May 7, 1957 S. SIMMONS 2,791,225

VACUUM HAIR CURLER

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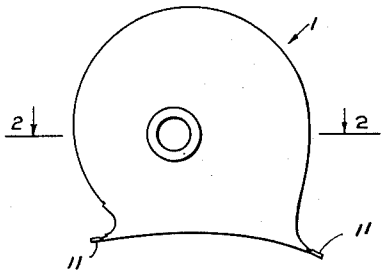


Fig. 1.

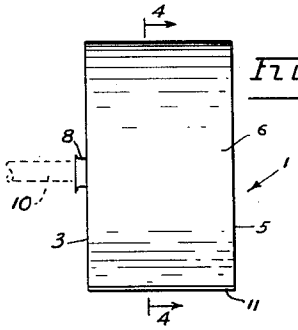


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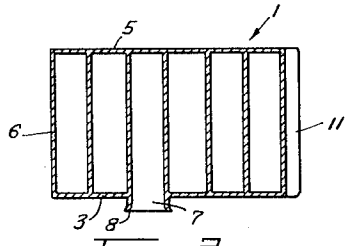


Fig. 2.

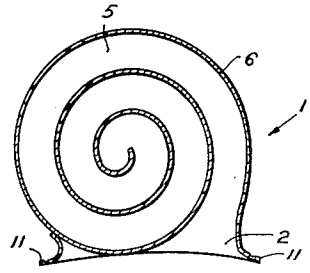


Fig. 4.

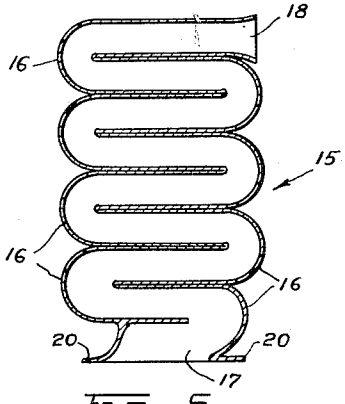


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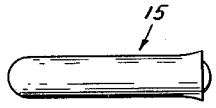


Fig. 6.

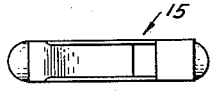


Fig. 7.

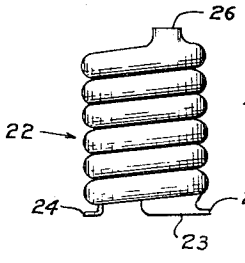


Fig. 8.

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VACUUM HAIR CURLER

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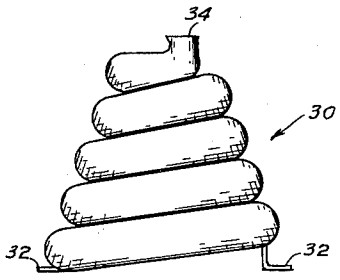
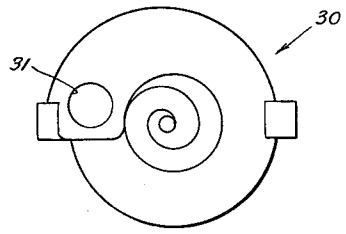


Fig. 9.

Fig. 10.



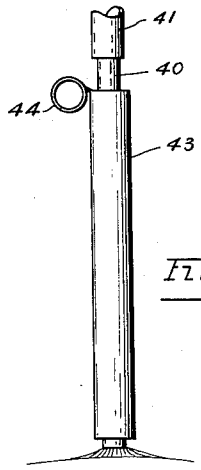


Fig. 11.

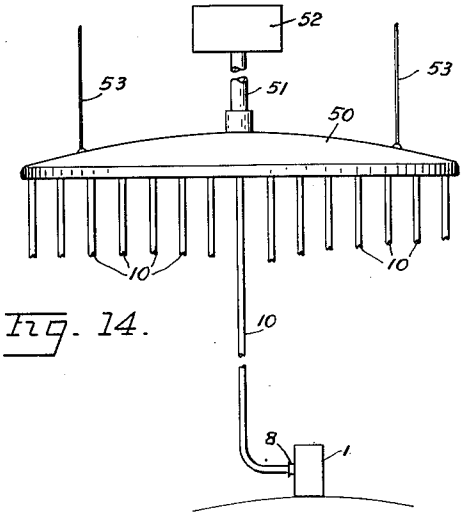


Fig. 14.

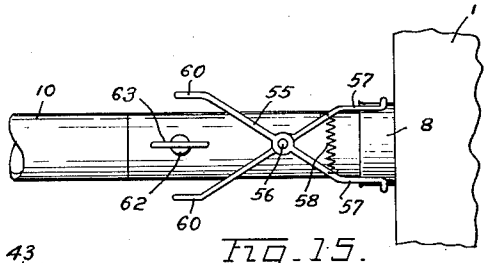


Fig. 15.

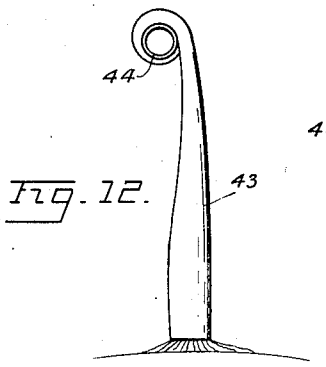


Fig. 12.

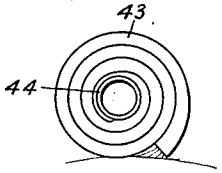


Fig. 13.

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VACUUM HAIR CURLER

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5 Claims. (Cl. 132—7)

This invention relates to a vacuum hair curler.

Presently, in order to make a permanent wave, or to give temporary waves, human hair is first wetted either with water or with one of the many special solutions sold for that purpose. Then separate strands of hair are wound on spools or curlers and left there to dry. It takes an average of forty curlers to make a permanent wave. Winding of the strands of hair on the spools and drying the hair takes very considerable time.

The primary object of this invention is to reduce drastically the time required for winding hair strands by eliminating human labor in this step.

The other object of this invention is to make all the curls of a given type uniform.

Another object of this invention is to reduce the time required for drying wet curls by employing vacuum for drying the same.

Another object of this invention is to employ vacuum for the purpose of winding a strand of hair inside of a specially made curler.

Still another object of this invention is to provide vacuum operated curlers of different designs to produce curls of different shapes.

Other objects and advantages will appear as the specification proceeds and the novel features of the device will be particularly pointed out in the claims hereto annexed.

In this specification and the annexed drawing, the invention is illustrated in the form considered to be the best but it is understood, that the invention is not limited to such form; and it is also to be understood that in and by the claim following the description, it is desired to cover the invention in whatsoever form it may be embodied.

This invention is illustrated in the accompanying drawings in which:

Fig. 1 is a front elevation of a spiral shaped vacuum hair curler.

Fig. 2 is a horizontal cross-section of the vacuum hair curler taken along the line 2—2 of Fig. 1.

Fig. 3 is a side elevation of Fig. 1.

Fig. 4 is a vertical cross-section of the vacuum hair curler taken along the line 4—4 of Fig. 3.

Fig. 5 is a vertical cross-section of a modified form of the curler.

Fig. 6 is a plan view of the same.

Fig. 7 is a bottom plan view of the same.

Fig. 8 shows a front elevation of a second modified form of the device.

Fig. 9 is a front elevation of a third modified form of the device.

Fig. 10 is a bottom elevation of the same.

Fig. 11 is a front view of still another form of my invention.

Fig. 12 shows the last form in process of winding.

Fig. 13 shows the last form wound.

Fig. 14 is a side elevation of a vacuum distributor and a curler, and

Fig. 15 is a side view of the outer end of a vacuum tube, showing how the same is connected with a vacuum curler.

In general, my curler consists of a closed container which may be of various sizes and shapes, each having an inlet opening through which a strand of hair is admitted thereinto, and also having an outlet opening which is adapted to be connected to a source of vacuum. When vacuum is applied to said curler and the inlet opening is brought in close vicinity to a strand of hair which is already wetted or impregnated with a desirable solution, the strand is instantly drawn into said curler. The curler is attached to the hair by hair pins, or otherwise. Thereupon the vacuum in said curler is reduced to provide comparatively slow circulation of air therethrough and through the hair therein contained for drying the latter. Means are provided to regulate the vacuum in the curler and also for attaching the suction means thereto. When the hair is dry, the curlers are taken off the head leaving hair uniformly curled in desired shape or shapes.

In detail my curler as shown in Figs. 1–4 comprises a rounded container 1 having an inlet opening 2 through which hair is introduced thereinto. The container 1 is closed by a front 3 and a back 5, and contains therebetween a spiral partition 6. The front 3 is provided with an outlet opening 7 leading to the inner end of said spiral partition. The outlet opening 7 is surrounded by an outwardly flared flange 8 into which a tube 10, communicating with a source of vacuum may be inserted. The container 1 also includes two flanges 11 by which the same may be secured to the hair. As securing means between said flanges and hair ordinary hair pins may be used by pushing one leg of the same over said flange and the other leg under said hair near its roots.

The curler above described produces what is known in profession as a "psyche" curl and is in form of a flat spiral.

Figures 5–7 show a modified form of a curler 15 shaped in the form of an oscillatory wave of constant amplitude and comprising a tube bent upon itself to form a series of curves 16 and having an inlet opening 17 for introducing hair into said curler and an outlet opening 18 for connecting the same with the vacuum tube 10. Flanges 20 are provided near the inlet opening 17 for the purpose of securing said curler to the hair. The curler 15 produces what is known as a "finger wave" curl.

Figure 8 shows a curler 22 made out of a tube bent to form a vertical circular spiral and having an inlet opening 23 for introducing hair, a pair of flanges 24 at said opening and an outlet opening 26 for connecting with the vacuum tube 10. The curler 22 produces so called a "pin curl" or a "sculpture" curl.

Figures 9–10 show a curler 30 made out of a tube bent in form of a conical spiral and includes an inlet opening 31 for introducing hair thereinto, a pair of flanges 32 near said opening and an outlet opening 34 at the top of said spiral for connecting with the vacuum tube 10. This curler also produces a "sculpture" curl.

Figures 11–13 show a different method of application of vacuum to hair curling. A transparent tube 40 attached to a vacuum conduit 41, is placed inside of an open cylindrical container 43 made of soft fluid absorbing material, carrying on one end thereof a short hollow roller 44. The open end of the tube 40 is brought to a strand of hair, and vacuum, applied to said tube, sucks hair thereinto. Thereupon vacuum is cut off and the tube 40 is withdrawn from the container 43, thus placing the strand of hair thereinto. The container 43 is rolled on the roller 44 and is tied by some means such as a rubber band or a string. By this means the time required to

place a strand of hair into a paper container is considerably cut.

A considerable number of vacuum curlers of desired shape, or different shapes, is required to give a permanent wave. Each of said curlers is connected to a separate conduit **10** hanging from the lower surface of a distributor **50** which in turn is connected by a larger conduit **51** to a source of vacuum **52**, shown in Fig. 14 diagrammatically. The distributor **50** is supported over the head of a person desiring to have a permanent wave, by the conduit **51** or by cables or wires **53**. Each of said conduits **10** is secured to a corresponding curler by some detachable means such as shown in Fig. 15. The latter means consists of two pairs of levers **55** fulcrumed at **56** on opposite sides of the conduit. The front portions **57** of said levers are so formed as to securely clamp on the outwardly flared flange **8**. A spring **58** pulls the portions **57** toward each other and securely holds the conduit **10** and the flange **8** together. By pressing the handles **60** of the levers **53** the front portions **57** are spread apart and the conduit **10** is disengaged from the flange **8**. Near said handles **60** is located a valve **62**. By turning the handle **63** of said valves, the same may be fully opened, as shown in Fig. 15, for the purpose of sucking hair into a curler, or may be partially closed for the purpose of providing low vacuum for drying hair in said curler, or closed entirely.

I claim:

1. A method for curling human hair comprising the following steps: pulling the hair through a confined curved passage by suction in presence of moisture, reducing said suction after the hair is confined in the curved passage so as to draw drying air current through said hair in said confined passage until the hair is dried; and withdrawing the dried curled hair from said passage.

2. A vacuum hair curler comprising a rigid and closed container having a curved passage therein, said container having a large inlet opening for admitting a strand of human hair into said passage; said container having an outlet opening communicating with said passage, vacuum means connected to said outlet opening for drawing said strand of human hair into said passage and means for regulating said vacuum.

3. A vacuum hair curler comprising a container having a spiral passage therein, said container having rigid closed walls and having an inlet and outlet openings communicating with said passage and vacuum means communicating with said outlet opening for drawing a strand of human hair through said inlet opening into said passage.

4. A vacuum hair curler comprising a container having front and back walls and a spiral partition connecting the same to form a confined spiral passage, said container having a large inlet opening at the end of the spiral on the periphery of said container, said container having a small opening at the beginning of the spiral near the center thereof, a source of vacuum connected with said small opening for drawing air through said large inlet opening and into said passage whereby a strand of hair is drawn through said inlet opening into said chamber, means for attaching said curler to the hair, and means for regulating said vacuum.

5. A vacuum hair curler comprising a rigid closed container having a passage therein shaped in the form of an oscillatory wave of constant amplitude, said container having a large inlet opening communicating with said passage for admitting a strand of human hair thereinto, said container having a small outlet opening communicating wtih said passage, vacuum means connected to said outlet opening for creating vacuum in said chamber whereby a strand of human hair is drawn into said chamber and is dried therein, and means for regulating said vacuum.

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