Jan. 20, 1953 E. W. CARPER 2,625,940

COLD WAVE CURLING ROD

Filed Dec. 27, 1949

Fig. 1.

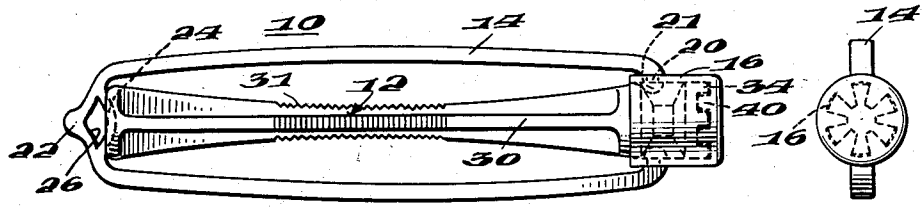


Fig. 3.

Fig. 2.

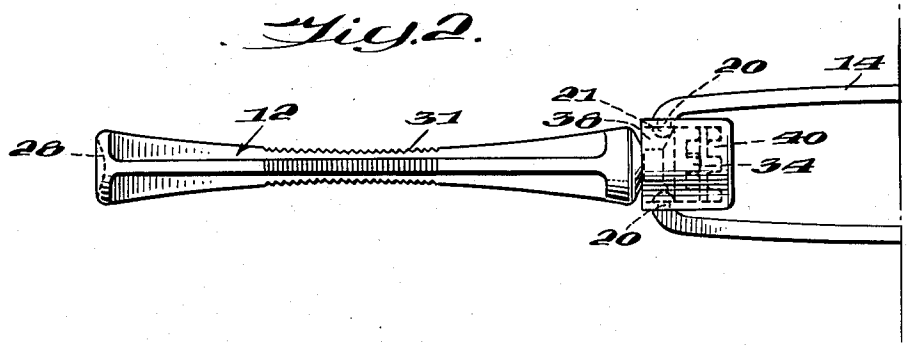


Fig. 4.

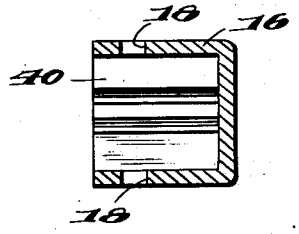


Fig. 5.

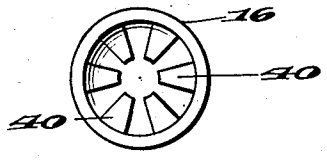


Fig. 6.

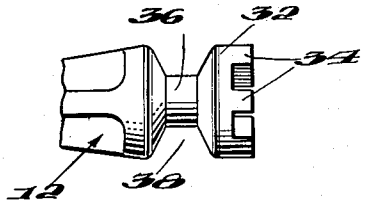
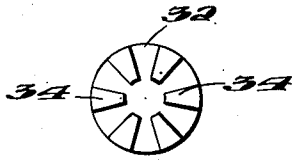


Fig. 7.



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COLD WAVE CURLING ROD

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10 Claims. (Cl. 132—41)

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This invention relates to hair waving or curling devices and particularly to a cold wave curling rod that is adapted for home use.

A large number of devices have been proposed and used to enable one to produce permanent or semi-permanent hair waves. Many of these involve spring clamps, elastic bands, or mechanical clamping devices that must be precisely operated to clamp and unclamp the hair. Most of them are difficult to apply and to remove and tend to become entangled with the hair. Some are so cumbersome that close, tight waves are unobtainable. Others, more efficient in character, are so complicated in construction and relatively high in cost as to make them impractical for general home use.

It is the general purpose of this invention to overcome the outlined problems by providing a unitary, all plastic curling device having improved features of construction and operation.

More particularly it is intended to provide a hair curling or hair waving rod that can be readily and easily operated by the person to whose hair it is to be applied without direct observation or the positioning of particular parts in alignment.

It is a further object of the invention to provide a simple, plastic, cold waving device that is economical to manufacture and simple and efficient in use.

A further object of the invention resides in the provision of a three-piece waving device of the character indicated in which the bail has a swiveling and rotating connection with the waving rod and said rod is held against rotation when in clamping relation to the bail.

More specifically, it is an object of the invention to provide a symmetrical, three-piece hair waving device comprising a curling rod, a hair securing or clamping bail securable over the rod, and a slidable collar-like member connecting the rod and bail for relative swinging and rotating movement with positive locking in any clamping position.

It is a further and specific object of the invention to provide a unitary hair curling device having a curling rod rotatable relative to a pivotally connected bail, with interengaging clutch elements associated with the rod and the bail respectively for locking the rod against rotation in

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whatever rotational position it is engaged by the bail for clamping hair.

An additional specific object of the invention is to provide a unitary hair curling device having a curling rod and a pivotally connected clamping bail or loop in which the bail is formed with a resilient latch member and the rod is provided with a cooperating detent.

A still further specific object is to provide a hair curling device of the character indicated having a curling or winding rod with notched rib portions intermediate its ends for positive gripping action.

These and other features of novelty and improvement contributing to efficiency in use and economy in manufacture will be more fully understood from the following detailed description of a preferred embodiment taken in connection with the accompanying drawings in which:

Fig. 1 is a side elevation to enlarged scale showing the curling device in closed or clamping position;

Fig. 2 is a similar side elevational view showing the curling device in a completely open position;

Fig. 3 is an end elevational view of the device as shown in Fig. 1;

Fig. 4 is a longitudinal sectional view to an enlarged scale showing details of the collar-like member;

Fig. 5 is an end view of the collar-like member of Fig. 4 as seen from one end;

Fig. 6 is a partial side elevation to enlarged scale showing the clutch or locking end of the rod member; and

Fig. 7 is an end elevational view of Fig. 6.

While it is preferred to manufacture the curling device from commercially available synthetic resinous or plastic material that will withstand the chemicals used for hair waving and can be readily molded, there are various other less advantageous materials that can be employed within the purview of the invention.

In the drawings the curling device in its entirety is designated by the reference numeral 10. As shown best in Fig. 1 the device 10 comprises a curling rod or elongated member 12, a bail or loop member 14 having outwardly bowed legs and adapted to extend over and embrace the rod 12, and a thimble or collar-like member 16 for main-

taining the rod and bail in assembled relation while accommodating the intended operations.

It will be seen from Fig. 4 that the thimble or cap member 16 is formed to provide small diametrically opposed openings 18 adjacent the open end thereof. The ends of the bail or loop member 14 are formed to provide aligned pivot shafts 20 fitting into the thimble openings 18 for easy rotation (Figs. 1 and 2). At their inner extremities the bail shafts 20 when assembled have a button formation 21 which is preferably rounded for purposes that will be described.

The other end of the bail 14 is formed with an outwardly directed finger tab portion 22 and an inwardly directed catch loop 24 as shown in Fig. 1. In order to give the catch loop 24 greater resiliency or springiness than is provided by the slightly bowed portions of the bail 14, an opening or cutout 26 is disposed between the tab portion 22 and the catch loop. Fig. 2 indicates the formation and arrangement of a catch socket 28 in the free end of the rod 12 for cooperative engagement with the catch loop 24 when the device is in the closed condition illustrated by Fig. 1.

While the rod 12 may have a variety of shapes it is preferred to form it with a plurality of spaced longitudinal ribs 30 extending the length thereof for better frictional engagement and gripping of the hair which is curled thereon. Because the hair curled on a rod like this is always of maximum diameter at the center and in order to maintain the hair centrally of the rod, the rod 12 of this invention is shaped to provide a relatively thin central portion tapering outwardly to thicker ends. In the cold waving process the end of each divided portion of hair to be waved has to be enclosed in the fold of a thin "end paper" or tissue. It has been found that the difficulty of starting the paper enclosed hair around the rod can be effectively avoided by forming each rib 30 with a longitudinal series of small V-shaped notches 31 extending at least over a major intermediate portion, as shown in Figs. 1 and 2.

Figs. 1, 2 and 6 show the formation of the rod 12 to include a cylindrical clutching end 32 having longitudinally extending outwardly directed clutch teeth 34, the ends of which may be rounded as shown. The clutching end 32 is spaced from the main portion of the rod 12 by a connecting shaft 36 of reduced diameter. This results in a groove formation, preferably of V shape, between the clutching end 32 and the remaining portion of the rod 12.

Figs. 1, 2, 4 and 5 clearly illustrate the formation of the thimble or cap member 16 to provide a cooperating clutch element. In the preferred embodiment this second clutch element comprises a plurality of longitudinally extending jaw teeth 40 projecting a short distance inwardly from the closed end 42 of the thimble 16, these teeth 40 being so spaced and dimensioned as to cooperate with the teeth 34 on the clutching end of the rod 12. The ends of the clutch teeth 40 are also shown as rounded for easier meshing.

From Figs. 1 and 2 it will be apparent that the thimble 16 can be moved longitudinally relative to the rod 12 for an appreciable distance that is sufficient to permit engagement and complete disengagement of the teeth 34 and 40 of the respective clutch elements. The outer part of the annular groove formation 38 is sufficiently wide to accommodate such movement, which is limited by engagement of the rounded retaining formations 21 with one side or the other of said grooved formation. When the clutch elements are in the disengaged relation shown in Fig. 2 the rod 12 can be freely rotated and the rounded formation of the buttons 21 minimizes the friction of the engagement with the grooved formation 38. When the teeth 34 and 40 of the respective clutch elements are in full engagement as shown in Fig. 1, the rod 12 will be locked against rotation in either direction and the catch loop 24 of the bail 14 can be snapped into the rod socket 28 to maintain all parts of the curling device 10 in fixed curling relation. The thimble member 16 is of a length to extend completely over the portion of reduced diameter (36—38) when the teeth 34 and 40 are interengaged. The cap member 16 having teeth 40 within its closed end encloses the teeth 34 on the adjacent end of rod 12 at all times.

It is believed that the unusual advantages of the cold wave curling device of this invention will be even more apparent from a description of the manner in which this device is used and functions. When a bundle of hair is to be wound on the rod 12, the bail 14 will be away from the rod, but not necessarily in the extreme position indicated by Fig. 2. The clutch teeth or serrated elements 34 and 40 will be completely disengaged as shown so that the rod can be rotated freely in either direction and the bail 14 can be swung or rotated relative to the rod. The freedom of motion of both the rod 12 and the bail 14 permit the rod to be manipulated very easily and the hair wound to a tight position adjacent the scalp. The bail 14 can remain at rest in a removed position where there is no likelihood of its becoming entangled in the hair while it is serving also as a support and bearing for the connected end of the finding rod 12. Upon completion of winding the bail 14 is merely swung into clamping position over opposite sides of the curl of hair and securely latched to the end of the rod 12 by the strong but yielding engagement between the catch loop 24 and rod socket formation 28. It is of course unnecessary to rotate the bail 14 in making this clamping connection as the clutch teeth 34 and 40 will engage and lock in any rotational position of the bail without the necessity for aligning or locating any parts of the device. The curling device of this invention also permits quick and easy removal from the hair without tangling after the wave is completed. It is necessary only to unfasten the bail 14 and swing it to a removed position with respect to the rod 12 such that the clutch elements will be unlocked and the rod can freely unroll the hair without interference or catching.

While a preferred embodiment of the curling device of this invention has been fully illustrated and described, it will be appreciated by those skilled in the art that various changes can be made in the details of construction and form and arrangement of parts without departing from the spirit of the invention an the scope of the appended claims.

Having thus described my invention what I claim as novel and desire to secure by Letters Patent of the United States is:

1. A hair waving device comprising a cap member, an elongated rod member having one end rotatably mounted within the open end portion of the cap member for limited lengthwise movement, interengageable surfaces formed within the cap member and on the rotatably mounted end of the rod member respectively, and a bail pivot-

ed on the cap member and formed to fasten over the other end of the rod member to move and hold said surfaces into non-rotatable engagement for stopping rotation of the rod member when fastened.

2. A hair waving device comprising a cap member, an elongated rod member having one end rotatably mounted in one end portion of the cap member and secured therein for limited lengthwise movement, interengageable locking elements within the cap member and on the rotatably mounted end of the rod member respectively, and a bail pivoted on the cap member and formed to snap over the other end of the rod member and thereby move the locking elements into engagement preventing rotation of the rod member.

3. An all plastic hair waving device comprising a cap member, an elongated ribbed rod member having one end rotatably mounted within one end portion of the cap member and secured therein for limited lengthwise movement, interengageable locking elements on the cap member and the rotatable end of the rod member respectively, and a bail pivotally connected to the cap member and formed to fasten over the other end of the rod member and thereby move and hold the locking elements into engagement preventing rotation of the rod member.

4. An all plastic hair waving device comprising an elongated rod member having a roughened lateral surface, a cap member rotatably mounted on one end of the rod member for limited reciprocal movement, a bail member pivotally connected by its ends to opposite sides of the cap member and formed and arranged to snap over the other end of the rod member, said cap member being formed with an inwardly faced toothed clutch element on the outer end thereof, said rod member having an outwardly faced toothed clutch element on its rotatably mounted end, and said clutch elements being movable into positive locking relation by snap engagement of the bail over said other end of the rod member.

5. The combination of claim 4 in which the portion of the bail member that snaps over the other end of the rod member has an opening therethrough defining an inwardly directed spring loop formation and the said other end of the rod member has a socket formation into which the spring loop snaps to lock the rod member against rotation and the bail member in hair clamping relation to the rod member.

6. A hair curling device comprising an elongated rod member having a cylindrical end portion separated from the adjacent end of the rod member by a shaft portion of reduced diameter providing an intermediate grooved formation, said end portion having clutch teeth thereon; a collar-like member rotatably receiving said end portion of the rod member, said collar-like member being provided with clutch teeth interengageable with the clutch teeth of said end portion, and said collar-like member being adapted to extend completely over the portion of reduced diameter when the clutch teeth are interengaged; a bail member having shaft portions on its ends pivotally mounted in opposite lateral sides of the collar-like member intermediate the length thereof, the shaft portions each having a retaining formation disposed within the collar-like member and movable back and forth in said grooved formation to accommodate complete rotation of the rod member and limit reciprocal movement thereof relative to the collar-like member, and said bail member being formed and arranged to clamp over hair curled on the rod member and to snap over the other end of the rod member when the clutch teeth are interengaged.

7. An all plastic cold wave curling device comprising an elongated rod member having a short cylindrical end portion separated from the adjacent end of the rod member by a shaft portion of reduced diameter providing an intermediate grooved formation, said short end portion having clutch teeth projecting outwardly and lengthwise thereof; a thimble member rotatably receiving the short end portion of the rod member, the closed end portion of said thimble member being provided with outwardly directed and lengthwise extending clutch teeth interengageable with the clutch teeth of the short end portion, and said thimble member being adapted to extend completely over the portion of reduced diameter when the clutch teeth are interengaged; a bail member having shaft portions on its ends pivotally mounted in opposite lateral sides of the thimble member intermediate the length thereof, the shaft portions each having a retaining formation disposed within the thimble member and movable back and forth in said grooved formation to accommodate complete rotation of the rod member and limit relative reciprocal movement thereof relative to the thimble member, and said bail member being formed and arranged to clamp over hair curled on the rod member and to snap over the other end of the rod member when the clutch teeth are interengaged.

8. An all plastic cold wave curling device consisting of an elongated ribbed rod member having a short cylindrical end portion separated from the adjacent end of the rod by a shaft portion of reduced diameter providing an intermediate grooved formation, said short end portion having clutch teeth projecting outwardly and lengthwise thereof; a thimble member rotatably receiving the short end portion of the rod member, the closed end portion of said thimble member being formed with outwardly directed and lengthwise extending clutch teeth interengageable with the clutch teeth of the short end portion, and said thimble member being adapted to extend completely over the portion of reduced diameter when the clutch teeth are interengaged; a bail member having outwardly bowed legs and shaft portions on its ends pivotally mounted in opposite lateral sides of the thimble member intermediate the length thereof, the shaft portions each having retaining formations disposed within the thimble member and movable back and forth in said grooved formation to accommodate complete rotation of the rod member and limit relative reciprocal movement thereof relative to the thimble member, and said bail member being formed and arranged to clamp over hair curled on the rod member and to snap over the other end of the rod when the clutch teeth are interengaged.

9. The combination of claim 8 in which the portion of the bail member that snaps over the other end of the rod member is formed with an opening therethrough defining an inwardly directed spring loop, and the said other end of the rod member has a recess formation into which the spring loop snaps to lock the bail member in hair clamping relation to the rod member.

10. An all plastic hair waving device comprising a cap member, an elongated ribbed rod member in the form of a relatively thin central portion tapering outwardly to thicker ends with a series of V-shaped notches extending longitudi-

nally along the ribbed portions, said rod member having one end rotatably mounted in the open end portion of the cap member for limited lengthwise movement, interengageable locking elements within the cap member and on the rotatably mounted end of the rod member respectively, and a bail having its ends pivotally connected to opposite sides of the cap member and formed to fasten over the other end of the rod member to move the locking elements into engagement preventing rotation of the rod member, said cap member enclosing the locking elements of the rod member at all times when fastened.

EARL W. CARPER.

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