

Jan. 24, 1933.

J. SGUERSO

1,894,964

METHOD OF PERMANENT WAVING

Filed Aug. 6, 1931

3 Sheets-Sheet 1

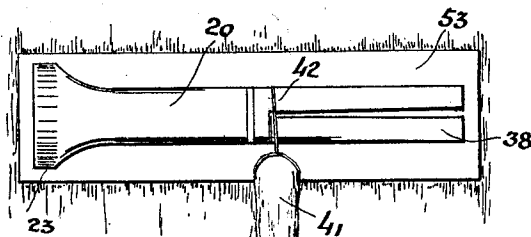


FIG. 1

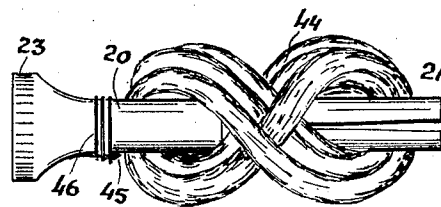


FIG. 3

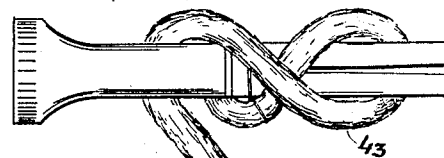


FIG. 2

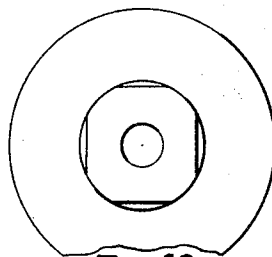


FIG. 13

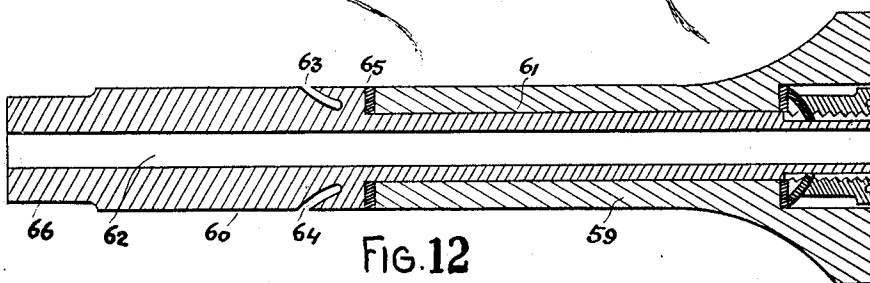


FIG. 12

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3 Sheets-Sheet 2

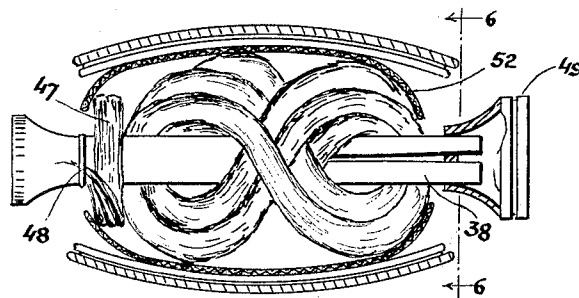


FIG. 4

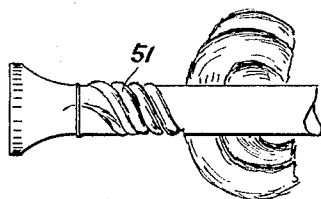


FIG. 5

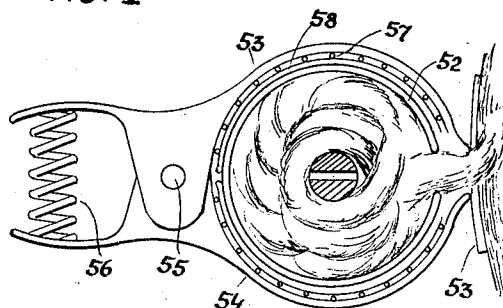


FIG. 6

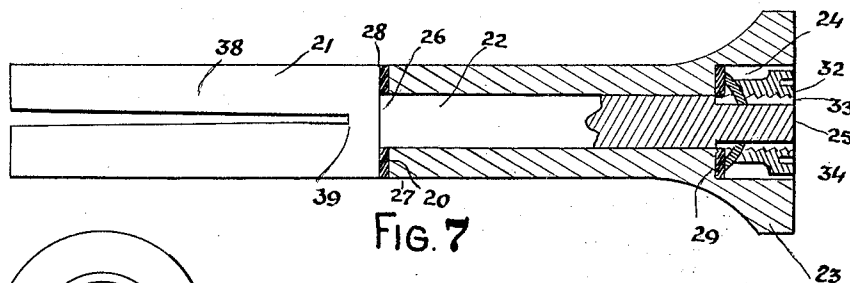


FIG. 7

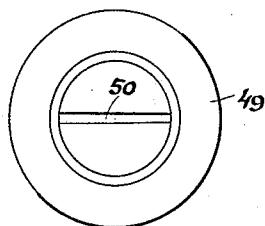


FIG. 8

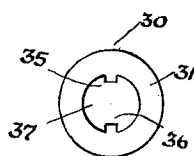


FIG. 9

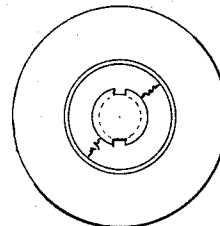


FIG. 10

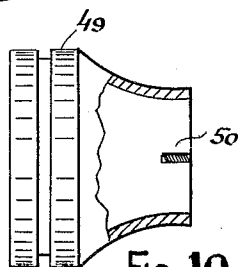


FIG. 11

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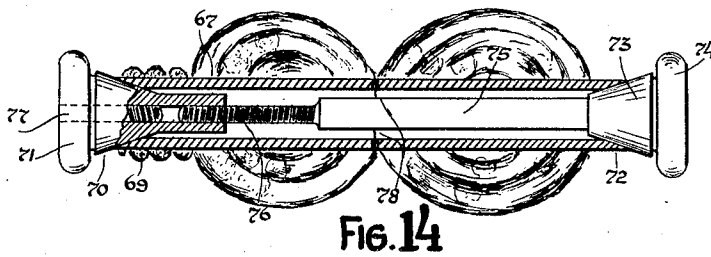
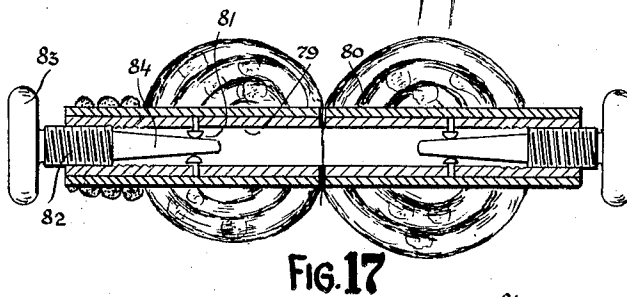
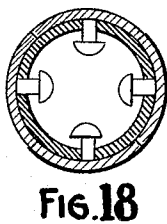
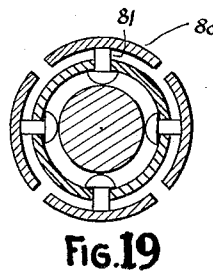
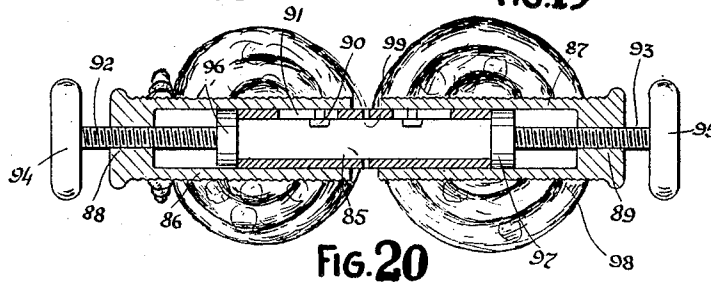
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METHOD OF PERMANENT WAVING

Filed Aug. 6, 1931

3 Sheets-Sheet 3



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METHOD OF PERMANENT WAVING

Application filed August 6, 1931. Serial No. 555,398.

This invention relates to hair treatment and more particularly refers to improvements in methods of carrying out operations attached to permanent waving.

In current permanent waving practice, strands of hair are usually wound upon a metal curler so as to form a continuous helical coil extending longitudinally of the curler.

In some cases the strand of hair is flattened and is spirally wound upon the curler so as to have its various coils superimposed upon one another. Before or after or both before and after the coiling operation, lotion is applied to the hair, said lotion usually consisting of an alkaline solution, its effect being to "open" the hair. As a rule one end of the strand of hair is tied onto the curler before winding and the other end is tied after the winding is completed, and the coil thus formed is usually tightened by the use of specially designed curlers.

Each coil thus formed is then wrapped in flannel and a heating element is inserted over the coil with a view to "baking" it for a suitable length of time. The heat thus applied, which is substantially uniform throughout the period of heating, causes the hair to remain curled permanently until newly grown hair takes its place.

The curls thus produced however are more or less spiral in form and do not have a Marcel-wave effect. This effect is only produced later by a separate operation which is called finger-waving, the result of which is not in itself permanent because moisture or time can affect it. Therefore the finger waving operation must be repeated at relatively close intervals, generally two weeks.

The necessity of thus frequently renewing the hair treatment constitutes a serious source of inconvenience and expense, because finger waving can only be practiced by experienced operators and therefore requires a visit to a beauty parlor each time.

The finger waving operation producing a Marcel wave effect is frequently limited to a portion of each curl, the end being left as it is so that each Marcel-waved strand terminates in a short curl.

It is extremely desirable in practice to pro-

duce a Marcel-wave which is really permanent as such, and which will not therefore require any finger waving for the entire period while the permanent waving lasts. Such a result can be obtained if the Marcel-wave effect is produced directly by the permanent waving treatment, when the hair is made to permanently retain the curling effect which is produced by the method of winding used.

I have therefore devised a method of permanent waving whereby the Marcel-wave effect is obtained directly as a result of the original treatment to which the hair is subjected, so that no subsequent waving operation is required. Accordingly, the primary object of this invention is to produce a novel and improved method of permanently waving hair, whereby the hair is Marcel-waved directly and will remain permanently so.

Another object of the invention is to produce a novel and improved method of permanently waving hair whereby each strand of hair may be caused to acquire a permanent Marcel-wave throughout its length except at the tip end where it is caused to form a permanent curl, by the performance of a single operation.

A further object of the invention is to provide a novel and improved method of Marcel-waving hair which permits of permanently Marcel-waving a newly grown portion of hair without interfering with the wave originally produced in the remaining portion.

Other objects and advantages of the present invention will more fully appear as the description proceeds and will be set forth and claimed in the appended claims.

The manner of carrying my invention into practice is illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a side view of a hair curler adapted for use in carrying my invention into practice;

Fig. 2 is a similar view illustrating the beginning of the winding operation;

Fig. 3 is a similar view illustrating the appearance of the lock of hair after it has been completely wound upon the curler so as to produce a Marcel-wave effect;

Fig. 4 is a view similar to that of Fig. 3 il-

illustrating a method of winding where the extreme end of the lock of hair is wound upon the curler so as to form a spiral curl, said figure also illustrating the application of an electric heater onto the wound lock of hair;

Fig. 5 is a fragmentary side view of a hair curler illustrating another method of spirally winding upon the curler the outer end of a lock of hair;

Fig. 6 is a cross sectional view of the curler and heating element shown in Fig. 4, through the line 6—6 of said figure;

Fig. 7 is a side view in an enlarged scale, partly sectioned and broken away of the curling device shown in the preceding figures;

Fig. 8 is an end view of the same with part of the pressure adjusting nut broken away;

Fig. 9 is a detail front view of a spring washer used in connection with my device;

Fig. 10 is a side view partly broken away and sectioned of a knob removably insertable onto the split end of my curling device;

Fig. 11 is an end view thereof;

Fig. 12 is a longitudinal section of another curling device also adapted for use in connection with my method of permanent Marcel waving, said curling device being adapted for both external and internal heating of the hair;

Fig. 13 is an end view thereof;

Fig. 14 is a longitudinal section of another curling device in which the tightening of the hair windings is obtained by expansion so as to prevent all possibility of distortion of the windings;

Fig. 15 is a cross sectional view thereof;

Fig. 16 is a cross sectional view of the same in an expanded condition;

Fig. 17 is a longitudinal section of another curling device, also adapted to tighten the hair windings by expansion;

Fig. 18 is a cross sectional view of the same in an enlarged scale;

Fig. 19 is a cross sectional view of the same in an enlarged scale, showing the outer segments in an expanded condition; and

Fig. 20 is a longitudinal section of still another curling device, also adapted for use in connection with my method of permanent Marcel waving, said device being adapted to tighten the hair windings by end-wise extension instead of by twisting or expansion.

In current permanent waving practice, strands of hair are usually wound upon a metal curler so as to form a continuous helical coil extending longitudinally of the curler. In some cases the strand of hair is flattened and is spirally wound upon the curler so as to have its various coils superimposed upon one another. Before or after or both before and after the coiling operation, lotion is applied to the hair, said lotion usually consisting of an alkaline solution, its effect being to "open" the hair.

As a rule the outer end of the strand of hair

is tied after the winding is completed, and the coil thus formed is usually tightened by the use of specially designed curlers. These usually consist of an outer tube about three to five inches long and an inner rod having a slitted end projecting beyond the tube, said inner rod having a slitted end projecting beyond the tube, said inner rod being rotatable in one direction and being restrained against rotation with respect to the tube in the opposite direction. The starting end of the strand of hair is tied onto the slitted end of the rod and the strand is then coiled tightly around the tube, tightening of the coil being subsequently obtained by turning the rod with respect to the tube in the winding direction.

In all the hair curlers which have heretofore come to my notice, the slitted end of the inner rod projects only about five sixteenths of an inch beyond the tube, that is, just enough to provide the means for inserting a string or wire through the slot and tying it to said end. The coiling of the hair proper however is effected entirely along the tube and extends from the point of attachment of the hair strand to the slitted end of the inner rod to the opposite end of the tube, where the other end of the hair strand is tied. I found that in order to obtain a permanent Marcel-wave effect directly from the curler without any subsequent finger waving operation, it is necessary to wind the hair upon the curler by forming a number of twisted convolutions having a horizontal S shape, and baking the hair while so wound.

For this type of winding to be effective, it is necessary to tie the hair strand at the root end onto the curler and to wind each twisted convolution partly at one side and partly at the other at the point of attachment. Such a method of winding could not therefore be applied in connection with curlers in which the slitted end of the inner rod does not project a substantial length beyond the tube. The total length of each twisted convolution is one and one-half inches more or less, and therefore the inner rod should project at least from about five eighths of an inch to an inch or more beyond the point at which the hair strand is attached thereto.

The hair should be wound tightly upon the curler and when this is done, a slight twist produced by rotating one of the parts of the curler with respect to the other is sufficient to set the hair under proper tension. However, if the hair is twisted at an excessive angle, its convolutions may become distorted with the result that the waves may be uneven and unsatisfactory. In order to avoid this possibility, therefore, in practice I prefer to tighten the hair windings without twisting them, either by expansion in a radial direction with respect to the axis of the curler, or by extension in the direction of said axis.

In order to facilitate a full understanding of my invention, in the drawings I illustrate my invention as applied by means of several hair curling devices, which I shall here describe.

Referring to the drawings, Figs. 1 to 12, it will be seen that the device illustrated thereby essentially consists of a tubular member or barrel 20 and a rod member 21 of a smaller diameter inserted through the barrel 20 and retained therein so as to be adapted to rotate with respect thereto.

The outer end of the barrel 20 is enlarged to form a knob 23 and is recessed to form a chamber 24 within which projects the threaded end 25 of stem 22. The diameter of rod 21 is equal to the diameter of barrel 20 and between the face of shoulder 26 formed by stem 22 where it extends from rod 21, and the inner surface 27 of barrel 20, is preferably inserted a washer 28 which may be of fibre or any other suitable material.

Another flat washer 29 is placed about threaded end 25 of stem 22 and against the bottom surface of chamber 24. Against said washer 29 bears the edge 30 of a convex spring washer 31, which also is inserted about the threaded end 25 of stem 22 and against said convex washer rests the inner surface of a pressure nut 32 screwed upon threaded end 25.

Threaded end 25 of stem 22 is preferably formed with two longitudinal grooves or keyways 33, 34, in which are inserted tongues 35, 36 inwardly projecting from opening 37 of washer 31, so that said washer is prevented from turning and will act as a lock washer for nut 32, causing said washer and said nut together with washer 29 to turn bodily with stem 22 when the same is rotated with respect to barrel 20 or vice versa.

By virtue of the construction described, it will be seen that the barrel and the rod are rotatable with respect to each other, but that the pressure exerted by nut 32 against washer 31 tends at all times to restrain said two parts from rotation. The action of nut 32, washer 31 and washer 29 is in every way similar to that of a disk friction clutch, the friction opposing the rotation of the two parts being developed between the inner surface of washer 29 and the bottom surface of chamber 24. By adjusting the position of nut 32 one way or the other, it is possible to decrease or increase the pressure exerted by washer 31 so that the restraining action of the friction clutch may be adjusted at will.

The enlarged or body portion of rod 21 which extends in continuation of barrel 20 is substantially of the same length as the body portion of said barrel, and is slit almost for its entire length, as shown at 38. It is thus possible to insert a wire through a slot 38 up to the end of said slot, that is, to a point practically midway of the total length of the

body portion of the curler for the purpose of tying onto the curler a lock of hair 40 at the root 41, the wire or thread used being indicated by 42.

It is thus possible to wind the lock of hair upon the curler in a series of twisted convolutions such as shown at 43 in Fig. 2 by running the lock or strand of hair across and around the curler alternately from one side of the point of attachment of the strand to the other, reversing the direction at each convolution. As a result the strand of hair will ultimately take the shape shown in Fig. 3 in which a number of convolutions are superimposed upon one another and form a substantially barrel-shaped mass of hair 44 extending at both sides of the point of the inner point of attachment. The hair should be tightly wound to start with, and in order to further tighten it the extreme end 45 of the hair strand is tied onto the barrel portion of the curler by means of a wire 46 or any other suitable fastening means. The rod 21 is then rotated a certain angle in the direction in which the winding is made tighter, while the knob 23 of the barrel 20 is held in one hand so as to hold the barrel stationary.

Due to the friction exerted by the friction clutch arrangement described, the rod will stay put once it has been turned so as to sufficiently tighten the windings, and no additional restraining means will be required. The method of winding shown results in the Marcel-wave effect being directly produced by the curler, after the permanent waving operation has been completed.

The arrangement shown in Fig. 3 where the strand of hair is wound in the manner described up to its extreme end, results in the hair being marcelled for its entire length. It is frequently desirable to produce a combined Marcel-wave-curl effect in which the body of the hair strand is Marcel-waved and the tip end is curled so as to form a spiral curl. Such a result can be obtained by winding the hair about the curler in the manner explained up to one inch or more from the end, and then winding the remaining portion spirally upon the curler, tying the extreme end as before explained.

Such an arrangement is illustrated in Fig. 4 where the extreme end of the hair strand is spirally wound upon the curler so that its convolutions are superimposed on one another, as shown at 47, the extreme end being tied onto the curler as before explained and as shown at 48. The hair is generally thoroughly moistened with a suitable alkaline lotion before or after twisting or both. As explained, after the hair has been tightly wound by hand, the windings are tightened by causing the rod to which the root of the hair strand is attached to rotate a certain angle with respect to the barrel in the tightening direction.

In order to facilitate the manipulations required, I insert a removable knob such as 49, upon the outer end of the slit rod, said knob being provided with a transverse bar 50 insertable through the slot 38, as Fig. 4 clearly shows. After the tightening operation has been completed, knob 49 can once more be removed. A spiral curl can also be produced at the end of each hair strand by causing the same to follow a spiral extending longitudinally of the barrel, as shown at 51 in Fig. 5. This method of curling however, is not quite as satisfactory as the one shown in Fig. 4, because adjoining spiral rings of the curl have a tendency to spread more apart when the method of Fig. 5 is followed. After the hair has been wound, tightened and moistened, it is covered with a piece of flannel, or other suitable material such as shown at 52, said flannel having first been impregnated with the lotion. A protective pad such as shown at 53 is also preferably applied onto the head directly opposite the curler, and the hair is then ready to be "baked" by the more or less prolonged application of a heating element thereto.

In the drawings, Figs. 4 and 6, the heating element is shown in the form of an electric heater of the clamp type, said heater comprising two jaws 53, 54, pivotally connected to each other at 55 and normally urged to their clamping position by a spring 56.

Each jaw is internally provided with an electric resistance wire 57 which is covered by a protective shield 58. A heating element is inserted over each wound strand of hair and the current is then turned on, each heating element being connected to a source of electric supply in any suitable manner (not shown). Due to the fact that the hair windings are superimposed upon one another, the curler need not be very long, in fact in practice I have found that a total length of two inches will do. This permits of placing the curler flat against the head even though a large number of hair locks are treated at the same time. The friction clutch arrangement shown permits of the rod being rotated in either direction and this may at times be found convenient especially when the hair is curled instead of being Marcel-waved, the curler being adapted for use in connection with curling hair in ways other than those shown. As a general rule, curlers are designed so that the inner rod can only be made to rotate in one direction with respect to the tubular body. The possibility of turning the rod in either direction is also an advantage in facilitating as it does, loosening of the hair after the baking operation has been completed and the curler is to be removed.

When the hair treated is very long, it is desirable to apply heat to the same also internally in order to enable heat to reach all portions of the hair mass. My improved

curler can therefore be modified so as to provide a tubular chamber through which an elongated heating element may be inserted.

Such a construction is shown in Figs. 12, 13, where 59 is the barrel portion of the curler and 60 is the body portion of the rod formed integral with a stem 61 rotatably mounted within the barrel in a manner similar to that previously described, said rod and stem having a through axial opening 62, through which an elongated heating element (not shown) can be inserted. In this case, instead of slitting the body portion 60 of the rod, I prefer to provide the stem with slots such as 63, 64 at or near its surface abutting against washer 65 interposed between said body and the barrel, so as to provide a means of fastening the strand of hair thereto. The outer end 66 of rod 60 is shown having a substantially octagonal section adapted to receive a knob having a corresponding opening, for the purpose of rotating the rod while the barrel is held stationary.

It will be observed that by the arrangement shown, when the rod is turned in order to tighten the windings, tension is applied to the windings partly at one side and partly at the other of the point of attachment of the strand onto the rod. The tensioning stresses are therefore evenly distributed, and no tendency will develop towards causing the hair to unevenly shift along the curler with respect to the point of attachment. As a result, the waves produced in the hair strand will be graceful and even throughout the length of each hair lock.

The enlarged knob end of the barrel is also at times found useful in preventing coils made at the end of the hair strand from slipping longitudinally of the curler.

As stated in the premises, unless the hair is wound tightly upon the curler by hand, an excessive twisting movement may be required in order to set it at the proper tension. In this case, the wave is likely to be uneven due to the distortion of the various windings, and therefore the work is bound to be totally unsatisfactory. In order to avoid all possibility of the work being marred when the operator does not possess sufficient experience or skill, I prefer to tighten the hair windings without twisting them.

In Figs. 14 to 16 I illustrate a special type of curler in which the tightening of the hair can be effected by the expansion of the body of the curler. In said figures, 67 designates a tubular body made of relatively thin springy metal, such as high carbon steel, for instance, said body being slit longitudinally throughout its length, as shown at 68, and being therefore capable of expansion.

At one end 69 of said tubular body is inserted a tapering actuator 70, the outer portion of which extending beyond body 67 is formed with a knob 71, and at the other end

72 of said body is inserted another tapering actuator 73, also formed with a knob 74. Actuator 73 has a stem 75 extending axially thereof, and said stem has a threaded extension 76, which is screwed within a threaded opening 77, provided through actuator 70.

By virtue of this construction if one or both actuators are rotated in the screwing direction, the tapering surfaces of the actuators will gradually force the slitted tubular body open, causing it to expand, as shown in Fig. 16. Such an expansion results in a tightening action being exerted on the hair windings without subjecting same to any twisting or distorting action.

In order to secure the base of the hair strand onto the curler, body 67 may be provided with two diametrically opposed openings 78, at a point midway of its length, said openings permitting the insertion of a thread or wire 79, which may be used for tying the hair strand onto the curler, as previously explained. In order to facilitate the operation, thread or wire 79 is first threaded through openings 78 and then stem 75—76 of actuator 73 is inserted through the body of the curler.

Unless a very good grade of spring steel is used for making the tubular body 67 there might be the possibility of said body losing its elasticity, due to the annealing action of the heat to which it is exposed after prolonged use during the baking operation.

If desired, other ways of tightening the hair windings by expansion may be employed. For instance, in Figs. 17 to 19 I illustrate an expanding curler comprising a tubular body 79, which is normally surrounded by a plurality of longitudinal segments 80, which form a collapsible and expansible shield therefor. Said segments 80, which are shown as being four in number, are each provided with inwardly extending studs 81, which project through corresponding openings provided through body 79 and which while maintaining the longitudinal alinement of the segments permit a certain amount of radial displacement thereof.

Each end of tubular body 79 is internally threaded to receive a plug 82, provided with a knob 83, and having a tapering extension 84 projecting between and beyond studs 81 at the corresponding end of the curler.

Figs. 17, 18 illustrate the device in its contracted position, while plugs 82 axially extend a certain distance from the ends of the curler. It is obvious that if said plugs are turned in the screwing direction by means of knobs 83, studs 81 will be gradually forced outwardly in a radial direction, causing the longitudinal segments to expand so as to increase the diameter of the device, as Fig. 19 clearly shows. Also in this case, therefore, tightening of the hair windings is effected by expanding the body of the curler without

causing any twisting or distortion of said windings.

The windings can also be tightened by pulling upon them in opposite directions, and such an action is also free of all twisting or distorting action. In Fig. 20 I illustrate a device comprising a central tubular body 85, from which are slidably inserted two end shells 86, 87, each having its outer end provided with a threaded opening such as 88, 89. Each end shell is provided with an inwardly extending stud 90, which projects through longitudinal slot 91, provided in body 85, said slot permitting a limited amount of axial movement of the end shell with respect to the tubular body 85, to prevent its rotation.

Through each threaded opening 88, 89, is inserted a threaded stem 92—93, provided with a knob 94—95 and terminating in a plug 96—97 abutting against the adjoining end of tubular body 85. End shells 86—87 are inserted through body 85 with a close fit, so that a certain frictional resistance developing therebetween will cause the end shells to remain put wherever they are set. The outer surface of said shell is preferably roughened, as shown at 98, in order to develop a certain friction between said surface and the hair strand wound thereupon.

When the operation is started stems 92, 93 are unscrewed so as to permit the two end shells to be moved inwardly until the inner ends are substantially adjoining each other. The base of the hair strand having been tied onto the curler, body 85 to this end being provided with openings such as 99, the hair is then wound upon the curler, partly upon end shell 86 and partly upon end shell 87. After the end of the hair strand has been tied onto the curler, knobs 94, 95 are rotated in the screwing direction so that plugs 96—97 abutting against the outer ends of body 85 will cause their respective end shells to move outwardly in an axial direction with respect to central body 85. By virtue of the friction developing between the rough surface of the end shells and the hair windings, said hair windings will be prevented from slipping and will be pulled outwardly by the moving end shells, thus causing said windings to become tighter.

It is obvious that my improved method of permanent waving can also be applied in connection with hair curlers, the construction of which may be different from those shown and described. I accordingly reserve the right to carry my invention into practice in all those ways and manners which may enter, fairly, into the scope of the appended claims.

I claim:

1. The method of permanently waving hair, which consists in winding by hand hair upon a curler in a series of superimposed 8-shaped twisted convolutions, moistening said hair, tightening the windings thus produced after

the completion of the winding operation; and subsequently applying heat thereto for a relatively prolonged period, thereby causing said hair to be waved with, and to permanently retain a Marcel wave effect.

2. The method of waving hair, which consists in winding the major portion of a lock of hair upon a curler in a series of superimposed 8-shaped twisted convolutions, and winding the tip end thereof spirally upon said curler coaxial with the longer axis of said convolutions, subsequently applying heat thereto, thereby causing said lock of hair to be waved with a Marcel wave effect, with a curled tip end.

3. The method of permanently waving hair, which consists in winding the major portion of a lock of hair upon a curler in a series of superimposed 8-shaped twisted convolutions, and winding the tip end thereof spirally upon said curler coaxial with the longer axis of said convolutions, moistening said hair, and subsequently applying heat thereto for a relatively prolonged period, thereby causing said lock of hair to be waved with, and to permanently retain a Marcel wave effect, with a curled tip end.

4. The method of permanently waving hair, which consists in winding by hand the major portion of a lock of hair upon a curler in a series of superimposed 8-shaped twisted convolutions, and winding the tip end thereof spirally upon said curler, moistening said hair, tightening the windings thus produced after the completion of the winding operation, and subsequently applying heat thereto for a relatively prolonged period, thereby causing said lock of hair to be waved with, and to permanently retain a Marcel wave effect, with a curled tip end.

5. The method of permanently waving hair, which consists in securing the root portion of a lock of hair onto a curler, winding the same upon said curler in a series of superimposed 8-shaped twisted convolutions extending at both sides of the point of attachment of said lock of hair, securing the tip end of said lock of hair onto said curler after completion of the winding operation, tightening the windings thus produced after the completion of the winding operation, moistening the hair, and subsequently applying heat thereto for a relatively prolonged period, thereby causing said lock of hair to be waved with, and to permanently retain, a Marcel wave effect.

6. The method of permanently waving hair, which consists in securing the root portion of a lock of hair onto a curler, winding the major part of the same upon said curler in a series of superimposed 8-shaped twisted convolutions extending at both sides of the point of attachment of said lock of hair, winding the tip end thereof spirally upon said curler, securing the tip end of said lock

of hair onto said curler coaxial with the longer axis of said convolutions, and subsequently applying heat thereto for a relatively prolonged period, thereby causing said lock of hair to be waved with, and to permanently retain a Marcel wave effect, with a curled tip end.

7. The method of permanently waving hair, which consists in securing the root portion of a lock of hair onto a curler, winding the major part of the same upon said curler in a series of superimposed 8-shaped twisted convolutions extending at both sides of the point of attachment of said lock of hair, winding the tip end thereof spirally upon said curler, securing the tip end of said lock of hair onto said curler after completion of the winding operation, tightening the windings thus produced, moistening said hair thereafter, and subsequently applying heat thereto for a relatively prolonged period, thereby causing said lock of hair to be waved with, and to permanently retain, a Marcel wave effect, with a curled tip end.

8. In a method of permanently waving hair, the step which consists in winding a lock of hair upon a curler, partly in a series of superimposed 8-shaped twisted convolutions, and partly in a series of spirally wound coils coaxial with the longer axis of said convolutions.

9. In a method of permanently waving hair, the step which consists in winding a lock of hair upon a curler in a series of superimposed 8-shaped convolutions, and tightening said hair by radially expanding the body of the curler.

10. In a method of permanently waving hair, the step which consists in winding a lock of hair upon a curler in a series of superimposed 8-shaped convolutions, and tightening said hair by extending said curler in an axial direction.

In testimony whereof I affix my signature.

JOHN SGUERSO.