Feb. 6, 1934. R. MUSSY 1,946,444

APPARATUS FOR WAVING HAIR

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Fig. 1.

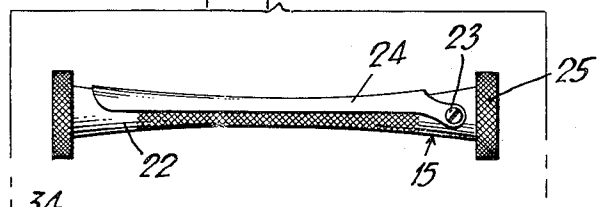
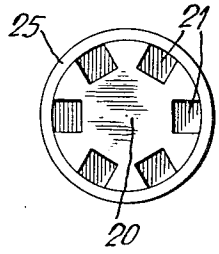


Fig. 2.



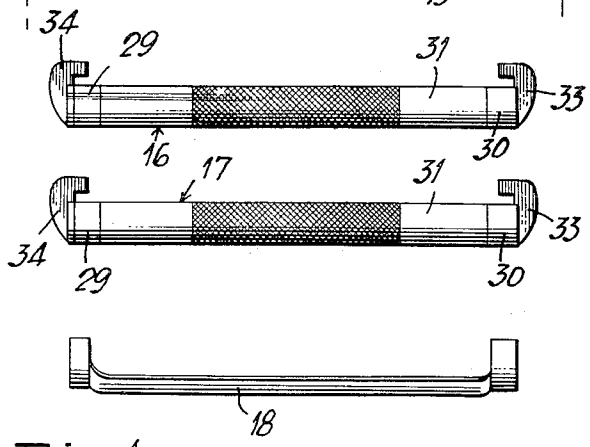


Fig. 3.

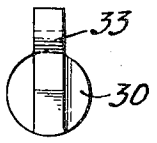


Fig. 4.

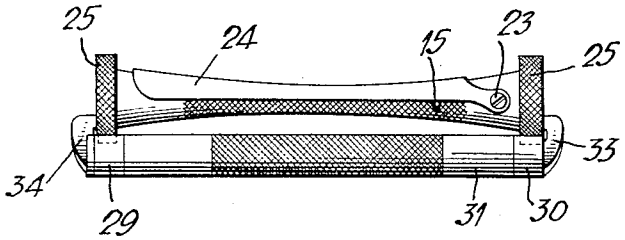


Fig. 5.

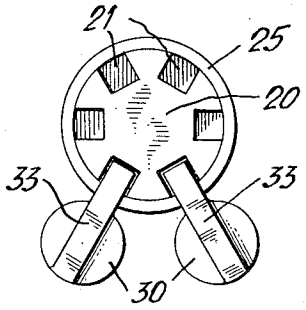
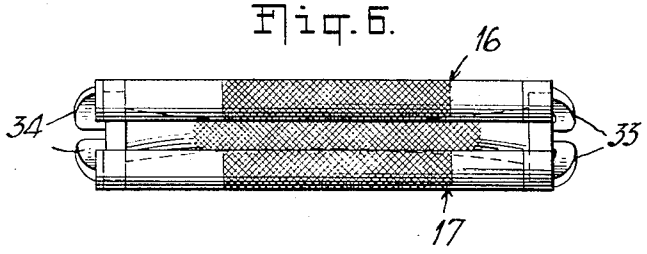


Fig. 6.



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Fig. 7

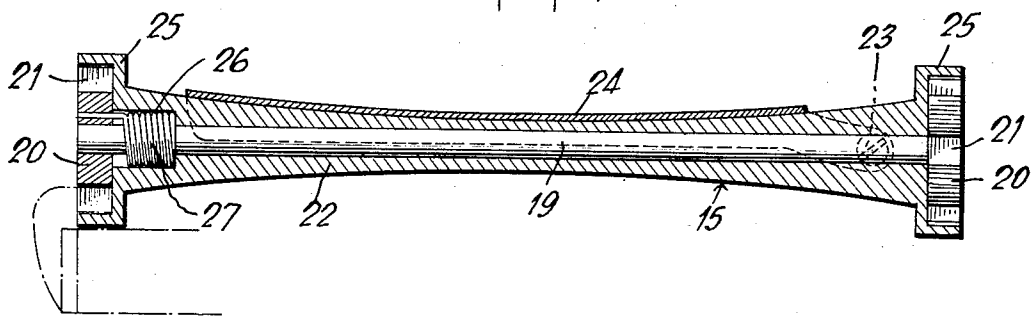


Fig. 8.

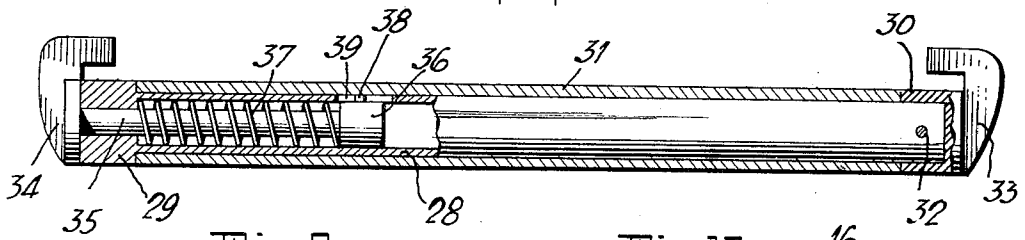


Fig. 9.

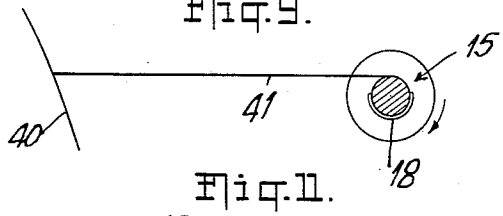


Fig. 10.

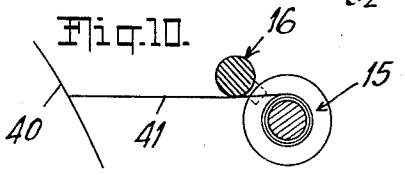


Fig. 11.

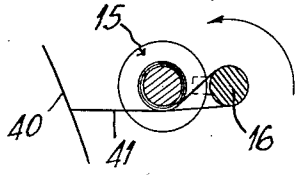


Fig. 12

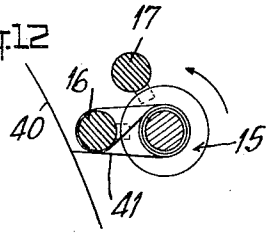
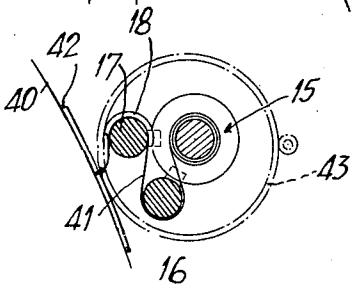


Fig. 13.



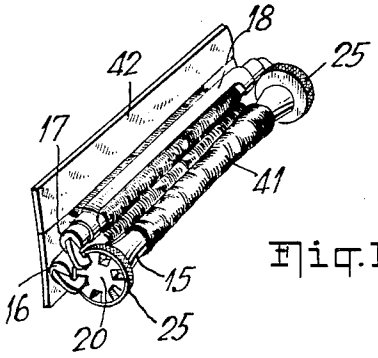


Fig. 14.

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APPARATUS FOR WAVING HAIR

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Application January 14, 1933. Serial No. 651,702

11 Claims. (Cl. 132—33)

This invention relates to improvements in the art of treating human hair and has particular reference to apparatus for permanently waving the hair.

In one of the well-known systems of hair waving, commonly identified as the croquignole method, it is customary to utilize a clamp to secure a strand of hair contiguous to the scalp and then, beginning with the free end of said strand, wind the same upon a curler rod in superimposed coils until the wound strand and rod are brought to a position adjacent said clamp, following which heat is applied to the strand to effect the permanent wave. It has been found with this method that, due to the ever increasing diameter of coils as the winding operation proceeds, the waves formed in the strand, especially those near the scalp, are noticeably longer than those at and adjacent the outer end of the strand and, as a consequence, the final result lacks the desired uniformity of appearance.

In accordance with the present invention, it is proposed to wind a strand of hair upon a curling device in such manner that the innermost waves of the strand will be of a uniform length and thus materially enhance the appearance of the wave. To this end, use is made of a curling device preferably consisting of one or a plurality of curler rods which are successively attached to another or main rod, as the winding operation proceeds, and about which the strand is wound to form therein the innermost waves, that is, those nearest the scalp.

The inventive idea involved is capable of receiving a variety of expressions, one of which, for purposes of illustration, is shown in the accompanying drawings wherein:

Figure 1 is an elevational view of the main and auxiliary curler rods and the clamp constituting the curling device employed in carrying out the invention.

Figure 2 is an end elevation of the main curler rod.

Figure 3 is a similar view of one of the auxiliary rods.

Figure 4 is a side elevation of the curler rods assembled.

Figure 5 is an end elevation thereof.

Figure 6 is an elevation taken at right angles to Figure 4.

Figure 7 is an enlarged longitudinal section through the main curler rod.

Figure 8 is a similar view through one of the auxiliary rods.

Figures 9 to 13, inclusive, illustrate diagrammatically the various steps in the winding of a strand onto the curling device, and

Figure 14 is a perspective view showing the strand completely wound and ready for the application of the heating element thereto.

The curling device is shown in Figure 1 as comprising four elements, namely, the main curler rod generally indicated by the numeral 15, two auxiliary curler rods 16 and 17, and a resilient clamp 18. Although two auxiliary curler rods are shown, it will be apparent from the following description that the desired result might be obtained by the use of only one of these rods, or that more than two rods may be employed, the number of rods used depending more or less upon the length of the strand of hair to be waved.

The main curler rod 15 used in connection with the invention is best illustrated in Figure 7 and is shown as comprising a shaft 19 having secured to its ends the end members or discs 20, each of which is provided at regularly spaced intervals about its periphery with a plurality of recesses 21 the purpose of which will appear in the course of description. The body portion 22 of the rod 15 is circular in cross section throughout its entire length and preferably tapered from its opposite ends toward the middle thereof as is customary with rods of this type. Adjacent one end of the body portion 22 the same has pivoted thereto, as indicated at 23, a retaining arm 24 which lies against and conforms to the curvature of the body portion so as to securely clamp the free end of a strand of hair between the same and said body portion at the beginning of the winding operation. Each end of the body portion 22 is provided with a head 25 recessed to receive therein the adjacent end member 20 of the rod so that the head actually encircles said end member and forms a closure for the outer ends of the recesses 21. The body portion 22 is rotatable on the shaft 19 and relative to the end members 20 so as to permit of the tightening of the coils of the hair strand which are wound on the body portion in superimposed relation. This tightening of the coils on the curler rod is usually effected after the winding operation has been completed and in order that the heads will afford an adequate grip for the operator to rotate the body portion in the desired direction, the peripheral surfaces of said heads are milled, as shown in Figures 1 and 4. In order that the body portion 22 may be frictionally held in a position of rotation relative to the shaft 19, the interior of one end of said body portion is enlarged to provide a cavity 26 interiorly of the adjacent head 25 and adapted to receive a coil

spring 27, the inner end of which frictionally engages with the bottom or inner end of the cavity 26 while the opposite end of said spring is secured in the adjacent end member 20. The first named or inner end of the spring engages the bottom of the cavity 26 in such manner that when the body portion 22 is rotated to tighten the coils of the strand of hair thereon said end of the spring will grip said bottom, which may be roughened if necessary, and as a consequence the coils of the spring will be expanded to frictionally engage the circumferential wall of the cavity 26 and thus retain the body portion in its adjusted position.

The curler rod 15, in the present method of waving the hair is utilized to receive only a portion of the entire length of the strand being waved and that portion is wound upon the said rod in superimposed coils in the usual manner. After this partial winding operation has been completed the auxiliary rods 16 and 17, constituting essential features of the present invention are then employed for the purpose of completing the winding operation. Before describing in detail the manner in which these auxiliary rods are used, a description of the construction of one of said rods, which are identical, will be given.

As shown in Figure 8 the auxiliary rod preferably comprises an inner central tubular member 28 terminating at each end in enlarged heads 29 and 30 and rotatably supported upon said inner member between said heads is the sleeve 31. This sleeve is rotatably mounted so that after the winding operation of the strand of hair has been completed and the body portion 22 of the curler rod 15 is rotated to tighten the coils of hair wound thereon, this tightening action will also be transmitted to that portion of the strand which is wound about the sleeve 31 of the auxiliary curler rod. The head 30 is anchored to the adjacent end of the inner member 28 by a dowel pin 32 and said head has formed thereon a stationary detent 33 the free hooked end of which is adapted to engage in any one of the series of openings 21 in one of the end members 20 of the rod 15 when the main curler and auxiliary curler rods are attached to each other at the conclusion of the winding operation. At the end of the rod opposite the detent 33 there is provided a second detent 34 of a similar construction. This latter detent is movable longitudinally relative to the curler rod to projected and retracted positions and in order to support said detent for such movements the same is provided with a stem 35 which projects inwardly through the head 29 and into the tubular member 28. At the inner end of said rod same is provided with an enlarged head 36 and between said head and the head 29 there is interposed an expansible spring 37 which acts to normally and yieldably retain the detent 34 in its retracted position. In order to prevent rotation of the detent about the stem 35 as an axis, the head 36 carries a pin 38 which projects into an elongated slot 39 formed in the inner member 28. When attaching the auxiliary rod to the main rod, the detent 34 is first engaged in one of the recesses 21 of one of the end members 20 whereupon the circumferential flange of the adjacent head 25 will be interposed between the bill or hooked end of the detent and the head 29. A pull in the direction of the other end of the curler rod 15 is then exerted upon the auxiliary rod, this pull being against the tension of the spring 37 and for the purpose of extending the detent 33 beyond the head 25 at said other end of the rod 15. During this pull the detent 34 moves outwardly in a longitudinal direction relative to the rod itself and when the bill of the detent 33 has been extended sufficiently beyond the adjacent head 25 it is then moved inwardly a slight distance so that it will be aligned with the recess 21 which is opposed to the recess in which the bill of the detent 34 is then engaged. The pulling pressure upon the auxiliary rod is then released whereupon the spring 37 expands and draws the detent 33 into engagement with the desired recess 21, the flange of the adjacent head 25 being then disposed and snugly fitted in the space between the bill of the detent 33 and the head 30. Thus the auxiliary rod is attached to the main rod with the longitudinal axes of said rods in parallel relation and the body portion 22 spaced from the sleeve 31, as best shown in Figure 4.

After the main and auxiliary rods have been assembled, with a hair strand wound thereon and tightened by a turning movement of body portion 22 in the proper direction, the clamp 18, which may be of any desired construction, is applied to the last auxiliary rod upon which the strand has been wound as shown in Figures 13 and 14 and engages that portion of the strand on said rod so as to assist in retaining the strand in its tightened condition.

The method of winding a strand of hair upon the curling device will now be described. Successive steps of this operation are illustrated in Figures 9 to 13 in which the numerals 40 and 41 conventionally indicate, respectively, the scalp and hair strand. After preparing the strand in the usual manner, a heat insulating clamp 42 of any desired type is placed in position against the scalp 40 with the strand between the members of the clamp. The free end of the strand is then engaged between the body portion 22 of the curler 15 and the arm 24 thereof as indicated in Figure 9, whereupon the winding operation is started with the curler being rotated in the direction of the arrow in said figure. After several coils of the strand have been superimposed upon the curler rod and the parts are substantially in the position of Figure 10, the auxiliary rod 16 is attached to the rod 15 as previously described and when in position the centers of the two rods are parallel and a certain predetermined distance apart. Then with the rod 16 as an axis, the rod 15 is turned in the direction of the arrow in Figure 11 until it reaches the position shown in said figure. This is done for the purpose of winding the strand about the rod 16, as shown, and when this has been accomplished, another half turn is given the device with the rod 15 as the axis and in the direction indicated by the arrow in Figure 12. At this point of the operation, the second auxiliary rod 17 is attached to the rod 15 as shown in the latter figure. The centers of the two rods 15 and 17 are the same distance apart as the rods 15 and 16 and the openings 21 in the end members 20 of the rod 15 are so spaced apart that when the two auxiliary rods are in position for the further winding operation, the distance between the centers of said two rods is the same as that between each of them and the rod 15. To complete the winding operation, the assembled rods are now turned about the rod 15 as an axis and in the opposite, or clockwise, direction from that indicated by the arrow in Figure 12. During this movement, which results in the parts assuming the position of Figure 13, the strand remains wound about the rod 16 and as the rod 17, which

precedes the former rod in this turning movement, contacts the under side of the strand and is then moved further to the position of Figure 13, the innermost portion of the strand length becomes wound about said rod 17 in a direction opposite to that in which the strand passes about said rod 16. With the rods 15, 16, and 17 spaced equi-distances apart, it will be apparent that the waves which are ultimately formed between said rods will also be of equal length and substantially the same as those formed on the rod 15. After tightening the strand upon the rods, as previously described, the clamp 18 is placed in position on the rod 17 and the device and the wound strand then enclosed in the heater 43 which may be of any conventional type.

What is claimed is:

1. Apparatus for waving hair comprising a main curler rod, upon which a portion of the length of a hair strand is adapted to be coiled, an auxiliary rod upon which another portion of said length is capable of being wound, and cooperating means on said rods effective upon substantially longitudinal movements of said rods in opposite directions relative to each other for releasably attaching one to the other.

2. Apparatus for waving hair comprising a main curler rod, upon which a portion of the length of a hair strand is adapted to be coiled, an auxiliary rod associated with said main rod, and a sleeve rotatable on said auxiliary rod and upon which another portion of said length is capable of being wound.

3. Apparatus for waving hair comprising a main curler rod, upon which a portion of the length of a hair strand is adapted to be coiled, an auxiliary rod upon which another portion of said length is capable of being wound, detents on the ends of said auxiliary rod engageable with the ends of said main rod for attaching said rods together, one of said detents being movable longitudinally to extended and retracted positions relative to the adjacent end of said auxiliary rod, and spring means for normally retaining said detent in retracted position.

4. Apparatus for waving hair comprising a main curler rod, upon which a portion of the length of a hair strand is adapted to be coiled, an auxiliary rod upon which another portion of said length is capable of being wound, means on said auxiliary rod for attaching the same to said main rod in spaced parallel relation thereto, and a sleeve rotatable on the body portion of said auxiliary rod.

5. Apparatus for waving hair comprising a main curler rod, upon which a portion of the length of a hair strand is adapted to be coiled, end members for said rod having recesses therein, an auxiliary rod upon which another portion of said length is capable of being wound, and detents on the ends of said auxiliary rod each engageable in one of the recesses in one of said end members.

6. Apparatus for waving hair comprising a main curler rod, upon which a portion of the length of a hair strand is adapted to be coiled, end members for said rod having recesses therein, an auxiliary rod upon which another portion of said length is capable of being wound, and detents on the ends of said auxiliary rod each engageable in one of the recesses in one of said end members, one of said detents being movable to extended and retracted positions relative to the adjacent end of said auxiliary rod, and means to normally and yieldably retain said detent in its retracted position.

7. A curler rod for use in waving hair comprising a shaft, a body portion rotatable on said shaft and capable of having a strand of hair wound thereon, said body portion having a cavity in one end thereof surrounding said shaft, and a coiled spring within said cavity having one end secured to said shaft and its other end engaged with the bottom of said cavity.

8. Apparatus for waving hair comprising a curler rod including a shaft, end members on said shaft having recesses therein, a body portion rotatable on said shaft between said end members and capable of having a strand of hair wound thereon, heads on said body portion for receiving said end members, and for rotating said body portion, and a second rod having means engageable in the recesses in said end members for attaching the latter rod to the first named rod in spaced relation to the body portion thereof.

9. Apparatus for waving hair, comprising a main curler rod upon which a portion of a length of a hair strand is adapted to be coiled, an auxiliary rod upon which another portion of said length is capable of being wound, and attaching members on one of said rods engageable with the other rod to secure the same together, one of said members being movable relative to the rod carrying the same when connecting said rods one to the other.

10. Apparatus for waving hair, comprising a main curler rod upon which a portion of a length of a hair strand is adapted to be coiled, an end member on said rod having recesses therein, an auxiliary rod upon which another portion of said length is capable of being wound, and a spring controlled detent on said auxiliary rod engageable in any one of said recesses.

11. Apparatus for waving hair, comprising a main curler rod, a plurality of auxiliary rods and means to support the latter rods circumferentially about said main rod in spaced relation thereto with all of said rods being spaced equi-distantly from each other.

RENÉ MUSSY.