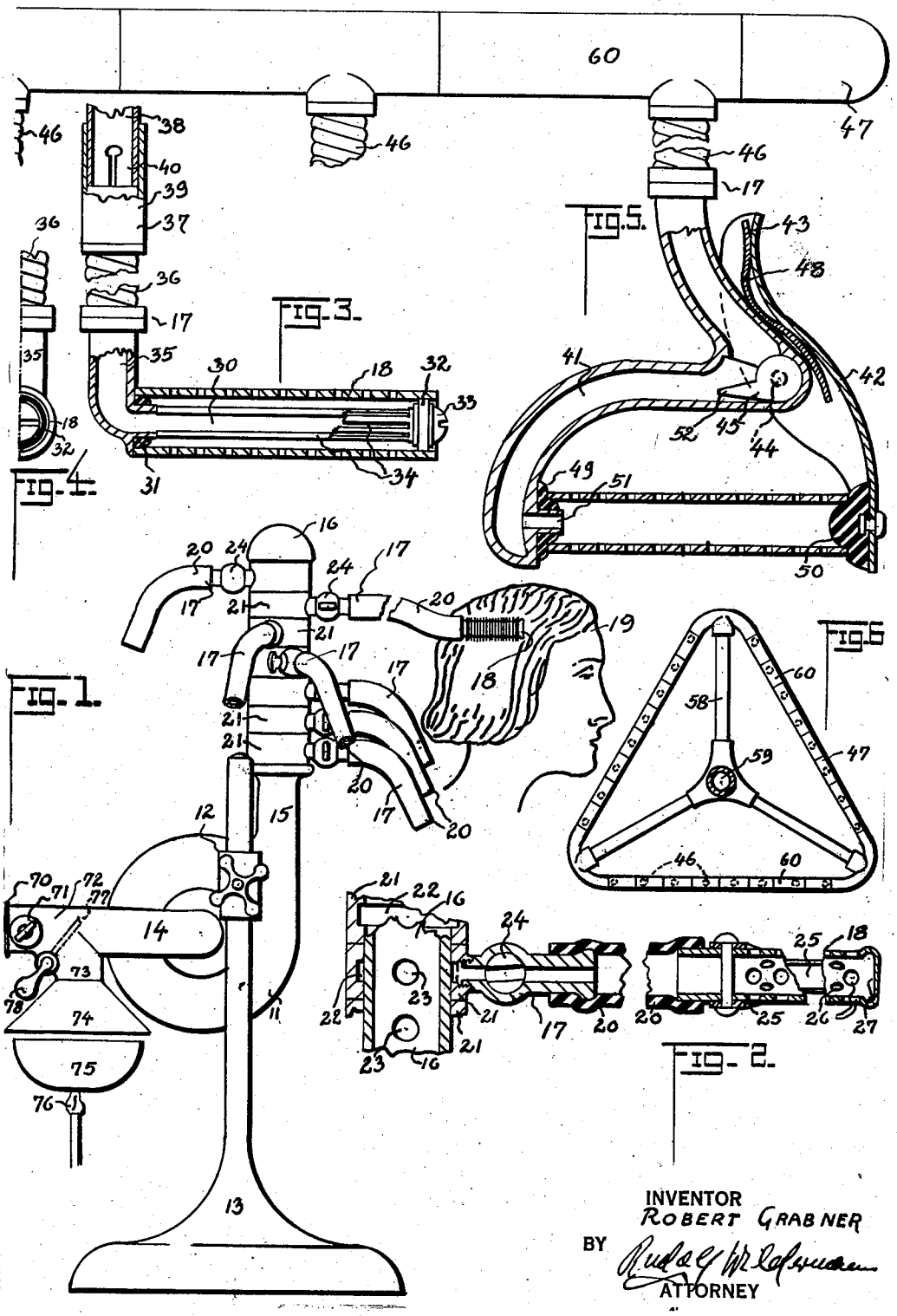
May 2, 1939. R. GRABNER 2,156,687

CURLING APPARATUS

Filed Nov. 14, 1936



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Patented May 2, 1939 2,156,687

UNITED STATES PATENT OFFICE

2,156,687

CURLING APPARATUS

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Application November 14, 1936, Serial No. 110,909

11 Claims. (Cl. 132—36)

The curling apparatus of this invention is more particularly a curling accessory, which facilitates and improves upon hair curling treatments by gases, such as air, hot air, steam, etc.

While different curling processes, e. g., Marcel waving and permanent waving, involve multifarious arrangement of the apparatus, they all make use of an implement upon which the hair is wound in a coil, such implement taking various shapes, such as flat or semi-circular forms, or cylinders or tubes. To this latter means, which hereinafter will be referred to, generally, as the curling implement, apply the improvements of the instant invention, directly as well as collaterally.

To the hair coiled upon the curling implement various processes are applied in order to produce the desired curls, starting from the simplest, a mere setting step, in accordance with which the hair is allowed to remain upon the curling implement for a desirable period of time, so that it assumes the helical array in a more or less temporary fashion, to more complicated setting, fixing or baking steps, involving for instance the application of particular pressure, of steam, of humidity, and/or of a plurality of treatment fluids.

When the hair mounted on the curling implement is to be subjected to gaseous fluids, the prior art has commonly used helmets or bells extending over the whole head, or casings which are applied to one or more of the individual curling implements, thus enveloping the curling implement with the hair coiled thereupon with an atmosphere of the desired gas, additional means being frequently provided for circulating the said atmosphere.

Such belts or casings are rigid, weighty and/or voluminous and therefore cumbersome; the atmosphere used for the treatment is not limited to the hair to be treated only but also to portions of the scalp, which impedes the free circulation of air around the scalp, causing undue heating of the scalp for instance; all of which renders the curling process a torture for the patient, rather than a harmless and pleasant treatment.

While curling implements are commonly perforate, or otherwise pervious, the atmosphere of the casing or belt surrounding the curling instrument, is by necessity primarily applied to the hair on the outside of the coil or hair on the implement, so that the atmospheric treatment is unevenly applied to the various layers of the coil, the innermost layers being sometimes not treated at all.

The prime object of the instant invention is to overcome the above shortcomings, cumbersomeness and inefficiency of the prior art.

Basically, and by way of contrast with the general teachings of the prior art, the treatment fluids are introduced from an outside source to the inside of the curling implement, and act through the pervious wall or walls of the implement upon the hair coiled thereupon. Further improvements are a predetermined allocation of the curling implement, providing, in respect to the scalp of the person to be treated, angular adjustment of the perviousness of the various sides of the wall of the curling implement, so that the fluids expelled through the wall of the implement are diverted from the scalp of the patient, and circulate and filter in the desired manner and direction through the coil of hair for an efficient treatment thereof.

Other and incidental objects of the instant invention will be understood from the various exemplary apparatus described in the following and illustrated in the drawing, in which:

Fig. 1 shows in elevation an assembly view, comprising a stand with fluid propelling means, a manifold, a multiplicity of devices of this invention, and the curling element applied to the head of a person.

Fig. 2 shows in a corresponding detail view, a section of the parts of importance in this invention.

Fig. 3 indicates a modification of the device of my invention in a sectioned side view, in connection with a curling implement.

Fig. 4 is a bisected end view relating to the modification of Fig. 3.

Fig. 5 shows the cross-sectioned elevation of still another modification of my invention, in connection with a suspended manifold.

Fig. 6 is a top view of the manifold used in connection with the modification of Fig. 5.

Similar numerals refer to similar parts throughout the various views:

The gaseous heating means may be supplied from above in accordance with the arrangements of Figs. 5 and 6, or otherwise, as for instance illustrated in Fig. 1.

In Fig. 1 the blower 11 may be adjusted by the setting means 12 at any preferred height on the stand 13. The source of treatment gas is connected to the blower intake 14. If air is to be used upon the hair, the intake 14 may merely be closed by a filter 10. If hot air is wanted, I may arrange, within the knowledge of the prior art, an electric heating element (switch 11), some-

where in the supply line, for instance in the extension 72 of the intake conduit 14.

Another extension 73 of intake 14 is shown to supply steam, e. g. it is flared out as a head 74 over an evaporating dish 75, from which steam arises in boiler fashion when it is heated, say by flame 76.

In order to provide various fluids at various times or simultaneously I may provide multiple valves. Thus shutter 77 controlled by handle 78, permits complementary admission of hot air and steam, or one may be supplied by the exclusion of the other.

Upon the outlet 15 of blower 11 is superimposed a riser 16 from which extends a plurality of relatively angularly adjustable connectors 17, one of which is for instance shown to be connected with the curling element 18 applied to the head 19 of the person to be treated. Thus the connectors 17 comprise elastic tubing 20, which is slipped over the left end of the curling implement 18.

An angular, and at the same time angularly adjustable interconnection between the flexible tubes 20 of the connectors 17 and the riser 16 may be brought about as follows:

A plurality of collars 21 are rotatably journalled upon the riser 16, each one of said collars being provided upon the inside with a circular groove 22. In alignment with each one of the grooves 22 of the collars, perforations 23 are provided in the riser 16, so that the gas or air propelled upon the inside of the rise may enter upon the groove 22, and may issue from there upon the curling implement 18, when a valve 24 mounted upon each collar 21, which connects at the other end of the tubing 17, is open.

Thus the valve 24 of the connector 20 attached to the curling implement 18 upon the head 19 is shown to be open whereas the valves on all the other connectors are shown to be closed.

The tube of the curling implement 18 should be pervious; for such purpose a plurality of openings or holes are shown along the whole circumference thereof.

I may provide the customary clamp 25, or a similar clamping device, by which the free ends of the hair initially clamped upon the curling element, before the strands of hair are wound onto the curling implement. The curling implement may also comprise a clip, or some other fastening means, for instance the elastic strap of the prior art, by which the coil of hair is finally retained upon the curling implement after it has been wound and tightened thereon. Such a final fastening means is not shown, and may not be necessary, because I may make use of the connector 17 to retain for processing the hair in its fully wound position upon the coiling implement 18. This would presuppose that the hair is first wound onto the curling implement, with the connecting tube 17 detached therefrom; after the hair has been fully wound onto the curling implement 18, the connector 17 may be attached to one of the ends thereof.

In order to prevent the gases flowing out from the curling implement 18 from striking the head of the person treated, holes 26 upon the side turned onto the scalp of the user may be omitted, or the clamp 25 may close the holes upon the said side.

It may be advisable to apply connectors 17 at both ends of the curling implement 18, if the said implement is open at both ends. The curling implement of Figs. 1 and 2 is shown however to be closed at one end by a wall or bottom 27, whereas to the open, other end the connector is applied.

Whereas the curling implement 18 of Figs. 1 and 2 is closed by a wall 27 at its free end, the curling implements or tubes 18, of Figs. 3 and 4 are open at both ends; but unless I introduce the treatment gas from both ends, it is desirable to close one of the ends so that the gas does not escape by way of the open end.

For this purpose and also in order to cause under certain circumstances a better and/or preferred distribution of the gaseous agent delivered to the inside of the curling implement 18, both ends of the implement should be closed, for instance by way of a rubber collar 31 at one end and a rubber disc 32 at the other end. The latter disc 32 also serves to close the free end of the nozzle 30, and for that purpose it is attached by way of a screw 33 to the nozzle.

The nozzle 30 is of course hollow, and should be perforated in order to admit the treating gas along its whole extent upon the inside of the curling element from where it then passes through the wall of the curling element onto the hair. Suitable perforations in nozzle 30 are shown in the drawing by way of a plurality of longitudinal slits 34, which may of course be omitted, as shown, upon the side of the connector turned toward the head or the scalp of the person to be treated, so that no hot air, steam or gas is blown directly onto the head of the user, when a curling implement is applied to a head 19 in a manner similar to that of Fig. 1. This position of the curling element in relation to the head and more particularly the position of the connector 17 in relation to the head may be preserved by providing an angular stem 35 on the connector, which is always directed upward, when the connector is inserted from the left into the curling implement 18.

Under these circumstances the gaseous treatment fluids may be supplied to the curling implements of Figs. 3 and 4 from the top. For that purpose I may provide a manifold for the treatment fluids overhead, similar to the manifold which will be hereinafter described in connection with Figs. 5 and 6, and a flexible tubing 36 may form part of the connector 17 providing an adjustable conduit extending down from the overhead supply means.

Since it is not desirable to weigh down upon the head of the user with the curling implements, nor with the connectors, the connector 17 may also be individually adjusted in height if we provide an elongatable, e. g. telescoping connecting sleeve 37. In the case of this modification a male tube 38 extends down from the overhead manifold and is slidably accommodated in the outer tubing 39, a fixed relative setting of the parts being obtained by the spring action at the lower end 40 of the male part 38, as we know it from other "telescope" application.

If no gaseous fluid is to be directly driven onto the head of the user we may of course also omit the perforations upon one side of the curling element, instead of omitting the slit 34 on one side of the nozzle 30. Since we have no nozzle 30 in connection with the device of Figs. 5 and 6, the perforations must be omitted in that instance upon one side of the curling implement 18, in case the fluid is not to radiate onto the scalp of the patient.

In the modification of Fig. 5 the connector assumes the shape of a clamp, called pliers herein, one arm of which is formed by the gaseous con-

duit 41, the other arm being the lever 42, with a manipulating end 43. The arms 41 and 42 are fulcrumed upon each other at the stem 44 of a valve 45, which is accommodated in a curve of the arm 41. The whole device of this connector is preferably balanced so that it extends substantially centrally from the flexible connection 41 of the connector 17 by way of which it is connected to the manifold 47.

Spring 48 normally forces the arms 41 and 42 together, the ends of said arms being provided with rubber plugs 49 and 50, which engage as jaws upon opposite ends of the curling implement 18. Of course both arms of the clamp may be developed as conduits delivering fluids for the treatment to both ends of the curling implement. But in this instance we have an opening in only one of the arms, arm 41, which opens into the curling implement, except that by way of one of said plugs the treatment fluid is omitted.

Since the shutter element 52 of the valve 45 is stationarily connected with the arm 42, the valve will be swung into a closed position under tension of spring 48, when the device is not applied and clamped over the ends of the curling implement. On the other hand, while the device is clamped over the ends of the curling implement, the valve is opened, so that the treatment fluid is automatically admitted to the curling implement.

Means suspending the device of Fig. 5 at a predetermined height, for instance like means 37 of the modification of Fig. 3 may of course be interposed between the device of Fig. 5 and the overhead manifold 47. The overhead manifold 47 of Figs. 5 and 6 is exemplarily shown to be angularly arranged, with a spider shaped supply tube 58 connecting said manifold with a central supply or feed line 59.

The individual connectors 17 of the modification of Figs. 5 and 6 may again be swingably connected with the manifold 47, each one of the sleeve sections 60 of Figs. 5 and 6 being oscillatably journalled upon the manifold is provided with a suitable groove, in analogy to, or, as a converse of, the arrangement of the collar 21 of Figs. 1 and 2.

An angular,—e. g., T or L,—arrangement of the connector is used throughout, first, to facilitate adjustable positioning of the point of connection of the curling implement relatively to a supply manifold and to reduce the weighting of the implement,—at and on the scalp,—to a minimum; second to give the operator freedom of view and space to work; third, to furnish bearings as to directing the blast of the gases, if so desired.

Although I have shown and described one form of embodiment of my invention in detail, yet I do not wish to be limited thereby, except as the state of the art and the appended claims may require, for it is obvious that various modifications and changes may be made in the form of embodiment of my invention, without departing from the spirit and scope thereof.

What I claim is:

1. In combination with a tubular, pervious implement for curling hair wound thereonto, a connector conduit detachable connected and sealed to said implement, and a nozzle at the end of said conduit opening upon the inside of, spacedly extending substantially centrally in and serving to supply a gas to said implement.

2. A curling apparatus comprising an endwise open tubular implement for curling hair wound thereonto, said implement being substantially evenly perforated on all but one side, a source of gas, a flexible connector conduit connected with said source, and a coupling for sealedly but readily detachably connecting said conduit with the open end of said implement.

3. A curling apparatus comprising an endwise open tubular implement for curling hair wound thereonto, said implement being substantially evenly perforated on all but one side, a gas manifold, a connector conduit oscillatably extending from said manifold, and a coupling for sealedly but readily detachably connecting said conduit with the open end of said implement.

4. A curling apparatus comprising an endwise open curling implement with, said implement being substantially evenly perforated on all but one side, a gas manifold, a connector conduit swingably extending from said manifold, an elongatable section in said conduit, and a coupling for sealedly but readily detachably connecting said conduit with the open end of said implement, said elongatable section providing for lengthwise adjustment between implement and manifold.

5. Means for connecting an endwise open curling implement with a gas manifold comprising a connector conduit swingably extending from said manifold for sealedly but readily detachably connecting said conduit with the open end of said implement, and a perforated hollow stem extending through said implement from said conduit, when said conduit and implement are interconnected.

6. Means for connecting an endwise open curling implement with a gas manifold comprising a connector conduit swingably extending from said manifold for sealedly but readily detachably connecting said conduit with the open end of said implement, and a hollow stem perforated on all sides but one and extending through said implement from said conduit, when said conduit and implement are interconnected.

7. Means for connecting an endwise open curling implement with a gas manifold comprising a connector conduit swingably extending from said manifold for sealedly but readily detachably connecting said conduit with the open end of said implement, a perforated hollow stem extending through said implement from said conduit, when said conduit and implement are interconnected, and closing means at the free, far end of said stem engaging upon the inside of said implement.

8. As a connector for a curling implement, pliers adapted endwise to clamp said implement and to close one end thereof, and a conduit forming part of said pliers and opening onto said implement at the end of said implement closed by said pliers.

9. As a connector for a curling implement, pliers adapted endwise to engage said implement and closing one end thereof, and a spring on said pliers for clamping them in said engagement upon said implement.

10. As a connector for a curling implement, pliers adapted to be clamped endwise upon said implement and to close one end thereof, and a conduit forming one of the arms of said pliers and opening onto said implement at the end of said implement closed by said pliers.

11. As a connector for a curling implement, pliers adapted endwise to engage said implement and closing one end thereof, a conduit forming part of said pliers and opening onto said implement at the end of said implement closed by said pliers, and a valve in said conduit actuated by manipulation of said pliers.

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