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De Napoli

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[54] STEAM OR DRY HAIR CURLER HEATING APPARATUS

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[52] **U.S. Cl.**.....**219/222,** 21/95, 99/442, 126/20, 132/33 R, 219/275, 219/401, 219/521

[51] **Int. Cl.**.....**A45d 4/12,** H05b 3/02

[58] **Field of Search**.....219/222–226, 214, 219/218, 401, 385, 386, 520, 521, 430, 439, 271, 275; 21/93–96, 98; 99/419, 442; 312/236; 126/20, 20.1, 20.2, 275, 369, 369.1, 369.2, 369.5; 132/33 R

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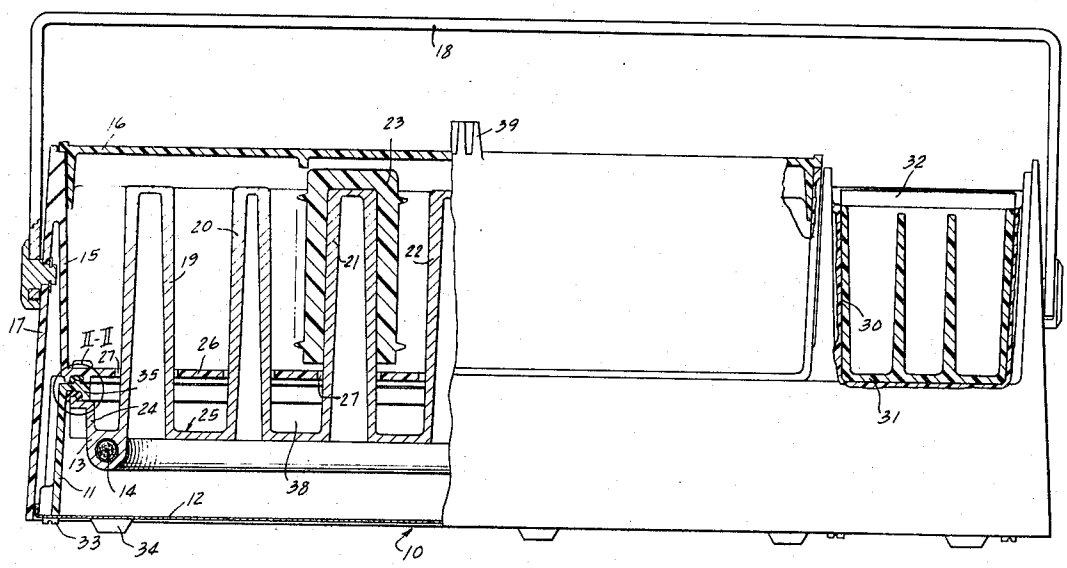
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[57] **ABSTRACT**

A hair curler heating apparatus providing combined heating effects so that hair curlers can be, in accordance with the preference of the user, selectively heated solely by dry heat from within or can be heated from within by dry heat and simultaneously heated from the outside by means of heated water vapor or steam to provide damp curler. The apparatus includes an electrically heated metallic base having a peripheral lip surrounding a flat, upwardly directed, water receiving, retaining and evaporating area to which a plurality of curler supporting mandrels are secured. A non-metallic chassis and housing structure to which the peripheral lip is attached in water-tight relationship supports the metallic base. A removable cover overlies the upwardly directed area and normally encloses the mandrels and any curlers thereon for retaining heated air and/or water vapor thereabout so that the curlers can be selectively heated with or without the presence of heated water vapor. A measuring cup sized to introduce an appropriate quantity of water to the upwardly directed area is provided.

12 Claims, 2 Drawing Figures



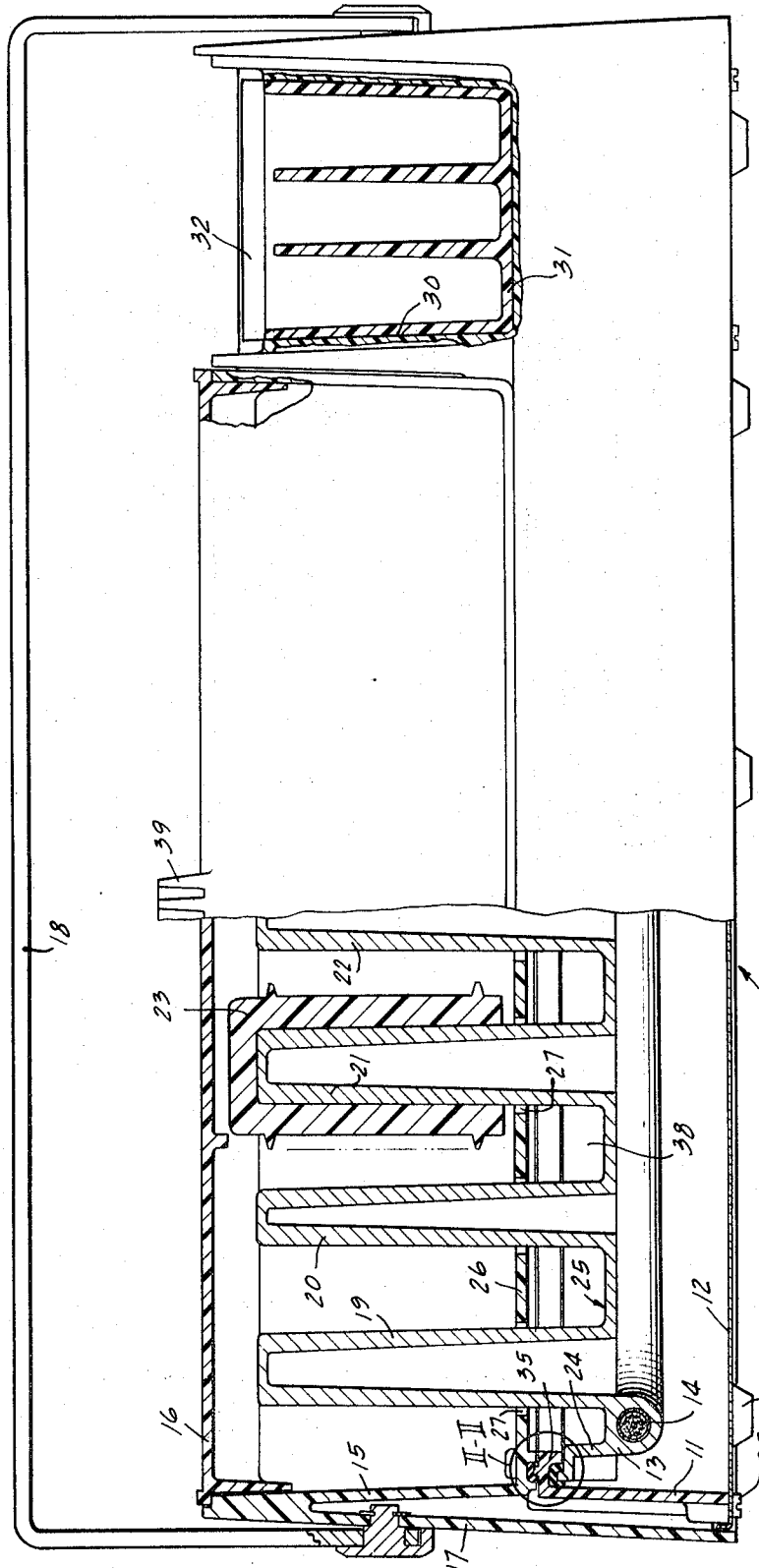


Fig. 1

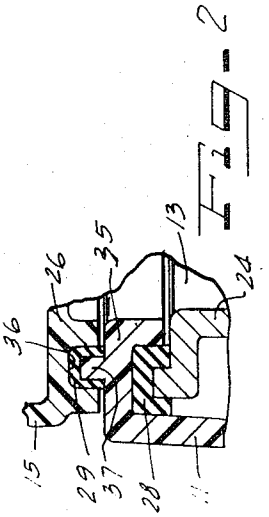


Fig. 2

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STEAM OR DRY HAIR CURLER HEATING APPARATUS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to apparatus for heating separate hair curlers that are thereafter removed from the heating means and applied to the hair.

2. Prior Art

It has been known heretofore to provide an apparatus for heating hair curlers from within. Some of the users of this type of apparatus have found that the hot dry heat provided by such a curler can in some instances split hair ends. This condition is not entirely the fault of the curler, but is in part caused by the nature of the hair itself.

Heretofore, it has also been known to heat a hair curler by storing it in a chamber or on a mandrel wherein it is subjected to heated water vapor or steam. This type of apparatus has encountered certain difficulties, one of which is that some users prefer to have dry curlers since they are not affected by any split hair end problem.

SUMMARY OF THE INVENTION

According to my invention, a hair curling apparatus is provided which has combined heating means so that the hair curler can be, in accordance with the preference of the user, selectably heated solely by dry heat from within, or in the alternative, can be heated from within by dry heat and simultaneously heated from the outside by means of heated water vapor or steam to provide a slightly damp curler against which the free ends of the hair are wound.

Accordingly, it is an object of the present invention to provide a hair curling apparatus capable of selectably heating hair curlers by dry heat or by heated water vapor.

A further object of the present invention is to provide hair curling apparatus which will evaporate water to provide heated water vapor at a temperature above that of the hair curler, the temperature of the hair curler being below the dew point of such heated water vapor so that water will condense directly thereon.

Many other advantages, features and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

ON THE DRAWING

FIG. 1 is an elevational view, partially broken away, and shown in cross section, of hair curling apparatus provided in accordance with the principles of the present invention; and

FIG. 2 is a cross-sectional view showing in enlarged form that portion of FIG. 1 which is enclosed by the circle II—II.

AS SHOWN ON THE DRAWING

The principles of the present invention are particularly useful when embodied in hair curling apparatus such as illustrated in FIG. 1, generally indicated by the numeral **10**. The apparatus **10** is constructed to enable the user to selectively heat hair curlers either with or without heated water vapor or steam so as to provide either moist or dry hair curlers that have been heated. To that end, the apparatus **10** includes a chassis **11** supported on a bottom cover **12** and supporting a horizontal base **13** to which is secured heating means **14**. The chassis **11** also supports a housing **15** which is open at the top and the front, such opening being closed by a cover **16**. The housing **15** has a skirt **17** that encircles the device and to which a carrying handle **18** is pivotally secured. The base **13** has a set of mandrels **19–22**, each of which supports a hair curler, one of which is illustrated at **23**. The base has a peripheral lip **24** which surrounds and encloses an upwardly directed area **25**, which is generally central and flat, and to which the mandrels **19** are secured in heat transfer relationship. The upwardly directed area **25** is imperforate and is thus capable of receiving and retaining a quantity of water. The housing **15** has a floor **26** which overlies the upwardly directed area **25** and which has an aperture **27** for each of the mandrels **19–22** through which heated water vapor or steam may pass, for flowing upwardly against individual curlers **23**. Water-tight seal means are provided between the base **13** and the chassis **11**, and between the chassis **11** and the housing **15**. The first of these seal means, best seen in FIG. **2** is indicated at **28** and the second of such water-tight seals is indicated at **29**. A preferred type of sealing material for the seals **28, 29** is a silicone rubber compound which is referred to as being room temperature vulcanizable, and such compounds are available from General Electric Company and Dow Corning Company. The seal can be thoroughly cured at the factory if desired, and if not done then, the first use of the device will complete any incomplete curing, as water is a catalyst therefor.

The housing **15** has a well or pocket **30** within which there is received a measuring cup **31** having internal ribs, the cup **31** being thereby stored within the device. The cup **31** has a grasping portion **32** which projects upwardly from the well **30**. If desired, a quantity of water may be stored in the cup **30** for future use, but it is not intended to heat any water in the cup **31** and therefore the well **30** and hence the cup **31** is disposed in upwardly spaced relation from the heating means **14** so that no functionally significant heating thereof should be expected.

The chassis **11** is secured by a number of screws **33** to the bottom cover **12** which has a set of feet **34** for supporting the curling apparatus **10** slightly above the surface of a table. The base **13** is similarly secured by screws (not shown) to an overhanging portion **35** of the chassis which surrounds the seal **28** on three sides, an upper edge of the lip **24** projecting into the seal **28**, whereby there is a water-tight connection along the entire periphery of the horizontal base **13** with respect to the chassis **11**.

In a similar fashion, at the peripheral lip **24** of the base **13**, the housing **15** also has a portion or groove **36** which is adjacent to the lip **24** for receiving and retaining the upper water-tight seal **29**, a portion of the chassis extending as a rib **37** into such upper seal **29**. The floor **26** of the chassis **15** is integral with that part of the housing that is adjacent to the peripheral lip **24** so that the floor **26** is likewise sealed at its periphery to the lip **24**. Thus, a water and steam cavity **38** is formed between the upwardly directed area **25** of the base **13** and the apertured floor **26** so that heated water vapor or steam may escape about each of the mandrels **19–22** to engage one of the curlers **23** to heat the same from the outside. The floor **26** also prevents anyone from having their fingers come into contact with the heated water in the cavity **38** or in contact with the upwardly directed area **25** of the base **13**. The mandrels **19–22** are in heat transfer relation with both the base **13** and the curlers **23** so that as the upwardly directed area **25** is heated from below, the curlers **23** become heated from within. The heat transfer path between the heating means **14** and the upwardly directed area **25** is somewhat shorter and more efficient than that path through the mandrels for heating the curlers **23** from within. Accordingly, as the device is turned on, the temperature of the curlers **23** will lag the temperature of the water vapor that is generated and thus will be cooler in the presence of a more or less saturated ambient whereby some water vapor will condense on the outside of the curlers **23** to coat the same with moisture. The heated water vapor surrounding the curlers **23** will of course heat the curlers **23** from the outside.

The removable cover **16** lies primarily over the upwardly directed area **25** to enclose the mandrels and the curlers, and the cover **16** serves to retain heated air, to retain heated water vapor, to minimize circulation with the atmosphere, and to close up the device when it is not in use. The cover **16** does not have a tight seal with the housing **15** so that as any pressure builds up, any excess water vapor can readily escape to the atmosphere.

If the user desires to have dry curlers **23**, no water is poured into the cavity **38**. If the user prefers to have moist curlers, the quantity of water provided by the measuring cup **31** is added to the cavity **38**, and the quantity is such that the curlers **23** will have become heated and ready for use before the heat that is applied from within re-evaporates the moisture on the outside of the curlers **23**.

The skirt **17** not only encloses the remainder of the housing **15**, the chassis **11** and the water-tight seals, but also provides an air pocket about the device so that the exposed outer surface does not become excessively warm and so that a measure of insulation is provided for the contents.

The cover **16** has a handle **39** by which it may be removed and replaced. Controls (not shown) for the heating means **14** are provided in the housing **15** just toward the viewer from the cup **31**, which controls are conventional and which have been removed from the illustration for ease of showing the cup **31**.

Although various minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon, all such embodiments as reasonably and properly come within the scope of my contribution of the art.

I claim:

1. Hair curling apparatus comprising:

a. a horizontal base having a peripheral lip surrounding an upwardly directed area for receiving, retaining and evaporating a quantity of water;

b. a non-metallic chassis to which said lip is attached;

c. water-tight sealing means between said lip and said chassis along the entire length of said lip;

d. a number of mandrels secured to said base in heat transfer relation to said base and extending upwardly from said area, each of said mandrels having a construction for transferring heat to a hair curler received thereon;

e. means secured to said base for applying heat thereto; and

f. a removable cover overlying said area for normally enclosing said mandrels and curlers thereon for retaining heated air and any water vapor therein; whereby the curlers may be selectively heated with or without the presence of heated water vapor.

2. Hair curling apparatus according to claim **1** including a floor overlying said area and having apertures of larger size than said mandrels through which said mandrels extend, the perimeter of said floor having a water-tight seal adjacent to said lip for thereby directing hot water vapor to discharge through said apertures onto the curlers.

3. Hair curling apparatus according to claim **1** including a measuring cup sized to provide said quantity of water, and means secured to said base for storing said cup remotely from said heat-applying means.

4. Hair curling apparatus comprising:

a. a horizontal base having a peripheral lip surrounding an upwardly directed area for receiving, retaining and evaporating a quantity of water;

b. a number of mandrels secured to said base in heat transfer relation to said base and extending upwardly from said area, each of said mandrels having a construction for transferring heat to a hair curler received thereon;

c. means secured to said base for applying heat thereto;

d. a removable cover overlying said area for normally enclosing said mandrels and curlers thereon for retaining heated air and any water vapor therein;

e. a chassis supporting said base at its periphery;

f. a housing supported by said base at said periphery, and supporting said cover; and

g. water-tight sealing means acting between said base, said chassis and said housing and limiting any water vapor escape to the periphery of said cover.

5. Hair curling apparatus according to claim **4** in which said housing surrounds said base and said mandrels.

6. Hair curling apparatus according to claim **4** in which said chassis depends downwardly from the periphery of said base.

7. Hair curling apparatus comprising:

a. a horizontal base having a peripheral lip surrounding an upwardly directed area for receiving, retaining and evaporating a quantity of water;

b. a number of mandrels secured to said base in heat transfer relation to said base and extending upwardly from said area, each of said mandrels having a construction for transferring heat to a hair curler received thereon;

c. means secured to said base for applying heat thereto;

d. a removable cover overlying said area for normally enclosing said mandrels and curlers thereon for retaining heated air and any water vapor therein;

e. a chassis supporting said base at its periphery with a water-tight seal therebetween;

f. a housing supported by said base adjacent to said periphery with a water-tight seal between said housing and said chassis, and said housing supporting said cover; and

g. a bottom cover secured to the lower side of said chassis in spaced relation to said heat applying means, and adapted to support the apparatus.

8. Hair curling apparatus according to claim **7** in which said housing has a skirt secured thereto adjacent to said cover, and surrounding said housing, said chassis and said water-tight seals.

9. Hair curling apparatus according to claim **8** including a carrying handle pivotally secured to said housing skirt.

10. Hair curling apparatus according to claim **7** in which said housing has a floor secured thereto adjacent to its water-tight seal and overlying said base area, and through which said mandrels project.

11. Hair curling apparatus according to claim **7** in which said housing surrounds said base and said mandrels.

12. Hair curling apparatus according to claim **7** in which said chassis depends downwardly from the periphery of said base.

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