

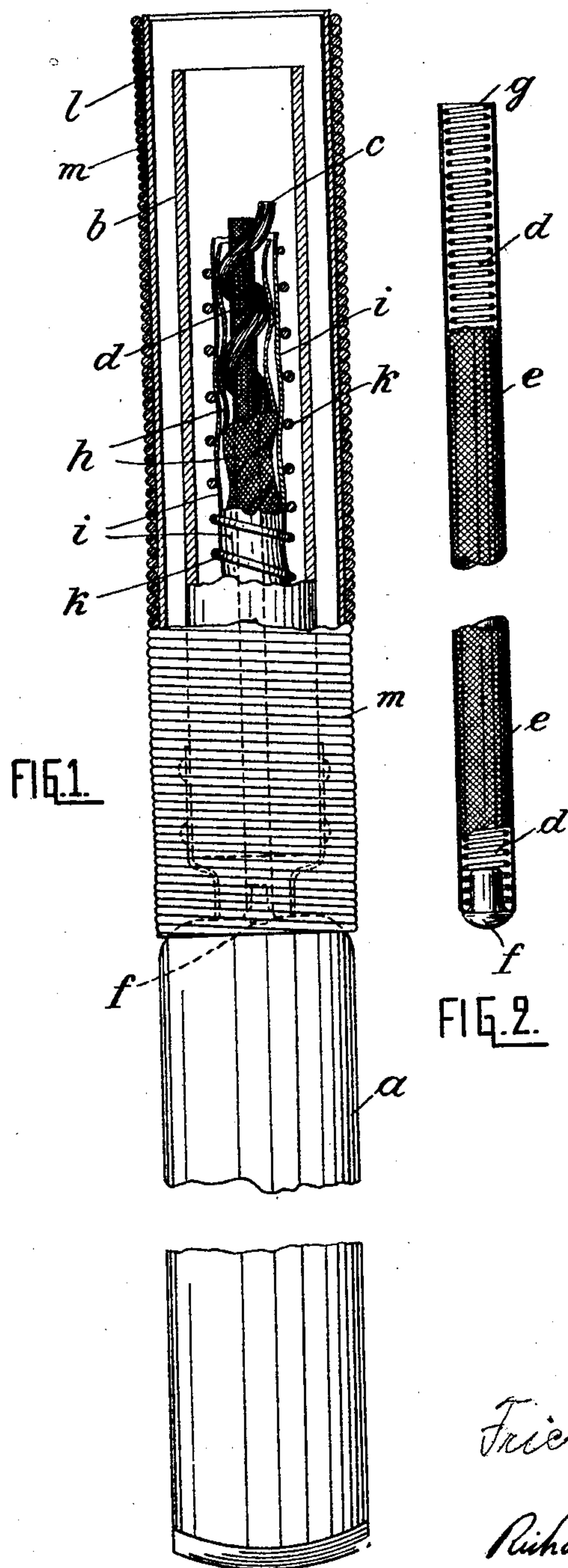
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METHOD AND APPARATUS FOR PRODUCING PERMANENT WAVES

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UNITED STATES PATENT OFFICE.

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METHOD AND APPARATUS FOR PRODUCING PERMANENT WAVES.

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This invention relates to improvements in the art of treating hair, and has particular reference to a method and apparatus for producing permanent waves.

5 An object of the invention is to securely maintain a strand of hair in curled position upon a permeable tube while treating said strand with a liquid introduced into the tube and also applying heat to the strand by the
10 insertion of the tube into a heating element.

Another object resides in applying a treating liquid to a curled strand of hair both from the interior of a tube upon which said strand is wound and also from a cover which
15 encircles said strand, and simultaneously applying heat to the strand.

A further object is to provide an improved apparatus of simple and practical construction by means of which the hair may be per-
20 manently waved without injury thereto.

The above and other objects will appear more clearly from the following detail description, when taken in connection with the accompanying drawing, which illus-
25 trates a preferred embodiment of the inventive idea.

In the drawing—

Figure 1 is a side elevation, partly broken away and shown in section, of the apparatus
30 constructed in accordance with the invention; and

Figure 2 is a fragmentary enlarged elevation, partly in section, of the tube upon which a strand of hair is wound.

35 Briefly, the invention consists in winding a strand of hair about a permeable tube into which a treating liquid may be introduced, the tube being permeable to permit said liquid to pass through the tube and on to
40 the strand of hair.

A cover which may also be saturated with the treating liquid is wrapped about the strand and this cover is enclosed in an outer cover of impermeable material about which
45 a flexible element, such as a wire or the like, may be wound in order to tightly bind the strand to the tube. The parts are then positioned within a heating element which is enclosed in an outer heat insulated casing
50 which protects the scalp from coming in contact with said heated element. Should the treating liquid become wholly or partially evaporated due to the action of the heat, the tube upon which the strand of hair is
55 wound may have injected therein a further supply of the liquid and in this manner the

hair will be protected against being scorched and becoming broken or otherwise seriously injured.

Referring more particularly to the draw-
60 ing, the character *a* indicates the handle of the apparatus upon one end of which is suitably mounted the tubular heating element *b* which is usually made of iron and which may be heated in any desired manner
65 prior to the introduction of a strand of hair into the element.

A mounting upon which the strand of hair to be waved is wound comprises a tubular member, preferably consisting of a coil
70 spring *d* enclosed within a casing *e* made of some suitable permeable material and upon which the strand of hair *c* is wound, as shown in Figure 1. One end of the tube is closed by means of a plug *f* so that a treating
75 liquid may be introduced into the tube through the open end *g* thereof. The filling of the tube may be accomplished in any suitable manner, as by means of a sprayer or the like. With the strand of hair wrapped
80 about the casing *e* said liquid will gradually seep through the casing and on to the hair to be curled.

After winding the hair upon the tube an inner cover *h* of cloth or other suitable ma-
85 terial, which may also be moistened or saturated with the treating liquid, is wrapped around the strand *c* and an outer cover *i* made of some desirable impermeable material, such as parchment or the like, is then
90 drawn over the inner cover *h*. A wire *k* or other flexible binding means is then coiled about the outer cover *i* so as to tightly wrap the covers *h* and *i* about the strand *c* and
95 thus bind the latter in permanent position upon the tube. The wire *k* may be of some heat conducting material so as to afford a better distribution of heat.

With the strand of hair thus wound upon the tube and held in position thereon the
100 various elements so far described are inserted into the previously heated element *b* so as to extend longitudinally thereof and in spaced relation thereto and thereupon an outer protective casing *l* is mounted over the
105 tube *b*. The casing *l* is of sufficient length to entirely enclose the heating element *b* to prevent its contact with the scalp and said casing is provided throughout its length with an outer winding *m* of insulated material.
110

The strand of hair is now heated by the element *b* with the aid of the binding means

h and during this heating, should the liquid in the tube e and the cover h become wholly or partially evaporated, additional liquid may be injected into the tube so that more of the liquid will come into contact with the strand of hair and thus prevent injury thereto by reason of the heat. To facilitate the seepage of the liquid through the tube or casing e the coil spring may be expanded to space the convolutions thereof and thus permit the liquid to more readily come in contact with said casing.

In addition to being used for the purpose of producing permanent waves, the apparatus of the present invention can also be used for flattening out wavy or curly hair, since to do this merely involves the proper positioning or winding of the strand c upon the tube and treating said strand by the present method.

What is claimed is:

1. An apparatus for producing permanent waves, including a tube upon which a strand of hair may be wound, a cover for said strand wrapped about the same and adapted to be moistened with a treating liquid, and a pre-heated heating element for receiving said tube, strand and cover.

2. An apparatus for producing permanent waves, including a flexible tube upon which a strand of hair may be wound, a cover for said strand wrapped about the same and adapted to be moistened with a treating liquid, a heat conducting wire wound about said cover for binding said strand to said tube, and a heating element enclosing said strand.

3. An apparatus for producing permanent waves, including a flexible tube upon which a strand of hair may be wound, a cover for said strand wrapped about the same and adapted to be moistened with a treating liquid, a heat conducting wire wound about said cover for binding said strand to said tube, a heating element enclosing said strand, and a heat insulated casing enclosing said heating element in spaced relation thereto.

4. An apparatus for producing permanent

waves, including a flexible permeable tube closed at one end to form a receptacle for the reception of a treating liquid and upon which a strand of hair is adapted to be wound, means binding said strand to said tube, and a heating element for enclosing said strand.

5. An apparatus for producing permanent waves, including a permeable tube adapted for the reception of a treating liquid and upon which a strand of hair is to be wound, a cover for said strand wrapped about the same and also adapted to be moistened with said liquid, an impermeable cover about the first named cover, flexible binding means extending around the second named cover for securing said strand upon said tube, and a heating element enclosing said strand.

6. An apparatus for producing permanent waves, including a permeable tube adapted for the reception of a treating liquid and upon which a strand of hair is to be wound, a cover for said strand wrapped about the same and also adapted to be moistened with said liquid, an impermeable cover about the first named cover, a heat conducting element wound about said impermeable cover to bind said strand to said tube, and a heating element enclosing said strand.

7. An apparatus for producing permanent waves, including a permeable tube closed at one end to form a receptacle for the reception of a treating liquid and upon which a strand of hair is adapted to be wound and become moistened by said liquid, said tube consisting of a spiral spring and a permeable casing therefor, a cover for said strand wrapped about the same and also adapted to be saturated with said liquid, a second cover of impermeable material wrapped about the first named cover, heat conducting means extending around the second named cover for binding said strand in permanent position on said tube, and a heating element enclosing said strand.

In testimony whereof I have affixed my signature.

FRIEDRICH GRIESER.