June 24, 1941. R. V. TAYS 2,246,767

HAIR DRIER

Filed March 6, 1939 3 Sheets-Sheet 1

Fig. 1.

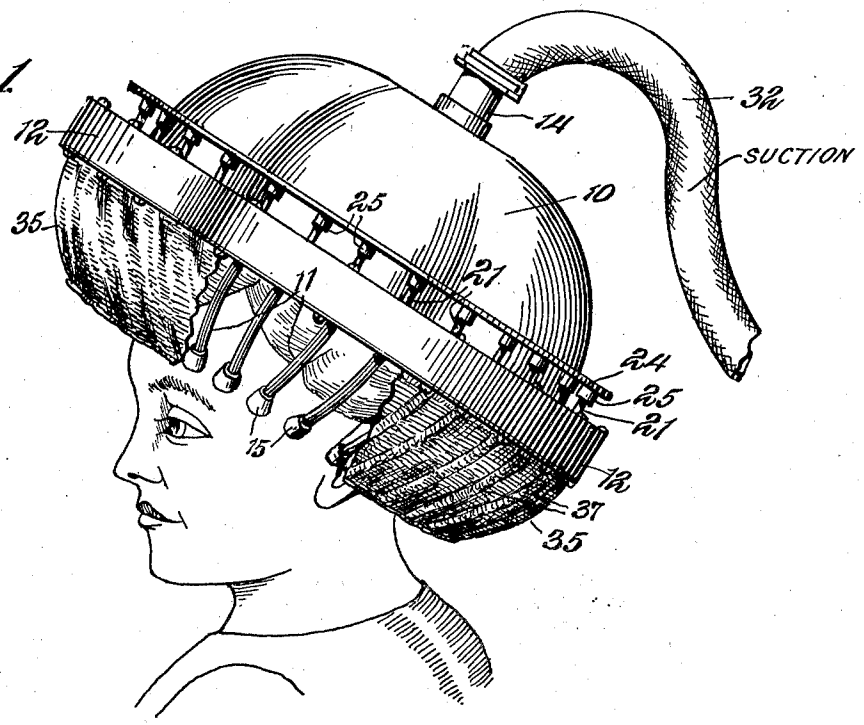
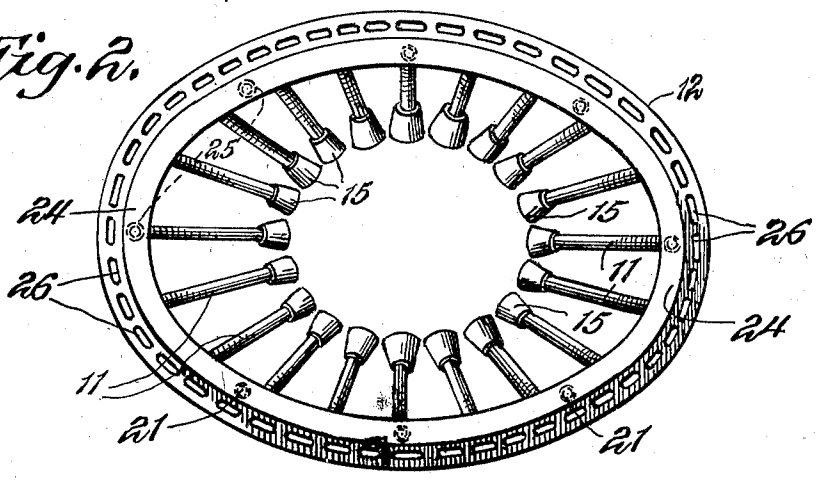


Fig. 2.



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June 24, 1941. R. V. TAYS 2,246,767

HAIR DRIER

Filed March 6, 1939 3 Sheets-Sheet 2

Fig. 3.

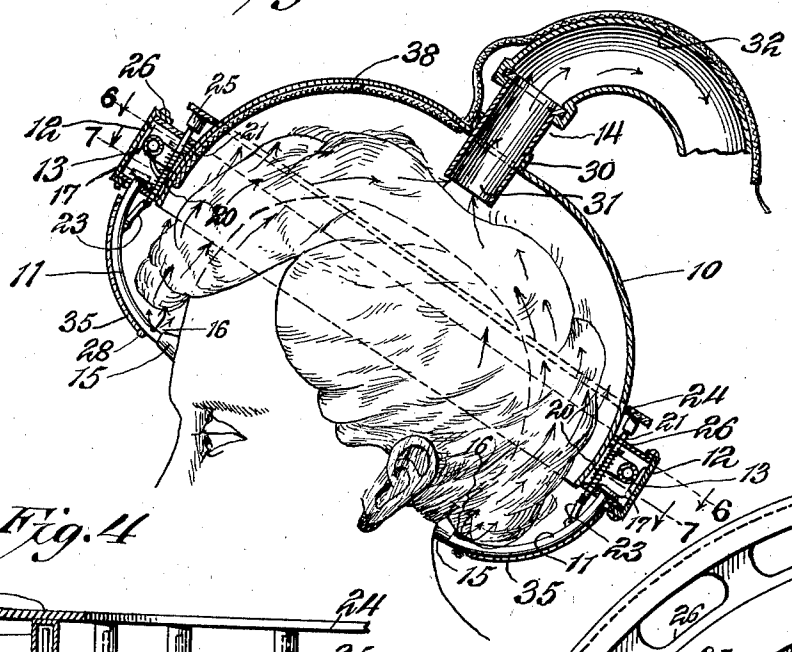
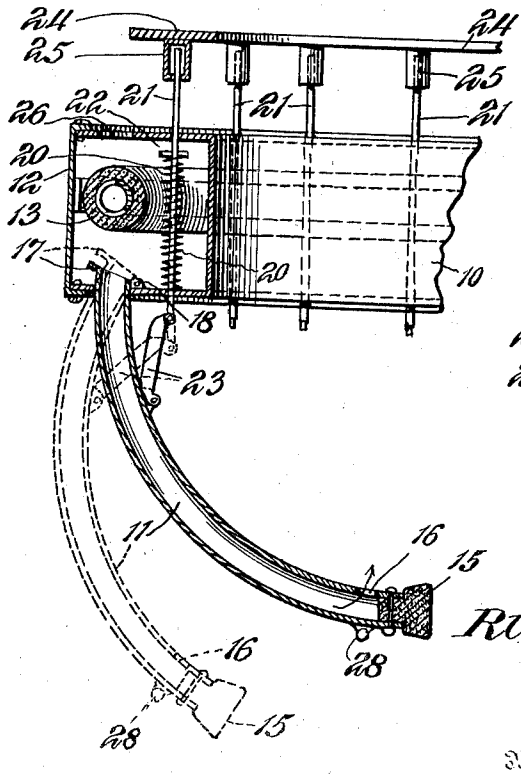


Fig. 4



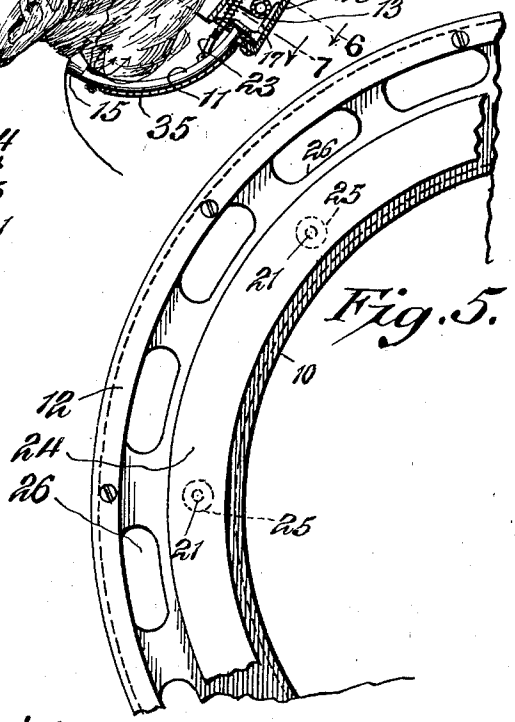


Fig. 5.

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June 24, 1941. R. V. TAYS 2,246,767

HAIR DRIER

Filed March 6, 1939 3 Sheets-Sheet 3

Fig. 6.

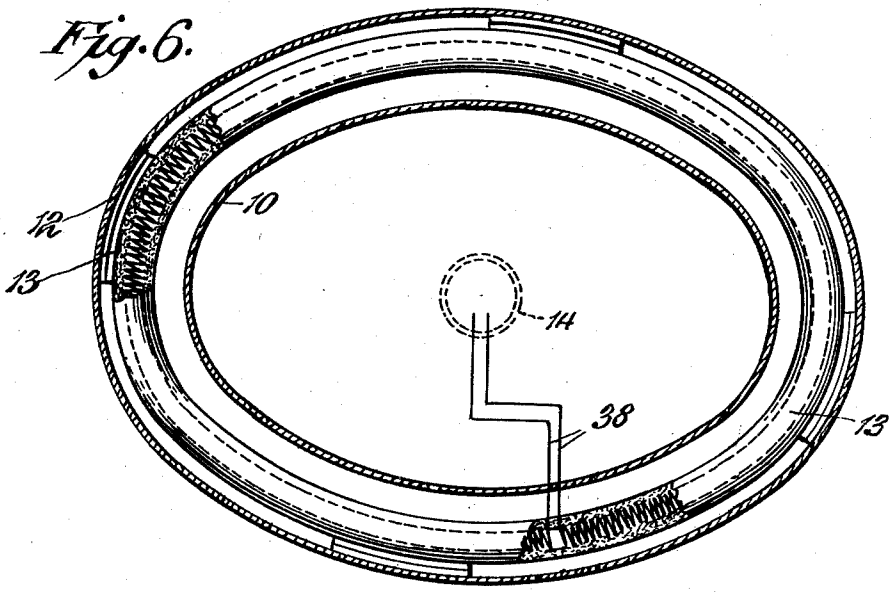
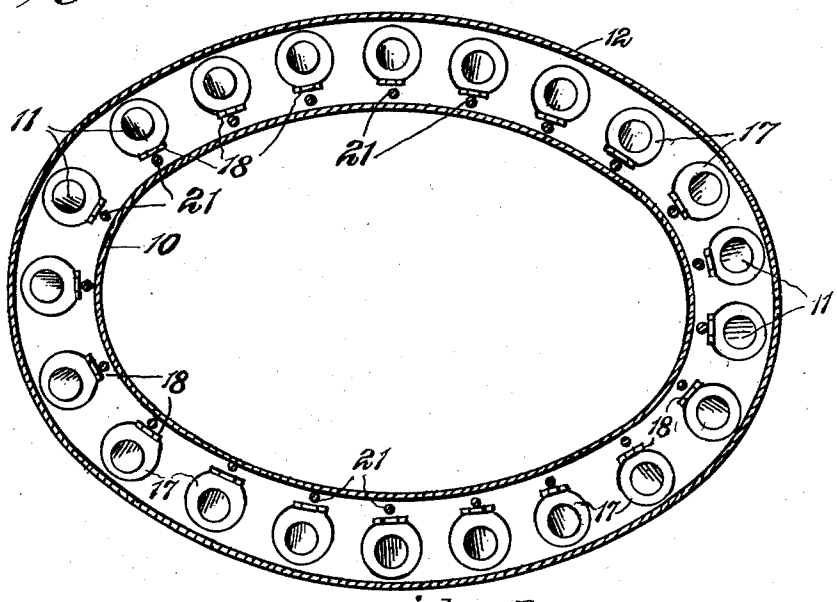


Fig. 7.



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Patented June 24, 1941 2,246,767

UNITED STATES PATENT OFFICE

2,246,767

HAIR DRIER

Richard V. Tays, Coral Gables, Fla.

Application March 6, 1939, Serial No. 260,167

11 Claims. (Cl. 34—100)

This invention is in hair driers, and particularly in driers of the helmet type, used largely in beauty shops. It is an improvement over the construction shown and described in my earlier application Serial No. 236,092, filed October 20, 1938.

The principal object of the invention is to effect the drying of the hair by passing air through rather than over the hair, and at temperatures much lower than those necessary with hair driers now commonly in use. To this end, the air is delivered as far as possible beneath the body of the hair, and is drawn or sucked through, rather than circulated around, the body of the hair, thus causing a very rapid drying effect.

The invention includes an upper helmet proper, and a lower cooperating section. This lower section comprises a number of tubes or channels movably cooperating with the lower edge of the helmet proper, which tubes or channels are flexible or adjustable, so that they may be moved away from and toward the head of the customer, and yet deliver the air as near to the scalp as convenient. They thus constitute a closure for the bottom of the helmet, which closure fits snugly the head of the customer, and adjusts itself to heads of varying sizes and shapes.

These delivery tubes as a whole are covered with some flexible or elastic material, so as to close the spaces around and between the tubes; and this covering is made to fit the head of the customer so as to prevent substantial leakage of air around the same.

By this arrangement, the drying air is delivered where most needed, and at the same time discharge of heated air over the face and body, with its great discomfort and inconvenience to the customer, is entirely avoided.

This arrangement, while closely enclosing the head, actually leaves the head relatively free, so that, within reasonable limits, it can be moved with freedom, to the ease and comfort of the customer.

In the drawings:

Fig. 1 is a side elevation of the drier in use, with the covering of the lower section partly broken away.

Fig. 2 is a plan view of the lower section, looking from above.

Fig. 3 is a sectional view of the drier, but showing the structure as applied to the head.

Fig. 4 is an enlarged view of a section of the drier and the delivery tubes, and the means for actuating the tubes.

Fig. 5 is an enlarged top fragmentary view of the chamber 12.

Fig. 6 is a section taken on the line 6—6 of Fig. 3, showing more particularly the heater.

Fig. 7 is an enlarged sectional view of the tubes 11, taken on the line 7—7 of Fig. 3.

Referring to the drawings in detail, the numeral 10 represents the top of the helmet, which may be of metal, vulcanite, or any other suitable material. To the lower edge of this top, there are pivotally secured hollow arms or tubes 11, which together constitute the bottom or adjustable portion of the drier. Around the lower portion of the helmet top 10 is a chamber 12, in which is arranged a heater 13 by which the temperature of the air may be raised, if and when heated air is desired. A suction outlet 14 is adjustably arranged in the top 10, as will be more fully described hereinafter.

The upper part 10 of the helmet is merely a covering of sufficient strength and of satisfactory material to provide a suitable recess to receive the top of the head. It is not intended to closely fit the head, but on the other hand should not be unduly large; a sufficient space to provide room for the head and leave a reasonable space around the same is all that is necessary.

The air delivery tubes 11, which together form the lower part of the structure, are sufficient in number to surround the head of the customer. The number may vary considerably, but if the number is too small, the tubes will not closely fit around the head; and if the number is too large, the structure wil be unnecessarily complicated. In Fig. 2, twenty such tubes are shown, but this number is merely illustrative, for any desired number may be used.

Referring more particularly to Fig. 4, which shows one of the tubes 11, and means for operating the same, somewhat enlarged, the tube has its outer end extending through and pivotally mounted in the lower part of the chamber 12, to be in constant communication with the interior thereof. The inner end of the tube has a soft rubber closure 15, by which it may rest against the head of the user, and one or a plurality of openings 16, at or near the inner end, for the escape of the circulating air. These tubes must be mounted in chamber 12 for swinging movement, and so are hinged or otherwise pivoted therein. As here shown, the outer end of each tube is flanged as at 17, so that it may tilt or turn on the inner side of the chamber, as by hinge 18.

The tubes 11 are forced toward the head, as shown in Fig. 3, by springs 20, which must have sufficient strength to move the tubes, but which can be easily overcome in practice. These springs 20 are here shown arranged within the chamber 12. Each tube 11 is operated by a pin or rod 21, movable in the top and bottom of the chamber 12. Each pin 21 carries a flange 22, and passes through its cooperating spring 20. The spring is confined between the bottom of the chamber 12 and the flange 22, and lifts the pin until the flange 22 rests beneath the

top of the chamber 12, unless the inner end of the tube or its closure 15 is sooner stopped by contacting the head of the user. The lower end of the pin is pivotally secured to a link 23, which is pivoted to the sides of its cooperating tube 11. The pin 21 is normally held raised by its spring 20, and in turn lifts its tube 11, and holds it in its elevated position, as shown in full lines in Fig. 4, or against the head, as shown in Fig. 3. Depression of the pins 21 compresses the springs 20, and causes the tubes 11 to pivot at their tops, and open out as shown in broken lines in Fig. 4. On release of pressure on the pins 21, the springs 20 lift the pins, and through links 23, restore the tubes 11 to the full line position of Fig. 3.

The pins 21 may be depressed one by one manually by pressure on their tops, but obviously, for practical purposes, all pins should be depressed together, so that all of the tubes 11 will open out simultaneously for application of the helmet to, and its removal from, the head of the customer. For simultaneous operation, a ring or band 24 is shown applied to the tops of all the pins 21. Pressure on this ring, as by grasping this ring and the lower edge of the chamber 12 with one hand on either side, compresses all springs 20 at one time and moves all tubes 11 simultaneously, thus making easy the placement of the helmet and its removal from the head. The pins 21 are not secured to the ring 24, but the ring merely rests on the tops thereof. This, or some equivalent arrangement, is necessary in order that the pins 21 may be operated as required by the positions of the tubes 11, some of which will have to move farther than others, depending on the shape and size of the head of the user. To provide for this independent movement, the ring 24 is provided with a series of tubular extensions 25, within which the pins 21 move with an easy or loose fit.

The annular chamber 12, in its upper portion, or elsewhere in its surface, is provided with a series of openings 26, for the admission of air. The heater 13 is immediately beneath these openings. Any type of heater may be used, but as here shown it comprises an electrical heating element mounted and connected in circuit in any convenient way.

The top 10 of the helmet, at some convenient point, is provided with an opening 30, by which the outlet 14 is connected to the exhaust tube 32. The outlet 14 may be a mere coupling, but preferably it is a tube which may be slipped more or less into the helmet, so that the inner end thereof can be placed close to, or moved farther away from, the crown of the head. If the inner end is placed close to the hair, it will accentuate the movement of the air through the hair, whereas, if it is moved farther away, more air will pass over the hair than through the hair. Thus, by adjusting this tube or coupling 14, toward or away from the top of the head, the flow of air through the hair can be varied at will. As here shown, this element 14 is merely slipped through the top of the helmet, but any other means of adjustment may be employed.

The tubes 11 are covered by some suitable woven or elastic material 35. If woven fabric is used, the inner edge 36 should be plaited, as at 37, to permit the ready opening and closing of the tubes 11. If rubber is used for this purpose, it need not be plaited, for it will yield sufficiently to adjust itself as the tubes are opened or closed.

In the form here shown, each tube 11 is provided at its lower end with a projection or other fastening 28, to which the cover may be secured, but of course the cover may be secured in place in any suitable manner.

Current for the heater may be supplied in any convenient way, as by conductor 38, and controlled by any suitable switch.

Operation

In using the drier, the operator grasps the ring 24, and the margin of the annular chamber 12, and with one side in one hand and the other side in the other hand, depresses the ring 24, thus depressing all pins 21, compressing all springs 20, and opening out all tubes 11, as shown in broken lines, Fig. 4. The helmet, thus opened, is then placed over the head of the customer. Upon releasing this pressure, the tubes 11 move inward, under the action of the springs 20, and embrace the head with a light pressure. The covering 35 closes the openings between the tubes 11, and also fits the head of the user sufficiently to prevent undue leakage of air. While this is not an air tight connection, particularly around the head, it is sufficiently close for all practical purposes.

Suction is now applied through the coupling 14 and tube 32. Air is thus drawn in through the openings 26 of the annular chamber 12, over and around the heater 13, which may or may not be in heated condition, and through the tubes 11. The air passes out the openings 16, which are preferably arranged to discharge beneath the body of the hair and close to the scalp, as best shown in Fig. 3. The coupling 14 is set close to but preferably not in contact with the hair. As the exhaust is applied, the air tends to flow up through the hair, rather than merely over the surface thereof, and out the suction hose 32. This applies the air in the most effective manner, and where it is most needed.

The heater 13 may or may not be used, depending largely upon the condition of the external air. If the air is very dry, the heater may not be needed; if its moisture content is high, that is, if it is humid, the heater will probably be necessary.

No air is blown down over the face and body of the customer, and the very disagreeable effect of a blast of hot moist air for a long period of time is entirely avoided. At the same time, the application of air at or below the bottom of the hair, and its circulation by suction, rather than by pressure from behind, makes the drying very rapid and effective. Any degree of suction, that is, reduced pressure in the helmet, may be used, but preferably the reduced pressure is just sufficient to cause rapid movement of the air, but not sufficient to disturb the hair.

The use of a suction device, of course slightly lowers the air pressure within the helmet, and this to some extent tends to bring the blood to the surface of the skin, thus stimulating the scalp.

The illustration is the best form of the drier now known, but it is to be understood that I am not limited to the exact form or proportion of parts here shown.

I claim:

1. In a hair drier, the combination of a helmet proper having an outlet opening therein and adapted to receive the crown of the head, a co-

operating head enclosing section comprising a plurality of air tubes having inlet orifices therein and outlet orifices directed toward the head of the user supported by and spaced around the helmet for supplying air to the hair of the user, and means cooperating simultaneously with a plurality of the tubes for moving the same relative to the helmet and toward and away from the head.

2. In a hair drier, the combination of a helmet proper having an outlet opening therein and adapted to receive the crown of the head, a cooperating section comprising a plurality of air tubes having inlet orifices therein and outlet orifices directed toward the head of the user supported by and distributed approximately around the lower part of the helmet for supplying air to the hair of the user, means cooperating with a plurality of the tubes simultaneously for moving the same relative to the helmet and toward and away from the head, and a cover for the tubes of the cooperating section to prevent outside air from passing between the tubes.

3. In a hair drier, the combination of a helmet proper having an outlet opening therein and adapted to receive the crown of the head, a cooperating enclosing section comprising a plurality of air supply tubes having inlet orifices therein and outlet orifices directed toward the head of the user attached to the helmet around the lower edge thereof, means for moving the tubes relative to the helmet and toward the head, and additional means cooperating simultaneously with a plurality of the air supply tubes for moving the same relative to the helmet and away from the head of the user.

4. In a hair drier, the combination of a helmet proper provided with an outlet and adapted to receive the crown of the head, a cooperating section comprising a plurality of air supply tubes supported by the helmet and adapted to receive air at or near one end and to deliver air to the head of the user, means for moving the tubes relative to the helmet and toward the head, means cooperating simultaneously with a plurality of the tubes for moving the same relative to the helmet and away from the head, and means cooperating with the tubes for preventing outside air from passing between and around the tubes.

5. In a hair drier, the combination of a helmet proper adapted to receive the crown of the head and having an outlet therein, a cooperating section comprising a plurality of air supply tubes having inlet orifices therein and outlet orifices directed toward the head of the user and having their outer ends pivoted on the helmet proper, springs for moving the inner ends of the tubes relative to the helmet and toward the head, and manual means including a movable ring around the helmet operatively connected to the said springs and to the tubes so that movement of the ring in one direction relative to the helmet will overcome the action of the springs and move the tubes relative to the helmet and away from the head.

6. In a hair drier, the combination of a helmet proper provided with an outlet and adapted to receive the crown of the head, an air chamber supported around the lower edge of the helmet proper having air inlet openings in the top and outlet openings in the bottom thereof, a plurality of air supply tubes supported by and spaced around and communicating at their outer ends with the air chamber and having delivery openings at or near their inner ends to direct air to the hair of the user, means for moving the inner ends of the tubes relative to the helmet and toward the head and means cooperating with a plurality of the tubes simultaneously to move the same relative to the helmet and away from the head of the user.

7. In a hair drier, the combination of a helmet proper adapted to receive the crown of the head and having an outlet therein, an air chamber supported by the lower edge of the helmet proper, a plurality of air supply tubes having inlet openings therein and outlet openings to direct air to the hair of the user and having their outer ends pivotally secured in the air chamber, cushioning stops on the inner ends of the tubes, spring means for moving the inner ends of the tubes relative to the helmet and toward the head, and manually operated means mounted on the helmet and movable with respect thereto engaging with the tubes for moving the inner ends thereof relative to the helmet and away from the head.

8. In a hair drier, the combination of a helmet proper provided with an outlet and adapted to receive the crown of the head, an air chamber cooperating with the lower edge of the helmet proper and supported thereby, a plurality of swingable air supply tubes supported by and spaced around and communicating at their outer ends with the air chamber and having outlets at or near their inner ends to direct air to the head of the user, a heater in the chamber, and means for drawing air through the chamber over the heater and through the tubes.

9. In a hair drier, the combination of a helmet proper having an outlet therein and adapted to receive the crown of the head, an air chamber supported by the lower edge of the helmet proper, air supply tubes arranged around the chamber with their outer ends pivotally mounted therein and communicating therewith and having outlet orifices at or near their inner ends for delivering air to the hair of the user, springs arranged in the chamber one for moving the inner end of each tube relative to the helmet and toward the head of the user, pins one for each tube adapted to compress the springs and move the tubes relative to the helmet and away from the head, and means simultaneously engaging with a plurality of the pins for operating the same.

10. In a hair drier, the combination of a helmet proper provided with an outlet and adapted to receive the crown of the head, means for delivering air beneath the hair of the user, an outlet pipe cooperating with the outlet and slidably movable into and out of the helmet and into close proximity with and away from the head of the user, and means for creating suction in the outlet so as to draw drying air through the hair.

11. In a hair drier, the combination of a helmet proper having an outlet therein, a cooperating section comprising a plurality of air supply tubes having inlet openings therein and outlet openings for directing air to the hair of the user pivoted around the edge of the helmet proper, manual means for simultaneously turning the tubes on their pivots to open the cooperating section and means for moving the tubes relative to the helmet variably toward the head of the patron so that the inner ends of the tubes may engage around heads of varying sizes and shapes.

RICHARD V. TAYS.