HAIR DRYER CURLING ATTACHMENT

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This invention relates to a curling attachment for adapting hair dryers to dry hair curled on a hair curling form.

In the past several years, the home hair dryer has become a very popular appliance. It has relieved the woman of the necessity of going to the beauty parlor to wash, set and dry her hair. The home hair dryer conventionally comprises a motor-fan-heater unit, a plastic tubular member for directing air, and an air hose interconnecting the two. With proper design and usage, a woman can achieve professional results in the home with her home hair dryer.

In order to increase the continuing popularity and versatility of the home hair dryer, several attachments have been introduced. One such attachment has been a curling attachment for purposes of touching-up previously set curls. Obviously, such an attachment besides being effective must be simple, low cost, versatile and easy to use if it is to be accepted by a prospective purchaser or user.

Accordingly, it is an object of this invention to provide an effective curling attachment for home hair dryers which is simple, low cost, versatile and easy to use.

Briefly, in the invention, the curling attachment comprises a tubular member. One end of the tubular member is adapted to be quickly and removably connected to the outlet of a home hair dryer hose. The other end of the tubular member is adapted to be quickly and removably connected to a plurality of different size hair curling forms which are readily available on the market. Since the user will be holding or grasping the attachment by its tubular member, heat insulating means is provided to prevent the tubular member from becoming hot to the sense of touch. Such means may comprise a double walled insulated construction in the tubular member or insulation fins. In addition, in a refinement of the invention a valving arrangement may be provided inside the tubular member to permit the hot air to the curling form or to by-pass the hot air to the atmosphere.

The invention will be better understood by considering the following description taken in connection with the accompanying drawings, and its scope will be pointed out in the appended claims.

In the drawings, FIG. 1 is an elevation view of one form of the invention;
FIG. 2 is a sectional view taken along the section line 2—2 of FIG. 1;
FIG. 3 is a sectional view taken along the section line 3—3 of FIG. 1;
FIG. 4 is an enlarged broken away view of the invention illustrating in broken lines how the hair curler attachment is adapted to receive three different sizes of hair curler forms;
FIG. 5 is a right hand end view of FIG. 4;
FIG. 6 is a broken away elevation view of a second form of the invention showing the device in its hair curl drying position;
FIG. 7 is a view similar to FIG. 6 showing the device in its non-hair curl drying position;
FIG. 8 is an enlarged left hand end view of FIG. 7;
FIG. 9 is an enlarged sectional view taken along the section line 9—9 of FIG. 7;
FIG. 10 is an enlarged sectional view taken along the section line 10—10 of FIG. 7; and
FIG. 11 is a broken away sectional view taken along the section line 11—11 of FIG. 8.

Referring now first to FIGS. 1 to 5 of the drawings, the hair curling attachment comprises an elongated and cylindrical or tubular member 10 of slight taper. The left hand end of member 10 has a pair of notches 11 formed therein so that the connector or coupling 12 at the outer end of a hair dryer hose 13 can be quickly and removably connected thereto. The hose coupling 12 is described in detail in Chambers et al. Patent No. 3,188,352 issued Feb. 2, 1965 and assigned to the same assignee as the instant patent application. It has a pair of outwardly spring biased latching elements 14 which snap into grooves 11 when the connector 12 is inserted into the left hand end of member 10. To remove the connector 12 from the curling attachment, it is only necessary to depress the portions 15 of the latches 14 against the bias of their spring 16.

The right hand end of member 10 is adapted to be quickly and removably connected to three different sizes of hair curler forms indicated in broken lines in FIG. 4 by reference numerals 17', 17", and 17"'. The right hand outermost extremity of member 10 is provided with a reduced diameter or shouldered nose portion 10'. A pair of spaced rows of latching tabs or shoulders 18 and 18' are provided inside nose 10' for the purpose of quickly and removably connecting the smallest curling form 17' to the curling attachment. A pair tab or shoulder 18" is also provided on the outside of nose 10'. The two rows of tabs 18' and 18" removably latch the intermediate size hair curler form 17". The row of tabs 18" are spaced from a shoulder 19, and the tabs 18" and shoulder 19 removably latch the large size curler form 17" to the curling attachment.

The curling forms 17', 17", and 17"'' are readily available on the market in drug and notions stores or the like. They comprise pliable plastic screen-like cylinders having beads 20 at their opposite ends. Cylindrical brushes comprising a central wire form 21 and radiating brush bristles 22 are located inside the curling forms. The brush bristles 22 protrude slightly through the apertures 23 of the curling forms. As is well known in the art, hair is curled or rolled on the curling forms and the curled hair will not unintentionally unroll because it is retained on the protruding bristles 22. Since the screen-like cylinders of the curling forms are constructed from pliable plastic material, their ends can be easily forced past the tabs 18, 18", and 18"'. The tabs, of course, will enter the apertures 23 to removably latch the curling forms on the nose 10" as is illustrated in the drawings.

Since hot air is conducted by the curling attachment from the hose 13 to the curling forms, the curling attachment will become warm. At the hot or high setting of the not shown motor-fan-heater unit of the hair dryer, the curling attachment may become rather warm for comfortable hand holding or grasping of the curling attachment. Therefore, in the form of the invention illustrated in FIGS. 1-5, the tubular member 10 is given a double walled heat insulated construction. More particularly, the member 10 has concentrically spaced inner and outer walls 10" and 10"'. Between the walls 10" and 10"' is a dead air space 24. The dead air space 24 is closed at its right hand end by the shoulder 19 and at its left hand end by a heat insulating washer or ring 25. The washer 25 is held in place by integral tabs 26 which are formed on the wall 10"' and then heat staked over against the washer 25. This double walled heat insulating construction in the member 10 makes it comfortable to the sense of touch even though very warm or hot air may be traveling through member 10 to the hair curling forms.

The second form of the invention will now be described by reference to FIGS. 6-11. The second form of the in-
vention is similar to the first form except in addition there's a valving arrangement inside the hair curler attachment to let air either pass therethrough or to bypass or vent the air to the atmosphere. The advantage of this is that after the hair dryer comes up to heat, the hot air can be by-passed away from the nose of the attachment so that a strong blast of hot air isn't directed immediately against the head while the woman is connecting up the attachment to a hair curler form on her head.

The curling attachment comprises a round tubular member 30 having a slight taper. The left hand end has grooves 19 as before described for purposes of connecting a hair dryer hose coupling or connector 12. At its right hand end, there's a nose portion having two reduced diameter portions 31 and 32 and an internal circular shoulder 33 on the portion 31. The nose portion is adapted to receive three different sizes of hair curler forms 17, 17', and 17'' as illustrated in broken lines in FIG. 6 and similar to those previously described. The smallest curler 17' fits inside portion 31 against the shoulder 33. The in-between size curler 17'' fits on the outside of portion 31 against a shoulder or step 34 located between portions 31 and 32 and the larger 17 fits portion 32 against a shoulder 35 at the left hand end of portion 32. The curlers are retained on the nose of the attachment by a snap or friction fit. The heat insulation means for comfortable holding of tubular member 30 comprises a plurality of integral and spaced lengthwise extending fins 36.

For purposes of venting the hot air to the atmosphere, a vent opening 37 and valve 40 and valve seat 42 are provided at the left hand end of tube 30 and a valve 38 and valve seat 39 are provided at the right hand end of tube 30. The opening 37 is defined by an integral enlarged portion 30' which extends for about 90 degrees about the left hand edge of tube 30. Portion 30' has a larger radius than the left hand end of tube 30 so as to be spaced therefrom to define the opening 37. The opening 37 is opened and closed by the valve element 40 integrally formed on the left hand end of a valve slide actuator 41. The valve 38 is integrally formed at the right hand end of valve slide actuator 41. When the slide 41 is moved to the right, valve 38 seats on valve seat 39 to close off air flow through tube 30. At the same time, the valve 40 is moved off the contiguous edge 42 of the nose connector 12 to open the vent 37.

That is to say, edge 42 is the equivalent of a valve seat for the valve 40. When slide 41 is moved to the right, valve 40 leaves valve seat 42 to place the opening 37 in communication with the inside of tube 30. Since at this time the right hand end of tube 30 is closed, the hot air exits from inside tube 30 through vent or by-pass opening 37 to the atmosphere. When the hot air is vented through opening 37 there is no blast of air leaving the nose of the tube 30 which will impinge on the woman's head as she is connecting tube 30 to one of the hair curler forms.

The slide 41 extends lengthwise of tube 30 and it has a width equivalent to about 90 degrees of the tube 30. A slide groove 43 extends lengthwise of tube 30. The slide 41 is nested in the slide groove 43 for back and forth movement therein. Opposite side edges 44 of slide 41 are tapered and the tapered edges 44 fit beneath undercut shoulders 45 formed along opposite sides of the groove 43. Actually, this slide 41 and its groove 43 have a gradual reduced width or taper from left to right. Therefore, it is possible to connect up the attachment from the left hand end of tube 30 by pulling it out in a left hand direction. However, normally movement of slide 41 is limited to just a sufficient distance to operate the valves 38 and 40. Movement of slide 41 is limited by a thumb actuator 46 integrally formed on slide 41 and which rides in a notch 47 formed in the side of tube 30.

The slide guide groove 43 at its right hand end extends as far as the right hand end of the thumb actuator groove 47. At the left hand end of slide 41, the valve element 42 is about 90 degrees wide similar to the about 90 degree width of the enlargement 30' to completely close off the opening 37 when the slide 41 is moved to the left. At the right hand end of the device, the shoulder 33 is aligned with the shoulder 34 so as to comprise an integral extension at their ends, and the right hand valve seat 39 is formed in the back side of shoulder 33 which faces the right hand valve element 38. The valve element 38 is circular, as is its valve seat 39, and the axes of these two parts are aligned with the axis of the tubular member 30. The slide 41 is a common valve control or actuator for each of valves 38 and 40.

The thumb actuator 46 is actually carried by an integral resilient finger part 41' of slide 41. The finger 41' is cut out of slide 41 by a U-shaped groove 48. The right hand end of finger 41' is free whereas the left hand end is integral with the slide 41. Since the slide 41 is constructed from plastic the finger 41' is resilient. That is to say, finger 41' can be pushed in a direction away from the slide groove 43 when inserting slide 41 in its groove 43 when assembling the device. Due to the taper of the slide 41 and its groove 43, the slide is inserted in groove 43 in a left to right direction. At this time, the finger 41' is pushed in so that the button side of the slide is against the inside surface of groove 43 until it reaches its notch 47 after which it will snap into place therein.

Actually, in both forms of the invention the hair curler attachment tubes are constructed from molded plastic. In the first form of the invention, the tube is a composite one-piece member. In the second form of the invention, the tube is split lengthwise thereof into semi-cylinders. The slide 41 is mounted in one half. The other half has a latch spring 49 to latch the slide 41 in either its left hand vent closed or right hand vent open extreme positions. The spring 49 is seated in a groove 50 formed in this latter half of the tube 30 which other half is the upper half when viewing the drawings. The valve 38 is carried by the front end of slide 41 by an integral extension 41". Behind the valve 38 is an integral bridge portion 51 having a front latch notch 52 and a rear latch sloped surface 53. When the slide is moved forwardly to close valve 38 and open valve 40 and vent 37 the spring 49 catches on surface 53 to retain the slide in the position shown in FIG. 7. When the slide 41 is moved to the left to open valve 38 and close valve 40 and vent 37, the spring 49 catches in the notch 52 to retain the slide in the position shown in FIG. 6.

At this time, parts are assembled as shown in the drawings, the thumb actuator 46 is retained captive in its notch 47 by an integral strut 54 formed on finger 41' and a cooperative guide ridge 55 formed on the upper half of the tube. As shown in the drawings, the free or upper end of strut 54 moves in a lengthwise extending notch 56 formed in the guide 55 which also extends lengthwise of tube 30. The semi-cylinders of the tube can be connected together by a suitable cement or by not shown clamping rings or the like slipped over the tube after the parts are assembled together. To disassemble the device, the semi-cylinders are first removed with respect to each other. This removes the ridge 55 from abutting relationship with respect to the free or upper end of strut 54. This being so, the thumb button 46 can then be pushed in to clear its notch 47 so that the slide 41 is free to be removed by withdrawing it from its guide 43 in a left hand direction.

It will now be seen that the invention provides a hair curler attachment 41 from which the hair dryer can be easily to use and has a minimum number of parts whereby it is low cost. In addition, the device is versatile inasmuch as it is adaptable for connection to existing hair dryer hoses and a range of different sizes of existing hair curling forms.

While there have been shown and described particular embodiments of the invention, it will be obvious to those skilled in the art that changes and modifications may be made without departing from the invention, and that it is intended by the appended claims to cover all such
changes and modifications as fall within the true spirit and scope of the invention.

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A hair dryer curling attachment, comprising a tubular member, means at one end of said tubular member adapting said one end for removable connection to a hair dryer hose, means at the other end of said tubular member adapting said other end for removable connection to any one of a plurality of different size tubular hair curling forms, and means for heat insulating the portion of said tubular member between said ends to the sense of touch.

2. In an attachment as in claim 1, wherein said tubular member is constructed from molded plastic material, said means at said one end of said tubular member comprises a pair of diametrically spaced notches at said one end, and said means at the other end of said tubular member comprises a reduced diameter portion at said other end and shoulder means on the inside and outside of said reduced diameter portion.

3. In an attachment as in claim 2, wherein said heat insulating means comprises said tubular member having a pair of concentrically spaced tubular side walls, said tubular side walls being spaced from each other, and means entrapping dead air space between said side walls.

4. In an attachment as in claim 2, wherein said insulating means comprises spaced external integral fins on said tubular member extending lengthwise thereof, and said means at the other end of said tubular member comprises two reduced diameter portions at said other end.

5. In an attachment as in claim 4, wherein valve means is provided inside said tubular member at the opposite ends of said tubular member, a common valve slide actuator positioned in said tubular member for alternately opening each of said valve means and closing the other, the valve means at said one end being opened when the valve means at said other end is closed whereby said one end is vented to the atmosphere when said other end is closed to the passage of air therethrough.

6. A hair dryer curling attachment, comprising a tubular member, means at one end of said tubular member adapting said one end for removable connection to a hair dryer hose, means at the other end of said tubular member adapting said other end for removable connection to a tubular hair curling form, valve means inside said tubular member at the opposite ends thereof, a common valve slide actuator positioned inside said tubular member for alternately opening each of said valve means and closing the other, an atmospheric vent opening at said one end controlled by said one end valve means whereby when said common valve slide actuator is operated to close the valve means at said other end said one end is vented to the atmosphere.

7. In an attachment as in claim 6, wherein said common valve slide actuator comprises an elongated member extending lengthwise of said tubular member, the valve means at said other end comprising a circular valve seat at said one end having its axis aligned with the axis of said tubular member and a valve element on the contiguous end of said elongated member for opening and closing said valve seat, and the valve means at said one end comprising a valve element at the other end of said elongated member and a valve seat, said last mentioned valve seat comprising the contiguous edge of a hair dryer hose connector which is adapted to be inserted into said one end, and said vent opening comprising an air passageway formed at said one end, the inner end of said passageway being in communication with said one end valve means and the outer end of said passageway being open to the atmosphere.

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