Dec. 24, 1929. J. KREMER 1,740,988

ELECTRICALLY OPERATED HAIR CURLER

Filed April 21, 1928

FIGURE 1

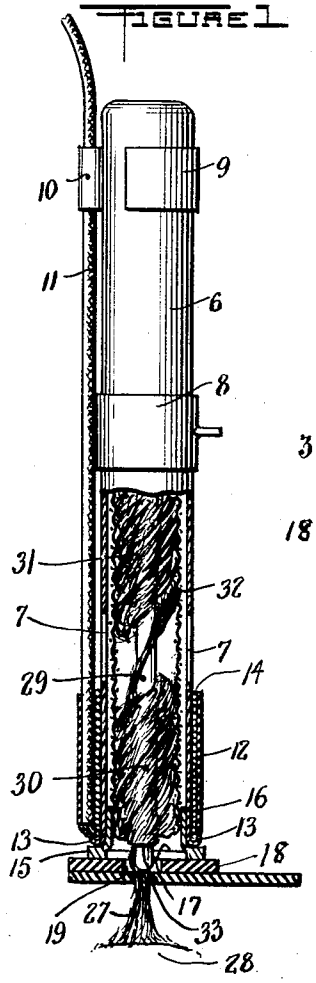


FIGURE 2

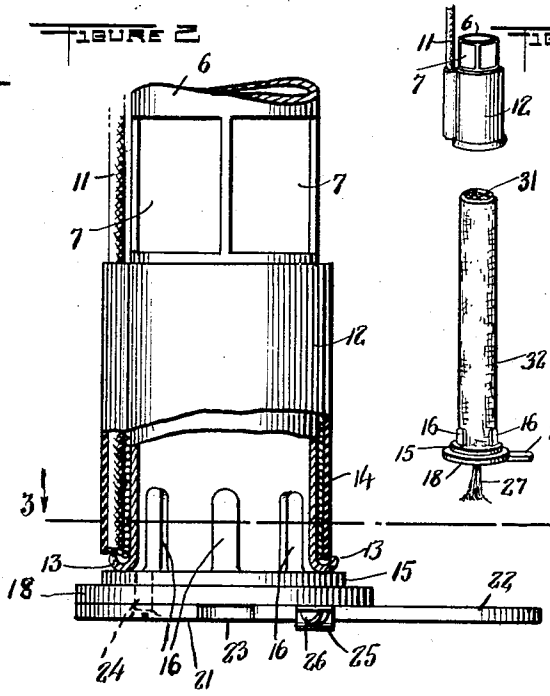


FIGURE 5

FIGURE 3

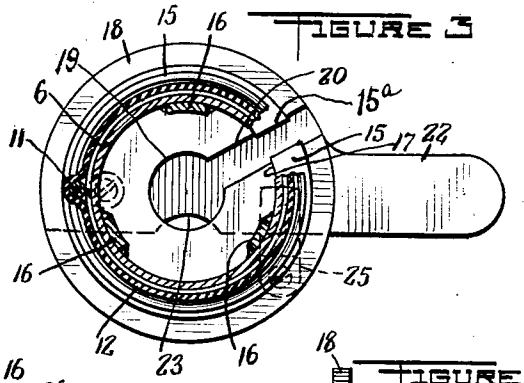


FIGURE 4

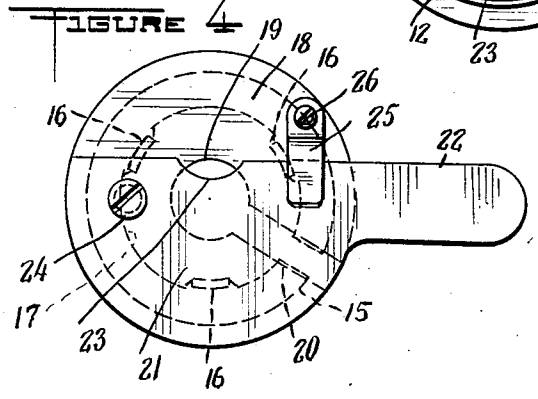
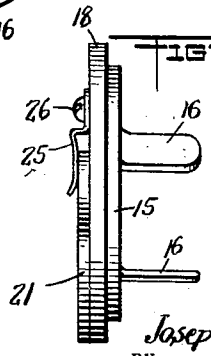


FIGURE 5



INVENTOR
Joseph Kremer
BY Walton Harrison
ATTORNEY

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UNITED STATES PATENT OFFICE

JOSEPH KREMER, OF LONG ISLAND CITY, NEW YORK, ASSIGNOR TO WAPPLER ELECTRIC COMPANY, INC., A CORPORATION OF NEW YORK

ELECTRICALLY-OPERATED HAIR CURLER

Application filed April 21, 1928. Serial No. 271,755.

My invention relates to electrically operated hair curlers, of the type usually made up in the form of small tubes, each carrying its own individual heater, the portions of hair to be curled being wound upon forming rods, and the latter being inserted into the tubes, so that each portion of hair thus treated extends directly from a person's scalp into the tubular hair curler.

More particularly stated, my invention contemplates a number of separate improvements in the construction of the tubular hair curler, and particularly the manner in which the portion of hair to be curled is wound upon and supported by the forming rod, along with a cloth carrying the chemicals usually employed in connection with the curling of the hair.

Reference is made to the accompanying drawing forming a part of this specification and in which like reference characters indicate like parts throughout the several figures.

Figure 1 is a side view, partly an elevation and partly a section, showing one of my improved hair curlers with its parts arranged as in actual use.

Figure 2 is a fragmentary view, partly a side elevation and partly a section, showing my improved closure cap as fitted to the end of the tubular member.

Figure 3 is a section on the line 3—3 of Figure 2, looking in the direction indicated by the arrows.

Figure 4 is an elevation of the cap plate.

Figure 5 is an edge elevation of the same.

Figure 6 is a fragmentary perspective of the device, as it appears with the portion of hair to be curled formed into a bobbin and connected with the cap plate, all ready to be inserted in the tube.

The tubular body member of the hair curler appears at 6, and is provided with an opening 7 of large size serving as a window.

Mounted upon the tubular body member 6, and slidable relatively thereto, is a shutter 8 and a clamp 9. This clamp is provided with an eye 10, through which extends a cord conductor 11, relatively to which the eye is slidable.

The tubular body member 6 carries a small electrically operated heater 12, having the proximate form of a cylinder. The body member 6 is provided with an annular flange 13, flaring slightly outward and engaging the adjacent end portion of the heaters 12.

The heater is provided with a resistance coil 14, the latter being in communication with the conducting coil 11, whereby it is energized and thus heated.

In my improved cap plate, shown more particularly in Figures 3, 4 and 5, I use a closure ring 15, provided with a radially disposed slot 15[a] and carrying tongues 16 integral with it, the ring being also provided with a central aperture 17.

The closure ring 15, with its tongues 16, slot 15[a], and central aperture 17 is formed at a single operation being preferably stamped, cut or punched from a single sheet of metal.

Closely associated with the closure ring 15 is a cap plate 18, made in this instance of insulating material such as hard rubber, rubber composition, micanite, bakelite or the like. The cap plate is provided centrally with an opening 19, and with a slot 20 extending radially outward from this opening.

A clamping plate 21 is provided with a portion 22, formed into and serving as a handle, and is further provided with a concave edge portion 23, as shown more particularly in Figure 4.

A screw 24 extends through the clamping plate 21 and through the cap plate 18 as well as through the closure ring 15, so as to hold these parts together and allow the clamping plate 21 to swing upon the screw 24 as a pivot.

A spring latch 25 is mounted upon the cap plate 18 by means of a screw 26, which extends into a hole in the closure ring 15. This screw and the screw 24 above mentioned serve to hold the cap plate and the closure ring 15 firmly together.

The spring latch 25 serves as a limiting stop for the clamping plate 21, and also as a latch for gripping the adjacent edge of the clamping plate and thus locking the clamping plate.

A wisp of hair to be curled is shown at 27, and is operated upon notwithstanding its con-

nection with the scalp 28 of the person whose hair is to be curled.

The portion of hair to be curled is wound in the form of two coils 30, 31, spaced apart and disposed as indicated in Figure 1.

The purpose in having two coils of hair thus spaced apart is to subject the coil 30 to heating action of the device, in instances where the coil 31, having already been curled at some previous time, is not in need of treatment.

A wrapper is shown at 32, and is made of cloth, felt, paper or other analogous absorbent material. This wrapper is saturated with chemicals used in connection with the curling of hair; the wrapper with its chemicals, and the hair inclosed within the wrapper, being moistened. In some instances the wrapper may carry the chemicals in the form of a salve or even a powder, in which event they are merely held in contact with the moistened hair.

The closure cap shown in Figures 4 and 5 is adapted to be mounted upon one end of the tubular member 6, as indicated more particularly in Figures 2 and 3.

For this purpose the tongues 16 are so formed and arranged that they fit snugly into the adjacent portion of the body member 6, the closure ring 15 moving up directly against the annular flange 13. The tongues 16 are sufficiently strong and springy to hold the closure cap rather firmly as to prevent the closure cap from being readily disconnected from the body member by giving a little pull, by hand.

In practice, the wisp of hair 27, at a point near the scalp 28, as indicated in Figure 1, is by means of a string 33 tied to one end of the forming rod 29, the wrapping 32 being preferably, though not necessarily tied in the same way. The hair is next wound into coils 30 and 31, as above described, the wrapper 32 extending along the outside of the hair, as indicated in Figure 6.

This forms the hair and the wrapper with its chemicals practically into a bobbin of simple form, and which is carried bodily by the closure cap, as shown in the bottom portion of Figure 6.

After the hair is thus wound upon the forming rod 29, the operator picks up the closure cap, and swings the clamping plate 21 in a clockwise direction according to Figure 4. Next the cap plate is so handled, relatively to the wisp of hair 27 that the latter is slipped through the slots 15ª and 20, and thus extends through the aperture 19.

This done, the operator inserts the tongues 16 into the adjacent open end of the body member 6, and forces the cap plate into position, as indicated in Figure 1.

The electric current now being turned on, the heater 12 is energized, and the hair is curled. As soon as the treatment is finished the electric current is turned off and the heater allowed to cool, which it does in a moment. The closure cap is then removed from the body member 6, and also from the wisp of hair 27. Finally, the wrapper 32 is removed and the hair unwound from the forming rod 29.

If no portion of the hair has been previously curled or waved, it is not necessary to form two distinct coils 30 and 31, and the window 7 is in this event closed by the shutter 8, in accordance with practice heretofore obtaining in this art.

I have found in practice that by means of my improved closure cap the operator can save considerable time in treating the hair. I have also found that the use of the closure cap with the forming rod and other parts, all serving collectively as a bobbin or unitary member to be detachably fitted into the tubular body member 6, renders the device as a whole quite efficient for purposes of treating the hair as thus contemplated.

My closure cap, shown more particularly in Figures 4 and 5, is adapted for sale and use as an article of manufacture.

I do not limit myself to the precise mechanism here shown and described, as variations therein may be made without departing from my invention, the scope of which is commensurate with my claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

1. As an article of manufacture, a device of the character described, comprising a cap plate provided with a central opening and with a slot merging into said opening, a closure ring secured to said cap plate and provided with a slot communicating with the said first mentioned slot, and a clamping member connected with said cap plate and movable relatively thereto.

2. As an article of manufacture, a device of the character described, comprising a closure ring provided with tongues integral therewith, a closure plate connected with said closure ring and provided with a central opening, said closure ring and said cap plate each being provided with a slot, and a clamping plate carried by said cap plate and movable relatively thereto, said cap plate being provided with means for locking said clamping plate in a predetermined fixed position, relative to said cap plate.

3. A device of the character described comprising a tubular body member, means for electrically heating the same, a closure cap provided with a plurality of spring tongues spaced apart for detachably fitting one end of said tubular body member, a forming rod, means for holding a portion of hair upon said forming rod, thus forming a bobbin, said closure cap being provided with means for

holding said forming rod substantially in the center of said tubular body member.

4. In a device of the character described the combination, with a tubular body member and means for heating the same, of a closure cap provided with means for supporting a forming rod and a portion of hair formed thereon in order to be curled, said portion of hair being connected with a person's scalp, said closure cap being further provided with an opening and with a slot merging into said opening, in order to facilitate the passage of said portion of hair, near where connected with the scalp, into and out of said central opening and a clamping plate carried by said closure cap and movable relatively thereto for holding said portion of hair within said opening.

Signed at 162 Harris Ave., Long Island City, in the county of Queens and State of New York, this 19th day of April, 1928.

JOSEPH KREMER.