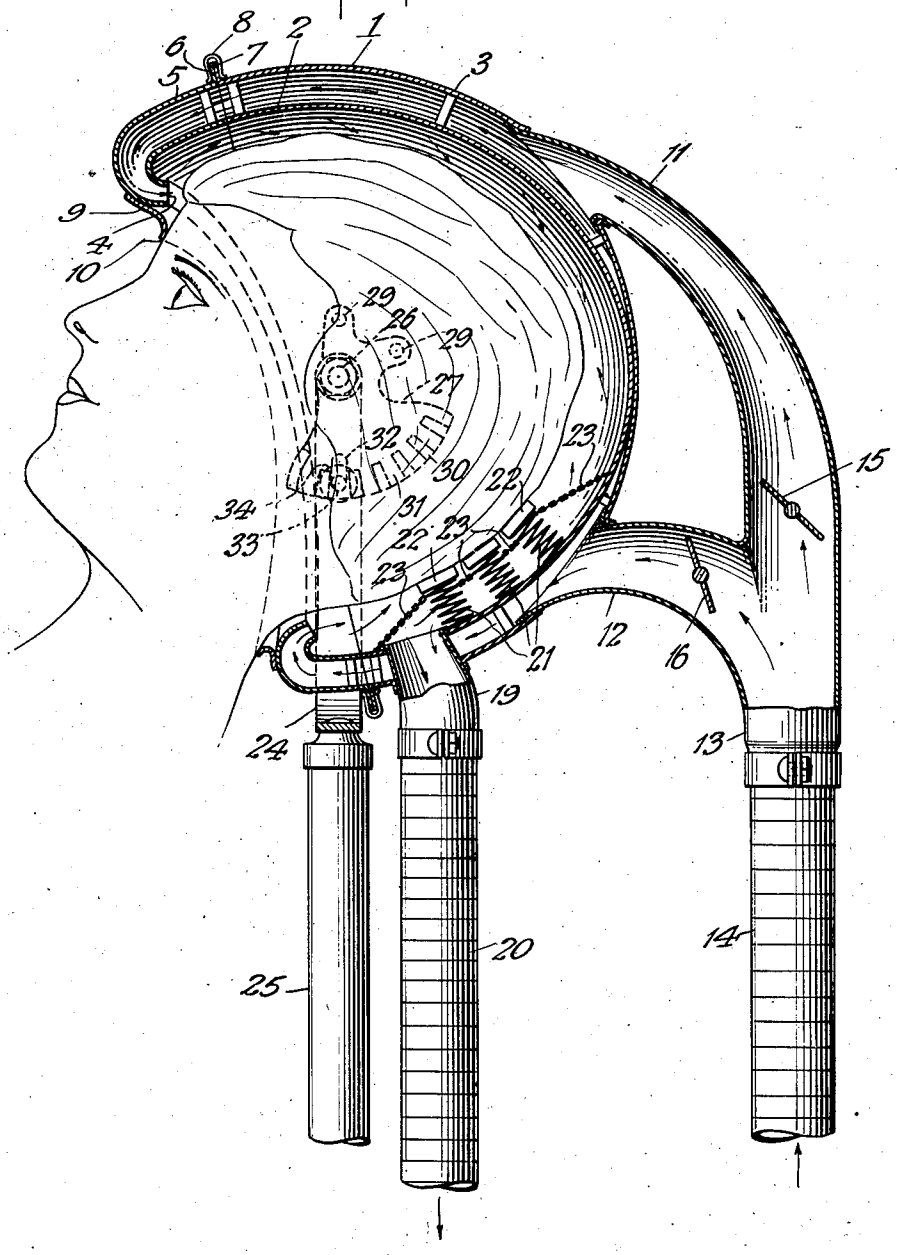
Sept. 16, 1930. E. F. SUTER 1,775,704

HAIR DRIER

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Fig. 1.



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Fig. 2.

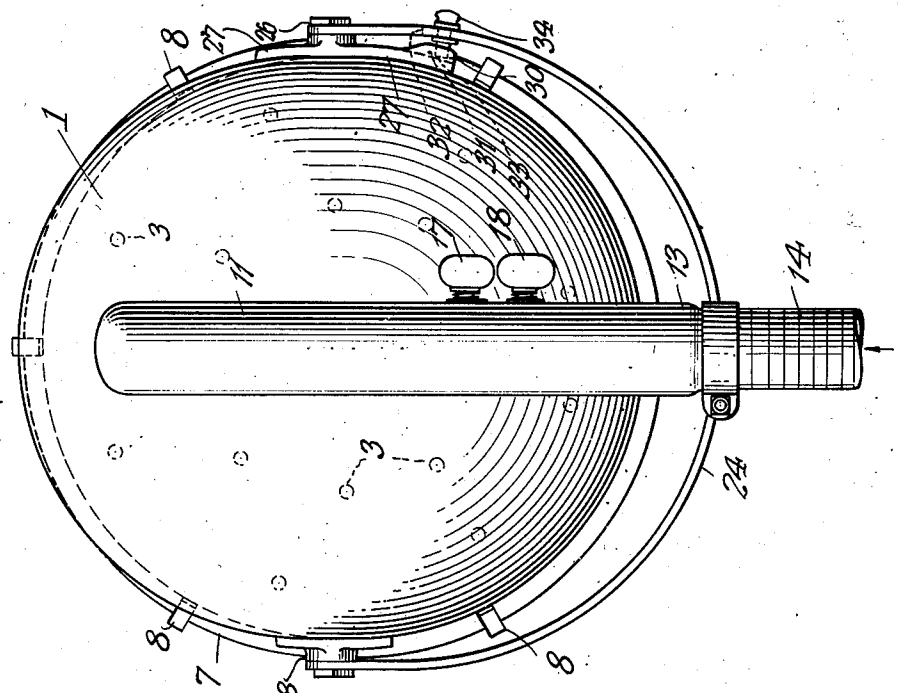
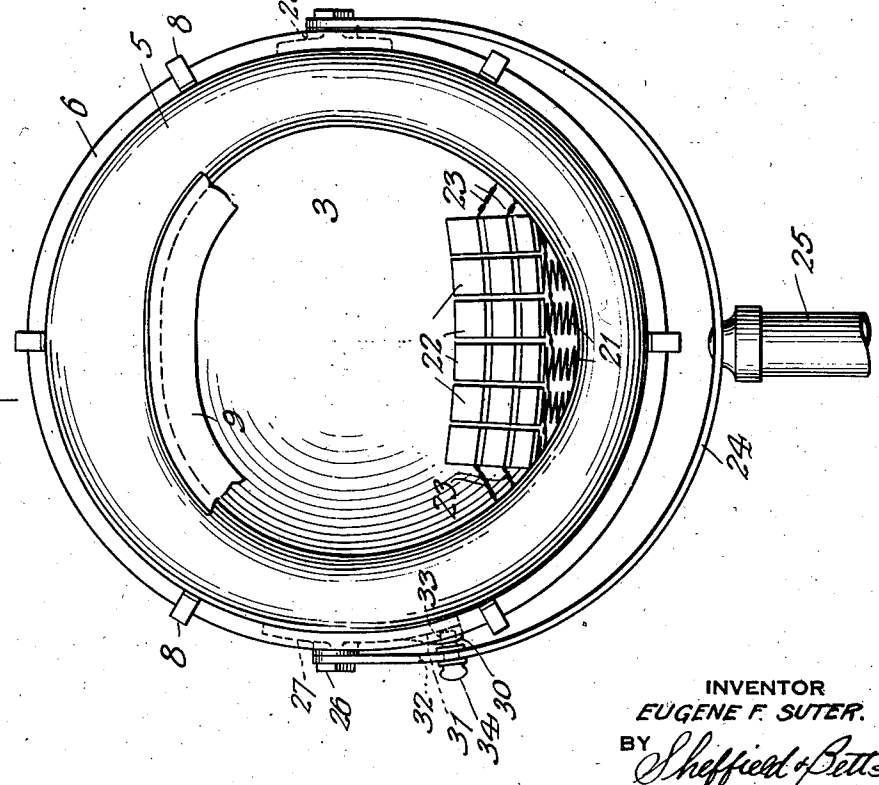


Fig. 3.



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UNITED STATES PATENT OFFICE

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HAIR DRIER

Application filed January 2, 1929, Serial No. 329,734, and in Great Britain November 30, 1928.

This invention relates to improvements in hair drying apparatus and is concerned more particularly with those forms of hair drying apparatus which comprise a helmet adapted to be placed over the head of the person whose hair is to be dried and in which the hair is dried by the circulation of a heated stream of air through the hair. The present invention constitutes a modification of the apparatus disclosed in my prior United States applications Serial No. 163,838, filed January 26, 1927, and Serial No. 207,852, filed July 23, 1927.

The principal object of the present invention is to provide a hair drying apparatus of the helmet type adapted to effect the drying of the hair rapidly and without discomfort to the person undergoing treatment.

Another object of the invention is to provide a double-walled helmet adapted to be placed over the person's head and having ducts or conduits communicating with the space between the walls of the helmet and with the space between the person's head and the helmet whereby the stream of air flowing through the apparatus may be circulated by a forced draft or by a partial vacuum, as preferred.

A further object is to provide a helmet having an orifice at its periphery adjacent the margin of the hair and adapted to impinge a stream of air on the hair.

Another object is to provide resilient means for supporting the head in the helmet in spaced relation thereto.

A still further object of the invention is to provide the helmet with an adjustable front portion whereby the front margin may be adapted to various sizes or annular outlets of various designs may be attached to the helmet.

Another object is to provide adjustable means for supporting the apparatus in any desired position.

Further objects of the invention will be apparent from the detailed description given hereinafter.

In general, the apparatus embodying a preferred form of the present invention, comprises a casing or helmet having inner and outer walls in spaced relation to one another and adapted to be placed over the head on which the hair is to be dried, so that a space is left between the inner wall of the helmet and the head of the person. Ducts or conduits communicating with the space between the inner and outer walls of the helmet convey heated air to the helmet. The periphery of the helmet constitutes an orifice adjacent the margin of the hair to be dried and is adapted to direct a stream of heated air on the hair and through the space between the head and the inner wall of the helmet. An outlet duct or conduit communicating with this space is positioned adjacent the nape of the person's neck and conveys the moisture laden air out from the interior of the apparatus. In the lower half of the helmet a resilient pad is provided to support the head of the helmet so as to leave a space through which the drying medium may flow, as described above. The forward part of the helmet is made removable so that it may be replaced by front pieces of various sizes and designs, as desired, and each of the front pieces is preferably provided with a flexible closure, such as, for example, a rubber strip extending from the front piece to the person's head and adapted to prevent the escape of air through the front part of the apparatus. The helmet is mounted upon a suitable standard which is preferably made adjustable so that the helmet may be readily positioned over a person's head when the person is in the various upright and reclining positions.

In order to understand the invention fully reference may be had to the following detailed description and the accompanying drawings in which,

Fig. 1 is a cross-sectional view of the apparatus showing it in position over a person's head;

Fig. 2 is a right side view of the apparatus shown in Fig. 1; and

Fig. 3 is a front view of the apparatus.

In the accompanying drawings which illustrate a preferred embodiment of the present invention there is illustrated a double-walled,

dome-like helmet which is adapted to be placed over the head of the person whose hair is to be dried so as to leave a space between the head and the helmet through which the drying medium, preferably heated air, can circulate freely. This helmet comprises an outer wall 1 and an inner wall 2 held in spaced relation by the staybolts 3, distributed over the area of the helmet so that the heated air may flow therebetween as hereinafter described. The helmet is preferably made of sufficient size to accommodate, without inconvenience to the persons undergoing treatment, heads of various sizes and shapes and is adapted to encompass that portion of the human head which is ordinarily covered with hair. The helmet is ordinarily placed over the person's head so that it does not cover any substantial part of the face.

The periphery of the helmet constitutes an annular orifice 4 adjacent the margin of the hair which is so located as to cause the heated air flowing therethrough to flow toward the hair and in a rearward direction. As shown in Fig. 1 the periphery of the helmet is bent inwardly and rearwardly so as to position the orifice 4 as described above. While the orifice 4 is preferably continuous around the periphery of the helmet, it obviously may be made discontinuous at any point, if it should be so desired.

In order that the helmet may better accommodate heads of various sizes and shapes, the front part 5 of the helmet may be made adjustable so that the front portion thereof may be adapted to assume suitable sizes and shapes as required and is preferably detachable. To hold the front piece 5 in position, it is provided at its rear periphery with an exterior annular flange 6 which abuts against a similar flange 7 on the main part of the helmet. A convenient number of substantially U-shaped spring clips 8 are placed over the flanges 6 and 7 as illustrated to hold the two parts of the helmet together. A closure 9 of suitable flexible material, such as, for example, a rubber sheet, is provided to prevent the escape of air through the front of the helmet between the front piece 5 and the person's head. The closure 9 may be attached to the helmet by any suitable means, for instance, spring clips (not shown) and contacts with the person's head as shown at 10.

The circulation of the heated air through the space between the head and the helmet to dry the hair is accomplished by the flow of air through ducts or pipes which communicate with the space between the walls 1 and 2 of the helmet and with the space between the head and the helmet. It will be appreciated from the description of the ducts hereinafter given that the circulation of the drying air through the apparatus may be accomplished by means of a forced draft or a partial vacuum, as desired, but for convenience merely, the description is confined to a forced draft. Heated air is supplied to the space between the walls 1 and 2 of the helmet by means of the ducts or pipes 11 and 12 which communicate with this space at two spaced points in the upper and lower parts of the helmet, respectively. It will, of course, be understood that various other arrangements of these ducts may be employed, and if desirable a single duct suitably positioned may be used, but the arrangement shown is deemed preferable. The inlet ducts 11 and 12 are branches of a single duct or pipe 13 to which is clamped a flexible hose 14 which permits easy movement of the apparatus without the necessity of any adjustment in the inlet piping system. Dampers 15 and 16 provided with handles 17 and 18 are located in the ducts 11 and 12, respectively, to permit regulation of the inflowing heated air to the upper and lower portions of the helmet. The flexible supply pipe 14 is connected to a suitable supply of heated air which may be obtained by causing air to circulate through electrical heating coils, or it may be obtained by other means well known in the art.

The heated air flows through the space between the walls 1 and 2 of the helmet, through the orifice 4, as described above, and into the space between the head and the helmet where it comes into contact with the hair to dry the same by the absorption of water therefrom. The moisture-laden air is withdrawn from the space through this outlet duct or pipe 19 which is also clamped to a flexible hose 20. The outlet duct 19 is preferably located in the lower part of the helmet adjacent the nape of the neck, as illustrated, but obviously it may, if deemed desirable, be placed elsewhere. The space between the head and the helmet is of substantial width as shown in Fig. 1 and being practically obstructed, permits rapid circulation of the drying air through the apparatus. It will be observed that with the present apparatus all of the hair is dried rapidly and efficiently without discomfiture to the person and with but one setting of the apparatus on the person's head.

Resilient means are employed to support the person's head within the helmet and in spaced relation to the inner wall 2 thereof. These means may, and preferably do, comprise a plurality of helical springs 21 contacting at one end with the inner wall 2 and provided at the other end with suitable pads 22 on which the person's head rests and are arranged in rows and columns on the lower part of the helmet as shown in the drawings. The springs 21 are held in position relative to one another by the chains 23 which connect adjacent springs together and connect the outermost springs to the inner wall of the helmet as illustrated in the drawings. As this arrangement does not interfere with

the circulation of the drying air through the apparatus the use of the described pads is preferred.

The head of the person undergoing treatment is generally placed in a position which is most convenient for the operator of the apparatus and not discomfitting to the person. Consequently, the means for the supporting apparatus must be capable of adjustment to accommodate the person's head when the person is in various upright and reclining positions. Such adjustment of the present apparatus is accompanied by virtue of the following construction. The helmet is supported in a substantially U-shaped bracket 24 which is mounted on the upper end of a rod 25, preferably longitudinally slidable and rotatable in a suitable standard which is readily portable about the place where the apparatus is to be employed. The helmet is free to rotate in the bracket 24 on the trunnions 26 which are located at the upper ends of the bracket and extend into bearing members 27 and 28 secured to the helmet by the screws 29. The bearing member 27 is substantially segmental in form and at its outer margin is provided with an arcuate series of elongated projections 30 extending above the surface of the member 27 as more clearly shown in Fig. 2 and having therebetween the spaces 31 which are of a convenient width. The center of this series of projections coincides with the center line of the trunnions 26. The side of the bracket 24 adjacent this bearing member has an elongated slot 32 therein in which a pin 33 having a handle 34 is adapted to slide. The inner end of the pin 33 is adapted to engage in the spaces 31 between the projections 30 when it is in the lower part of the bracket slot 32 and when raised to the upper part of the slot 32 it is clear of the projections 30 thus permitting the helmet to be moved angularly with respect to the bracket 24. It will be apparent from this description that the position of the helmet may be varied within limits and securely held in place when so position.

Having thus illustrated and described this specific embodiment of my invention, I do not wish to be understood as being limited to the details set forth for the construction and arrangement of parts may be altered as the occasion requires or the construction of the apparatus may be otherwise modified by those skilled in the art without departing from the spirit and scope of the invention as set forth in the appended claims.

What is claimed and desired to be protected by Letters Patent is:

1. Hair drying apparatus comprising a substantially continuous casing adapted to encompass the head in close proximity to the scalp and the hair to be dried, the periphery of said casing approximately conforming to the shape of a head about the face and neck, the margin thereof being provided with an orifice directed toward the rearward portion of said casing and a supply conduit connected with said orifice.

2. Hair drying apparatus comprising a helmet adapted to encompass the head in close proximity to the hair to be dried, the periphery of said helmet comprising a rearwardly directed annular orifice approximately conforming to the shape of a head adjacent the margin of the scalp and the hair to be dried, and a conduit communicating with said marginal orifice.

3. Hair drying apparatus comprising a helmet adapted to encompass the head in close proximity to the hair to be dried and comprising double-walls having air spaces therebetween, a conduit communicating with the space between said double walls, the periphery of said helmet approximately conforming to the shape of a head about the face and neck comprising a rearwardly directed orifice adjacent the margin of the scalp and the hair to be dried, said helmet being provided with an orifice adapted to permit the exit of moist air.

4. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising a detachable portion, the front periphery of said portion constituting an orifice adjacent the margin of the hair to be dried.

5. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the periphery of said helmet constituting an annular orifice adjacent the margin of the hair to be dried, means for supporting the head in said helmet in spaced relation thereto, a bracket adapted to support said helmet and means associated with said bracket whereby said helmet may be adjusted angularly with respect to said bracket.

6. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular detachable portion, the front periphery of said portion constituting an orifice adjacent the margin of the hair to be dried and means for supporting the head in said helmet in spaced relation thereto.

7. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be

dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member constituting an orifice adjacent the margin of the hair to be dried, a bracket adapted to support said helmet and means associated with said bracket whereby said helmet may be adjusted angularly with respect to said bracket.

8. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member constituting an orifice adjacent the margin of the hair to be dried, means for supporting the head in said helmet in spaced relation thereto, a bracket adapted to support said helmet and means associated with said bracket whereby said helmet may be adjusted angularly with respect to said bracket.

9. Hair drying apparatus comprising a double walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the periphery of said helmet constituting an annular orifice adjacent the margin of the hair to be dried and resilient means for supporting the head in said helmet in spaced relation thereto, said means comprising a plurality of helical springs located on the lower interior surface of the helmet and pads mounted thereon on which the head rests.

10. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the scalp and the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the periphery of said helmet constituting an annular orifice adjacent the margin of the hair to be dried, a bracket adapted to support said helmet, a resilient device in said helmet for supporting the head in combination with said bracket, said device comprising spring supporting means and means carried upon said spring supporting means and adapted to form a rest for the head.

11. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member being curved inwardly of the head and rearwardly and constituting an orifice adjacent the margin of the hair to be dried and which is adapted to direct a stream of air through the space between the head and said helmet.

12. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the periphery of said helmet constituting an annular orifice adjacent the margin of the hair to be dried, resilient means for supporting the head in said helmet in spaced relation thereto, said means comprising a plurality of helical springs located on the lower interior surface of the helmet and pads mounted thereon on which the head rests, a bracket adapted to support said helmet, a segmental member attached to said helmet adjacent the upper end of said bracket, said member being provided with a series of projections with spaces therebetween and a pin slidable in a slot in said bracket and adapted to engage said member in said spaces whereby said helmet may be adjusted angularly with respect to said bracket.

13. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member being curved inwardly of the head and rearwardly and constituting an orifice adjacent the margin of the hair to be dried and which is adapted to direct a stream of air through the space between the head and said helmet and resilient means for supporting the head in said helmet in spaced relation thereto, said means comprising a plurality of helical springs located on the lower interior surface of the helmet and pads mounted thereon on which the head rests.

14. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably carried thereto, the periphery of said annular member being curved inwardly of the head and rearwardly and constituting an orifice adjacent the margin of the hair to be dried and which is adapted to direct a stream of air through the space between the head and said helmet, a bracket adapted to support said helmet, a segmental member attached to said helmet adjacent the upper end of said bracket, said member be-

ing provided with a series of projections with spaces therebetween and a pin slidable in a slot in said bracket and adapted to engage said member in said spaces whereby said helmet may be adjusted angularly with respect to said bracket.

15. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably carried thereby, the front periphery of said annular member being curved inwardly of the head and rearwardly and constituting an orifice adjacent the margin of the hair to be dried and which is adapted to direct a stream of air through the space between the head and said helmet and resilient means for supporting the head in said helmet in spaced relation thereto said means comprising a plurality of helical springs located on the lower interior surface of the helmet and pads mounted thereon on which the head rests, a bracket adapted to support said helmet, a segmental member attached to said helmet adjacent the upper end of said bracket, said member being provided with a series of projections with spaces therebetween and a pin slidable in a slot in said bracket and adapted to engage said member in said spaces whereby said helmet may be adjusted angularly with respect to said bracket.

16. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member constituting an orifice adjacent the margin of the hair to be dried, resilient means for supporting the head in said helmet in spaced relation thereto, said means comprising a plurality of helical springs located on the lower surface of the helmet and pads mounted thereon on which the head rests, a bracket adapted to support said helmet and means associated with said bracket whereby said helmet may be adjusted angularly with respect to said bracket.

17. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member constituting an orifice adjacent the margin of the hair to be dried, means for supporting the head in said helmet in spaced relation thereto, a bracket adapted to support said helmet, a segmental member attached to said helmet adjacent the upper end of said bracket, said member being provided with a series of projections with spaces therebetween and a pin slidable in a slot in said bracket and adapted to engage said member in said spaces whereby said helmet may be adjusted angularly with respect to said bracket.

18. Hair drying apparatus comprising a double-walled helmet adapted to encompass the head in close proximity to the hair to be dried, conduits communicating with the space between said double walls and with the space between the head and said helmet, the front part of said helmet comprising an annular member detachably connected thereto, the front periphery of said annular member being curved inwardly of the head and rearwardly and constituting an orifice adjacent the margin of the hair to be dried and which is adapted to direct a stream of air through the space between the head and said helmet, means for supporting the head in said helmet in spaced relation thereto, a bracket adapted to support said helmet and means associated with said bracket whereby said helmet may be adjusted angularly with respect to said bracket.

In testimony whereof I have affixed my signature hereto.

EUGÉNE FRANÇOIS SUTER.