US 20030196674A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2003/0196674 A1**

(43) **Pub. Date: Oct. 23, 2003**

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(54) **SURE GRIP STEAM & PERM ROLLERS**

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(21) Appl. No.: **10/127,003**

(22) Filed: **Apr. 22, 2002**

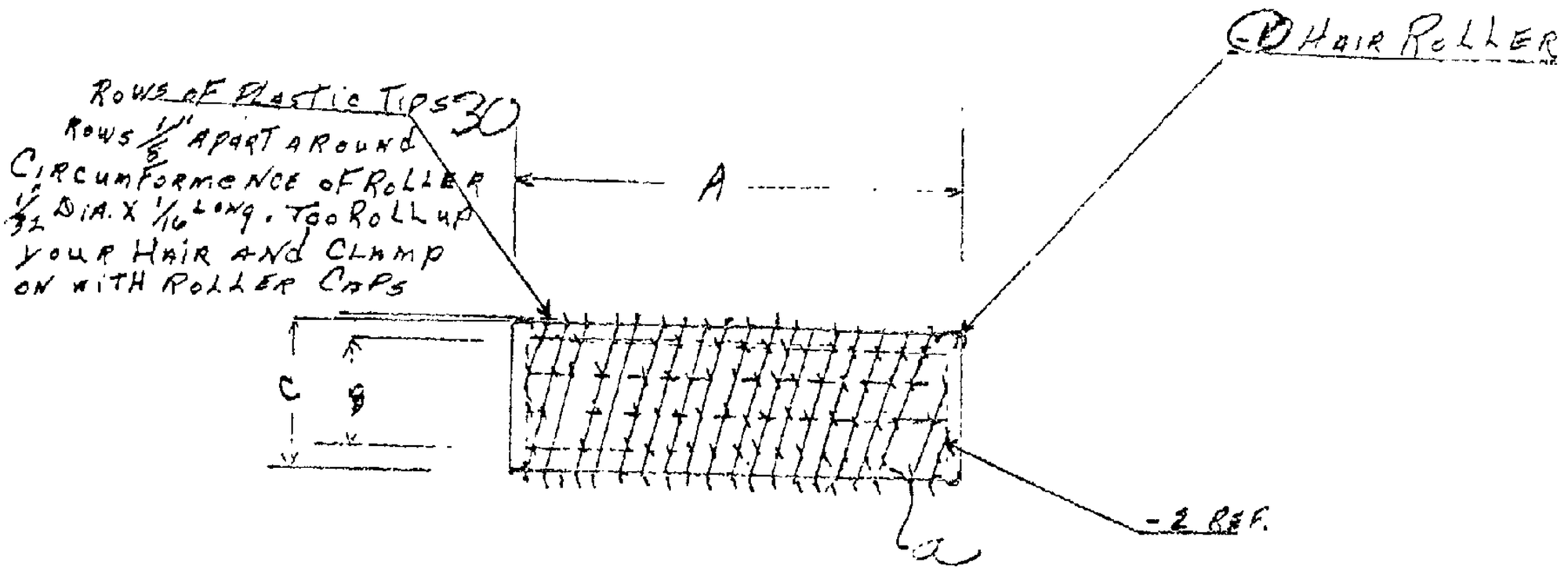
Publication Classification

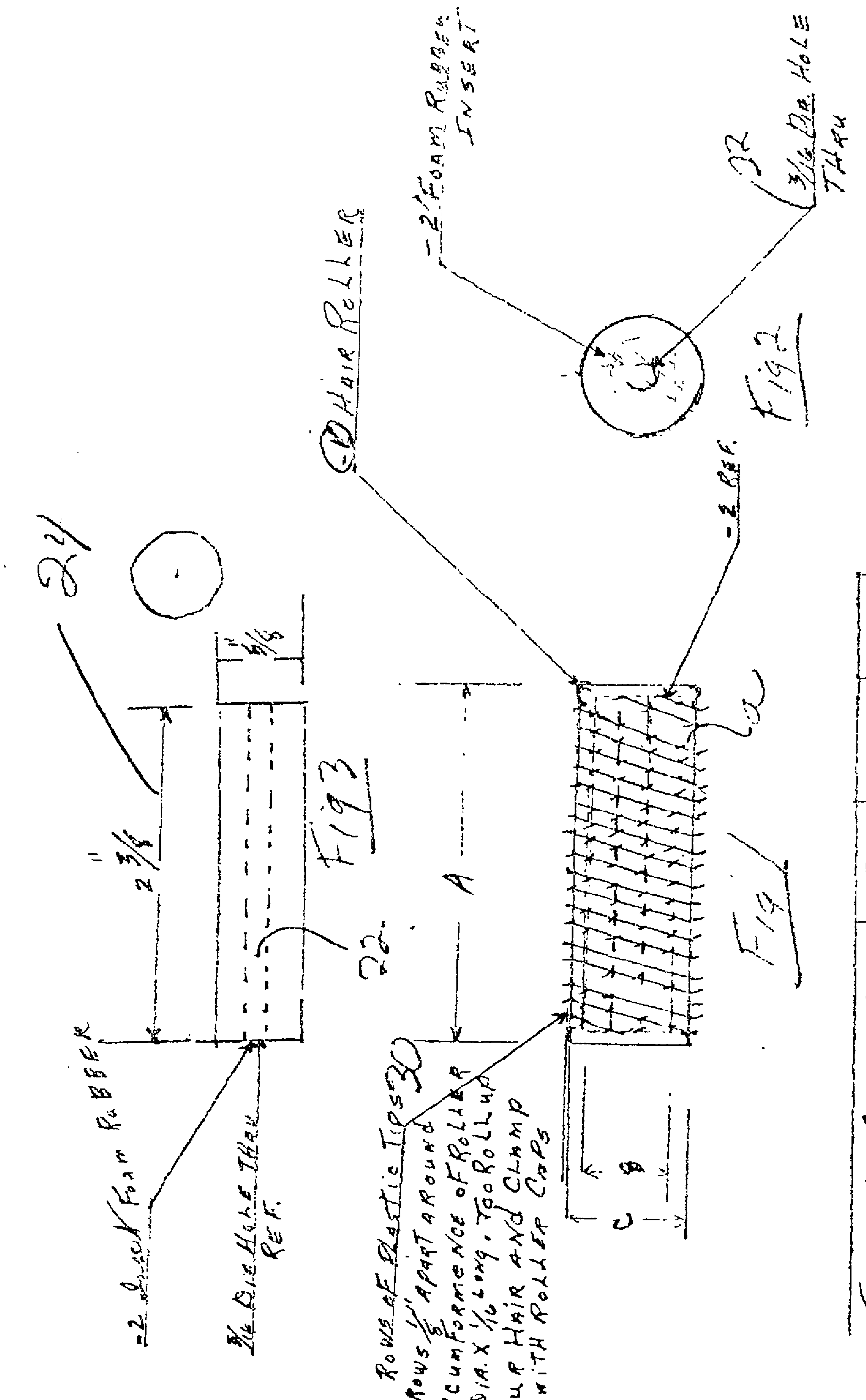
(51) **Int. Cl.**[7] **A45D 2/14**; A45D 2/06

(52) **U.S. Cl.** **132/262**; 132/267

(57) **ABSTRACT**

In accordance with the present invention a hair roller **10** is provided including a cylindrical foam rubber insert **20** having a longitudinally extending hole **22** extending throughout the length **24** of the foam rubber member. Rows of plastic tips **30** are provided around the circumference of the foam robber member extending along the length **24** of the foam rubber member. The tips are located at an angle with the horizontal a in FIG. **1** around the circumference. The foam rubber member **20** with the rows of plastic tips **30** in place is placed in a cap **40** made of heat conductive material such as aluminum or aluminum alloy having a body portion **41** and an opening **42** at one side **44** to receive the foam rubber member with the roles of plastic tips having suffecient resiliency to receive the foam rubber member with the roles of plastic tips and maintain them in place.





TOLERANCE ± 1/32	INVENTOR AUDREY TABBE
MATERIAL PLASTIC & FOAM RUBBER	HAIR ROLLER & INSERT

Fig 6

SIZE	A	B	C
JUMBO	2 3/16	13/16	1"
LARGE	2 11/16	3/4	15/16
MEDIUM	2 5/8	5/8	13/16
SMALL	2 1/16	11/16	11/16

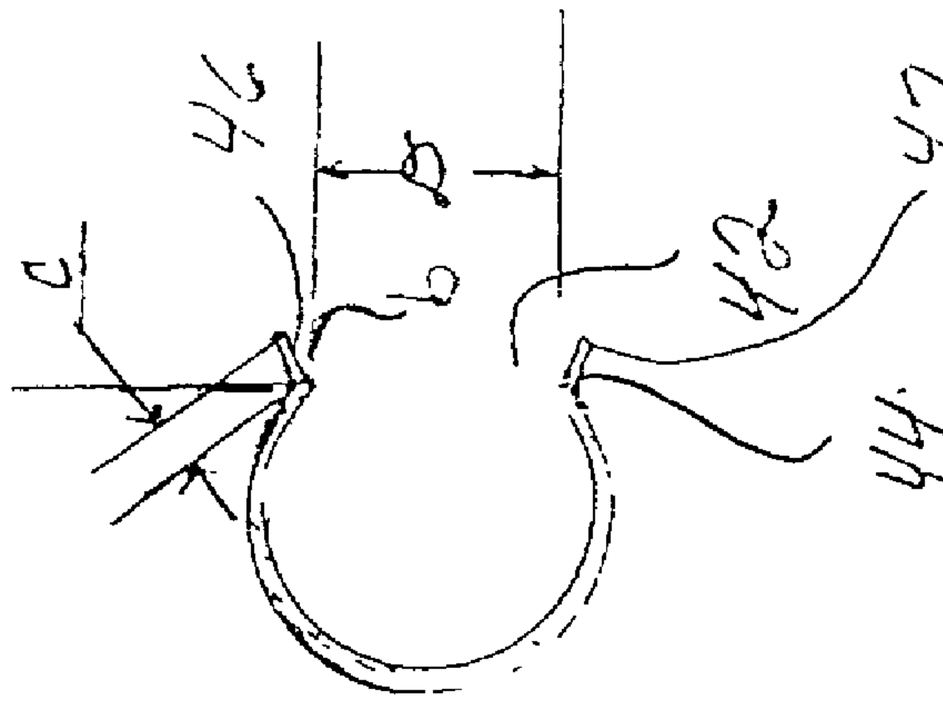


Fig 5

PART	A	B	C
- 1	1 1/16"	2.25	3/16
- 2	1 5/16"	2.25	3/16
- 3	1 3/16"	2.25	3/16
- 4	1 1/16"	2.25	3/16

SIZE	TOLERANCE	TOLERANCE
JUMBO	.025	3 1/16"
LARGE	.025	2 3/4"
MEDIUM	.025	2 1/2"
SMALL	.025	2"

Fig 6

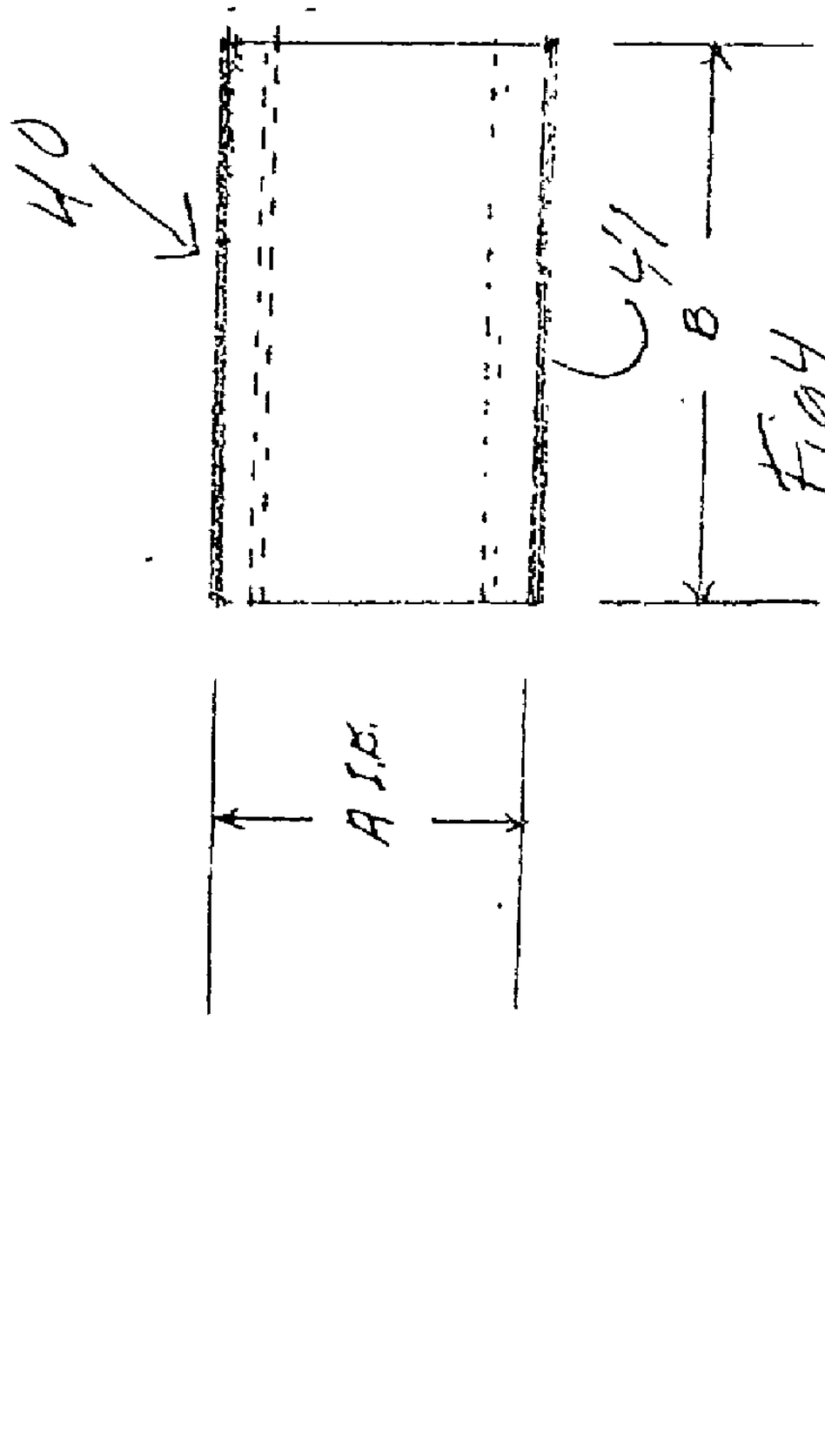


Fig 4

SURE GRIP STEAM & PERM ROLLERS

I FIELD OF THE INVENTION

[0001] This invention relates to an improved hair curler roller assembly.

II BACKGROUND OF THE INVENTION

[0002] The hair curler assemblies which are presently commercially available are not efficient. They are smooth and cannot grip the hair in order to roll it.

[0003] For example in U.S. Pat. Nos. 4,453,554 and Re. No. 35,287 hereby incorporated into the present application by this reference, tubular foam pad **26** does not effectively grip the hair.

III SUMMARY OF THE INVENTION

[0004] A. Objects of the Invention

[0005] One object of the present invention is to provide a hair roller assembly having surface which effectively grips and holds the hair for rolling.

[0006] Another object of the present invention is to provide is to provide a foam insert with an opening in the center which allows steam to permeate the foam and thus retain the heat from the steam.

[0007] Another object of the present invention is to provide a solid cover made of heat condutive material such as aluminum or aluminum alloy which may be placed over the roller which retains the heat longer than commercially available covers made of plastic.

[0008] Another object of the present invention is to provide and economical option for persons who presently posses a steam roller system can add these improved rollers to their presently possesed system.

[0009] Another object of the present invention it is to provide a system for rolling perms which can be down the much more quickly and easier than previously with the improved rollers of the present invention.

[0010] Other objects of the invention will be apparent from the following Description and Drawings.

B. SUMMARY

[0011] In accordance with the present invention a hair roller **10** is provided including a cylindrical foam rubber insert **20** having a longitudinally extending hole **22** extending throughout the length **24** of the foam rubber member. Rows of plastic tips **30** are provided around the circumference of the foam robber member extending along the length **24** of the foam rubber member. The tips are located at an angle with the horizontal a in **FIG. 1** around the circumference. The foam rubber member **20** with the rows of plastic tips **30** in place is placed in a cap **40** made of heat conductive material such as aluminum or aluminum alloy having a body portion **41** and an opening **42** at one side **44** to receive the foam rubber member with the roles of plastic tips having suffecient resiliency to receive the foam rubber member with the roles of plastic tips and maintain them in place. Projections **46** and **47** at an angle with the horizontal b in **FIG. 5** extend outwardly a distance C and are located a distance D apart.

IV THE DRAWINGS

[0012] **FIG. 1** is a side evevation view of the hair curler roller assembly of the present invention.

[0013] **FIG. 2** is an end view of the hair curler roller assembly of the present invention.

[0014] **FIG. 3** is a detail view of the foam rubber insert used in the hair curler roller assembly of the present invention.

[0015] **FIG. 4** is a detail side elevation view of the conductive cap used in the hair curler roller assembly of the present invention.

[0016] **FIG. 5** is an end view of the conductive cap used in the hair curler roller assembly of the present invention.

[0017] **FIG. 6** is a table of example dimensions which may be used in the hair curler roller assembly of the present invention.

[0018] **FIG. 7** is a table of example dimensions which may be used in the cap in the hair curler roller assembly of the present invention.

V DESCRIPTION OF PREFERRED EMBODIMENTS

[0019] In accordance with the present invention a hair roller **10** is provided including a cylindrical foam rubber insert **20** having a longitudinally extending hole **22** extending throughout the length **24** of the foam rubber member.

[0020] Rows **30** of plastic tips **32** of, for example ⅛th inch apart of 1/32 inch diameter and 1/16 inch long are provided around the circumference of the foam robber member extending along the length **24** of the foam rubber member. The tips are located at an angle with the horizontal a in **FIG. 1** around the circumference. Angle a may vary between 50 and 80 degrees. Circular hollow end members **34** and **36** are provided at each end.

[0021] The foam rubber member **20** with the rows **30** of plastic tips **32** in place is placed in a cap **40** made of heat conductive material such as aluminum or aluminum alloy having a body portion **41** and an opening **42** at one side **44** and having suffecient resiliency to receive the foam rubber member with the roles of plastic tips and maintain them in place. The resiliency is preferably within the ductility elongation range of 15 to 45%. See for example, 1971 Materials Engineering, Materials Selector pp.109-116. Projections **46** and **47** at an angle with the horizontal b in **FIG. 5** extend outwardly a distance C and are located a distance D apart. Angle b may vary between 5 to 25 degrees.

[0022] **FIG. 6** is a table of example dimensions which may be used in the hair curler roller assembly of the present invention shown in FIGS. **1-3**.

[0023] **FIG. 7** is a table of example dimensions which may be used in the cap in the hair curler roller assembly of the present invention shown in **FIGS. 4 and 5**.

What is claimed is:

1. a hair roller assembly comprising:

a cylindrical foam rubber insert having a longitudinally extending hole extending throughout the length of said foam rubber member;

rows of plastic tips located around the circumference of said foam robber member extending along the length of said foam rubber member and making an acute angle with said foam rubber member;

said foam rubber member with said rows of plastic tips in place located in a generally cylindrical cap made of resilient, heat conductive material having a longitudinally extending body portion and a longitundinally extending opening at one side to receive said foam rubber member with said rowes of plastic tips in place; and

means for retaining said foam rubber member with said rowes of plastic tips in place within said cap.

2. a hair roller assembly according to claim 1 wherein said conductive material is selected form aluminum and aluminum alloys.

3. a hair roller assembly according to claim 1 wherein said means for retaining said foam rubber member with said rowes of plastic tips in place within said cap comprise resiliency in said cap.

4. a hair roller assembly according to claim 3 wherein said resiliency results from ductility of said conductive material.

5. a hair roller assembly according to claim 1 wherein spaced projections extend outwardly from said cap.

6. a hair roller assembly according to claim 5 wherein said rows make an angle a with the horizontal from 50 to 80 degrees.

7. a hair roller assembly according to claim 5 wherein said spaced projections extend outwardly a distance C in **FIG. 7** and are located a distance D apart in **FIG. 7**.

8. a hair roller assembly according to claim 5 wherein the dimensions in **FIG. 6** are used in the hair curler roller assembly of the present invention shown in FIGS. **1-3**.

9. a hair roller assembly comprising:

a cylindrical foam rubber insert having a longitudinally extending hole extending throughout the length of said foam rubber member;

rows of plastic tips located around the circumference of said foam robber member extending along the length of said foam rubber member and making an acute angle with said foam rubber member;

said foam rubber member with said rows of plastic tips adapted to be located in place in a generally cylindrical cap made of resilient heat conductive material having a longitudinally extending body portion and a longitundinally extending opening at one side to receive said foam rubber member with said rowes of plastic tips in place in said cap.

10. a hair roller assembly according to claim 9 wherein said means for retaining said foam rubber member with said rowes of plastic tips in place within said cap comprise resiliency in said cap.

11. a hair roller assembly according to claim 9 wherein the dimensions shown in **FIG. 6** are be used in the the hair curler roller assembly shown in FIGS. **1-3**.

12. a hair roller assembly according to claim 11 wherein said tips are located at an angle with the horizontal a of from 50 to 80 degrees.

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