Feb. 9, 1937. G. DECKER ET AL 2,070,422

HAIR WAVING APPARATUS

Filed Jan. 7, 1932

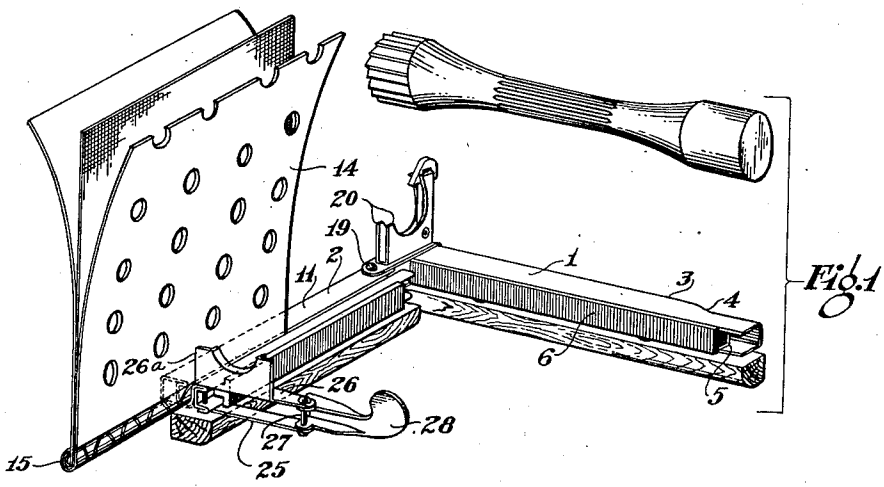



Fig. 1

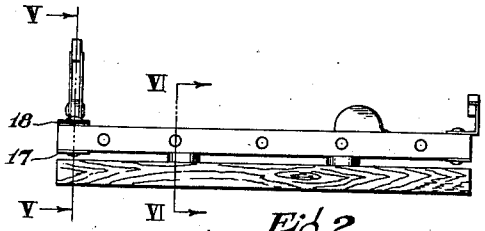



Fig. 2

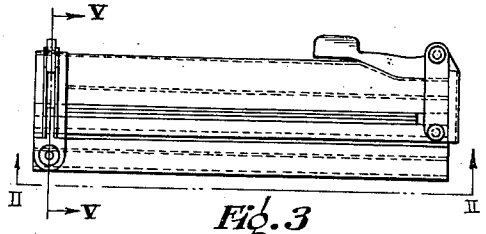



Fig. 3

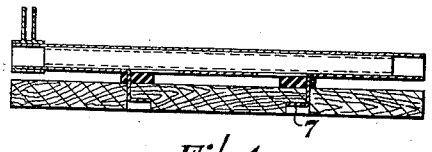



Fig. 4

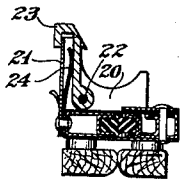



Fig. 5

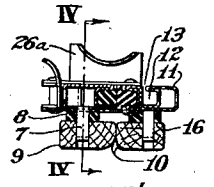



Fig. 6




Fig. 7

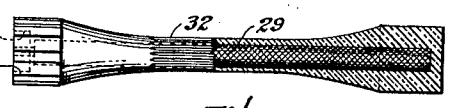



Fig. 8

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# UNITED STATES PATENT OFFICE

2,070,422

## HAIR WAVING APPARATUS

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Application January 7, 1932, Serial No. 585,306

10 Claims. (Cl. 132—33)

This invention relates to apparatus for the permanently waving of hair and more particularly to apparatus for producing the style of wave known as the croquignole type.

An object of the invention is to provide an improved means for winding and retaining a strand of hair which will be simple to operate.

Another object of the invention is to provide an improved apparatus which will wave the hair closely adjacent the scalp of the wearer.

Another object is to provide an improved apparatus which will permit the hair adjacent its roots to attain a stronger wave than that adjacent the tips.

Another object is to provide an improved apparatus which will permit the hair to be waved closely adjacent the scalp without the formation of a line or bind where the apparatus engages the hair.

Other objects will hereinafter appear.

The invention will be better understood from the description of one practical embodiment illustrated in the accompanying drawing, in which:

Figure 1 is a perspective view of a curler rod, protector clamp, and pad embodying the invention, shown in separated relation;

Figure 2 is a side elevation of the protector clamp of Figure 1;

Figure 3 is a plan view of the clamp of Figure 2;

Figure 4 is a longitudinal sectional view taken on the line IV—IV of Figure 6.

Figures 5 and 6 are cross sectional views taken on the lines V—V and VI—VI of Figure 2 respectively;

Figure 7 is an end elevation of the curler rod of Figure 1; and,

Figure 8 is a side elevation of the curler rod, parts being shown in section.

In the croquignole style of permanently waving, the hair on the subject's scalp is divided into a plurality of flat strands and each strand retained adjacent the scalp by a protector clamp. The hair of the strand is then wound from its outer end toward the clamp upon a spool-like rod, and after the winding, the strand and rod are enclosed within some kind of covering or envelope and heated so that moisture, which has previously been supplied to the hair, will be evaporated and impart to the hair a permanent set or wave.

One form of protector clamp or curler rod is illustrated in the prior patent to Decker 1,683,531 while another form is shown in the patent to Spaeth 1,746,018, the latter patent showing a pad identical to that illustrated in Figure 1.

The protector clamp consists of two arms 1 and 2 pivoted together at one end and detachably clamped at the other. Arm 1 consists of a channeled shaped member 3, conveniently formed of sheet metal and having one end formed as indicated at 4 with the web portion of the channel at this point approaching more nearly the free edges of the flanges for a purpose to be hereinafter described.

Within the open side of the channel a smaller channel shaped piece 5 is secured, this piece serving as a carrier for a strip 6 of rubber or other elastic material having on its exposed side upwardly and downwardly projecting flanges overlying the edges of the metal. Secured to the underside of arm 1 by means of L shaped lugs 7 struck from the lower flange of this arm and spaced from it by washers 8 is a strip of heat insulating material 9, conveniently of wood, substantially coextensive with the arm. The lower inner corner of this wooden strip is rounded as indicated at 10, so that there will be no sharp edge over which hairs secured by the clamp can be abruptly bent.

The arm 2 is constructed in a manner very similar to the arm 1 excepting that the upper flange 11 is bent inwardly and downwardly to form a longitudinally extending space 12 throughout the length of this arm, this space having an open narrow slot 13 in which the edge of the pad 14 may be inserted.

This pad, as above mentioned, is shown in the patent to Spaeth and consists of an inner foraminous ply of foil, a central ply of absorbent material, an outer ply of relatively impervious material, conveniently parchment, the three plys being secured together to form a thickened edge 15 which may be retained in the space 12.

Arm 2 has secured to its lower side a piece of heat insulating material 16 also shown as of wood which is connected as is the corresponding bar to arm 1 by L shaped lugs and spacing washers. This bar likewise has its lower inner corner rounded as indicated at 10 for the same purpose as does bar 9.

The arms are joined adjacent one end by links 17 and 18 which are rigidly fixed to arm 1 but joined to arm 2 by a single rivet 19 serving as a pivot about which this arm may swing.

Link 18 is provided on its upper surface with a bearing member consisting of side flanges 20 connected by an end flange 21, the three being bent from a single piece of sheet metal, and

within the channel-shaped end of this bearing member is pivoted upon a rivet 22 a pawl 23. This pawl has a U shaped outer end hooking over the upper end of flange 21 which serves as a stop to limit its motion. A leaf spring 24 is positioned within the channel shaped end of the bearing member pressing the pawl in a clockwise direction as seen in Figure 5.

At the free end of arm 2 are pivoted two links 25 and 26 adapted to be swung about the free end of arm 1. Pivoted between the ends of these links by means of a rivet 27 is a cam shaped latching member 28. This latching member is shaped to fit within the recess formed by the depression 4 so that neither the latching member nor the links project any material distance beyond the outer edge of arm 1. Link 26 has formed integrally with it an upwardly extending flange 26a having an arcuate bearing flange formed on its upper edge.

The curler rod shown in Figures 1, 7 and 8 consists of a central metal reinforcing rod 29, shown as knurled throughout the majority of its length and formed with a flattened end 30. The first step in the process of producing the curler rod is to form the reinforcing rod as just described. About this reinforcing rod is molded a generally spool shaped cover of approximately hyperboloidal contour, this cover being conveniently molded of bakelite or the like. The end of the bakelite portion is recessed at 31 to expose the flattened end 30 of the reinforcing rod while the central exterior portion of the bakelite portion is provided with longitudinally extending flutes 32 which serve to roughen it and give a greater frictional grip to the hair being wound thereabout. One end of the rod is provided with serrations 33 which constitute a ratchet adapted to cooperate with the pawl 23.

The operation of the device is as follows:

The hair is first divided into flat strands and one strand inserted between the arms of the protector clamp, links 25 and 26 are then swung about the arm 1 and the latch 28 swung to the position shown in Figure 3, thus gripping the hair between the two rubber members 6. Next, the operator places the tips of the hair strand over the rod and winds this toward the clamp until the serrated end of the rod fits in bearing flanges 20 and the cylindrical end of the rod fits upon flange 26a. The end 30 of the reinforcing portion of the curler rod can then be engaged by a wrench and the rod turned to tighten the hair as much as desired, the pawl engaging the teeth of the ratchet and so holding the rod in its adjusted position.

A pad 14, moistened with a suitable solution, is applied by having its thickened edge inserted within space 12 and then being wrapped about the wound strand, after which a heater may be placed over the curl and heat applied to impart a permanent wave to it.

Due to the heat insulating character of the rod, the tips of the hair closely adjacent the rod receive less heat than has been the case with metal rods heretofore in use and so are not excessively waved. Due to the use of the reinforcing bar, the exterior of the rod may be made of molded material, such as bakelite, which in itself does not possess sufficient strength or is alone too brittle for such purposes.

It will be noted that the center of the rod is not directly over the opening between the arms of the clamp but is set to one side, to the left as shown in Figures 5 and 6, of this space, hence the hair in passing from the scalp to the rod extends from the scalp around the curved edges of the wooden bars and substantially straight from this point upwardly, tangent to the hair which has been wound upon the rod. As there are no abrupt bends in the hair during the waving process, the resultant wave is smooth, without sudden changes of direction such as have been experienced heretofore, and a much more pleasing effect can be achieved in the arrangement of hair so waved.

While we have described our invention in some particularity it is obvious that many modifications and variations therein may be made without departing from the spirit of the invention and we therefore claim as our invention all embodiments coming within the scope of the appending claims.

We claim:

1. A protector clamp having two elongated arms pivoted together at one end, a link pivoted to the free end of one of the arms, a cam-shaped latch pivoted to the free end of the link, the outer side of the free end of the other arm being recessed so that when the latch engages the last mentioned end it will fit within the recess.

2. A protector clamp comprising two elongated arms pivoted together at one end, a pair of links pivoted upon the upper and lower sides of the free end of one arm, a cam latch between the free ends of the links and pivoted thereto, the outer surface of the free end of the other arm being recessed and adapted to be received between the links so that when the latch is in closed position it will lie within the recess.

3. A protector clamp comprising two elongated arms pivoted together at one end and detachably connected at the other end, heat insulating strips substantially co-extensive with said arms and secured thereto, the meeting edges of said strips being rounded to diverge in a direction away from said arms.

4. A curler rod having a central reinforcing bar surrounded by a generally spool-shaped envelope of heat insulating material.

5. A curler rod having a central cylindrical reinforcing bar provided with a non-circular end, and a covering of heat insulating material leaving said non-circular end accessible.

6. A generally spool-shaped curler rod of heat insulating material having a fluted narrow central portion, and a reinforcing rod extending therethrough.

7. A curler rod comprising a generally spool-shaped piece of heat insulating material, ratchet teeth formed in one end thereof, roughening projections formed at the central portion thereof, a recess in one end of said rod, a reinforcing bar extending through the rod and having a non-circular end projecting into said recess.

8. The method of making a curler rod which consists of roughening the exterior of a reinforcing rod, forming one end of the reinforcing rod in a non-circular cross-section, and molding about said reinforcing rod a covering of heat insulating material having a recess surrounding said non-circular end.

9. A protector clamp comprising two elongated heat insulating bars pivoted together at one end and detachably connected at the other, a cradle carried by one of said bars adjacent one end and having an upwardly extending flange, a hook-shaped pawl pivoted to said cradle, the hook portion thereof overlying said flange, and a spring interposed betwen the flange and pawl.

10. A hair waver clamp comprising a pair of flat generally rectangular jaws pivotally connected to be swung to open and closed position and having meeting edges movable into and out of cooperation by the opening and closing of said jaws, said meeting edges being removed and cooperating on a bias along the sides of the jaws presented to the scalp when the device is applied to the hair to provide a relief space adjacent the scalp and longitudinally along said meeting edges when said jaws are closed.

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