July 2, 1946. J. M. SIMONS 2,403,244

COLD WAVE HAIR CURLER

Filed Feb. 15, 1945

Fig. 1.

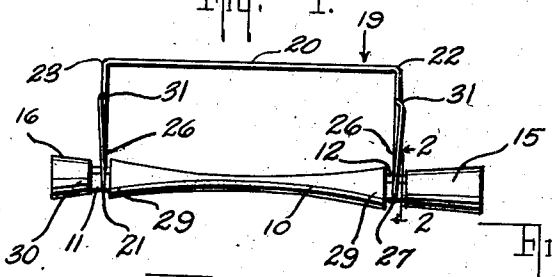


Fig. 2.

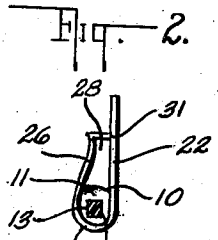


Fig. 3.

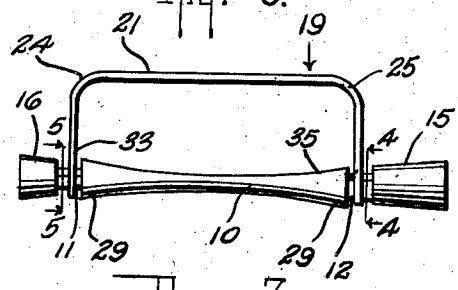


Fig. 4.

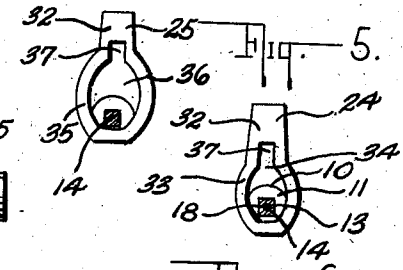


Fig. 5.

Fig. 6.

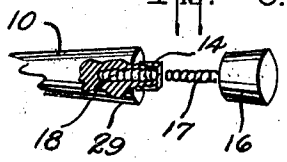


Fig. 7.

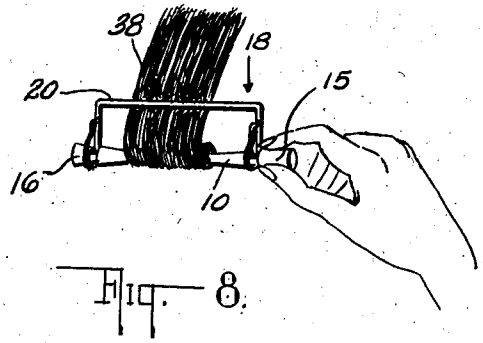


Fig. 8.

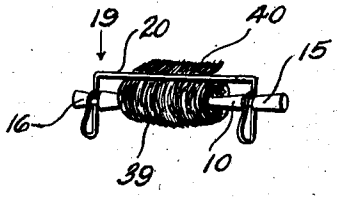
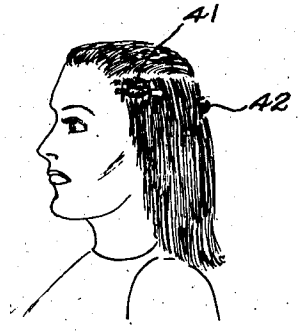


Fig. 9.



INVENTOR.
JOSEPH M. SIMONS
BY B. A. Whiteley
ATTORNEY.

Patented July 2, 1946

2,403,244

UNITED STATES PATENT OFFICE

2,403,244

COLD WAVE HAIR CURLER

Joseph M. Simons, St. Louis Park, Minn.

Application February 15, 1945, Serial No. 578,050

4 Claims. (Cl. 132—34)

1

My invention relates to a cold wave hair curler and has for its object to provide a device for forming curls of the hair for use in connection with the cold wave process, which has many substantial advantages over cold wave curlers as heretofore used.

In beauty culture practice what is known as permanent waving of the hair, particularly of women and in some instances men, for a great many years was effected by electrically heated members. This method, which is still employed to a considerable degree, involves some discomfort to the individuals on which it is performed, and because of the use of heat it is difficult to bring the permanent waving right close to the scalp, so that the growth of the hair will interfere with the effectiveness of the permanent waving sooner than would be the case if the waves were brought close to the scalp. Also there has been some danger in connection with heat waving, there having been a great many instances of serious burns.

For these reasons beauty culture operators have sought to find a way of permanently waving the hair without the use of heat. Such a way has been perfected, whereby the hair is curled upon curler members, which curls are held fixed while a solution is applied which upon drying has the effect of permanently setting the curls. The curlers used in this cold wave process have generally provided a cord or piece of string permanently attached to one end of the curler and which is drawn tight over the curler after it is formed and held by having the cord or string enter notches at the other end of the curler. This arrangement has had certain marked disadvantages in that it is difficult to keep the curl in position while the cord is carried over it and attached, and the arrangement does not with certainty prevent rotation of the curler and an uncurling effect, and furthermore there is considerable time taken up in releasing the cord and taking the curler out of the hair. All of these difficulties have interfered somewhat with the development and use of cold wave methods.

I have discovered that a very simple but highly efficient curler may be produced by applying a simple clip which is attached to the curler in such a manner that it may be freely rotated and not in any way interfere with the setting of the curl on the curler shaft, but which may be then changed in position not only to hold the curl as set, but to prevent rotation of the curler. This arrangement enables the cold wave setting to be done more rapidly and with better results than otherwise would be the case.

2

It is a principal object of my invention, therefore, to form a curler spindle in the customary manner but with sets of grooves adjacent the ends thereof, and to position about these sets of grooves a frame member in the form of an enveloping clip-like structure so connected with the grooves that in one position the curling spindle may be rotated freely within this member while in another position the spindle will be held from rotation and by means of the clip the curl will be maintained in position on the spindle while being dried and set by the setting liquid.

It is a further object of my invention to form the so-called clip as a U-shaped piece with a transverse bar and two shanks extending at right angles to the bar and being formed with loops, the dimensions of the spaces within the loops being wider at their outer ends and narrower at their inner ends, so that the spindle may be rotated freely when it is positioned in the wider spaces of the loops and will be locked against rotation when it is positioned in the narrower spaces of the loops.

It is a further object of my invention to provide the hair curling spindle with grooves adjacent the ends thereof formed with one or more flat faces adapted to seat in the narrowed portion of the loops of the clip member so that when so seated the curling spindle will be held from turning.

It is a further object of my invention to form the spindle with heads large enough to prevent the loops of the clip from coming out of the grooves on the spindle, and to form one of the loops larger than the other and with one of the heads removable whereby the arrangement may be conveniently assembled.

It is a further object of my invention to form the clips of some fairly rigid material such as to hold the shape of the clips, as for example steel wire, with the loops formed of the extent of the wire, or plastic material of such width as to permit the loops to be formed directly through the body of the plastic material.

The full objects and advantages of my invention will appear in connection with the detailed description of the invention given in the appended specification, and the novel features by which the advantageous results above enumerated are obtained will be particularly pointed out in the claims.

In the drawing illustrating an application of my invention in some of its forms:

Fig. 1 is a view of the hair curler in plan with the clip member formed of wire and fully extended.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a view of a hair curler similar to that of Fig. 1 in which the clip member is made of plastic and fully extended.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a sectional view taken on line 5—5 of Fig. 3, showing that the loops and the squared bottom of the grooves are the same for both grooves.

Fig. 6 is a detail view with some parts broken away, showing the manner of securing the removable end or hand-hold upon the end of the curler member, and also showing the squared portion within the groove of the curler.

Fig. 7 illustrates the manner of laying a curl upon the curling spindle inside of the clip with the clip fully extended to permit free rotation of the curling spindle.

Fig. 8 shows a curl completed with the clip pushed into locking position.

Fig. 9 is a schematic view showing the position of the curler upon the head of a subject after the curl has been completed and while the curler is holding the curl in position.

The curling spindle **10** is of standard construction preferably having a very broad hourglass shape with walls conically curved outward from the center. Adjacent the enlarged ends of the conical portions of the spindle are formed circumferential grooves **11** and **12**. The bottoms of the grooves are formed with some plane faces, such as face **13**, Figs. 2 and 5. Preferably the bottoms of the grooves will be in the form of squares **14**. Ends **15** and **16** extend beyond the grooves **11** and **12**. The end **15** is an elongated end rigidly and permanently secured to the curling spindle **10** and is adapted to be used between the thumb and finger. The end **16** will have secured thereto a screw **17** adapted to seat in a threaded aperture **18** extending through the squared portion **14** into the spindle **10**, as shown in Fig. 6, for a purpose later to be given.

A clip member **19** is provided formed of wire, as shown in Figs. 1 and 2, or of plastic, as shown in Figs. 3, 4 and 5. This clip member comprises in general a U-shaped device having a transverse bar **20** when formed of wire, or **21** when formed of plastic. To the transverse member is secured an extension of the transverse bar **20** into arms **22** and **23** extending at right angles to the cross bar **20**, for the wire form of the device. Where the plastic clip is used portions of the bar itself are turned over, as indicated at **24** and **25**. In either case the parts **22** and **23**, and **24** and **25** extend substantially at right angles to the connecting bar **20** or **21** and form in effect a U-piece. In the wire construction of Figs. 1 and 2 the wire is carried around to form a loop **26**. The loop comprises two parts, a circular part indicated at **27** and a narrowed part indicated at **28**, Fig. 2. The circular part is of such dimensions that the square portions **13** may turn freely in it when these squared portions are within the circular part, but will seat along their faces in the narrowed portion **28** when the squared part is brought into that narrowed portion and there prevent turning of the spindle. The enlarged part **27** of the loop **26** may be made large enough to pass over the end **30** of the spindle curler **10** when the head **16** has been removed therefrom, or where desired, the head **16** may be made integral with the spindle **10** and the loops inserted in the grooves **11** and **12** before being permanently secured, at the point indicated at **31**, Figs. 1 and 2.

In the plastic form of Figs. 3, 4 and 5, the parts **24** and **25**, Figs. 4 and 5, are carried from the transverse member **21** in the form of a broad plate **32** which expands, as indicated at **33**, and has formed therein an opening **34**, Fig. 5, which is large enough at its lower point to permit free rotation of the square end **14** in groove **11**. Plate **32** at the end **25** has formed therein an expanded portion **35** which encloses an opening **36** larger across than the opening **34** and large enough to slip over the enlarged ends **29** of the curler spindle **10**. This can be effected when the head **16** has been removed by being unscrewed, as indicated in Fig. 6. Since the fixed head **15** is too large to permit the larger loop or opening **36** to pass over it, and the removable head **16** when screwed back into position is too large to permit the smaller opening **34** to pass over it, the parts are in that manner permanently assembled together. From both of the openings **34** and **36** there is a narrowed extension **37** which is adapted to slip over the sides, such as **13**, of the squared connecting member **14**. This will occur at both sides of the hair curler, thus locking the curling spindle against any turning movements.

In Figs. 7, 8 and 9, the method of using the hair curler is indicated. A wisp of hair **38** wet with the setting solution is manipulated by one hand to go on the curling spindle **10** and is held by that hand while the spindle is rotated from the long end **15** thereof until a curl **39** is formed on the spindle close to the scalp, as indicated at **40** in Fig. 8, both hands aiding in the rotation. The transverse bar **20** or **21** is then pushed down upon the curl, as indicated in Fig. 8, causing the square portions **14** in the grooves **11** and **12** to seat in the parallel walled slot portion **37**, thus holding the spindle from rotation. The extended parts **22** and **23** of the loop members engage the scalp and effectively prevent any turning movement of the curling spindle **10** which might result in loosening or permit uncurling of the curl of hair upon the spindle. The manner in which the curls are held when made is shown at **41** and **42**, as applied to a subject's head. As is the usual practice in cold hair curling, the wisp of hair that is set in the curl has applied thereto a setting chemical so that after a certain length of time the hair in the curled form is dried and permanently set.

For withholding the curl it is only necessary to push the loops from the position of Fig. 8 to the position of Fig. 7 and hold the bar **20** in one hand so that the spindle may turn as it is withdrawn to pull it from the curl which then is set as a permanent wave. The practice, of course, is to take small strips of hair successively over the whole head or over that part of the head where it is desired to curl the hair, and make successive curls in rows and tiers until the hair is entirely curled.

The advantages of my invention have been made to appear very clearly in the foregoing description. A primary advantage of my invention comes from the fact that greatly increased speed and accuracy in forming the curl is possible with the use of this invention. In the practice of the usual curler where a string is employed to bind the curl after it is formed, there is a lot of difficulty because of the string getting in the way and becoming tangled with the hair, and after the curl is formed there is difficulty in bringing the string into binding position without the curl slip-

ping, and also there is nothing to prevent the curl and the spindle from rotating on the head. Also the string rots very rapidly by reason of its contact with the setting fluid and frequently breaks, all of which greatly increases the difficulty of the curling manipulation and correspondingly increases the length of time necessary to form the curl, which is, of course, a very important element in the practice of cold wave curling, since the length of time which elapses for completing the entire cold wave setting both increases expense and time consumption on the part of the subject. Also the use of the cross bar 20 or 21 pulling the curler from the set curl is both effective for that purpose and shortens the time in doing it.

It will be understood, of course, that the forming of the curls and the solution employed in connection with the curls as formed not merely sets the curls but effects a permanent set in what is known as permanent waving by a cold wave process.

I claim:

1. A hair curler, comprising a spindle formed with annular grooves adjacent the ends thereof, a U-shaped clip having arms formed with loops seated in said grooves, said loops providing an enlarged portion and a narrowed portion, the bottoms of the grooves being so shaped relative to said portion of the loops that rotation of the spindle freely can take place when the bottoms of the grooves are in the enlarged portions of the loops and the spindle will be locked to the loops and the clip when the bottoms of the grooves are in the narrowed portions of the loops.

2. A hair curler, comprising a spindle formed with annular grooves adjacent the ends thereof, a U-shaped clip having arms formed with loops seated in said grooves, the bottoms of said grooves being formed with a flat face, said loops providing an enlarged portion and a narrowed portion, the enlarged portion being of a size to permit free rotation of the spindle when the bottoms of

the grooves are located therein, and the narrowed portion being so shaped and positioned as to be engaged by the flat face in the bottoms of the grooves to lock the spindle to the loops and the clip when the bottoms of the grooves are in the narrowed portions of the loops.

3. A hair curler, comprising a spindle formed with annular grooves adjacent the ends thereof, a U-shaped clip having arms formed with loops seated in said grooves, the bottoms of said grooves being formed square in cross section with opposed flat faces, said loops each provided with an enlarged portion and a narrowed portion of such size relative to the squared portion of the bottoms of the grooves that the spindle may rotate freely when the bottoms of said grooves are in the enlarged portion, and the spindle will be locked against rotation when the bottoms of the grooves are pushed into the narrowed portions of the loops to cause the opposed flat faces thereof to engage the walls of the loops.

4. A hair curler formed of molding material such as plastic, comprising a spindle having annular grooves adjacent the ends thereof, said ends being substantially larger than the spindle and one of them being removably held thereon, a U-shaped clip having arms formed with loops, each of said loops being provided with an enlarged portion and a narrowed portion, the enlarged portion of one of said loops being adapted to slip over the spindle when the removable end has been removed so that both loops may be positioned in the respective grooves of the spindle, the bottoms of the grooves being so shaped relative to said portions of the loops that rotation of the spindle freely can take place when the grooves are positioned in the larger portions of the loops while the curl is being formed, and the spindle will be locked to the loops and the clip when the grooves are positioned in the smaller portions of the loops.

JOSEPH M. SIMONS.