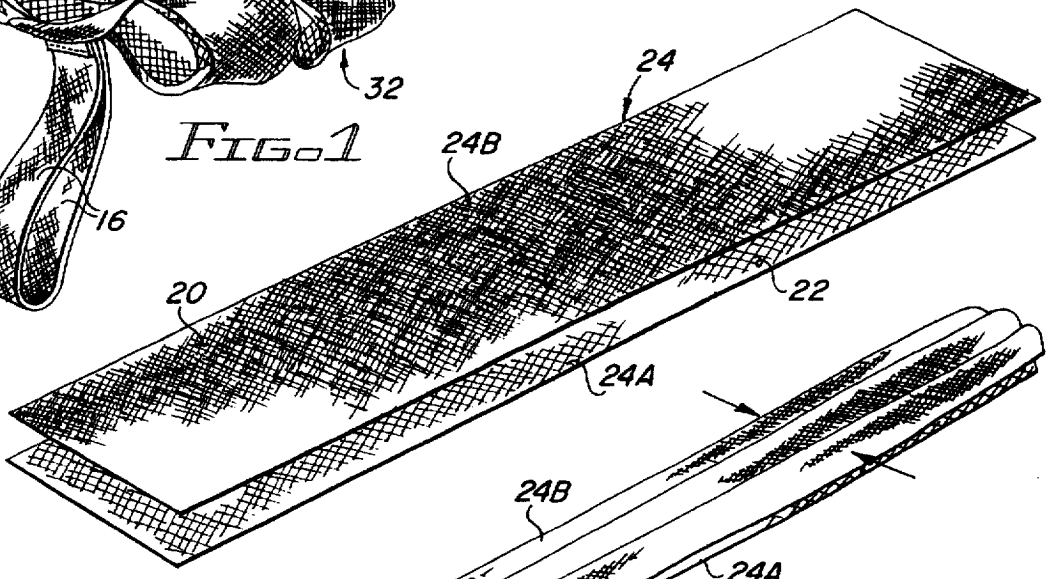


FIG. 2A

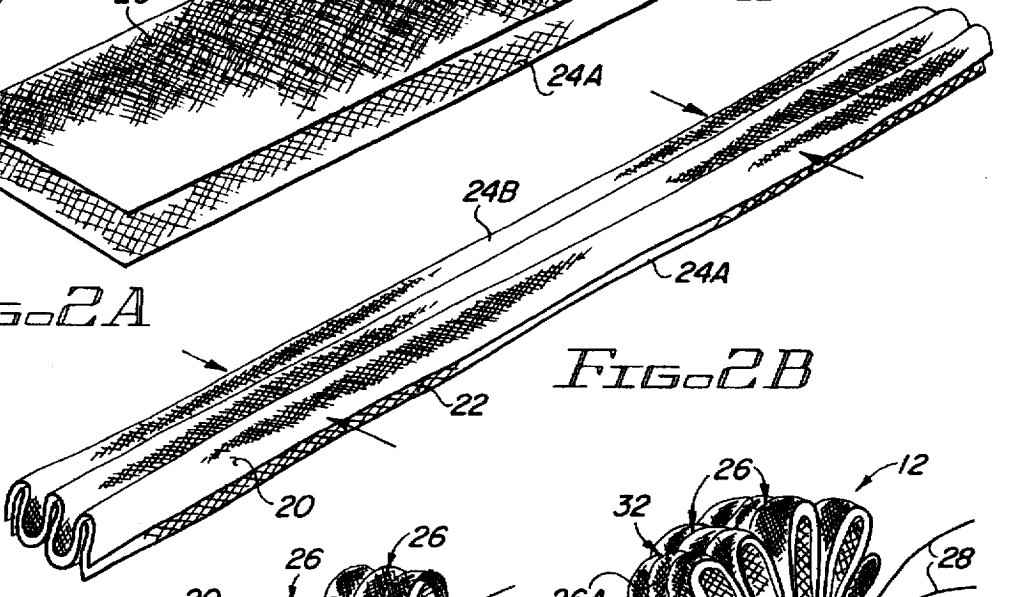


FIG. 2B

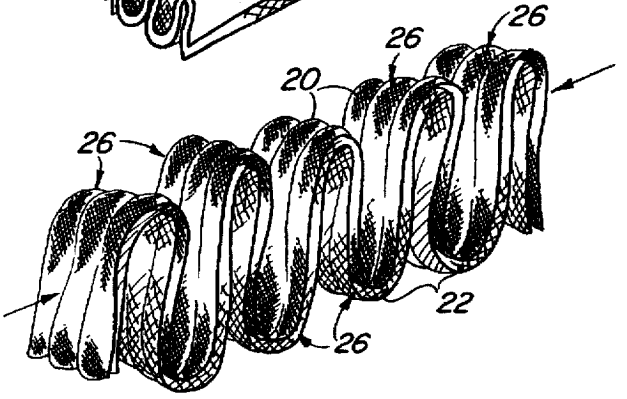


FIG. 2C

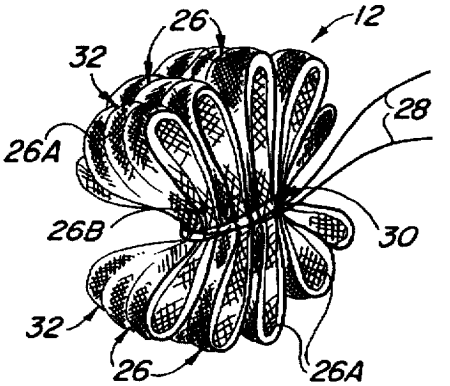


FIG. 2D

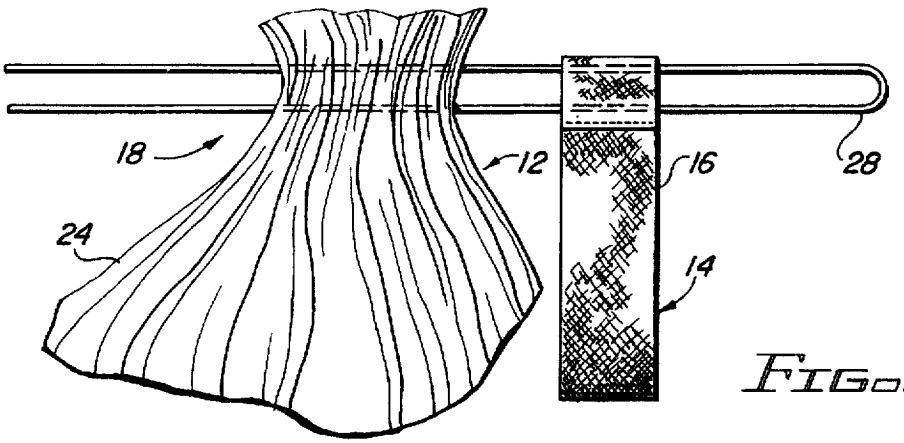


FIG. 3A

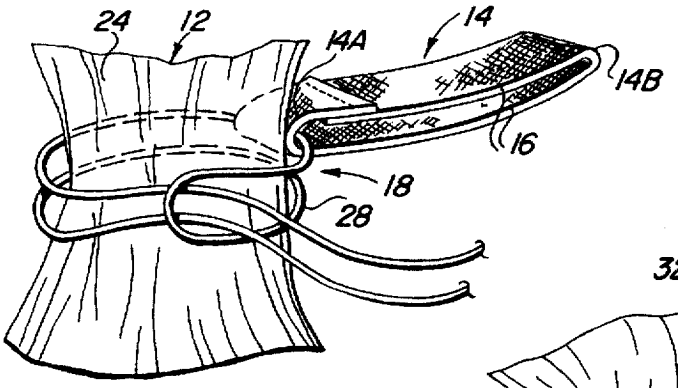


FIG. 3B

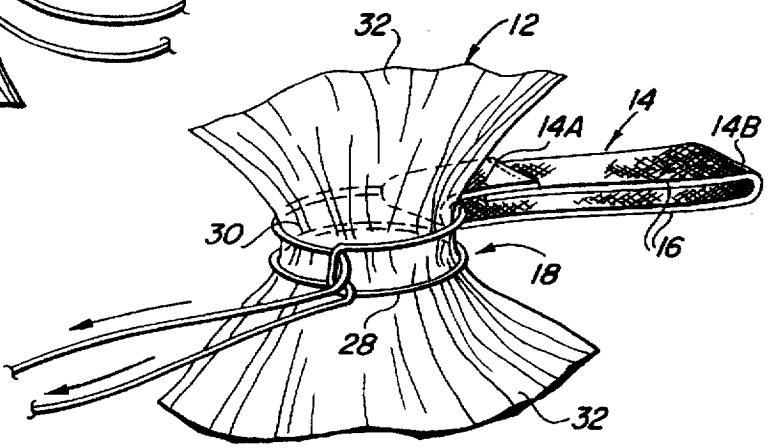


FIG. 3C

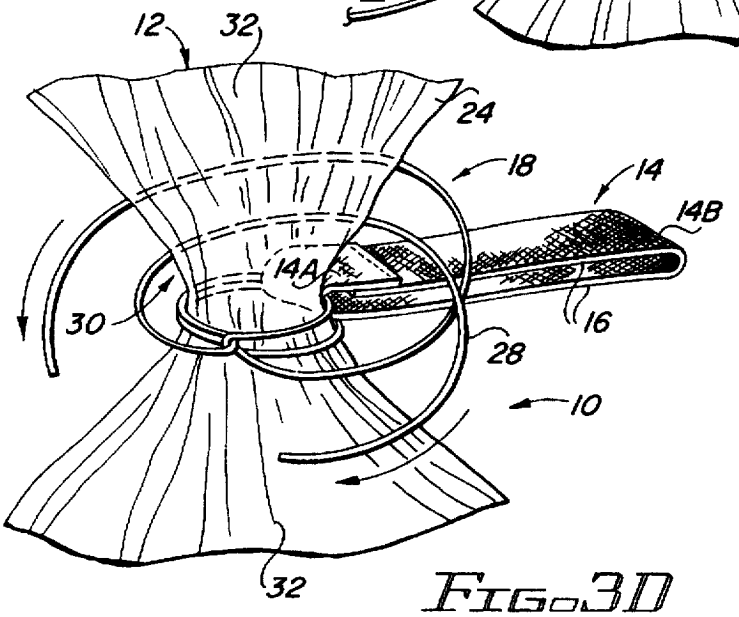


FIG. 3D

CLEANSING DEVICE WITH HAND STRAP AND METHOD OF MAKING SAME

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to cleansing devices for cleaning, scouring, scrubbing and polishing objects and, more particularly, is concerned with a cleansing device having a flexible hand strap for encompassing a user's hand.

2. Description of the Prior Art

It is often desirable to use a brush or the like to clean the skin of an individual's body, to exfoliate dry skin from the body and/or to stimulate blood circulation through the body. It is likewise generally desirable to clean and polish rigid objects and surfaces such as those found in the kitchens and bathrooms of a home. A variety of cleansing devices have been developed over the years for cleaning, scouring and polishing metal objects such as kitchen utensils and the like. A common element in many of these devices is the use of abrasive material which is folded upon itself to provide a conglomeration of material for scouring objects or surfaces to be cleaned or polished.

Representative examples of these cleansing devices and other like devices are disclosed in U.S. Pat. No. 1,713,975 to Mayer, U.S. Pat. No. 1,897,778 to Wallace, U.S. Pat. No. 1,963,529 to Protz, U.S. Pat. No. 2,152,697 to Kingman, U.S. Pat. No. 2,581,779 to Abraham, U.S. Pat. No. 3,146,479 to Stoker, U.S. Pat. No. 3,336,618 to Day, U.S. Pat. No. 3,343,196 to Barnhouse, U.S. Pat. No. 3,345,668 to Forrest and U.S. Pat. No. 4,199,835 to Heyer et al. A problem exists, however, with these prior art devices in that none of them appear to have a suitable means for ergonomically securing the device to the hand of a user so that the device can easily be retained by the user while it undergoes vigorous action and which securing means as part of the cleansing device will not impede its use in a variety of applications such as on the skin of an individual's body and on objects and surfaces found in kitchens and bathrooms of homes.

Consequently, a need still exists for a cleansing device which overcomes the aforementioned problem in the prior art without introducing any new problems in place thereof.

SUMMARY OF THE INVENTION

The present invention provides a cleansing device which is designed to satisfy the aforementioned need. The cleansing device has a flexible hand strap attached to a body of flexible abrasive material and fittable around the hand of a user so as to ergonomically secure the device to the user's hand with the body of abrasive material positioned for gripping by the user's hand. The hand strap does not impede but instead facilitates use of the cleansing device in a variety of applications such as for use on the skin of an individual's body and for use on objects and surfaces found in kitchens and bathrooms of homes. The abrasive material of the body can be selected so as to best suit the specific application.

Accordingly, the present invention is directed to a cleansing device which comprises: (a) a body of flexible abrasive material; (b) an elongated flexible strap provided in the form of a loop; and (c) means for securing an inner end of the strap to substantially a central portion of the body such that the strap extends from the body to an outer end thereof spaced from the body to provide a looped handle for a user to insert one hand through and thereby place the body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

The body is generally formed by at least one sheet of inelastic flexible netting-like abrasive material folded upon itself to provide a multiplicity of ruffles bunched together so as to define the body. More particularly, the abrasive material forming the body can include an outer sheet of substantially fine mesh exposed at an exterior thereof for making contact with the skin of an individual's body or with an object or surface in the kitchen or bathroom of a home and an inner sheet of substantially coarse mesh substantially covered by the outer sheet and disposed at an interior thereof for providing overall rigidity to the body.

Furthermore, the elongated strap generally is in the form of a continuous loop and is comprised of interwoven strands of flexible material and further has a substantially flat and narrow configuration. The strap can be of any desired length but preferably is of a length which forms a loop large enough to receive therethrough a variety of hand sizes.

Also, the securing means generally is an elongated string inserted at least one time through the loop of the strap and wound about a circumferential portion of the body and drawn inwardly toward the center of the body to form a winding of the string having a substantially smaller circumference than that of the body which secures the inner end of the loop of the strap to the body at the interior of the body such that the inner end of the strap is substantially hidden from the exterior of the body and the strap extends from the body to the outer end spaced from the body to provide the looped handle for the user to insert one hand through and thereby place the body in the palm of the one hand of the user for holding by the fingers and thumb of the user. The string may also be inserted multiple times through the loop of the strap to form the string into several strands wound multiple times about the circumferential portion of the body and drawn inwardly toward the center of the body to form a multi-strand winding of the string.

These and other features and advantages of the present invention will become apparent to those skilled in the art upon a reading of the following detailed description when taken in conjunction with the drawings wherein there is shown and described an illustrative embodiment of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

In the following detailed description, reference will be made to the attached drawings in which:

FIG. 1 is a perspective view of the cleansing device of the present invention having a flexible hand strap.

FIG. 2A is a perspective view of an unfolded pair of inner and outer respectively coarse and fine mesh sheets of an inelastic flexible netting-like abrasive material provided to form a body of the cleansing device.

FIG. 2B is another perspective view of the coarse and fine mesh sheets being folded onto themselves in a transverse direction in the process of forming the body of the cleansing device.

FIG. 2C is still another perspective view of the coarse and fine mesh sheets being folded yet again onto themselves in a longitudinal direction forming a multiplicity of ruffles bunched together in the process of forming the body of the cleansing device.

FIG. 2D is yet another perspective view of the coarse and fine mesh sheets being drawn inwardly toward a center of the multiplicity of ruffles by an elongated string wound thereabout in the process of forming the body of the cleansing device.

FIG. 3A is a perspective view of the body in fragmentary form and of a string and elongated strap in the process of securing the elongated strap to the body of the cleansing device.

FIG. 3B is another perspective view of the body, string and elongated strap further along in relation to FIG. 3A in the process of securing the elongated strap to the body of the cleansing device.

FIG. 3C is still another perspective view of the body, string and elongated strap still further along in relation to FIG. 3B in the process of securing the elongated strap to the body of the cleaning device.

FIG. 3D is yet another perspective view of the body, string and elongated strap yet further along in relation to FIG. 3C in the process of securing the elongated strap to the body of the cleansing device.

FIG. 4 is an enlarged detailed plan view of a portion of the inner coarse mesh sheet of FIG. 2A.

FIG. 5 is an enlarged detailed plan view of a portion of the outer fine mesh sheet of FIG. 2A.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings and particularly to FIG. 1, there is illustrated a cleansing device, generally designated **10**, of the present invention. Basically, the cleansing device **10** includes a body **12** of flexible abrasive material, an elongated flexible strap **14** provided in the form of a loop **16**, and securing means **18** (see FIG. 3D) for securing an inner end **14A** of the strap **14** to a central portion of the body **12** such that the strap **14** extends from the body **12** to an outer end **14B** thereof spaced from the body **12** to provide a looped handle.**16** for a user to insert one hand through and thereby place the body **12** in the palm of the one hand of the user for holding by the fingers and thumb of the user.

Referring now to FIGS. 1 to 5, the body **12** generally has a substantially fine mesh **20** of abrasive material, as shown particularly in FIGS. 2A–2D and 5, exposed at the exterior of the body **12** for making contact with the skin of an individual's body or with an object or surface in the kitchen or bathroom of a home and a substantially coarse mesh **22** of abrasive material, as shown particularly in FIGS. 2A–2D and 4, disposed at the interior of the body **12** for providing overall bulk and support to the body **12**. Alternatively, the body **12** may have the substantially fine mesh **20** interspersed with the substantially coarse mesh **22** throughout the body **12**.

The body **12** is generally formed by at least one sheet **24** of a suitable inelastic flexible netting-like material, such as nylon, folded upon itself to provide a multiplicity of ruffles **26** bunched together so as to define the body **12**. The body **12** may also be formed by a pair of inner and outer sheets **24A**, **24B** of the inelastic flexible netting-like material folded upon themselves to provide the multiplicity of ruffles **26** with the inner sheet **24A** being preferably the substantially coarse mesh **22** disposed at the interior of the body **12** and the outer sheet **24B** being the substantially fine mesh **20** exposed at the exterior of the body **12** and substantially covering the inner sheet **24A**, as shown particularly in FIGS. 2A–2D. The ruffles **26** generally have loop ends **26A** disposed at the exterior of the body **12** which make contact with the skin of the individual's body or with the object or surface found in the kitchen or bathroom of the home, and interior portions **26B** which extend between the loop ends **26A**. FIG. 2A shows the pair of inner and outer sheets **24A**, **24B** in an unfolded condition, with the sheets disposed adjacent to one another with one above the other. FIG. 2B shows the pair of inner and outer sheets **24A**, **24B** folded onto itself in a first, transverse or widthwise, direction. FIG. 2C shows the pair of inner and outer sheets **24A**, **24B** folded yet again onto itself in a second, longitudinal or lengthwise, direction, extending generally transverse to the first direction, thereby forming the muliplicity of ruffles **26** in a bunched together folded condition. FIG. 2D shows the pair of inner and outer sheets **24A**, **24B** drawn inwardly toward a center of the muliplicity of ruffles **26** by the securing means **16** being wound thereabout and the elongated strap **14** secured thereto, as is described below with reference to FIGS. 3A–3D.

The strap **14** generally in the form of the loop **16** is preferably comprised of interwoven strands of flexible material and further has a substantially flat and narrow configuration. The strap **14** may have other constructions and configurations within the purview of the present invention. The ends of the strap **14** are generally stitched together to provide a continuous or endless loop but can be attached to one another by any other suitable means so as to form the desired loop **16**. The inner end **14A** of the strap **14** which is secured to the interior of the body **12** is substantially hidden therewithin. The outer end **14B** of the strap **14** is substantially exposed beyond the exterior of the body **12**. The strap **14** can be of any desired length but is preferably of a length generally which forms a loop **16** large enough to receive therethrough a variety of hand sizes. The material forming the strap **14** can be either substantially inelastic or elastic in nature.

The securing means **18** generally is an elongated cord or string **28** preferably made of relatively inelastic material. The string can be made from any suitable material, such as cotton or a separate strip of the netting itself. The elongated string **28** is inserted at least one time through the loop **16** of the strap **14** and wound about a circumferential portion of the body **12**, preferably centrally located, and drawn inwardly toward the center of the body **12** and secured to itself to form a winding of the string **28** having a substantially smaller circumference than that of the body **12** which secures the inner end **14A** of the loop **16** of the strap **14** to the body **12** at the interior of the body **12** such that the secured inner end **14A** of the strap **14** is substantially hidden from the exterior of the body **12**. The strap **14** extends from the body **12** to the outer end **14B** spaced from the body **12** to provide the looped handle **16** for the user to insert one hand through and thereby place the body **12** in the palm of the one hand of the user for holding by the fingers and thumb of the user. The string **28** may also be inserted multiple times through the loop **16** of the strap **14** to form the string **28** into several strands wound multiple times about the circumferential portion of the body **12** and drawn inwardly toward the center of the body **12** to form a multi-strand winding of the string **28** having the same substantially smaller circumference than that of the body **12** as in the case of there being only one strand of the string **28** wound about the body **12**.

Winding of the string **28** about the body **12** generally has the effect of bunching together the interior portions **26B** of the ruffles **26** toward the center of the body **12**. This bunching effect generally forms a central portion **30** from which outwardly projects a pair of lobes **32** formed of the loop ends **26A** of the ruffles **26** extending radially in every direction. Each loop end **26A** also has generally the same length and so the lobes **32** of the body **12** formed thereby generally have a spherical shape. Since the netting-like material which makes up the body **12** is generally pliable, the spherical shape of the body **12** is deformable during use

of the cleansing device **10** such as by application of pressure and contacting the object or surface to be cleaned in a scouring or scrubbing motion. The ball-like shape of the body **12** will generally return after use without becoming attenuated.

To summarize, the cleansing device **10** is formed by steps which include forming the body **12** by providing at least one and preferably a pair of sheets **24** of inelastic flexible netting-like abrasive material in layered relationship in which one sheet overlies the other sheet and folding the sheets **24** transversely and longitudinally upon themselves to provide the multiplicity of ruffles **26** bunched together so as to define the body **12**. The steps further include providing the elongated flat and narrow strap **14** comprised of the interwoven strands of flexible material and in the form of the loop **16**, and providing the elongated string **28**. The string **28** is then inserted at least one time through the loop **16** of the strap **14** and wound about a central circumferential portion of the body **12**. The string **28** is next drawn inwardly toward the center of the body **12** and secured to itself so as to thereby form a string winding having a substantially smaller circumference than that of the body **12** which secures the inner end **14A** of the loop **16** of the strap **14** to the body **12** at the interior of the body **12**. In such manner, **14A** inner end **14A** of the strap **14** is substantially hidden from the exterior of the body **12** and the strap **14** extends from the body **12** to the outer end **14B** spaced from the body **12** to provide the looped handle **16** for the user to insert one hand through and thereby place the body **12** in the palm of the one hand of the user for holding by the fingers and thumb of the user.

It is thought that the present invention and its advantages will be understood from the foregoing description and it will be apparent that various changes may be made thereto without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely preferred or exemplary embodiment thereof.

I claim:

1. A cleansing device, comprising:

(a) a body of flexible abrasive material;

(b) an elongated flexible strap provided in the form of a loop; and

(c) means for securing an inner end of said strap to substantially a central portion of said body such that said strap extends from said body to an outer end thereof spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user;

(d) said securing means being an elongated string inserted at least one time through said loop of said strap and wound about a circumferential portion of said body and drawn inwardly toward a center of said body to form a winding of said string having a substantially smaller circumference than that of said body which secures an inner end of said loop of said strap to said body at an interior of said body such that said inner end of said loop of said strap is substantially hidden from an exterior of said body and said loop of said strap extends from said body to an outer end spaced from said body to provide said looped handle for the user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

2. The device of claim **1** wherein said body has a substantially fine mesh of abrasive material exposed at an exterior of said body.

3. The device of claim **1** wherein said body has a substantially coarse mesh of abrasive material disposed substantially at an interior of said body.

4. The device of claim **1** wherein said body has a substantially coarse mesh of abrasive material and a substantially fine mesh of abrasive material which is interspersed with said coarse mesh of abrasive material throughout said body.

5. The device of claim **1** wherein said body is formed by at least one sheet of inelastic flexible netting-like material folded upon itself to provide a multiplicity of ruffles bunched together so as to define said body.

6. The device of claim **1** wherein said body is formed by a pair of inner and outer sheets of inelastic flexible netting-like material folded upon themselves to provide a multiplicity of ruffles bunched together so as to define said body, said inner sheet being a substantially coarse mesh disposed substantially at an interior of said body and said outer sheet being a substantially fine mesh exposed at an exterior of said body and substantially covering said inner sheet.

7. The device of claim **1** wherein said strap is comprised of interwoven strands of flexible material.

8. The device of claim **1** wherein said strap has a substantially flat and narrow configuration.

9. A cleansing device, comprising:

(a) a body of flexible abrasive material;

(b) an elongated flexible strap provided in the form of a loop; and

(c) means for securing an inner end of said strap to substantially a central portion of said body such that said strap extends from said body to an outer end thereof spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user;

(d) said securing means being an elongated string inserted multiple times through said loop of said strap to form said string into several strands wound multiple times about a circumferential portion of said body and drawn inwardly toward the center of said body to form a multi-strand winding of said string having a substantially smaller circumference than that of said body which secures an inner end of said loop of said strap to said body at an interior of said body such that said inner end of said strap is substantially hidden from an exterior of said body and said strap extends from said body to an outer end thereof spaced from said body to provide said looped handle for the user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

10. A cleansing device, comprising:

(a) a body formed by at least one sheet of inelastic flexible netting-like material folded upon itself to provide a multiplicity of ruffles bunched together so as to define said body;

(b) an elongated strap comprised of interwoven strands of flexible material and provided in the form of a loop; and

(c) means for securing an inner end of said strap to said body such that said strap extends from said body to an outer end thereof spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user;

(d) said securing means being an elongated string inserted at least one time through said loop of said strap and

wound about a circumferential portion of said body and drawn inwardly toward the center of said body to form a winding of said string having a substantially smaller circumference than that of said body which secures an inner end of said loop of said strap to said body at an interior of said body such that said inner end of said strap is substantially hidden from an exterior of said body and said strap extends from said body to an outer end spaced from said body to provide said looped handle for the user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

11. The device of claim **10** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a substantially fine mesh of abrasive material exposed at an exterior of said body.

12. The device of claim **10** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a substantially coarse mesh of abrasive material disposed substantially at an interior of said body.

13. The device of claim **10** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a substantially coarse mesh of abrasive material and a substantially fine mesh of abrasive material which is interspersed with said coarse mesh of abrasive material throughout said body.

14. The device of claim **10** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a pair of inner and outer said sheets, said inner sheet being a substantially coarse mesh disposed substantially at an interior of said body and said outer sheet being a substantially fine mesh exposed at an exterior of said body and substantially covering said inner sheet.

15. The device of claim **10** wherein said strap has a substantially flat and narrow configuration.

16. A cleansing device comprising:

(a) a body formed by at least one sheet of inelastic flexible netting-like material folded upon itself to provide a multiplicity of ruffles bunched together so as to define said body;

(b) an elongated strap comprised of interwoven strands of flexible material and provided in the form of a loop; and

(c) means for securing an inner end of said strap to said body such that said strap extends from said body to an outer end thereof spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user;

(d) said securing means being an elongated string inserted multiple times through said loop of said strap to form said string into several strands wound multiple times about a circumferential portion of said body and drawn inwardly toward the center of said body to form a multi-strand winding of said string having a substantially smaller circumference than that of said body which secures an inner end of said loop of said strap to said body at an interior of said body such that said inner end of said strap is substantially hidden from an exterior of said body and said strap extends from said body to an outer end thereof spaced from said body to provide said looped handle for the user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

17. A cleansing device, comprising:

(a) a body formed by at least one sheet of inelastic flexible netting-like material folded upon itself to provide a multiplicity of ruffles bunched together so as to define said body;

(b) an elongated flat and narrow strap comprised of interwoven strands of flexible material and provided in the form of a loop; and

(c) an elongated string inserted at least one time through said loop of said strap and wound about a circumferential portion of said body and drawn inwardly toward the center of said body to form a winding of said string having a substantially smaller circumference than that of said body which secures an inner end of said loop of said strap to said body at an interior of said body such that said inner end of said strap is substantially hidden from an exterior of said body and said strap extends from said body to an outer end spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

18. The device of claim **17** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a substantially fine mesh of abrasive material exposed at an exterior of said body.

19. The device of claim **17** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a substantially coarse mesh of abrasive material disposed substantially at an interior of said body.

20. The device of claim **17** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a substantially coarse mesh of abrasive material and a substantially fine mesh of abrasive material which is interspersed with said coarse mesh of abrasive material throughout said body.

21. The device of claim **17** wherein said at least one sheet of inelastic flexible netting-like material forming said body is a pair of inner and outer said sheets, said inner sheet being a substantially coarse mesh disposed substantially at an interior of said body and said outer sheet being a substantially fine mesh exposed at an exterior of said body and substantially covering said inner sheet.

22. The device of claim **17** wherein said string is inserted multiple times through said loop of said strap to form said string into several strands wound multiple times about said circumferential portion of said body and drawn inwardly toward said center of said body to form a multi-strand winding of said string.

23. A method for producing a cleansing device having a flexible hand strap, said method comprising the steps of:

(a) forming a body by providing at least one sheet of inelastic flexible netting-like material and folding said at least one sheet upon itself to provide a multiplicity of ruffles bunched together so as to define said body;

(b) providing an elongated flat and narrow strap of flexible material in the form of a loop;

(c) providing an elongated string; and

(d) inserting said elongated string at least one time through said loop of said strap and winding said string about a circumferential portion of said body and drawing said string inwardly toward the center of said body and thereby forming a winding of said string having a substantially smaller circumference than that of said body which secures an inner end of said loop of said strap to said body at an interior of said body such that said inner end of said strap is substantially hidden from

an exterior of said body and said strap extends from said body to an outer end spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

24. The method of claim **23** wherein said step of forming said body by providing said at least one sheet of inelastic flexible netting-like material includes providing a substantially fine mesh of abrasive material exposed at an exterior of said body.

25. The method of claim **23** wherein said step of forming said body by providing said at least one sheet of inelastic flexible netting-like material includes providing a substantially coarse mesh of abrasive material disposed substantially at an interior of said body.

26. The method of claim **23** wherein said step of forming said body by providing said at least one sheet of inelastic flexible netting-like material includes providing a substantially coarse mesh of abrasive material and a substantially fine mesh of abrasive material which is interspersed with said coarse mesh of abrasive material throughout said body.

27. The method of claim **23** wherein said step of forming said body by providing said at least one sheet of inelastic flexible netting-like material includes providing a pair of inner and outer said sheets, said inner sheet being a substantially coarse mesh disposed substantially at an interior of said body and said outer sheet being a substantially fine mesh exposed at an exterior of said body and substantially covering said inner sheet.

28. The method of claim **23** wherein said step of providing said string includes inserting said string multiple times through said loop of said strap and thereby forming said string into several strands wound multiple times about said circumferential portion of said body and drawing said string inwardly toward said center of said body and thereby forming a multi-strand winding of said string.

29. A cleansing device, comprising:

(a) a body having a multiplicity of ruffles bunched together, said body being defined by at least one sheet of flexible abrasive material folded onto itself in a first direction and folded again upon itself in a second direction extending generally transverse to the first direction to provide said multiplicity of ruffles bunched together and defining said body;

(b) an elongated flexible strap provided in the form of a loop; and

(c) means for securing an inner end of said strap to substantially a central portion of said body such that said strap extends from said body to an outer end thereof spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

30. A method for producing a cleansing device having a flexible hand strap, said method comprising the steps of:

(a) forming a body by providing at least one sheet of flexible abrasive material and folding said at least one sheet upon itself to provide a multiplicity of ruffles bunched together so as to define said body, said folding including

(i) folding said at least one sheet onto itself in a first direction, and

(ii) folding again said at least one sheet onto itself in a second direction extending generally transverse to said first direction to form said muliplicity of ruffles bunched together;

(b) providing an elongated strap of flexible material in the form of a loop; and

(c) securing an inner end of said strap to substantially a central portion of said body such that said strap extends from said body to an outer end thereof spaced from said body to provide a looped handle for a user to insert one hand through and thereby place said body in the palm of the one hand of the user for holding by the fingers and thumb of the user.

* * * * *

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United States Patent [19]

Chien

[11] Patent Number: 5,787,542

[45] Date of Patent: Aug. 4, 1998

[54] **BATHING PAD ASSEMBLY**

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[21] Appl. No.: **745,861**

[22] Filed: **Nov. 12, 1996**

[51] **Int. Cl.**[6] **A47K 7/02**

[52] **U.S. Cl.** **15/244.3**; 15/209.1; 15/227

[58] **Field of Search** 15/208, 209.1, 15/227, 229.11, 229.12, 244.3

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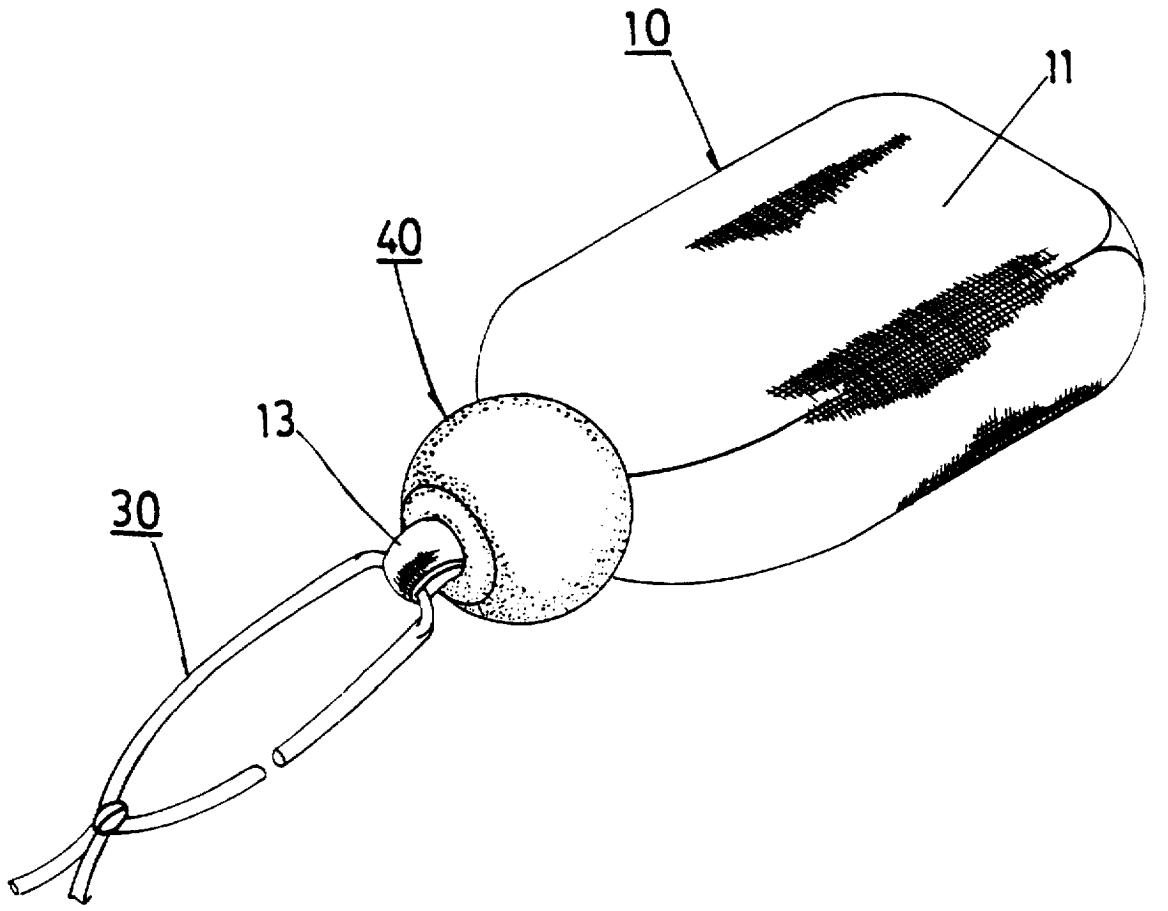
Primary Examiner—Randall Chin

Attorney, Agent, or Firm—Bacon & Thomas

[57] **ABSTRACT**

Bathing may be conducted in a sanitary and efficient manner by utilizing a braided bag within which a bathing pad is disposed, the bag being provided with an elastic neck and mouth opening which is secured in a closed position by a binding ribbon and a fixing member.

2 Claims, 3 Drawing Sheets



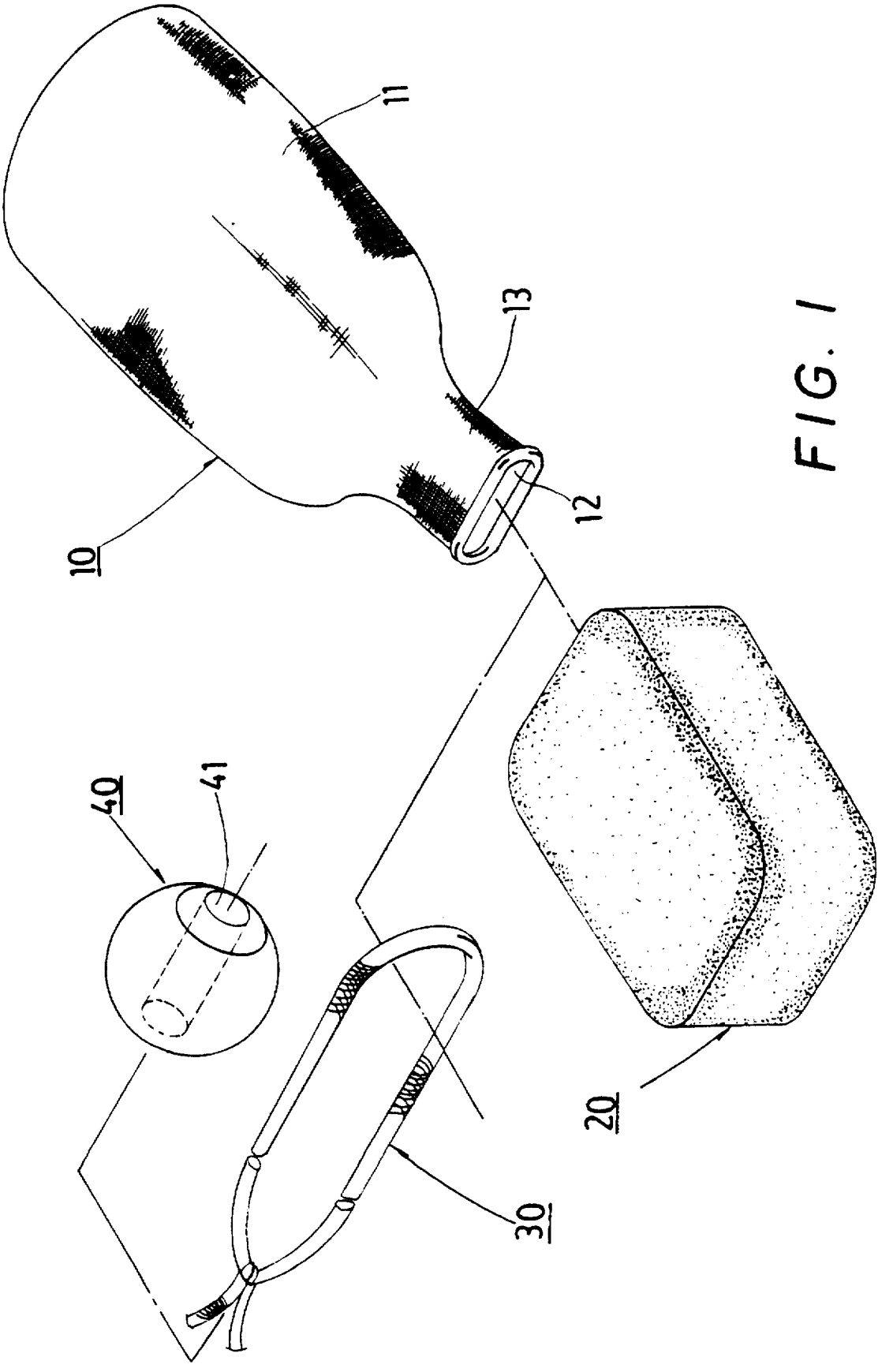


FIG. 1

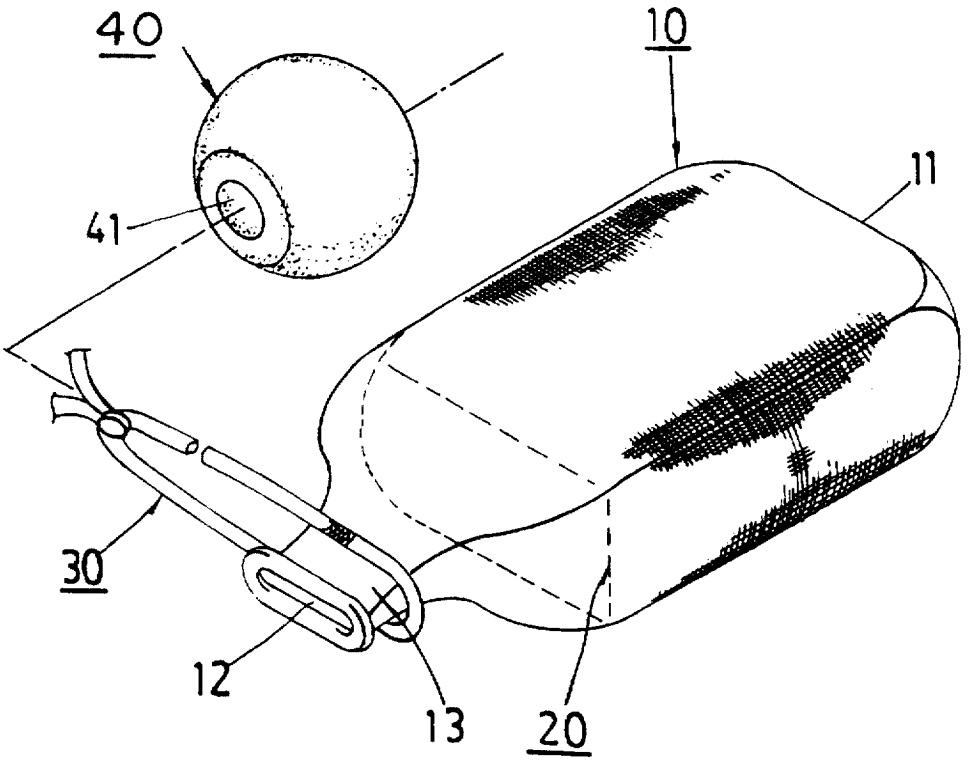


FIG. 2

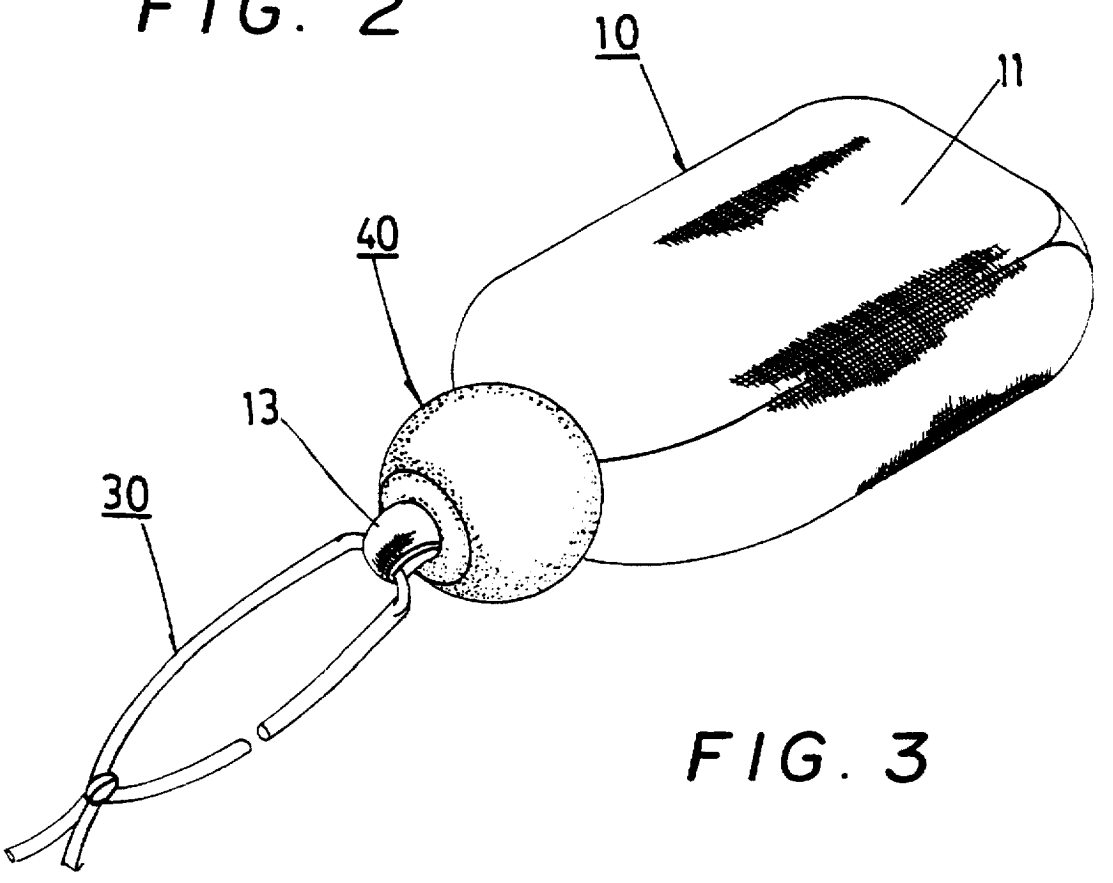


FIG. 3

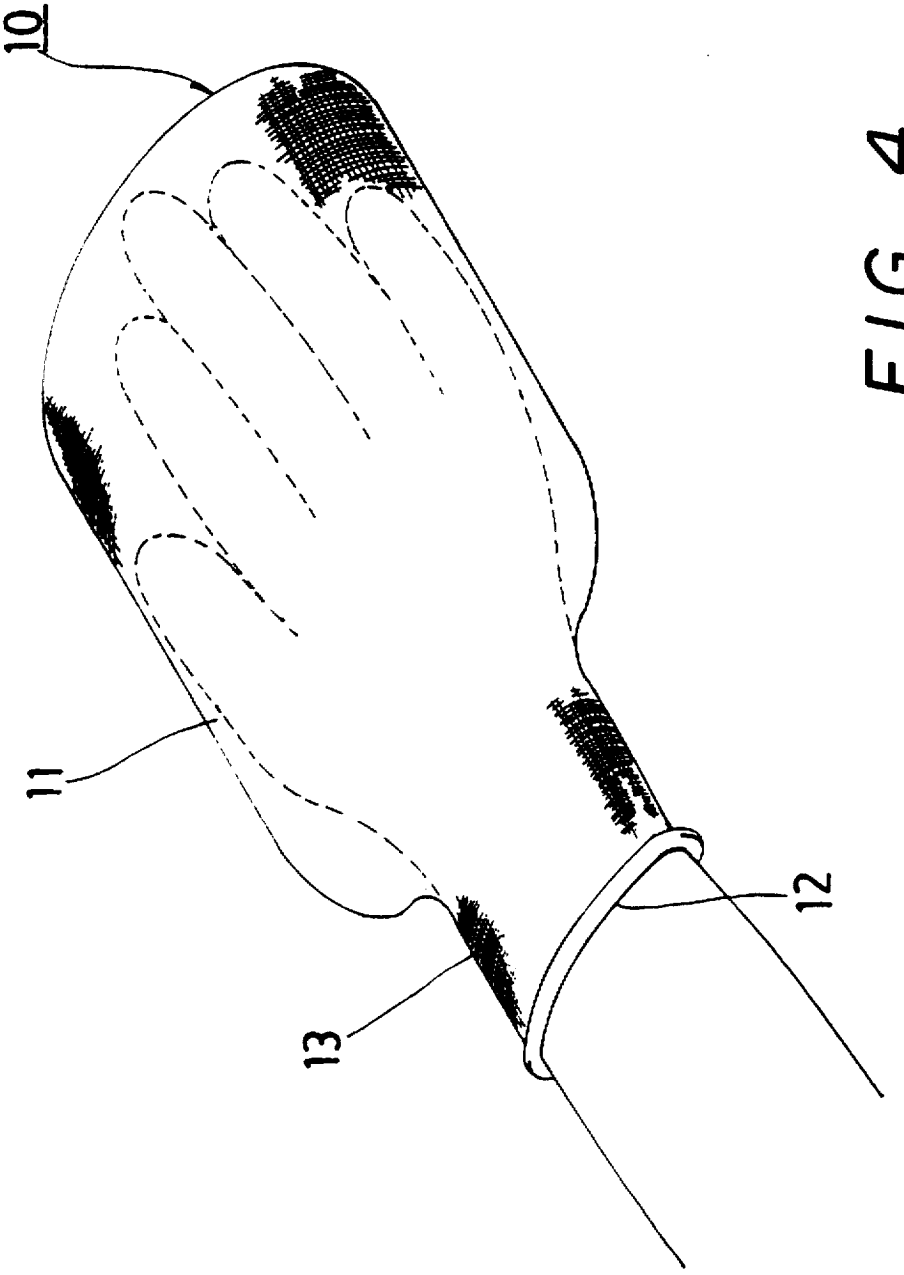


FIG. 4

BATHING PAD ASSEMBLY

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to bathing devices, and especially to a bathing pad assembly which can be disassembled for cleaning after bathing to prevent dirt or soiling substance from accumulating on the assembly or on parts forming the assembly, including a braided bag for enclosing the pad. The assembly can be disassembled so that the braided bag and the bathing pad can be cleaned after use, which ensures sanitary bathing.

2. Description of the Prior Art

The human body may occasionally be contaminated with micro-dust or fine filth, and also sweat. Therefore, cleansing after activity for a period of time by bathing to wash off the dirt and become clean again is necessary to prevent illness. Normally in bathing, various bathing articles are used to thoroughly wash off dirt and accumulated filth. Such articles include cotton cloths, sponges, luffa cloths and bathing brushes. However, cotton cloths and sponges are relatively soft, and must be forcibly applied when used in scrubbing, otherwise cleansing will not be achieved if they are applied too lightly. Materials used to make luffa cloths and bathing brushes are slightly stiff, so the body may be subjected to harm by using these articles, resulting in redness or pain. There are devices wherein cotton cloths, sponges, luffa cloths and bathing brushes may be enveloped within stiffer mesh cloths which are sealed after the articles are placed in the mesh cloths, so that the bathing articles can no longer be taken out or changed, thus fixing their sizes and shapes.

During bathing, the mesh cloths are subjected to accumulation of dirt, and when they are used for a long period, the dirt will accumulate on the bathing articles to form a foul condition. When such devices are used by a whole family, the situation will be even more serious. In this case, if they are changed frequently, increased cost will result, and if they are changed infrequently, bacteria will propagate, and infection may occur.

Known bathing articles may be advantageous, but sanitation is more important. In normal use, bathing articles generally accumulate water which causes bacteria to propagate. This causes the bathing articles to easily decay and shorten their useful life. Thorough cleaning of the body cannot be easily realized without some form of bathing article.

SUMMARY OF THE INVENTION

In view of this, the inventor of the present invention knows that cleansing of human bodies is extremely important. The inventor thereby provides the present invention based on his professional experience of years in designing, manufacturing and selling similar products. The present invention comprises a bathing pad enveloped in a braided bag, wherein the assembly can be disassembled after using for cleaning the bathing pad and ensuring bathing sanitation.

Accordingly, the principal object of the present invention is to provide a bathing pad enveloped in a braided bag, and the assembly can be disassembled after using for cleaning and thereby ensure that bathing can be more sanitary and safe.

Another object of the present invention is to provide a bathing pad enveloped in a braided bag which can be held in the palm of one hand for direct scrubbing to achieve the affect of bathing.

Another object of the present invention is to provide bathing pads enveloped in braided bags which can be hung on walls or any kind of hanging support when they are not in use, so that they do not become lost. The hanging of bathing articles after bathing ensures water removal and keep the articles dry and in good sanitary condition so that the useful life of the articles can be increased.

A further object of the present invention is to provide bathing pads enveloped in braided bags wherein the pads can be changed with other pads of any shape and size.

The present invention will be apparent in its structure, characteristics and mode of using from the detailed description of the preferred embodiments thereof with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is an exploded perspective view of the present invention;

FIG. **2** is an exploded perspective view of the present invention showing its manner of assembling;

FIG. **3** is a perspective view of the present invention in assembled form; and

FIG. **4** is a perspective view of another embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. **1** of the drawings, the present invention is comprised of a braided bag **10**, a bathing pad **20** which is of rectangular shape in this embodiment, a binding ribbon **30** and a fixing member **40**.

The braided bag **10** is a bag formed by braiding, with a body **11** which is wider than and gradually gets smaller toward a mouth **12** to form an elastic neck **13** for tightly binding the mouth **12**. The bathing pad **20** is made of soft elastic material. The binding ribbon **30** is used to tightly bind the elastic neck. The fixing member **40** is provided with a round hole **41** through which the binding ribbon **30** and the mouth **12** of the elastic neck **13** may be pulled.

By means of the above parts, the bathing pad **20** is first pressed through the mouth **12** of the braided bag **10** into the body **11** of the braided bag **10**, so that the braided bag **10** envelops the bathing pad **20**. The binding ribbon **30** is then placed around the elastic neck **13**, as seen in FIG. **2**. The binding ribbon **30** is pulled through the round hole **41** of the fixing member **40**. The elastic neck **13** of the braided bag **10** is folded over ribbon **30** and the folded portion is drawn into the round hole **41** of the fixing member **40** by pulling ribbon **30**. Thus, as shown in FIG. **3**, the bathing pad **20** is completely enclosed by the braided bag **10**.

When in use, the braided bag **10** directly contacts the body, so any dirt on the body will be attached to the surface of the braided bag **10**. After use, the elastic neck **13** of the braided bag **10** is pulled out of the round hole **41** of the fixing member **40**, the bathing pad **20** is taken out of the braided bag **10**, and the braided bag **10** can be washed so that dirt will not become attached directly on the surfaces of the bathing pad **20**. This maintains sanitation of the braided bag **10** and the bathing pad **20**.

Referring further to FIG. **4**, the braided bag **10** of the present invention can be put on a palm with the elastic neck **13** of the braided bag **10** fitting over the wrist of the user. The braided bag **10** can thus be held by a hand for direct scrubbing during bathing. The braided bag **10** can be taken off for washing after use to keep it clean.

As stated above, the present invention uses the braided bag **10** to envelop the bathing pad **20** to prevent dirt from direct contact with the bathing pad **20**, and only allow dirt to contact with the surface of the braided bag **10**. The braided bag **10** can be washed after use, so that the braided bag **10** and the bathing pad **20** can be kept clean. The braided bag **10** can also be put on a palm to provide sanitary use.

Having thus described the structure of my invention, what I claim is:

1. A bathing pad assembly comprising:

a) a braided bag formed of soft elastic material and including a body portion which gradually reduces in size to terminate in an open mouth, and an elastic neck being positioned between the mouth and the body for closing off the mouth;

b) a bathing pad passed through the mouth and disposed within the bag, with the bag enveloping the pad;

c) a binding ribbon having a portion thereof securable around the neck;

d) a fixing member having a hole through which the binding ribbon and neck may be pulled; and

e) wherein when the binding ribbon is secured around the neck and also drawn through the hole of the fixing member, the neck may be folded over the binding ribbon and also drawn through the hole of the fixing member in its folded position by pulling the binding ribbon, thereby tightly closing the mouth.

2. The bathing pad assembly of claim **1** wherein the braided bag is of sufficient size and shape for enveloping the hand of a user which is inserted into the bag through the mouth thereof.

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United States Patent [19]

Joyner et al.

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[45] Date of Patent: ** Oct. 11, 1994

[54] **SPONGE BRUSH**

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[73] Assignee: **Empire Brushes, Inc.**, Greenville, N.C.

[**] Term: **14 Years**

[21] Appl. No.: **12,625**

[22] Filed: **Sep. 7, 1993**

[52] **U.S. Cl.** **D4/120**; D28/63; D32/40

[58] **Field of Search** D4/119–120, D4/132, 137–138; 15/143.1, 114, 118, 208, 209.1, 210.1, 244.1, 244.4; D28/63; D32/40, 50–52

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[57] **CLAIM**

The ornamental design for a sponge brush, as shown and described.

DESCRIPTION

FIG. **1** is a top, front, and left side perspective view of a sponge brush showing our design;
FIG. **2** is an enlarged front elevational view thereof;
FIG. **3** is a top plan view thereof;
FIG. **4** is a right side elevational view thereof;
FIG. **5** is a rear elevational view thereof; and,
FIG. **6** is a bottom plan view thereof.

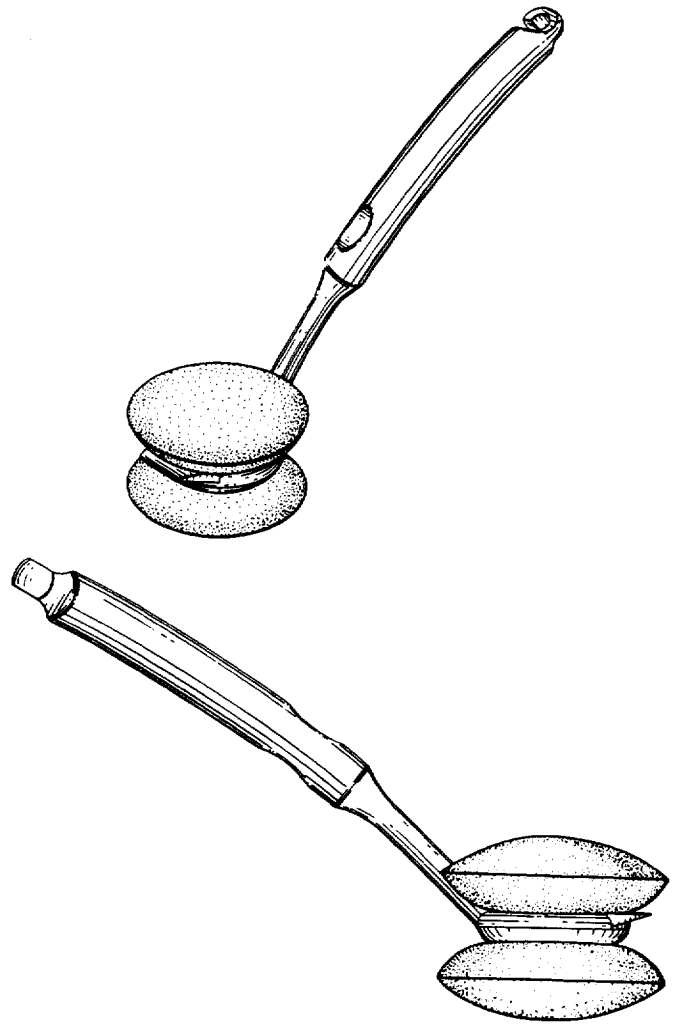
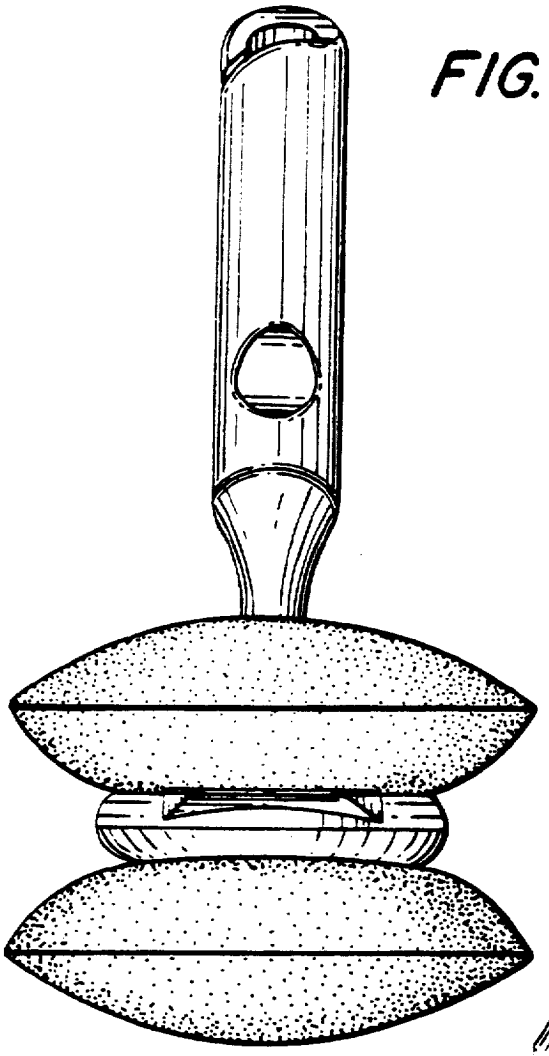


FIG. 2



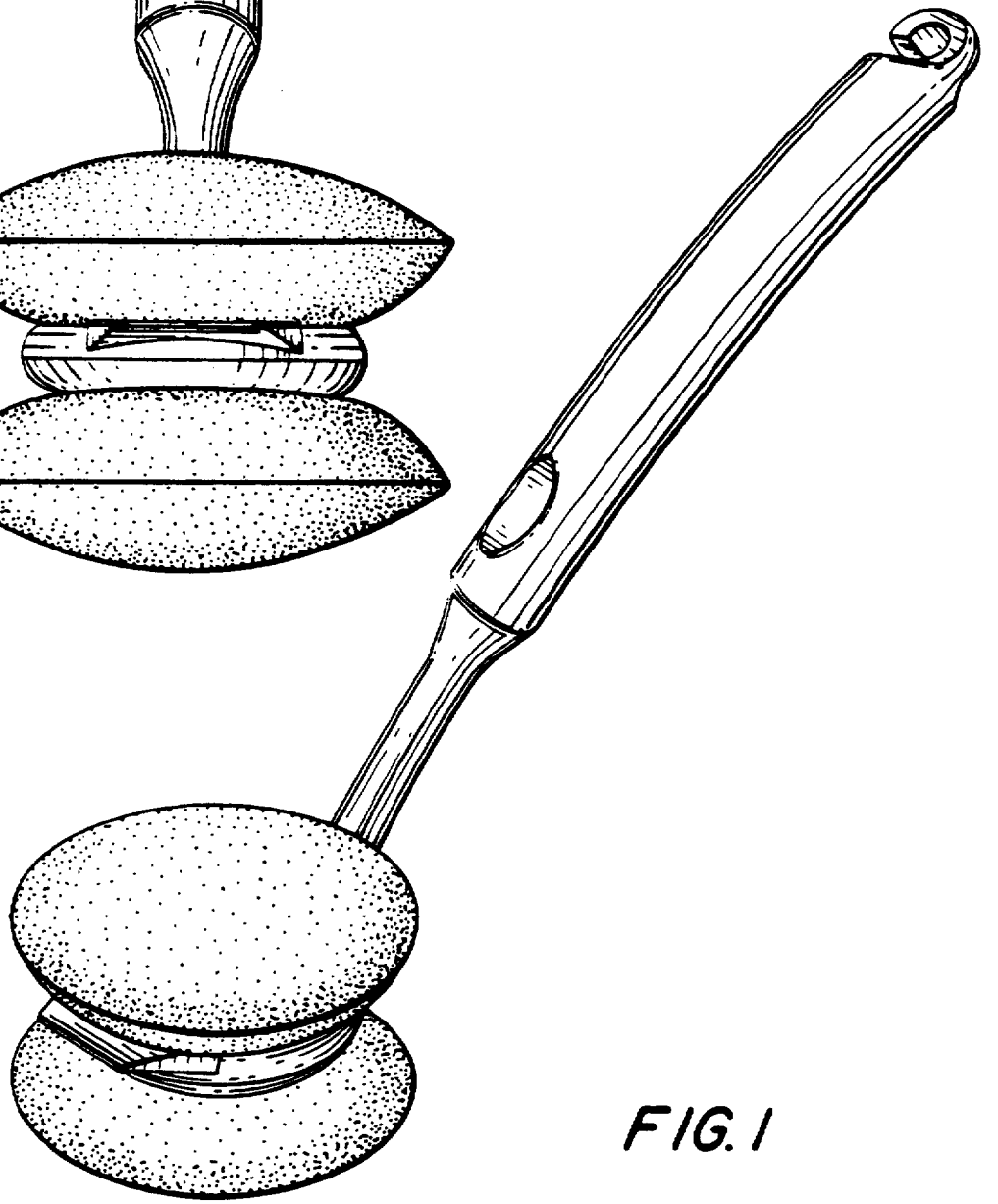


FIG. 1

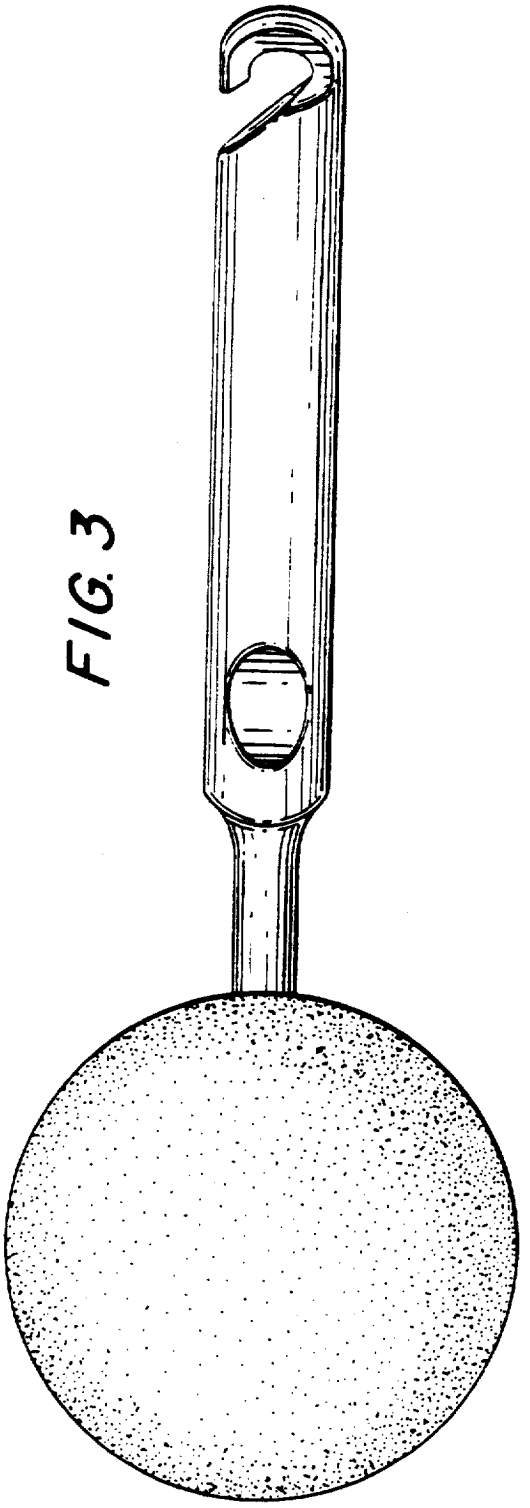


FIG. 3

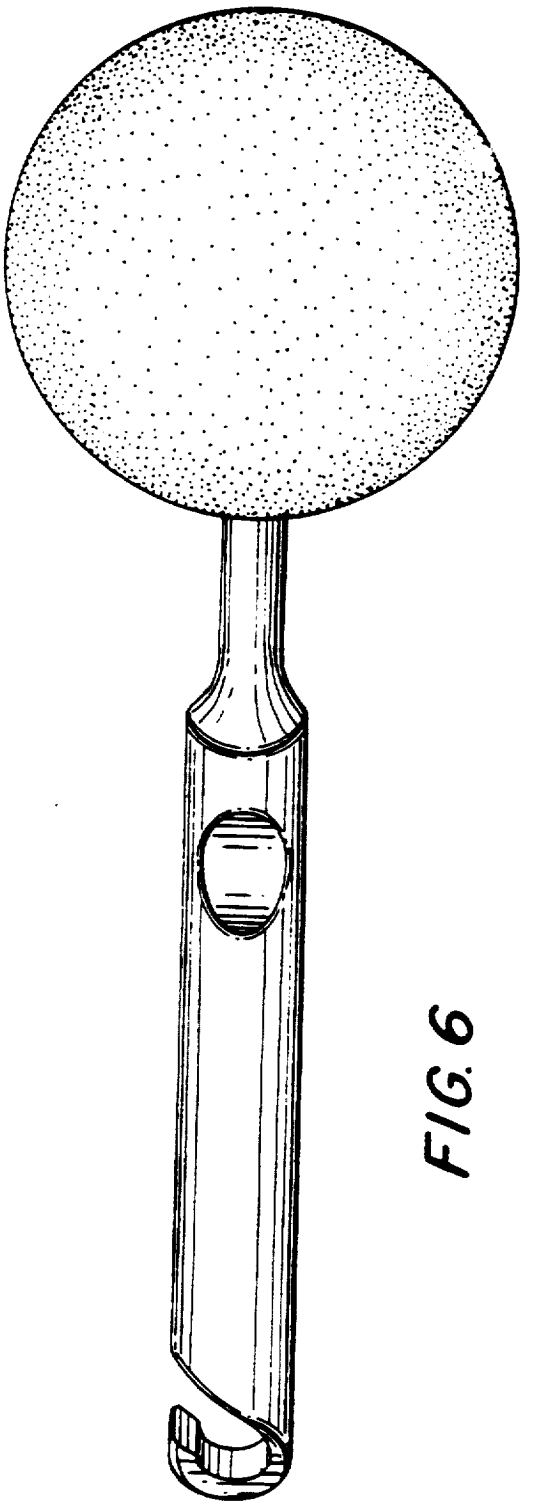


FIG. 6

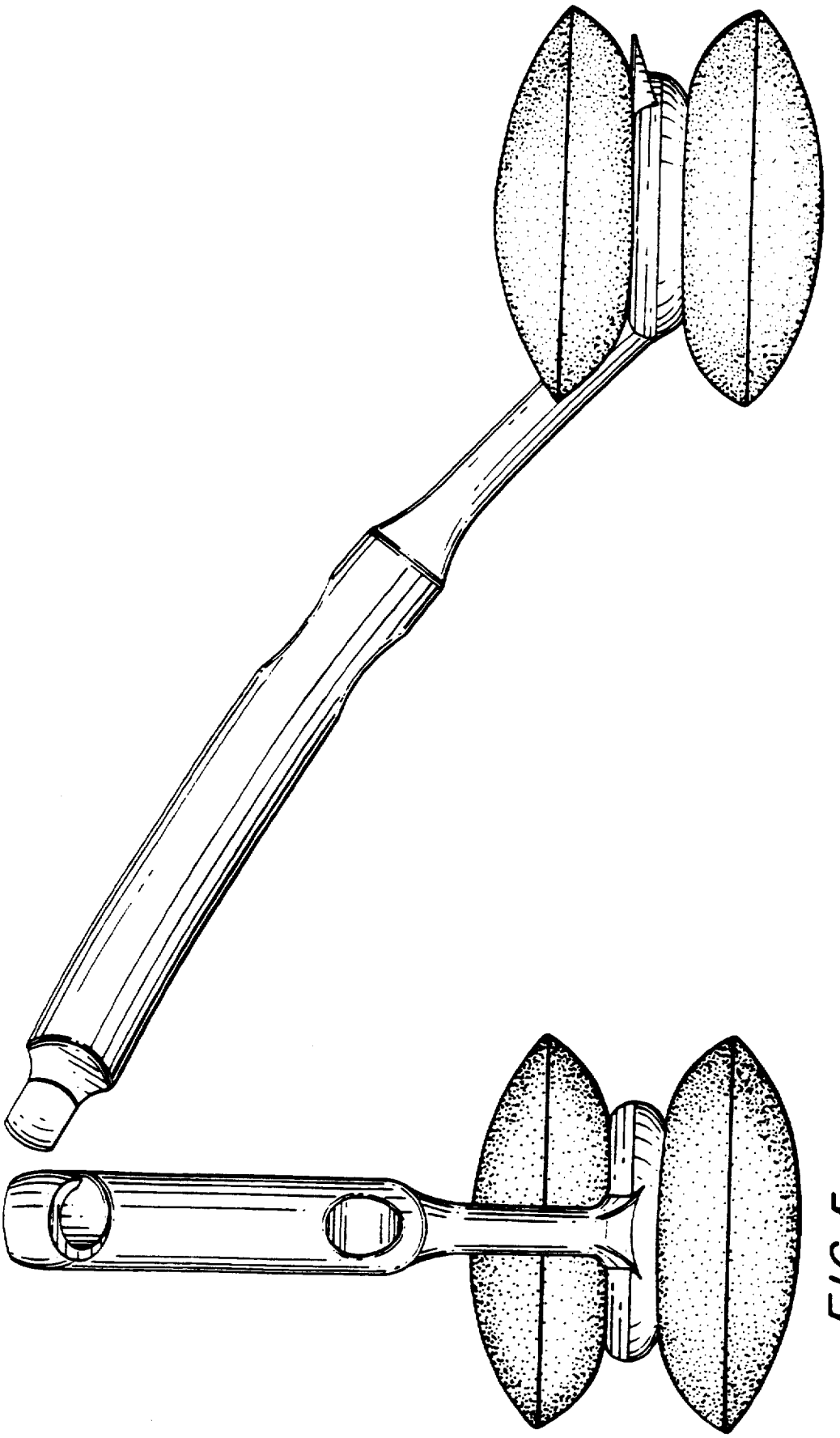


FIG. 4

FIG. 5