Aug. 10, 1965 J. T. BEAN 3,199,218

HAIR DRIER

Filed Aug. 21, 1961 2 Sheets-Sheet 1

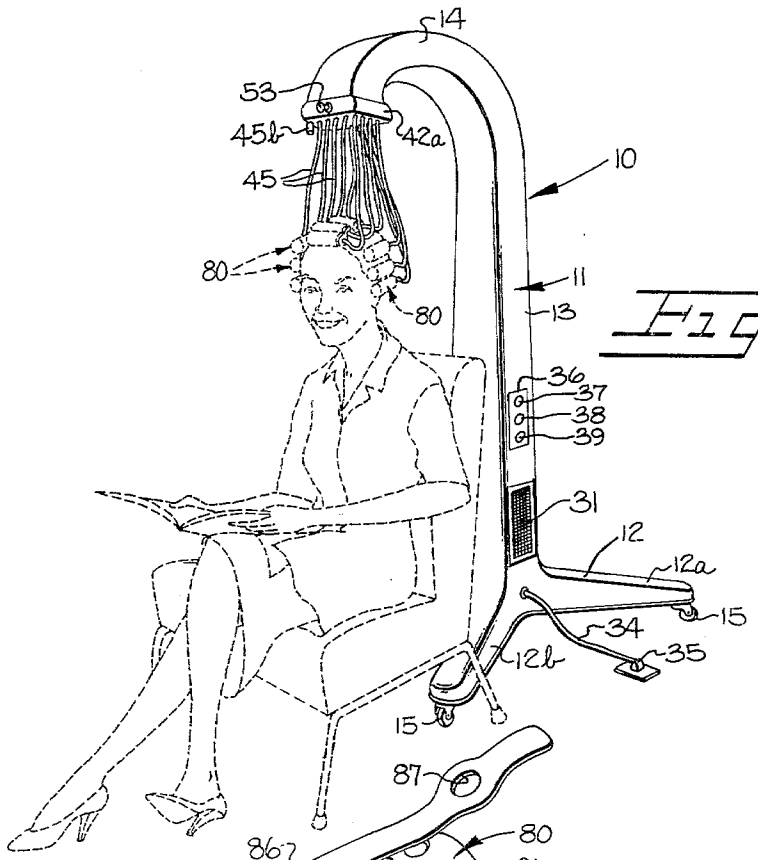


Fig-1

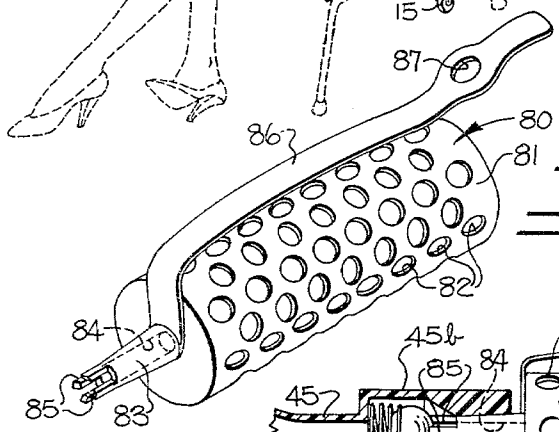


Fig-8

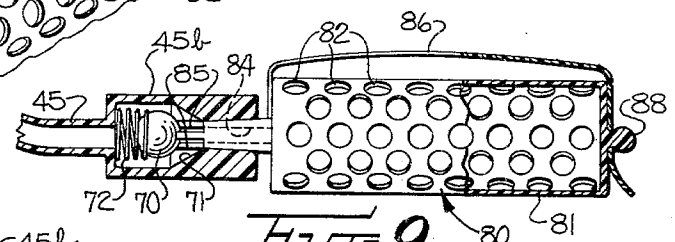


Fig-9

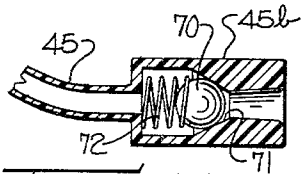


Fig-10

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HAIR DRIER

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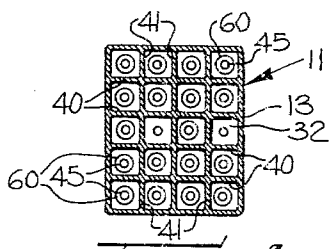


Fig-4

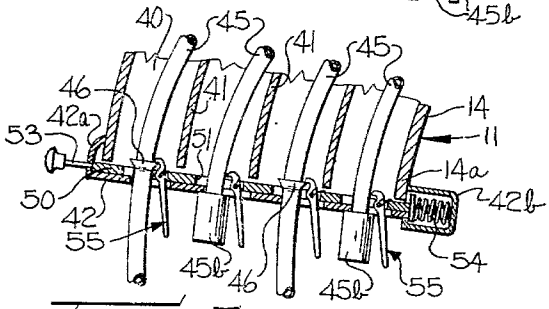


Fig-5

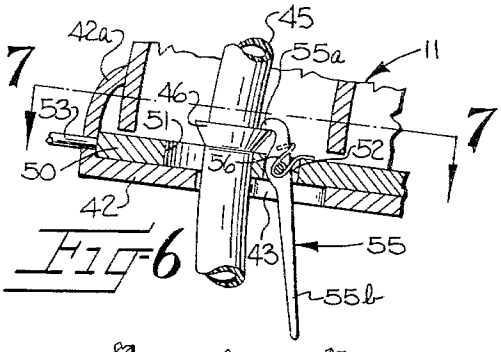


Fig-6

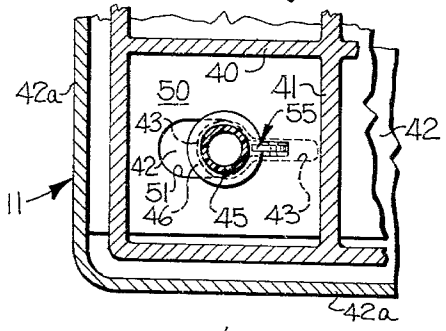


Fig-7

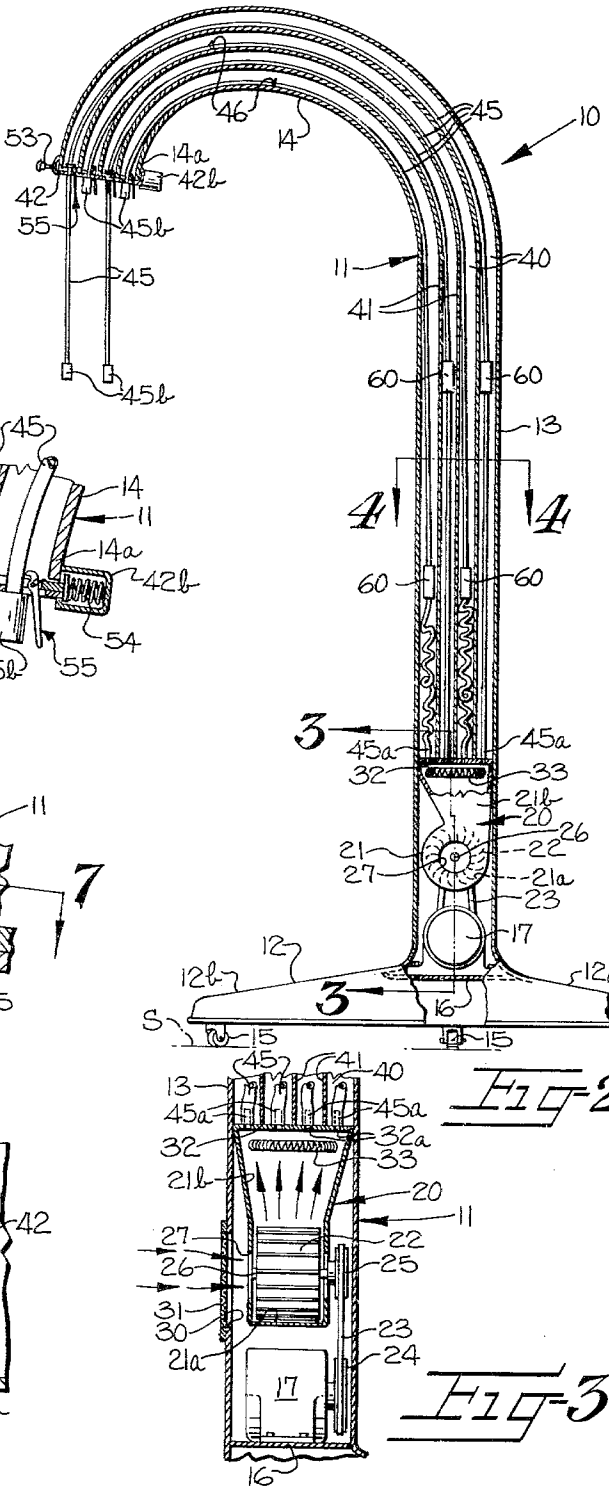


Fig-2

Fig-3

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3,199,218

HAIR DRIER

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5 Claims. (Cl. 34—98)

This invention relates to hair driers and more particularly to hair driers using currents of forced air directed against the hair of a user to dry the same.

The general type of hair driers to which the present invention more particularly relates may be termed the commercial or beauty salon type. Prior hair driers of this type normally comprise a standard carrying a hood of generally semi-spherical shape into which at least a portion of the head of the customer is inserted. The interior wall of the hood is generally perforated to allow currents of air to be directed upon the hair on the head partially inserted thereinto.

Problems were encountered in the use of these prior hair driers since the use thereof necessitated that the customer remain with the head, neck, and shoulders in substantially the same position for extended periods of time which proved to be very tiring causing excessive fatigue. Also, when heated air currents were being used, the same caused discomfort to the user since as the air currents were directed against the hair, the same were deflected downwardly across the face and neck of the customer. Further, if the customer's skin came in contact with the hood during the use of the same, there was likelihood that the person would be burned due to the heat conducted through the hood from the heated air, necessitating that extreme caution be used by the person whose head was partially inserted within the hood. Still further, when the person's hair was rolled into tightly formed curls, the prior hair driers directed the air currents only against the outer surface of such curls which did not cause the same to penetrate very deeply thereinto, resulting in an extended time being required for complete drying of the hair.

It is therefore an object of the present invention to provide a novel hair drier wherein the time required to dry the hair of a user is materially lessened and wherein the comfort of the user is enhanced while the hair is being dried.

A more specific object of the present invention is to provide a novel hair drier of the character last described wherein the comfort of the user is enhanced by allowing the user to freely move the head, neck, and shoulders while the hair is being dried, by preventing the air from the drier from contacting the face, neck, and shoulders of the user, and by obviating any likelihood of the user being burned.

A still more specific object of the present invention is to provide a hair drier of the character last described having a housing and a plurality of flexible, tubular members movable from a retracted position within the housing to an extended position wherein at least a portion thereof is disposed outwardly of the housing, the outward ends of the tubular members being adapted to be placed in intimate relation with the hair of a user, the flexible tubular members allowing the user to freely move the hand, neck, and shoulders while obviating the likelihood of being burned through contact with the heated structure.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which—

FIGURE 1 is a perspective view of a hair drier embodying the features of the present invention and illustrating the manner of intended use thereof;

FIGURE 2 is a side elevational view of the apparatus shown in FIGURE 1, partially in section and with portions broken away;

FIGURE 3 is an enlarged fragmentary section taken substantially along line 3—3 in FIGURE 2;

FIGURE 4 is an enlarged transverse sectional view taken substantially along line 4—4 in FIGURE 2;

FIGURE 5 is an enlarged fragmentary sectional detail of the portion of the housing shown in the upper left-hand portion of FIGURE 2;

FIGURE 6 is an enlarged fragmentary sectional detail of the left-hand portion of FIGURE 5;

FIGURE 7 is a sectional plan taken substantially along line 7—7 of FIGURE 6;

FIGURE 8 is an isometric view showing a curler forming a part of the apparatus of the present invention;

FIGURE 9 is a side elevational view of the curler shown in FIGURE 8 and a portion of one of the tubular members, partially in section and showing the manner of connection therebetween; and

FIGURE 10 is an enlarged fragmentary sectional view of the end of one of the tubular members showing the valve member therein in closed position.

Referring now to the drawings and more particularly to FIGURE 1 thereof, there is shown a hair drier generally indicated at 10 which includes a housing 11. Housing 11 comprises a base 12, a vertically disposed standard 13, and an overhanging arm portion 14. Base 12 includes three radially extending legs 12*a*, 12*b*, and 12*c* which are mounted on suitable caster wheels 15 for portable movement of the apparatus over a suitable supporting surface S.

Standard 13 and overhanging arm 14 are preferably tubular or hollow with arm 14 defining an extension of standard 13 (FIGURE 2). Standard 13 extends upwardly from base 12 a distance greater than the average height of a person sitting upon an average size chair, as is clearly shown in FIGURE 1, and arm 14 curves outwardly and upwardly and then downwardly therefrom to a point where arm 14 terminates in a downwardly opening free end portion 14*a*. It is noted that arm 14 extends outwardly from standard 13 a sufficient distance such that, when standard 13 is positioned in back of a chair in which a person is seated, the free end portion 14*a* will be positioned above the person's head. It is further noted that free end portion 14*a* is disposed a sufficient distance above the base 12 such that the tallest person may sit in an average size chair therebeneath without contacting the same and without the free end portion 14*a* interfering or restricting the movement of the person's head.

Standard 13 is divided or separated from base 12 by a lower closure plate 16 which serves as a mounting for a motor 17 (FIGURE 2). A centrifugal fan 20 is mounted in the lower portion of standard 13 above closure plate 16 and motor 17 carried thereby. Fan 20 comprises a housing or casing 21 and an impeller 22 rotatably mounted within a portion 21*a* of casing 21. Impeller 22 is suitably driven by motor 17 by a belt 23 which is drivingly mounted at one end on a pulley 24 (FIGURE 3) which in turn is mounted on the output shaft (not shown) of motor 17 and which is mounted at the other end by a pulley 25 which in turn is mounted on shaft 26 of impeller 22.

Impeller 22 communicates with the atmosphere through a suitable opening 27 formed in casing 21 and an opening 30 in the wall of standard 13. A filter 31 is mounted on standard 13 covering opening 30 and serves to remove dust and other impurities from the air delivered to impeller 22. Casing 21 has a portion 21*b* extending upwardly from the impeller enclosing portion 21*a* which

serves to direct the air discharged by impeller 22 upwardly in standard 13.

An upper closure member or plate 32 (FIGURES 2 and 3) is mounted in standard 13 across the upper end of portion 21*b* of casing 21 and serves to separate the fan enclosing portion of standard 13 from the remaining portion thereof and from overhanging arm 14. Plate 32 cooperates with portion 21*b* of casing 21 to define a compression chamber by serving to restrict the outward flow of air from the impeller 22 which causes the air to be compressed to a certain degree within portion 21*b*.

A heating coil 33 is mounted in portion 21*b* of casing 21 and is connected to a suitable electrical source (not shown) by a suitable cord 34 and male plug 35 for heating the air discharged by impeller 22 as desired. A suitable control panel 36 (FIGURE 1) for controlling operation of motor 17 and of heating element 33 is mounted on the exterior of standard 13 and has a suitable on-off switch 37 for starting and stopping motor 17 and a pair of control switches 38, 39 for selectively controlling the heating element 33 and the temperature thereof.

The remaining portion of standard 13 and the overhanging arm 14 are divided into a plurality of separate longitudinally extending chambers by a plurality of intersecting walls 40, 41 (FIGURES 2 and 4). Walls 40, 41 extend substantially throughout the entire length of standard 13 and overhanging arm 14 from the closure plate 32 to the free end portion 14*a* of overhanging arm 14. The free end portion 14*a* of overhanging arm 14 is closed by a closure plate 42 (FIGURE 5) which has openings 43 therein opposite the open end of the chambers defined by intersecting walls 40, 41. Openings 43 are preferably formed in a key-hole shape for reasons to be presently described. Closure plate 42 has an upturned flange 42*a* which receives the free end portion 14*a* of arm 14 therein with the end thereof in spaced relation to the portion of plate 42 having the openings 43 therein for reasons also to be presently described.

A tubular member 45 (FIGURES 2 and 5) is positioned in each of the chambers defined by the intersecting walls 40, 41 and has one end 45*a* thereof connected to the upper closure plate 32 and the other end portion 45*b* thereof extending through the circular portion of openings 43 in closure plate 42. End portion 45*b* is suitably enlarged so that the outside diameter is larger than the diameter of openings 43 so that end portion 45*b* is retained outwardly of overhanging arm 14. Tubular members 45 communicate with the compressed air chamber defined by the portion 21*b* of casing 21 and the upper closure plate 32 by suitable openings 32*a* formed in closure member 32. Tubular members 45 have an annular collar 46 formed thereon a distance spaced from the end portions 45*b* substantially equal to the distance at which the tubular members are to project from the free end portion 14*a* when in extended position.

A latch release member 50 (FIGURES 5 and 6) is slidably mounted on closure plate 42 between the portion of closure plate 42 having the openings 43 therein and the end of the free end portion 14*a* of arm 14. Member 50 has a first set of openings 51 therein which each receive one of the tubular members 45 therethrough and a second set of openings 52, each of which is formed closely adjacent to one of the openings 51 for reasons to be presently described. A handle 53 is connected at one end to member 50 and extends outwardly therefrom through an opening in flange 42*a* of plate 42 for manual sliding movement of member 50. A compression spring 54 (FIGURE 5) is mounted in an enlarged portion 42*b* of flange 42*a* and engages the side of member 50 opposite from handle 53 to bias member 50 to the left as seen in FIGURE 5.

An individual latch member 55 is pivotally mounted intermediate its end on latch release member 50 within each of the openings 52 and has a suitable hook portion 55*a* which extends upwardly from member 50 and is adapted to engage the upper surface of collar 46 to retain the tubular members 45 in extended position. Latch member 55 has a handle portion 55*b* which extends downwardly from member 50 through the rectangular portion of the keyhole openings 43 in the closure member 42 and outwardly therefrom a distance such that the same may be engaged by the fingers of the operator of the apparatus to move the latch member 55 about its pivot to individually release each of the tubular members 45. It is noted that latch members 55 are movable with latch release member 50 to unlatched position by manual movement of handle 53 and are collectively biased toward latch position or to the left as seen in FIGURE 5 by compression spring 54. In addition, a spring 56 is mounted on the pivot for each of the latch members 55 and serves to individually bias each of the latch members toward latched position or toward the tubular members 45.

A counterweight 60 (FIGURE 2) is mounted on each of the tubular members 45 within the vertically disposed standard 13 and serves to bias the same toward the retracted position. Counterweights 60 are of sufficient weight to overcome the frictional resistance to movement of the tubular members 45 within the standard 13, overhanging arm 14 and the openings in closure plate 42 and to move the tubular members 45 to the retracted position by the action of gravity when latch members 55 are moved out of contact with collars 46. While counterweights 60 are preferred as a means for biasing the tubular members to the retracted position, it is contemplated that other suitable means may be used without departing from the spirit of the instant invention.

The enlarged end portions 45*b* of tubular members 45 have a valve member 70 (FIGURES 9 and 10) mounted therein which is normally seated against a tapered valve seat 71 by a compression spring 72 to close the opening therethrough so that no loss of air will occur when the tubular members 45 are not being used. Valve member 70 is adapted to be moved away from valve seat 71 against the action of spring 72 in a manner to be presently described to allow air to flow outwardly through end portion 45*b*.

Referring now to FIGURE 8, there is shown a curler 80 which comprises a cylindrical body portion 81 which is preferably tubular or hollow and which has the side wall thereof suitably perforated as at 82 to allow air to readily escape from the interior thereof. One end of the cylindrical body portion 81 is provided with an extension 83 which is likewise tubular and communicates with the interior of body portion 81 through a suitable opening 84 formed in said one end wall. Extension 83 is tapered outwardly from body portion 81 and terminates in a free end. The free end of extension 83 is tapered to conform to the periphery of valve member 70 and has a plurality of slots 85 extending inwardly toward body portion 81 to allow air to enter extension 83 when the free end is seated against valve member 70. Extension 83 is adapted to be inserted in the opening in the enlarged end portion 45*b* of one of the tubular members 45 and to have the slotted free end thereof engage valve member 70 and move the same away from valve seat 71 against the action of compression spring 72. It is noted that extension 83 enters the opening in the enlarged end portion 45*b* with a sufficiently tight fit to prevent leakage of air therearound and to securely attach the curler 80 to the end of the tubular member 45 and to retain the same in connected relation against the action of the compression spring 73.

A strap member 86 is connected at one end to the same end of body portion 81 as extension 83 by any suitable means and extends in juxtaposed relation to the side wall of body portion 81 to a point where the same terminates in a free end portion. Such free end portion has an opening 87 therein whcih is adapted to receive a button 88 mounted on the end of body portion 81 opposite from extension 83 therein. Button 88 fastens the free end

portion of strap 86 to said other end portion for reasons to be presently described.

In operation, curler 80 is suitably applied to the hair of a person by winding the hair around body portion 81 and then placing strap member 86 over the thusly wound hair and inserting the button 88 through opening 87 to secure the free end portion of strap member 86 to said other end of body portion 81. A suitable number of curlers 80 are used until the hair of the person is formed in the desired coiffure. A like number of tubular members 45 are selected and are manually extended outwardly of the free end portion 14*a* of the overhanging arm 14 until the annular collars 46 move past the point of the hook portions 55*a* over the upper surface of collars 46 such that the tubular members 45 are retained in the extended position.

Extensions 83 on curlers 80 are then inserted into the end portions 45*b* of the selected tubular members 45 thereby moving valve members 70 away from valve seats 71 against the action of compression springs 73. When all of the curlers are connected to tubular members 45, switch 35 is moved to "on" position to cause impeller 22 to direct air upwardly into portion 21*b* of casing 21. If heated air is desired to be used to dry the hair of the person, heating coil 33 is actuated and the temperature thereon is selected by moving one of the switches 36, 37 to the "on" position.

The air is restricted in its upward flow by closure plate 32 and is compressed to a certain degree within portion 21*b* of casing 21. The compressed air enters tubular members 45 through the openings 32*a* in enclosure plate 32 and is transmitted by the tubular members to and outwardly through the enlarged end portions 45*b* into the extensions 83 of curlers 80 through the slots 85. The air is delivered by the extensions 83 to the interior of the cylindrical body portions 81 and escapes outwardly through the perforations 82 against the hair wound around body portion 81. It will therefore be seen that the hair is dried from the inside of the curls outwardly which materially reduces the time of drying thereof.

When the hair becomes dry, curlers 80 are disconnected from the tubular members 42 by manually retracting the extensions 83 from the enlarged end portions 45*b* and the latch members 55 are either individually released by movement of the latch members about their pivots or are collectively released by sliding movement of the latch release member 50 by manual movement of the handle member 53. Curlers 80 are then removed from the person's hair and drying thereof has been completed.

It will therefore be apparent that a novel hair drier is provided which materially decreases the time required to dry a person's hair, which is safer to use since any likelihood of the person being burned is obviated and which is more comfortable to use since a person may readily move the head, neck and shoulders without interfering with the efficient operation of the apparatus.

In the drawings and specification there has been set forth a preferred embodiment of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. Apparatus for drying hair by warm air currents comprising an upright housing, a plurality of flexible tubular members having inner end portions fixed in the lower portion of said housing and extending upwardly therein and outer end portions mounted for independent movement between a retracted position wherein the same are disposed within the upper portion of said housing and an extended position wherein the same are disposed at least partially outside said housing, hair engageable means detachably connected to said outer end portions of a selected number of said tubular members when in extended position and adapted to be disposed in intimate relation with the hair of a person using the apparatus, means positioned within the lower portion of said upright housing and communicatively connected to the inner end portions of said tubular members for supplying heated air through said tubular members and said hair engageable means to the hair of the user, latch means mounted on said housing and engageable with each of said outer end portions for releasably maintaining the same in the extended position, and means disposed within said upright housing and being connected to each of said tubular members for moving said outer end portions thereof from the extended position to the retracted position upon release of said latch means.

2. Apparatus according to claim 1 wherein said upright housing includes a base portion, a tubular standard portion mounted on said base and extending upwardly therefrom, and a tubular overhanging arm portion mounted at one end thereof on said standard portion and terminating at the other end thereof in a downwardly directed free end, said free end being adapted to overlie the head of a user, and including means disposed in said standard and overhanging arm portions for dividing the same into a plurality of longitudinally extending separate chambers communicating with the free end of said overhanging arm, said chambers being equal in number to said tubular members and each of said tubular members being disposed in a separate chamber.

3. Apparatus for drying hair by warm air currents comprising a housing including a base portion, a tubular vertical standard portion mounted on said base portion, and a tubular overhanging arm portion extending outwardly from the upper end of the vertical standard and terminating in a downwardly opening free end, said free end being adapted to overlie the head of a user, a plurality of flexible tubular members having inner end portions fixed in said standard portion and extending upwardly in said housing and outer end portions mounted for independent movement between a retracted position wherein the same are disposed within said arm portion of said housing and an extended position wherein the same are disposed partially outside the free end of said overhanging arm portion, said outer end portions of said tubular members when in extended position being adapted to have curler means detachably connected thereto to be disposed in intimate relation with the hair of a person using the apparatus, means mounted within the vertical standard portion of said housing and communicatively connected to the inner end portions of said tubular members for supplying heated air through said tubular members to the hair of the user, a plurality of latches mounted on the free end of said overhanging arm portion and being equal in number to said tubular members and engageable with each of said outer end portions for releasably maintaining the same in extended position, and a plurality of counterweights disposed within said standard portion of said housing and being equal in number to said tubular members and being connected to each of said tubular members for moving the outer end portions thereof from the extended position to the retracted position upon release of said latches.

4. Apparatus according to claim 3 wherein said latches are individually releasable for individual and independent movement of said outer end portions of said tubular members from the extended position to the retracted position, and including means operatively connected to said latches for collectively releasing the same for collective movement of said outer end portions of said tubular members from the extended position to the retracted position.

5. Apparatus for drying hair by warm air currents comprising a housing, means within said housing for dividing said housing into a plurality of separate chambers, a flexible tubular member disposed in each of said chambers in said housing and having an inner end portion fixed in said housing and an outer end portion mounted for movement between a retracted position wherein the same is disposed substantially within said housing and

an extended position wherein the same is disposed at least partially outside of said housing, said outer end portions of said flexible tubular members when in extended position being adapted to receive curler means thereon which in turn are adapted to be placed in intimate relation with the hair of a person using the apparatus, means communicatively connected to the inner end portions of said tubular members for supplying heated air through said tubular members to the hair of the user, releasable latch means mounted on said housing and engageable with the outer end portion of each of said tubular members for releasably maintaining the same in the extended position, and means disposed within said housing and operatively connected to each of said tubular members for moving the outer end portions thereof from the extended position to the retracted position upon release of said latch means.

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