April 10, 1934. A. E. WATKINS 1,954,273

PERMANENT HAIR WAVING APPARATUS

Filed Dec. 5, 1932

Fig. 1.

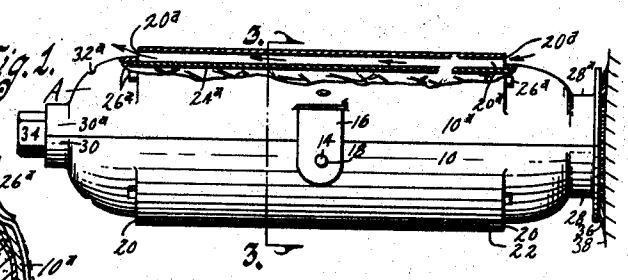


Fig. 3.

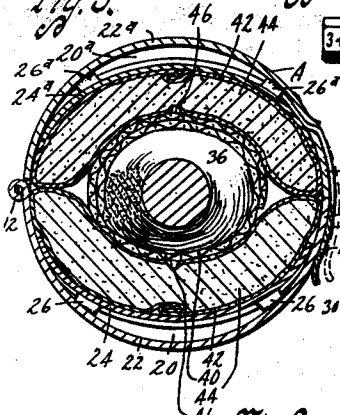


Fig. 2.

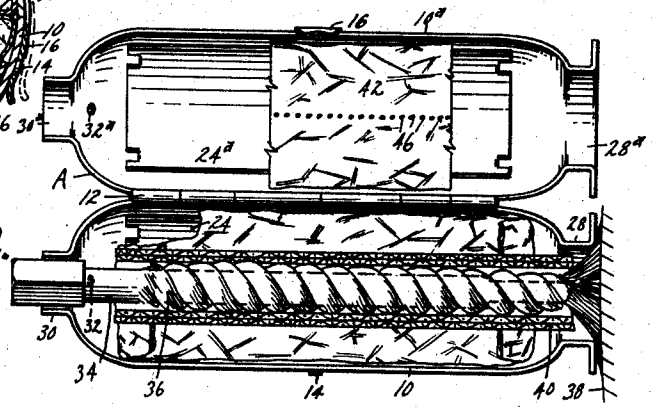


Fig. 4.

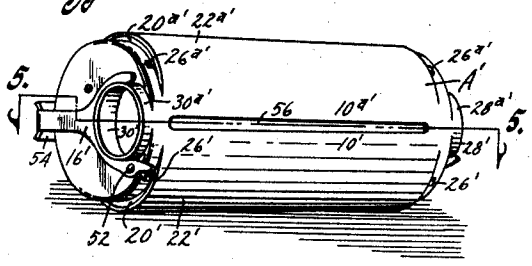


Fig. 5.

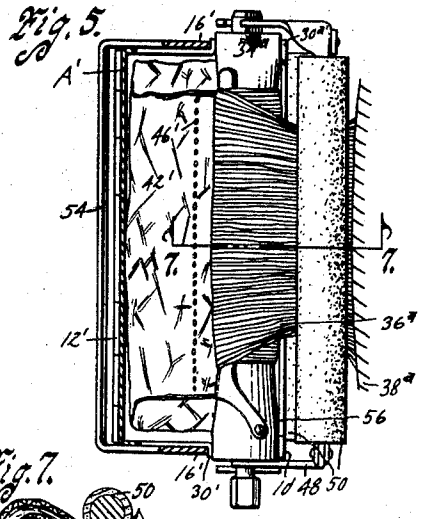


Fig. 6.

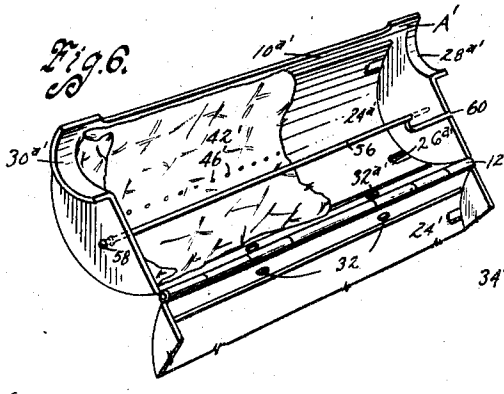
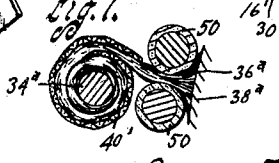


Fig. 7.



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UNITED STATES PATENT OFFICE

1,954,273

PERMANENT HAIR WAVING APPARATUS

Arthur E. Watkins, Des Moines, Iowa.

Application December 5, 1932, Serial No. 645,717

15 Claims. (Cl. 132—36)

The object of my invention is to provide a permanent hair waving apparatus which is simple, durable and comparatively inexpensive to manufacture.

A further object is to provide a hair steaming apparatus in the form of a split casing which can be positively clasped in closed position to enclose a tress of hair wound on a curler pin and surrounded by a pad, with chemical pads interposed between the pad and the interior wall of the casing, the chemical being of such character that the introduction of a reagent thereto causes an exothermic reaction to produce the necessary heat for steaming the tress of hair and producing a permanent curl or wave.

Still a further object is to provide the two halves of the casing positively secured together so that expansion of the chemical, pad and hair caused by the generation of steam in the casing will serve to more tightly compress the tress of hair about the curler pin and thus more effectively produce a permanent wave in the tress.

Still a further object is to provide the apparatus in the form of a casing which is split, the two halves thereof being hinged together for convenience in placing the tress of hair in the casing as well as introducing sachets containing the chemicals in position so that when the casing is closed, they surround the tress of hair.

An apparatus of the character I will disclose entirely eliminates the necessity of having an external source of heat, such as electrically operated heating elements and their attendant supporting and current conducting cords which are generally in use at the present time and which are uncomfortable to the user securing a permanent wave.

A further object is to provide simplified casings which can be formed of light sheet metal or other suitable material and which can therefore be supported by the tresses of hair they enclose without undue discomfort to the user.

My present application is a continuation in part of my copending application, Serial No. 628,913, filed August 15, 1932.

Still a further object is to provide both the form of invention shown in my copending application which is adaptable for permanent waving in connection with spiral curls and a modified form adaptable for permanent waving of the croquignole type of curl.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a side elevation of one piece of the hair waving apparatus embodying my invention, a plurality of these being used and placed over the head of the user to curl all portions of the hair on the head.

Figure 2 is a view similar to Figure 1 except that the hair waving casing has been opened for removal of the casing from the tress of hair, the tress of hair being illustrated as formed into the spiral type of curl.

Figure 3 is an enlarged sectional view on the line 3—3 of Figure 1 showing a curler rod, a tress of hair thereon, the pad and chemical sachets surrounding the tress of hair and the casing in closed position around the sachets.

Figure 4 is a perspective view of a modified form of hair curler casing used for the croquignole curl.

Figure 5 is a sectional view on the line 5—5 of Figure 4 showing the casing of Figure 4 applied to a tress of hair and supported on a curler pin of special construction for the tress when wound for the croquignole curl.

Figure 6 is a perspective view of slightly more than half the casing in Figure 4 showing it in open position; and

Figure 7 is a sectional view on the line 7—7 of Figure 5.

On the accompanying drawing, I have used the reference character A to indicate generally a hair steaming casing. It comprises two halves, 10 and 10*a*. These are hinged together, as indicated at 12. The two halves, or casing elements 10 and 10*a* are similar except the element 10 has a latch pin 14 and the element 10*a* has a coacting latch ear 16 which is preferably of resilient material. As shown in Figure 3, the latch ear 16 is adapted for a perforation 18 thereof to receive the pin 14 which serves to positively retain the casing in closed position. When it is desired to open the casing, the latch ear 16 can be sprung to the dotted line position.

I will describe the casing element 10 in detail. The casing element 10*a* has similar parts which will bear the same reference numerals except with the addition of the distinguishing characteristic *a*.

The casing element 10 has slits 20 cut therein, thereby forming an exterior jacket wall 22. Within the casing element, an interior jacket wall 24 in the form of a separate piece of material is spaced from the exterior jacket wall 22.

The slit openings 20 provide for the entrance and exit of air for cooling purposes as will hereinafter be more fully described.

The interior jacket wall 24 is supported in position relative to the casing element 10 by lips 26 which are cut from the wall 24 and bent to extend out through the slits 20 to contact with the outer wall of the casing element 10, as shown in Figure 1. The end portions of the wall 24 intermediate and on each side of the lips 26 serve as tongues to engage the inner wall of the casing element 10. Thus the interior jacket wall 24 is assembled in supported position relative to the casing element 10. Any other suitable means for securing the two together can of course be used.

The element 10 has a half hub 28 at one end and a half hub 30 at its other end. Adjacent the half hub 30 is a steam vent 32.

The casing A is adapted to enclose a curler pin 34 with a tress of hair 36 wound thereon (see Figures 2 and 3). The head of the user from which the tress extends is indicated at 38. The pin 34 and tress 36 extend through the hub formed by the half hubs 28 and 28*a*, while the other end of the curler pin extends through the hub formed by the half hubs 30 and 30*a*.

A pad 40 is wrapped around the tress of hair 36 and between this pad and the interior wall of the casing A, chemical sachets 42 are interposed. Each sachet is formed of tin-foil or other suitable enveloping material, preferably one which does not permit moisture to enter the sachet.

The sachet is filled with chemical 44. For convenience in the hair curling operation, two of the sachets 42 are provided, one to be positioned in each half of the casing A, (one in the element 10 and one in the element 10*a*).

The chemical 44 is preferably one which will react exothermically to a reagent. I have found that lime is suitable with water as the reagent. The water can be supplied by dampening the pad 40 and can be introduced to the chemical 44 by perforating the sachet 42 as indicated at 46. A small star wheel can be used for this purpose and if desired, dampening of the chemical can be accomplished by the use of a bulb syringe instead of by dampening the pad 40. The pad can also contain other chemicals such as ammonia for producing a more permanent set in the curl and if an oil wave is desired, the oil can be supplied to the pad.

In the use of the apparatus, after the perforations 46 have been formed and the casing A enclosed about the tress of hair 36 and the dampened pad 40, exothermic action takes place which produces heat and steam to set the wave. This action continues for about ten to twelve minutes.

It is quite important that the casing be held positively or rigidly in closed position. This is because the pad 40 and the chemical 44 as well as the tress of hair 36 swell somewhat due to the steaming process and it is desired to take advantage of this swelling to more firmly press the tress of hair against the curler pin 34. Thus by having the casing positively latched in closed position, the force of swelling is applied to the tress of hair.

The tress of hair 36 in Figure 2 is spirally wound on the pin 34. The croquignole type of curl is illustrated in Figure 5, the tress of hair being indicated by the reference numeral 36*a*. The tress is wound on a special curler pin 34*a* which is supported in a frame 48 having a pair of rubber or felt covered rods 50 through which the base of the tress extends. The parts 34*a*, 48 and 50 form no part of my present invention. My modified form of casing A' in Figures 4, 5 and 6 is especially designed for the croquignole type of curl. It will be noted that the base of the casing is somewhat different and that the hubs on it are in slightly different positions than those shown in Figures 1 and 2. Many of the features are identical however and the casing elements will therefore be referred to by the reference numerals 10' and 10*a*'. Details of construction which are similar to those in Figures 1, 2 and 3 will be given the same reference numerals with the addition of the character '.

The latch 16' in the croquignole type of hair waving casing is of pivoted character, the pivot being shown at 52 and there being a pivot on each end of the casing. The latch is of semi-circular hook shape, two of the hooks being provided and coacting with the hubs 28*a*' and 30*a*'. The hooks are connected by an operating bar 54.

The casing A' has a slot 56 through which the tress of hair 36*a* can extend. This is necessary since the tress must extend from the side of the casing, it being wound on the curler pin 34*a* in a given width with overlapping layers instead of spiral as in Figure 2. The pad 40' is shown in Figure 7 but is omitted from Figure 5.

An additional feature which makes for convenience in operation in either form of curler casing is a retainer pin 56 (see Figure 6). This is loosely pivoted at 58 to one end of the casing A' and is removably associated with a slot 60 in the other end thereof. The pin is adapted to hold the upper chemical sachet 42' in position, while the upper part of the casing is being closed around the tress of hair. This prevents the upper sachet from falling out.

A permanent hair waving apparatus of the character I disclose is very economical to use and does not require a source of electric current for its operation. In the use of the apparatus, one casing after another can be applied to the user's head and by the time all are applied, the first one has completed its exothermic action and cooled down by the circulation of atmospheric air through the air jacket between the walls 22 and 24. The first one can then be removed and so on successively so that the entire waving operation need not consume more than a half hour's time. This is, of course, labor saving and an apparatus of this character is much easier to use than one having electrical cords and counterbalancing weights for the many curlers to be used as in an electric machine.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:

1. In a permanent hair waving apparatus, a split casing adapted to be closed about a tress of hair, means for positively maintaining the two halves thereof in assembled relation about said tress of hair, a chemical sachet in said casing, contacting with the interior wall thereof and surrounding said tress of hair and a relatively thin dampened pad interposed between said tress of hair and said sachet.

2. In a permanent hair waving apparatus, a split casing adapted to be closed about a tress of hair, means for positively maintaining the two

halves thereof in assembled relation about said tress of hair, a sachet in said casing and surrounding said tress of hair and a chemical in said sachet substantially filling the space between said tress of hair and the interior wall of said casing and adapted to react exothermically upon the introduction of a reagent to said chemical.

3. In a device of the class described, a casing adapted to enclose a tress of hair, a chemical sachet in said casing interposed between the interior wall of said casing and said tress of hair and an air jacket on said casing communicating with atmosphere externally of said casing.

4. In a device of the class described, a casing adapted to enclose a tress of hair, a chemical sachet in said casing interposed between the interior wall of said casing and said tress of hair and a flange on one end of said casing adapted to surround the base of said tress of hair and contact with the user's head to retain said casing in projecting position with relation thereto.

5. In a device of the class described, a casing comprising a pair of casing elements hinged together and adapted to enclose a tress of hair when in closed position, clasp means for positively retaining said elements in their closed position, a chemical sachet in said casing interposed between the interior wall of said casing and said tress of hair and means for circulating air with respect to said casing to cool it after it has been heated by said chemical sachet.

6. In a device of the class described, a split casing having end hubs, a curler pin extending through said hubs, one of said hubs being intended for a tress of hair to also extend therethrough, means for positively retaining said casing in closed position about said curler pin and the tress of hair and a chemical sachet in said casing surrounding said curler pin and the tress of hair.

7. In a device of the class described, a split tubular casing formed of a pair of casing elements hinged together, a chemical sachet in each of said casing elements, manually operable means in one of said casing elements to retain the sachet therein and means for holding said casing elements in closed position, said manually operable means comprising a pin extending longitudinally of said casing and having at least one end disassociable therefrom.

8. In a device of the class described, a split casing formed of a pair of casing elements hinged together, a chemical sachet in each of said casing elements, a clasp for positively holding said casing elements in closed position and an air jacket for each of said casing elements.

9. In a device of the class described, a split casing formed of a pair of casing elements hinged together, a chemical sachet in each of said casing elements, a clasp for positively holding said casing elements in closed position, an air jacket for each of said casing elements and steam vents for permitting escape of excess steam from said casing.

10. A hair steaming casing for containing a tress of hair on a curler pin and surrounded by a chemical sachet comprising a pair of casing elements hingedly connected together, means for positively latching them in closed position to form said hair steaming casing, half hubs on each end of each casing element and an air jacket on each casing element through which air may circulate for cooling said hair steaming casing.

11. A hair steaming casing comprising a pair of casing elements pivotally connected together along one side thereof and having a slot opposite said side, split curler pin supporting hubs at the ends of said casing and latch means beyond the ends of said casing and embracing said hubs to positively retain said casing in closed position.

12. A hair steaming casing comprising a pair of casing elements pivotally connected together along one side thereof and having a slot opposite said side, split curler pin supporting hubs at the ends of said casing and air jacket means for cooling said casing.

13. In a device of the class described, a casing adapted to enclose a tress of hair, means in said casing interposed between the interior wall thereof and said tress of hair for curling said hair by heat and an air jacket on said casing communicating with atmosphere externally of said casing.

14. In a device of the class described, a casing adapted to enclose a tress of hair, means in said casing interposed between the interior wall thereof and said tress of hair for curling the hair by heat and a flange on one end of said casing adapted to surround the base of said tress of hair and contact with the user's head to retain said casing in projecting position with relation thereto.

15. In a device of the class described, a split casing having end hubs, a curler pin extending through said hubs, one of said hubs being intended for a tress of hair to also extend therethrough, means for positively retaining said casing in closed position about said curler pin and the tress of hair and means within said casing surrounding said curler pin and the tress of hair for curling the hair by heat.

ARTHUR E. WATKINS.