Dec. 18, 1951 C. W. RENSTROM 2,579,204

HAIR CURLER

Filed Oct. 31, 1947

Fig. 3.

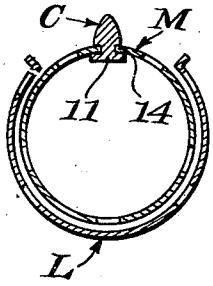


Fig. 1.

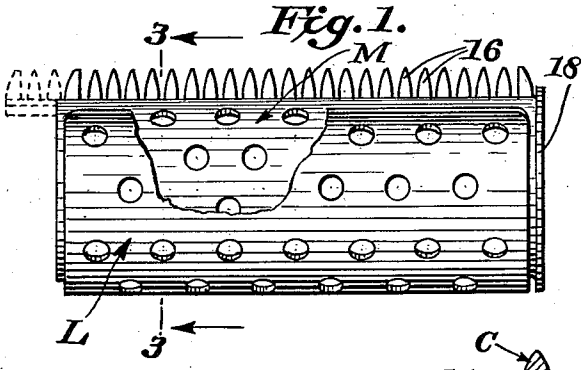


Fig. 2.

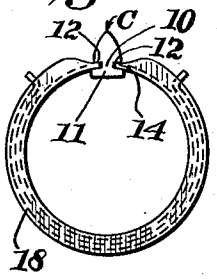


Fig. 6.

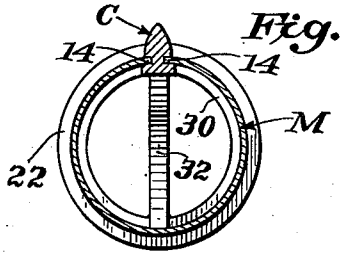


Fig. 4.

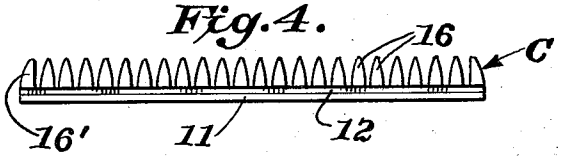


Fig. 5.

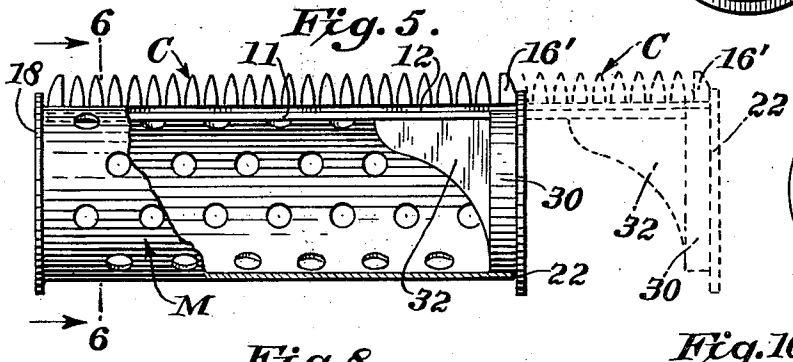


Fig. 7.

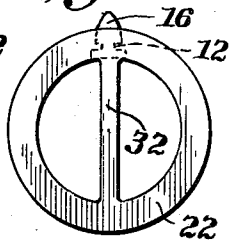


Fig. 8.

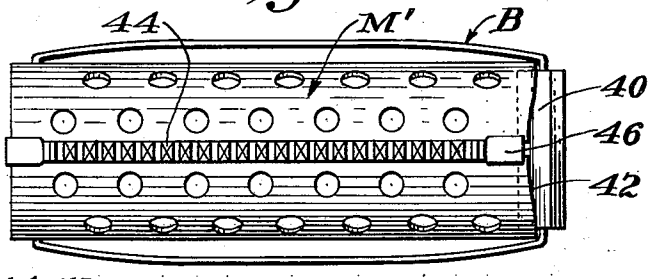
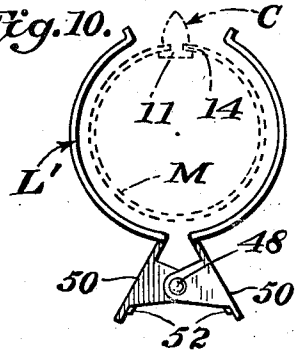


Fig. 10.



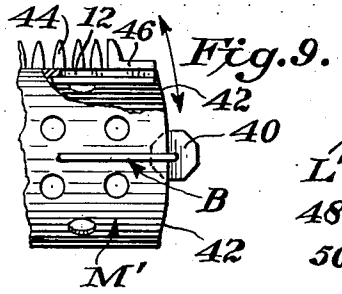


Fig. 9.

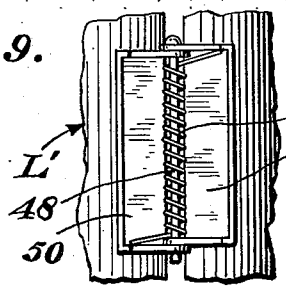


Fig. 11.

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HAIR CURLER

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Application October 31, 1947, Serial No. 783,353

8 Claims. (Cl. 132—35)

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The present invention relates to hair curlers of the type comprising a mandrel on which the hair is wound and then secured in order that it may set into a curl. Numerous devices for the above purpose have been heretofore manufactured, including mandrels provided with various types of comb arrangements whereby the hair may be combed and then immediately wound around the mandrel or equivalent element which carries the comb. Various types of clamps are provided to secure the hair when wound into a curl around the mandrel, whereby the curl will set.

In hair curlers of the type described using combs to evenly smooth the curl just prior to its formation, some disadvantages have been noted in removing the curler from the set curl, in that this operation often results in a disturbance of the smoothness of the curl. The idea of using a comb in conjunction with a mandrel and clamp has been known in the art for some time. Various suggestions have been made to provide for, in some way, retracting the comb at the time the mandrel is removed from the curl, so that the comb will not disturb the curl during removal. Most of these arrangements have been rather elaborate in construction, and expensive to make, usually providing for the withdrawal of the comb into the mandrel, by such as cam action or similar complicated mechanism.

I have provided a hair curler for the purposes wherein the comb is slidably mounted with respect to the mandrel, whereby the mandrel may be moved longitudinally from the curl while the comb is held in its fixed engagement with the curl, the mandrel and comb being entirely separated, after which the comb can be dropped down into the curl and removed, leaving the curl intact and undisturbed.

A principal object of the invention is to provide a curler of the above type comprising three separate and distinct parts, i. e., a mandrel, a comb which is separated from the mandrel at the time the latter is removed from the curl, and a clamp to secure the wound curl on the mandrel.

With the above construction and particularly as described herein, the formed curl may be maintained in tight condition and protected against loosening or disarrangement at the time the mandrel is removed from the interior of the curl.

A principal object of the invention is to provide a hair curler of the old and well known combination of parts including mandrel, comb and clamp, but so constructed that the mandrel may be removed or separated from the comb after the curl is set, whereby the comb may be then detached from the curl separately to avoid any disturbance of the curl.

Various other important features and advantages of the invention will be apparent as the description herein progresses.

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In the drawings:

Figure 1 is a side elevational view of a curler of the present invention,

Figure 2 is an end view looking inwardly from the right of Figure 1,

Figure 3 is a vertical sectional view taken along the line 3—3 of Figure 1,

Figure 4 is a side view of the detachable comb,

Figure 5 is a view of a modified and improved form of the invention, partly in elevation and partly in section, showing an arrangement in which the comb is provided with an integral end ring or plug.

Figure 6 is a sectional view along the line 6—6 of Figure 5,

Figure 7 is an end view of the detachable comb of Figure 5, looking inwardly from the right of Figure 5,

Figure 8 is a top plan view of a modification wherein a bail type clamp is employed for retaining the wound curl on the mandrel,

Figure 9 is a side elevational view of the embodiment of Figure 8, partly in section,

Figure 10 is an end view showing the use of another form of conventional clamping means, and

Figure 11 is a bottom view of such a clamp means, showing the details thereof.

Referring to Figure 1, the mandrel is shown at M, same comprising the conventional sheet of thin, light, flexible metal bent into substantially cylindrical form. It has been the custom for many years to form this mandrel with a multitude of openings or cut-outs therein, which merely serve to lighten the construction, and perhaps for ventilating purposes when the curl is set with the use of heat. As shown in Figure 2, the edges of the mandrel are bent so that they are slightly spaced from one another as indicated at 10, and in this space, which constitutes a comb receiving slot in the mandrel, a removable comb C is longitudinally inserted in the mandrel.

Referring to Figures 2 and 4, the comb comprises a bar 11 having longitudinal grooves 12 on opposite sides thereof and extending throughout the entire length of the bar, said grooves being of such dimension as to receive the opposite edges 14 of the mandrel therein, whereby the comb may be inserted lengthwise into the slot formed by the longitudinal edges 14 of the mandrel. It will be understood that the bar 10 is of such width between its grooves, that it serves to slightly separate the edges of the mandrel when inserted into the slot 10, whereby the mandrel is slightly expanded in order to grip and retain the comb in curl winding position therein. It will be further understood that while the mandrel is preferably made of metal, the comb is made of any suitable plastic material,

thus reducing the friction and facilitating its insertion into and removal from the mandrel.

The comb is provided with a plurality of teeth 16 which protrude a substantial distance beyond the surface of the mandrel when the comb is inserted in curl forming position therein.

As shown in Figures 1 and 3, a clamp L of conventional form is provided to secure the curl after it is wound on the mandrel, in a manner which has been well known in the art for many years. The clamp L is of the conventional open cylindrical construction as shown, whereby it may be opened between its meeting edges to be slipped or sprung over the mandrel with the wound curl thereon.

The above description covers the basic elements of the present improvement. In use, the comb will be inserted into the slot of the mandrel until it is in coextensive longitudinal relation with respect thereto, as shown in Figure 1. The mandrel will then be taken in the hand, and a lock of hair may then be combed outwardly from the head and without removing the comb from the lock, the lock is wound into a curl around the mandrel, the comb serving to smooth the hair and evenly distribute it on the mandrel. Thereafter, the curl thus formed is secured by the clamp L, after which it may be permitted to set. When it is desired to remove the curler, the clamp is removed, and then the comb is gripped in one hand and held in fixed relation with respect to the curl, the other hand being used to move the mandrel longitudinally with respect to the comb and out of the curl. In removing the mandrel, as described, the comb may be held in fixed relation with respect to the curl by simply gripping one of the end teeth 16' with the fingernail. When the mandrel is separated from the comb, the latter may be dropped inwardly toward the center of the curl, and thus removed therefrom. Obviously, the permissible longitudinal separation of the comb and mandrel avoids any disturbance of the formed curl at the time the device is removed.

In order to facilitate separation of the mandrel and comb as just described, conventional elements of the mandrel may be utilized. For example, the mandrel shown in Figures 1 and 2 is provided with the conventional outwardly turned flange 18, which may serve as a finger grip when pulling the mandrel longitudinally with respect to the comb. As shown in the drawings, the mandrel is provided with a flange 18 at one end only, in order to permit removal of the mandrel from the comb and the curl by grasping said flange and pulling it outwardly, the opposite end of the mandrel having no flange thereon, whereby it can pass longitudinally through the curl without the necessity of loosening the curl. Furthermore, a flange at the end of the mandrel which is being withdrawn would cause undesirable pulling and disarrangement of the hair adjacent the base of the teeth 16.

Obviously, the comb may likewise be provided with any form of extending finger piece to facilitate this separating operation.

In the construction shown in Figures 5, 6 and 7, the mandrel M is flanged as at 18 at one end thereof, and the comb has an end ring 22 formed integral therewith at the opposite end of the mandrel. The ring 22 may be gripped by one hand to hold the comb in fixed position with respect to the formed curl, while the mandrel is pulled out of the curl and separated from the comb by grasping its flange 18 at the opposite end of the mandrel. In the construction of Figure 5, the end ring 22 on the comb is provided with an inwardly directed cylindrical collar 30 of diameter to act as a plug when the comb is inserted into the mandrel to curl winding position, the collar 30 snugly entering the open end of the expanded mandrel and serving to support same at its end. The design of the comb may include an integral saddle-like brace 32 which strengthens the ring 22 and supports the bar 12 of the comb, this brace entering the mandrel to the position shown in Figure 5. The brace 32 constitutes a strengthening connection between the bar 11 of the comb and its end ring 22, and may, itself, constitute means for gripping the comb during the removal operation previously described, as will be apparent from Figure 7. The ring 22, brace 32 and comb proper may be integrally cast of plastic material.

The preceding description is concerned with the application of the invention to conventional hair curlers comprising a tubular mandrel and clamp of the type described. Figure 8 shows the invention applied to another form of curler, having a mandrel M' of the type just described, but employing in place of the clamp C, another well known form of clamping device consisting of the bail B pivoted to the mandrel at one end thereof as is well known in the art, the moving end of said bail having a roller 40 of polygonal form which is adapted to be sprung over the end of the bail as shown in Figures 8 and 9. In order to facilitate springing the roller 40 over the end of the mandrel, the latter may be beveled at 42 as shown in Figures 8 and 9.

Like the earlier described embodiments, the mandrel M' is constructed to provide an open slot between its meeting edges, and the separate comb element is removably inserted into the slot formed by these edges, the comb being designated by the numeral 44 in Figure 8. The comb may be provided with end areas 46 of sufficient bulk to be grasped when removing the mandrel from the comb and from the formed curl, as previously described.

In Figures 10 and 11, another modification is shown wherein the clamp L' is of a further well known construction, comprising two parts pivoted as at 48 and having finger gripping wings 50 which are normally held apart to contract the clamp by a spring 52, but which may be pressed together at the time the clamp is positioned on or removed from the mandrel.

It will be obvious that I have provided a novel hair curler comprising three separate parts, and including a comb member which can be separated from the mandrel at the time the latter is being removed from the curl.

An important feature of the invention is the absence of any protruding parts on the mandrel which would disarrange the hair upon removal of the mandrel from the curl. In both embodiments of Figures 1 and 5, the end of the mandrel which must be drawn through the curl has no protruding flange thereon, and, of course, it is not necessary to withdraw the comb laterally through the curl until after the mandrel is withdrawn, permitting the comb to drop down into the center of the curl. In the embodiment of Figure 8, the bail B can be lifted and thereafter the mandrel may be withdrawn to the left as viewed in this figure, there being no protruding parts on the mandrel or the trailing end thereof to disarrange the hair.

I claim:

1. A hair curler comprising an elongated man-

drel around which the hair may be wound, a comb comprising a bar with teeth thereon which is separable from said mandrel, said mandrel having a longitudinal slot therein to support said comb in curl winding position in said mandrel with its teeth protruding beyond the surface of said mandrel, said comb having means for slidably securing same in said slot, said comb having a circular abutment attached thereto which engages one end of said mandrel to limit the insertion of the comb in said slot, said abutment having an extending portion which serves as a finger grip, whereby to retain said comb in fixed position in the set curl while said mandrel is moved longitudinally with respect thereto and removed from said comb, the protruding portions of said teeth being of length less than the diameter of said mandrel.

2. A hair curler comprising a tubular mandrel around which the hair may be wound, a comb comprising a bar with teeth thereon which is separable from said mandrel, said mandrel having a longitudinal slot therein at its surface to support said comb in curl winding position in said mandrel with its teeth protruding beyond the surface of said mandrel, said comb having means for slidably securing same in said slot, said comb having a circular plug portion attached to one end thereof which enters one end of said mandrel when said comb is in curl winding position therein, said plug having an extending portion which serves as a finger grip, whereby to retain said comb in fixed position in the set curl while said mandrel is moved longitudinally with respect thereto and removed from said comb, the protruding portions of said teeth being of length less than the diameter of said mandrel.

3. A device for setting hair in curls that can be removed without disturbing the curl comprising a mandrel, an outwardly extending flange on one end of said mandrel, said mandrel having a straight slit running the full length thereof, a comb, grooves in the sides of the comb of such nature that the edges of the slit ride in the grooves, a disc integrally secured to one end of the comb, said disc being in a plane that is perpendicular to said grooves, an inner section on said disc adapted to be inserted inside the mandrel, and a flange on said disc of greater diameter than that of the mandrel.

4. A hair curler comprising a mandrel of thin light metal bent into substantially tubular form with the edges of the metal in contiguous relation with respect to one another to form a slot therebetween extending the entire length of said mandrel, a comb comprising a bar with teeth thereon having means on opposite sides thereof for receiving said edges whereby said comb may be inserted longitudinally into said slot into coextensive relation with respect to said mandrel with its teeth extending beyond the surface thereof for combing and winding a curl thereon, said comb having a finger gripping extension at one end thereof whereby said mandrel may be moved longitudinally with respect to said comb in a direction away from said extension and separated therefrom without disturbing the set curl.

5. A hair curler comprising a mandrel of thin, light resilient metal bent into substantially tubular form with the edges of the metal presented to one another but forming a narrow open slot therebetween, said slot being open at one end of the mandrel, a comb mounted in said mandrel for removal through the open end of said slot and comprising a bar with teeth thereon having

grooves on opposite sides thereof for receiving said edges whereby said comb may be inserted longitudinally into the open end of said slot and into co-extensive relation with respect to said mandrel with its teeth extending beyond the surface thereof for combing and winding a curl thereon, said comb being of such thickness as to widen the slot between said edges whereby it is held in curl winding position in said slot by the resilience of the metal of said mandrel, the extending portions of said teeth being of length substantially less than the diameter of said mandrel.

6. A construction in accordance with claim 5 wherein said comb is formed with a circular plug at one end thereof of such diameter as to enter the end of said mandrel when the latter is expanded by said comb and to thereby provide circular support for said mandrel at one end thereof.

7. A hair curler comprising an elongated tubular mandrel made of thin resilient material around which the hair may be wound and a comb comprising a bar with teeth thereon which is separable from said mandrel, said teeth being of length substantially less than the diameter of said mandrel, said mandrel having opposed longitudinal edges presented to but slightly spaced from one another to form a longitudinal slot open at one end extending entirely through the material of said mandrel to support said comb in curl winding position in said mandrel with its teeth protruding beyond the surface of said mandrel, the bar of said comb having a face which is presented outwardly beyond said slot and having means for slidably securing same in said slot whereby said mandrel may be moved longitudinally with respect to said comb and separated therefrom without disturbing the set curl, the inner ends of said teeth being joined to said face of said bar outwardly beyond said slot.

8. A device for setting hair in curls that can be removed without disturbing the curl comprising a hollow cylindrical mandrel open at its ends and made of thin resilient material, said mandrel having a longitudinal opening extending entirely through the material thereof and running the full length of said mandrel providing a slot which is open at its ends and defined by opposed longitudinal edges on said mandrel presented to but slightly spaced from one another, a comb, grooves in the sides of said comb, said grooves being adapted to engage the edges of said opening in such manner that said comb can be longitudinally moved therein and removed therefrom, said comb having teeth of length substantially less than the diameter of said mandrel and which extend outwardly therefrom.

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