July 26, 1927. 1,637,147

W. S. LEWIS

TUBE FOR PERMANENT WAVING

Filed Aug. 6, 1925

FIG. 1.

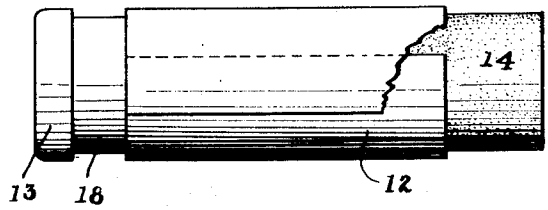


FIG. 2.

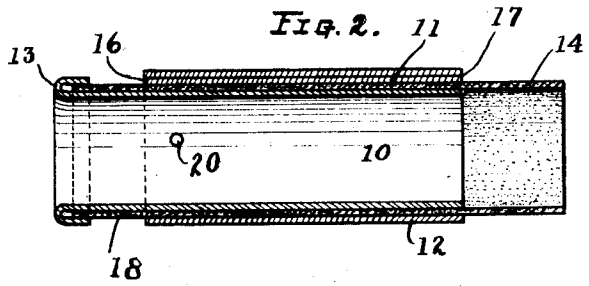
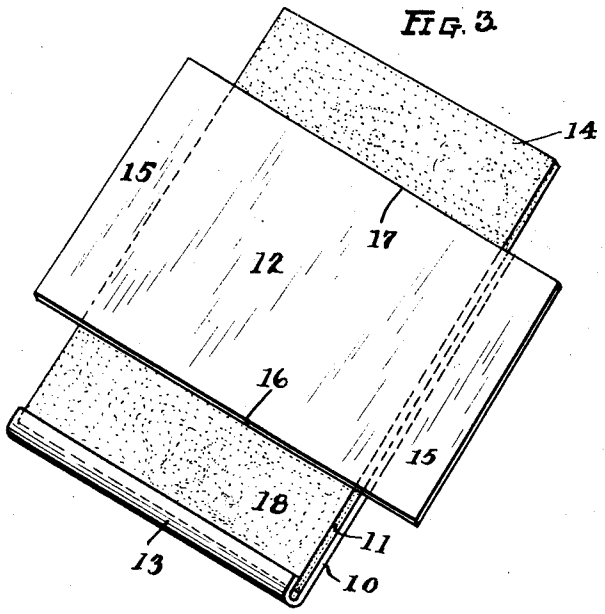


FIG. 3.



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UNITED STATES PATENT OFFICE.

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TUBE FOR PERMANENT WAVING.

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My invention relates to containers for enclosing strands of hair which have been prepared for the heating operation in a permanent waving process.

It is customary in permanent waving processes to first treat the hair with a softening solution, after which the hair is gathered into strands which are wound around and held in a stretched condition upon curler rods. The strands are then prepared for the heating operation, and usually are treated with a softening solution of borax or oil, which is held therewith by a covering. A container, usually in the form of a tube, is then secured around each strand and serves to prevent the hot solution from burning the scalp and also to provide what may be termed an oven in which the solution is steamed into the strands. It is desirable that such tubes be secured so that they are leak proof, with respect to the scalp, and clamps are generally applied in the effort to effect such a result. The application of clamps requires considerable time which adds materially to the time required for forming permanent waves in the human hair.

An object of my invention is to provide a tube, for enclosing a strand of hair during the heating operation of a permanent waving process, which is of such a character that it can be readily secured, in a self-securing and substantially leak proof relation against the strand.

A further object of my invention is to provide a tube which can be sealed in substantially leak proof relation with a strand of hair, and which will efficiently distribute heat substantially uniformly to the wound portions of the strand therein which are surrounded by a heater.

Another object of my invention is to provide as an article of manufacture an improved tubular envelope adapted to be telescoped over a wound strand of hair and to transmit heat through its walls to the strand and which will prevent the transmission of an undue amount of heat from the envelope towards the scalp of the patient.

These and other objects will appear in the following specification, in which I describe a specific embodiment of the invention.

In the accompanying drawings, Figure 1 is a side elevation of a tube embodying my invention; Fig. 2 is a medial longitudinal section of the same taken on line 2—2 of Fig. 1; and Fig. 3 is a perspective view of the elements forming the tube as they are associated just prior to being rolled into tubular form.

The container, or tube, is preferably formed of sheet material and in the embodiment illustrated, consists of a sheet of paper 10, a sheet of metal foil 11 and another sheet of paper 12. The paper is preferably of the thermal quality of a sheet of writing linen, and the foil is preferably formed of aluminum, or material having a melting point and properties of pliability of a similar nature.

The inner sheet of paper 10 is preferably rectangular in outline and one end 13 thereof is folded over the edge of an end of the sheet of aluminum foil 11. The sheet of foil is of substantially the same width as the sheet of paper 10 upon which it is placed and is somewhat longer, thus providing an end 14 which projects beyond the sheet 10. The sheet of paper 12 is preferably rectangular in outline and is placed lengthwise across the sheet of foil. The sheet 12 is of such length and is placed so that its sides 15 extend beyond the sides of the sheets 10 and 11, and the end edge 16 thereof is spaced from the folded end of the sheet 10. The end edge 17 of the sheet 12 is preferably in alignment with the end of the sheet 10.

It will be seen that the sheet of foil is interposed intermediate the sheets of paper, and the sheets are rolled into tubular form with the sheet 10 forming the interior wall and the sheet 12 forming the exterior wall. The tube is maintained in tubular form by sealing the sides 15 of the sheet 12 together when rolled into overlapping relation. With the sheets secured in such relation a portion 18 of the foil will be exposed intermediate the end 16 of the sheet 12 and the folded end 13 of the sheet 10.

The tube thus formed is moved endwise over a strand of hair which has been previously prepared upon a rod for the heating operation, and with the end 13 of the sheet 10 in advance. The folded end 13 will thus enclose the end of the foil adjacent the scalp so that the heat therefrom during the application of the heater will not be objectionable. When the tube is located in the proper position upon the strand, a crimping tool can be applied to the exposed portion

18 of the aluminum sheet to compress the tube annularly at such point against the strand of hair therein. The tube will thus be sealed against the strand adjacent the scalp and will be self retaining due to the inherent qualities of the foil. The paper sheet 10 forms the inner wall of the tube and the portion adjacent the portion 18 of the foil will be crimped therewith, and the hair treating solution will therefore not come in contact with the metal foil.

The sheets of the tube are perforated at 20, preferably after the tube is formed, and in this manner the steam can escape from the tube when the end of the foil 14 is crimped against the strand of hair, or is otherwise closed. I preferably seal both ends of the tube and cause the steam to escape from the end adjacent the scalp, because the larger end of the strand will thus be subjected to the escaping steam to accomplish a better waving effect adjacent the scalp.

The foil provides an oven, which will distribute heat uniformly within the tube when a heater is applied around the exterior thereof. The inner and outer walls of the tube are formed of paper with intermediately disposed foil which is to be protected from the heater and from the solution with which the hair is treated. It will be seen that I have provided a tube which can be readily applied and removed from a strand of hair, and which will distribute heat evenly to the strand so as to obtain the best results from the heating operation.

It will be understood that various changes could be made in the structure described without departing from the spirit of my invention and the scope of the appended claims.

What I claim is:—

1. A container, for enclosing a strand of hair during the application of heat in a permanent waving process, comprising a sheet of paper, a sheet of metal foil, said sheets being secured together in tubular form, and heat insulating means for enclosing the edge of one end of said metal foil.

2. A container, for enclosing a strand of hair during the application of heat in a permanent waving process, comprising a sheet of paper, and a sheet of aluminum foil, said sheets being secured together in tubular form with the foil placed exteriorly of the paper, one end of said paper being bent over an end of said foil to prevent contact of the foil with the strand of hair.

3. A tube, for enclosing a strand of hair during the heating operation of forming a permanent wave, comprising an inner wall of paper, an intermediate wall of metal foil, and an outer wall of paper, said outer wall being of less width than said foil and spaced longitudinally from an end thereof, and means for enclosing the edge of said foil at the end spaced from said outer wall, said tube being compressible adjacent the ends of said outer wall to form a sealed self retaining engagement with the strand of hair.

4. A container, for enclosing a strand of hair during the application of heat to form permanent waves, comprising an inner and an outer wall of sheet paper, and an intermediate wall of aluminum foil, one of said paper sheets being bent over an edge of said sheet of foil at one end, said sheets being rolled together and secured in tubular form, said bent over portion of the sheet projecting beyond the edge of the sheet of foil to provide an air space between the adjacent sheet portions beyond the foil.

5. A tubular container, for enclosing a strand of hair during the heat application in a permanent waving process, comprising a tubular inner paper wall and a wall of metal foil surrounding said inner wall, said walls being compressible to secure and seal said tube against a strand of hair when crimped annularly.

6. A tubular container, for enclosing a strand of hair during the heat application in permanent waving processes, comprising an inner and an outer wall of paper, and an intermediate wall comprising pliable metal, one end of said inner and intermediate walls projecting beyond an end of said outer wall and being compressible to secure and seal said tube against a strand of hair.

7. A tubular container, for enclosing a strand of hair during heat application in a permanent waving process, comprising inner and outer layers of paper and an intermediate layer of pliable metallic foil secured together, said inner layer of paper and said foil projecting beyond an end of said outer layer.

8. A container, for enclosing a strand of hair during heat application in a permanent waving process, comprised of an inner and an outer sheet of paper and an intermediate sheet of foil rolled together in tubular form, said outer sheet being of greater width than said inner and intermediate sheets, and means for securing the overlapping portions of said outer sheet together, said inner and intermediate sheets being of substantially the same length and projecting beyond one end of said outer sheet, said tube being sealed and secured to a strand of hair by crimping the projecting ends of said inner and intermediate sheets annularly.

9. A container, for enclosing a strand of hair during heat application in a permanent waving process, comprised of an inner and an outer sheet of paper and an intermediate sheet of aluminum foil rolled together and secured in tubular form, one end of said inner sheet and both ends of said foil projecting beyond the ends of said outer sheet,

the projecting end of said inner sheet being bent over the adjacent end of said sheet of foil at one end of said tube.

10. A container, for enclosing a strand of hair during heat application in a permanent waving process, comprised of an inner and an outer sheet of paper and an intermediate sheet of aluminum foil rolled and secured together in tubular form, both ends of said foil and one end of said inner paper sheet projecting beyond the ends of said outer paper sheet, said tube being self securing and sealing when the ends of said foil are crimped annularly against the strand of hair, and an aperture through said sheets adjacent one end of said tube to permit escape of steam and gases therefrom.

11. A container, for enclosing a strand of hair during heat application in a permanent waving process, comprised of a sheet of aluminum foil formed as a tube, and a heat insulating element projecting from said element adapted to be positioned next to the scalp during the permanent waving process to restrict the transferrence of the heat from the foil to the scalp covering one end edge of said aluminum tube.

12. A container, for enclosing a strand of hair during heat application in a permanent waving process, comprised of a tube formed of compressible metal foil capable of withstanding a high degree of heat, and a covering for enclosing one end edge of said tube, said tube being self retaining and self sealing when compressed against a strand of hair.

13. A tubular container for enclosing a strand of hair during the application of heat in a permanent waving process, comprising an outer sheet of paper and a sheet of pliable metallic foil enclosed thereby and in intimate contact therewith, said foil projecting beyond an end of said outer paper sheet, and a layer of heat insulating material embracing the end of the projecting foil end, to prevent contact between the foil and the scalp of the patient, the projecting portion being compressible to secure and seal said tube at an end thereof against a strand of hair.

In testimony whereof, I hereunto affix my signature.

WILBUR S. LEWIS.