

[54] **HAIR SETTING-DRYING DEVICE**

[75] Inventors: **Henry J. Walter**, Wilton, Conn.; **Edward J. Doyle**, Hatboro; **Robert R. Ream**, Ephrata, both of Pa.

[73] Assignee: **Schick Incorporated**, Lancaster, Pa.

[22] Filed: **Oct. 2, 1970**

[21] Appl. No.: **77,604**

3,267,587	8/1966	Niemiec et al.	34/99
R19,724	10/1935	Martin	34/100 X
2,218,868	10/1940	Bichon	219/301
1,346,586	7/1920	Barber	287/58
1,765,379	6/1930	McGinnis	34/99
2,074,018	3/1937	Gross	34/100
2,201,229	5/1940	Gross	34/99 X
3,081,393	3/1963	Wohl	219/38
3,348,316	10/1967	Reiss et al.	34/99
3,362,086	1/1968	McLean	34/99

Related U.S. Application Data

[63] Continuation of Ser. No. 649,209, June 27, 1967, abandoned.

[52] U.S. Cl. **34/99, 34/90, 34/97**

[51] Int. Cl. **A45d 20/00**

[58] Field of Search **34/96-101; 132/9; 219/38, 301; 287/58**

References Cited

UNITED STATES PATENTS

3,004,540 10/1961 Ronzi 132/9

Primary Examiner—Kenneth W. Sprague

Assistant Examiner—James C. Yeung

Attorney—Kane, Dalsimer, Kane, Sullivan & Kurucz

[57] **ABSTRACT**

A hair drying device in which provision is made for the generation and injection of steam into the duct system during a predetermined portion of the cycle of operation.

19 Claims, 19 Drawing Figures

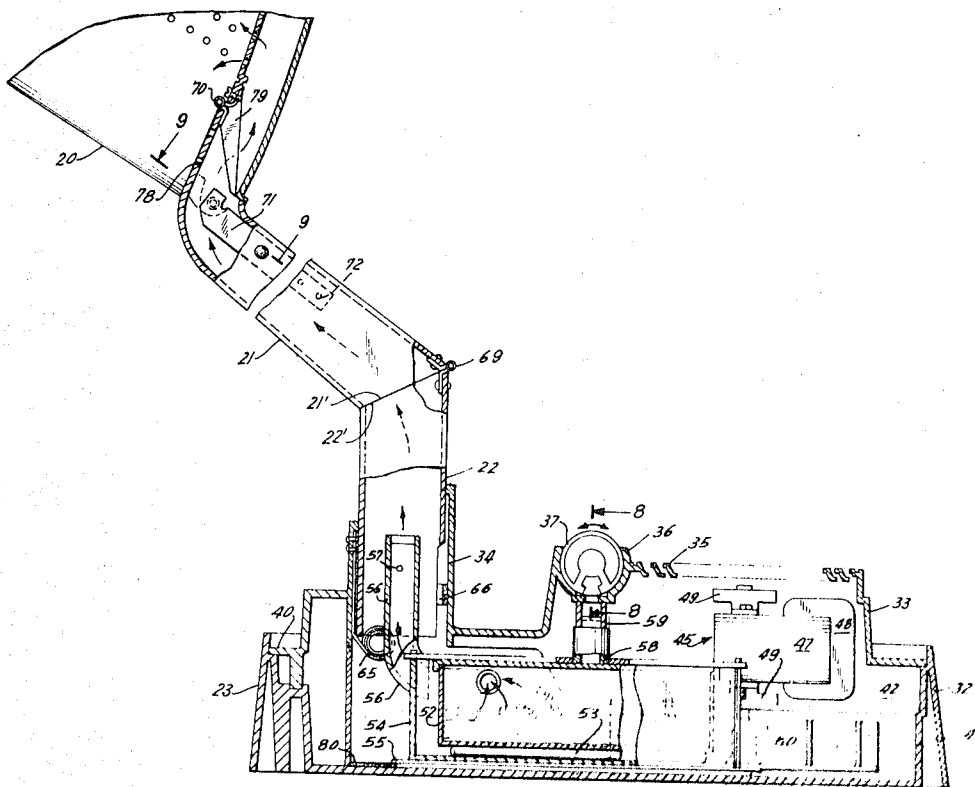


FIG. 1

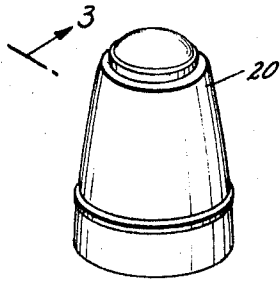


FIG. 2

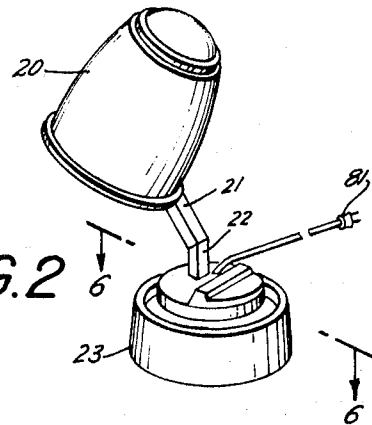
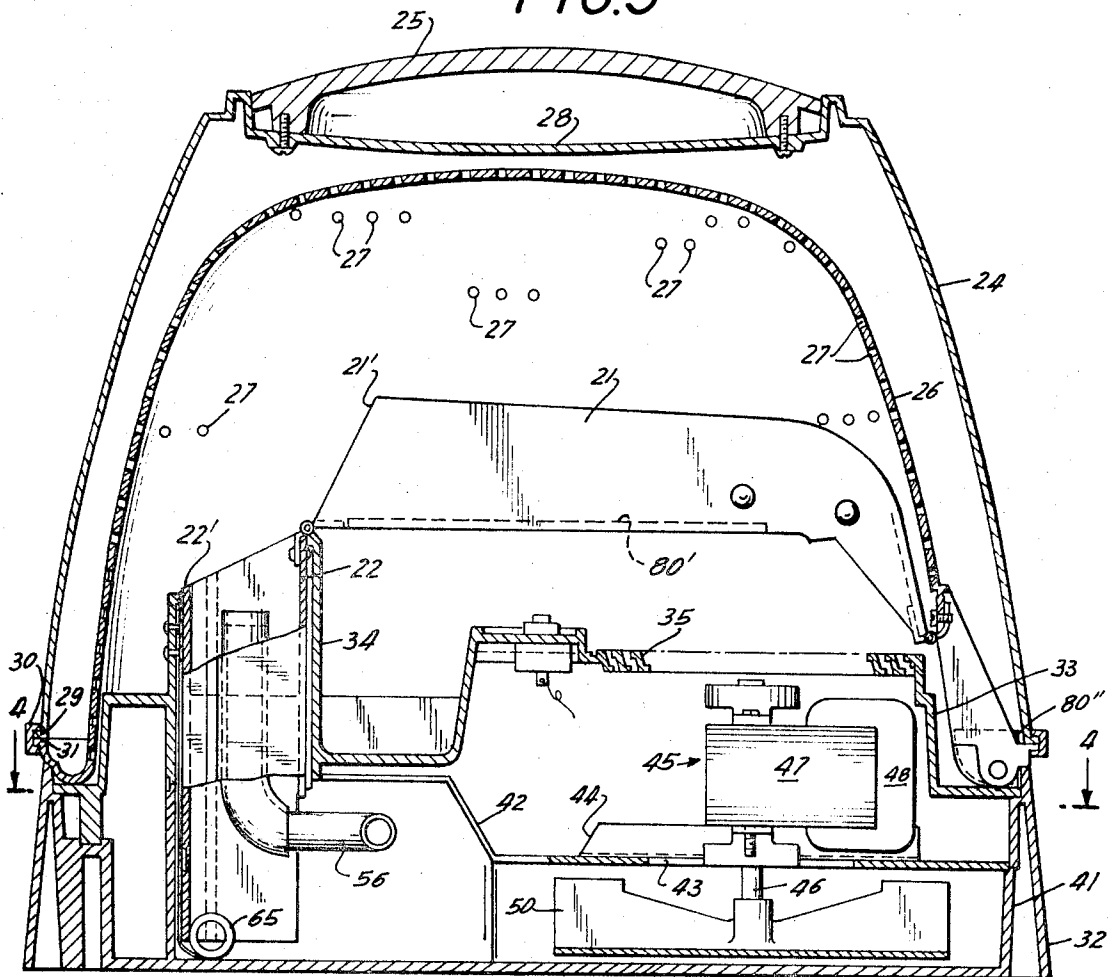


FIG. 3



INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
BY ROBERT A. REAM

Kane, Dabner, Kane, Sullivan & Kuehn
ATTORNEYS

FIG. 4

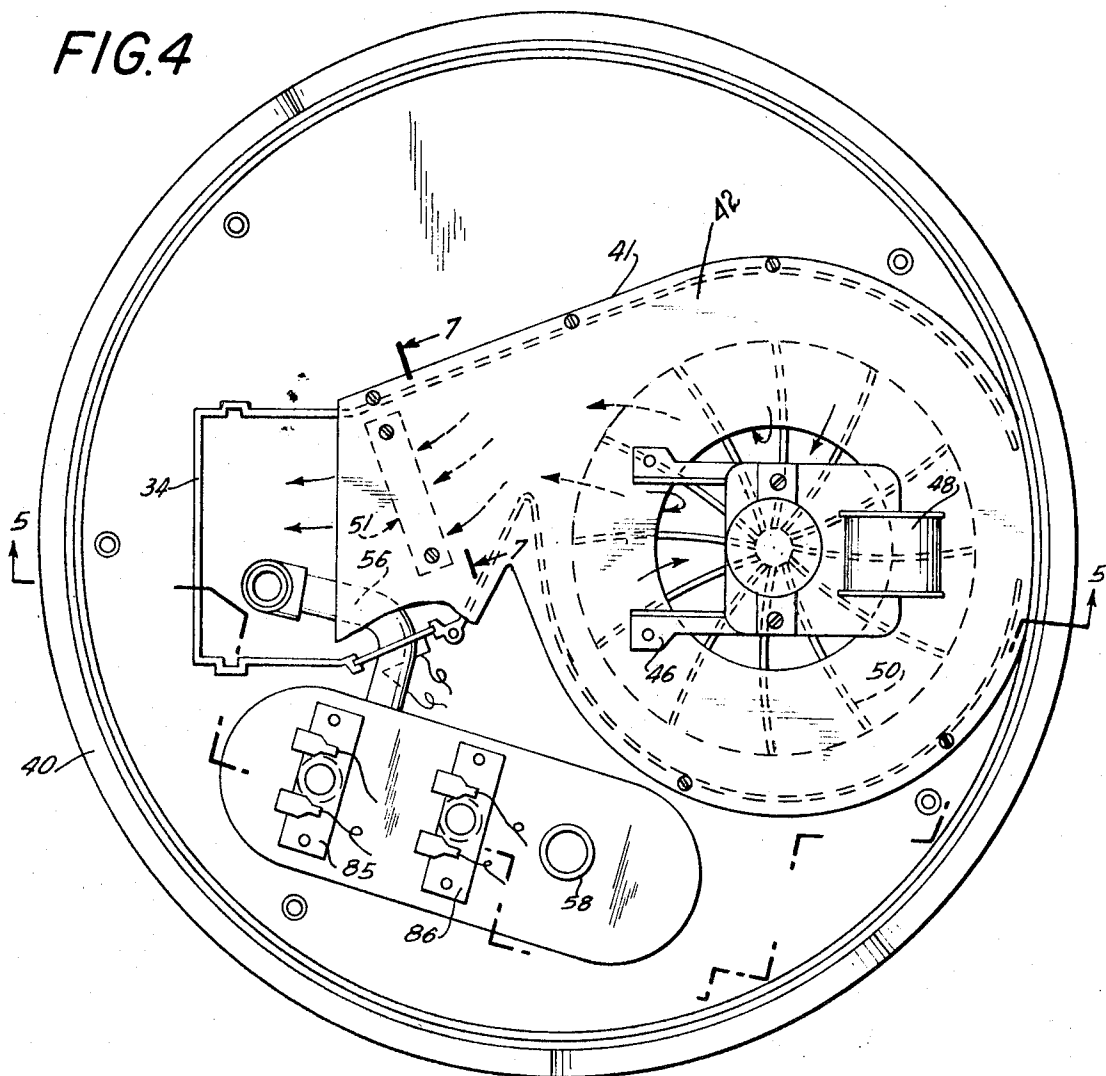
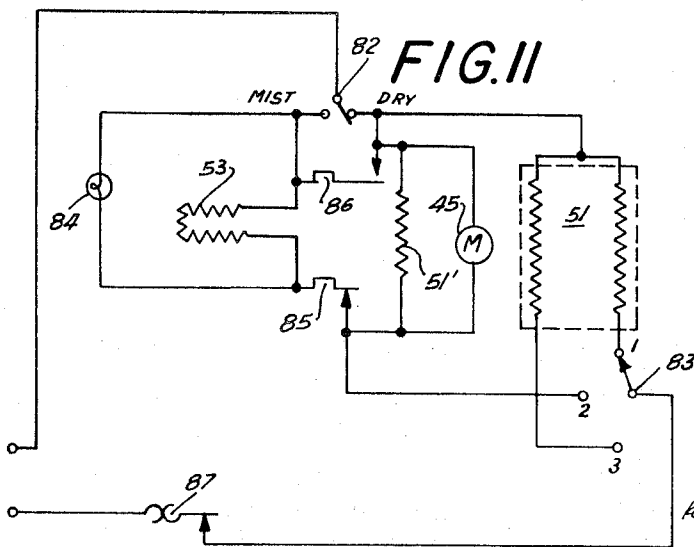
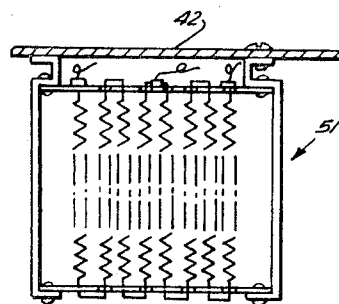


FIG. 7

INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
BY ROBERT A. REAM

Kane, Doherty, Kane, Sullivan & Lunnay
ATTORNEYS

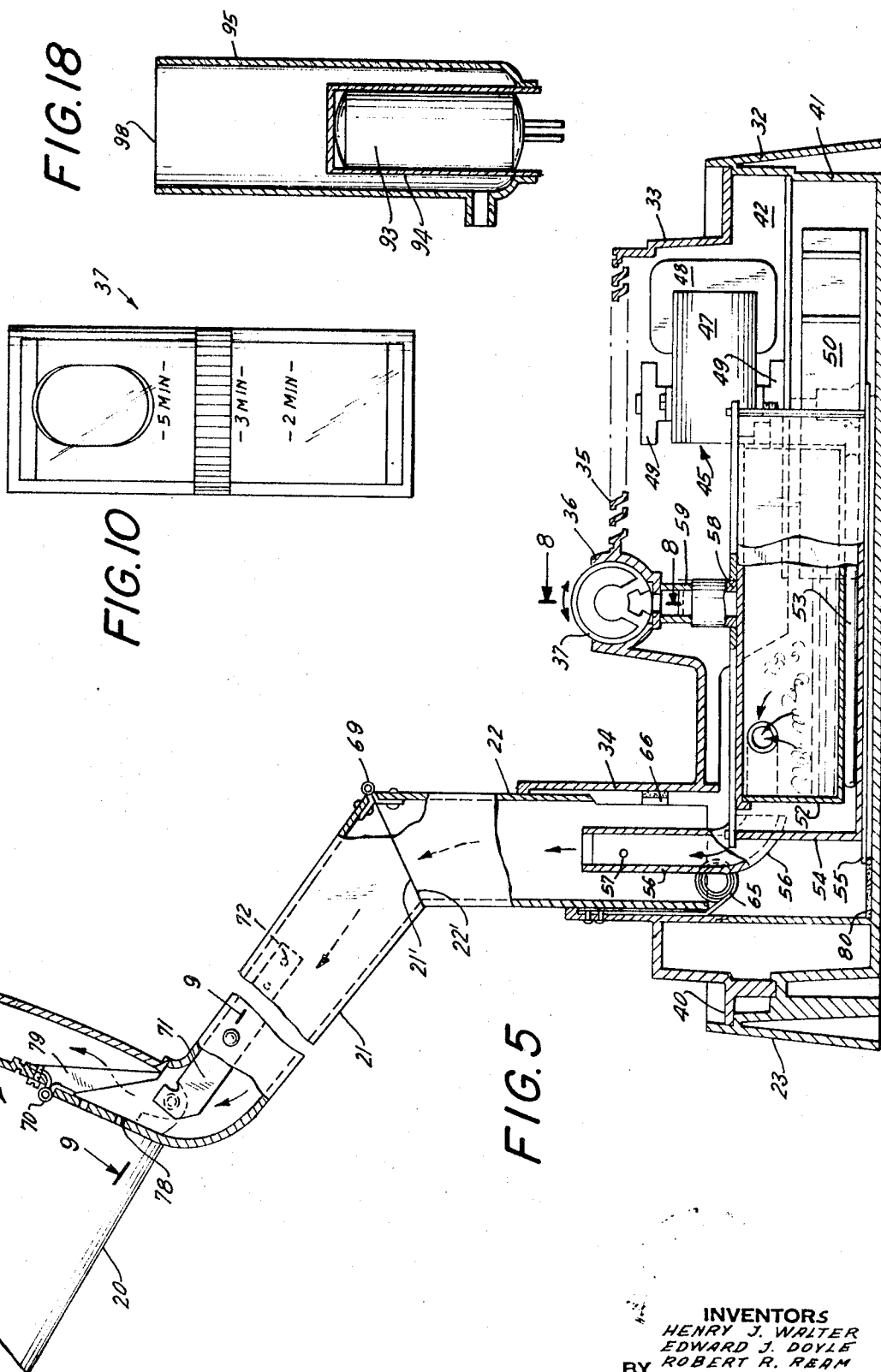


FIG. 5

FIG. 18

FIG. 10

INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
BY ROBERT R. REAM

Kase, Johnson, Kase, Sullivan & Kase
ATTORNEYS

FIG. 6

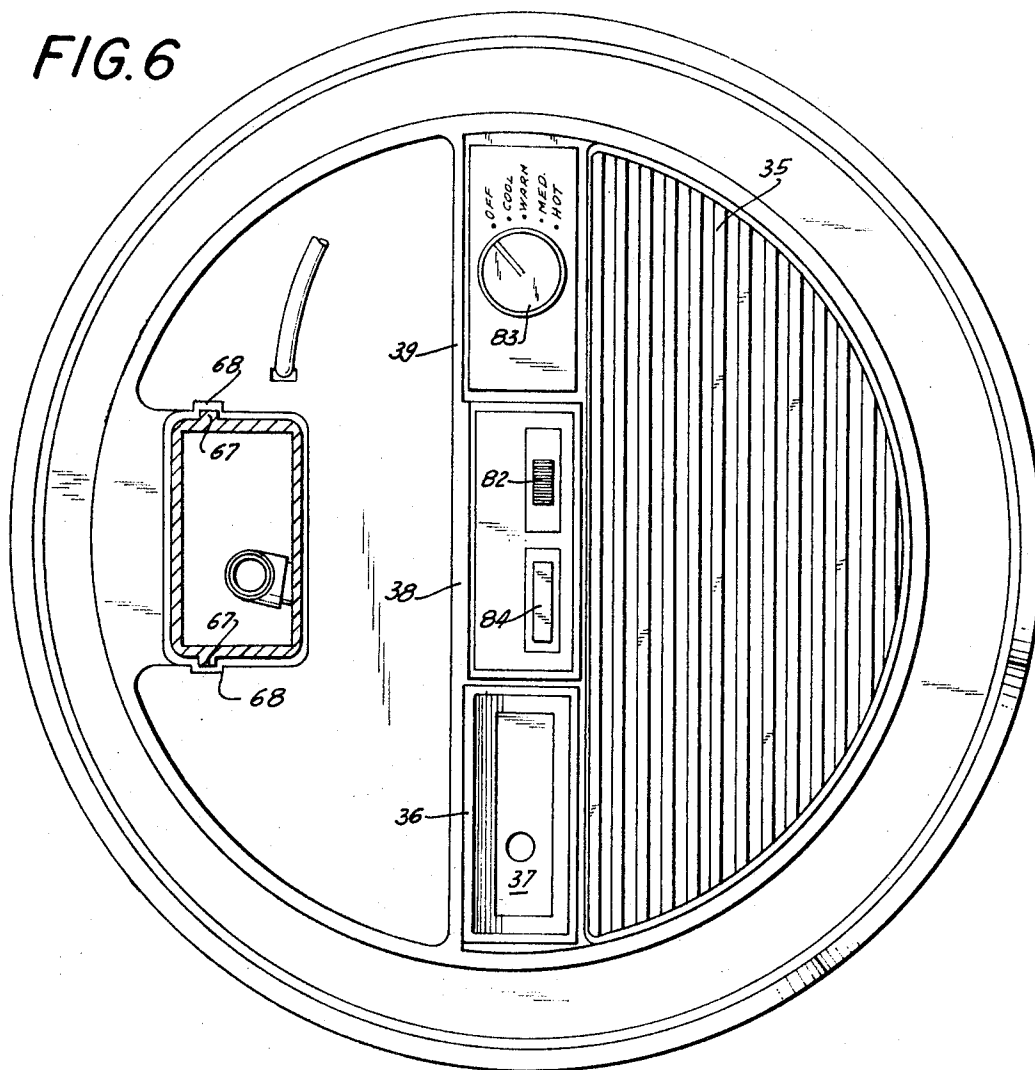
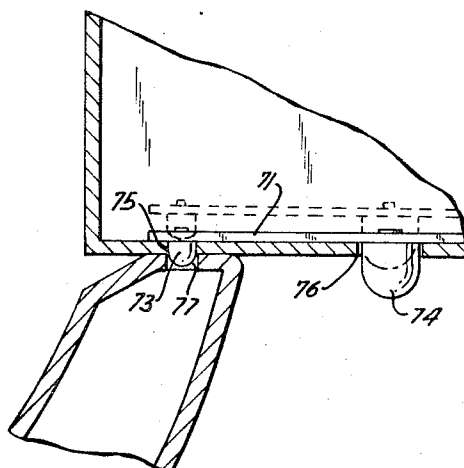


FIG. 9



INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
BY ROBERT R. REAM

Kane, Dabner, Kane, Sullivan & Loney
ATTORNEYS

SHEET 5 OF 7

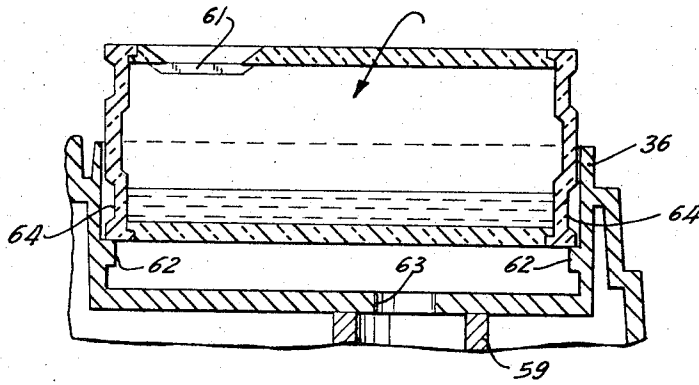


FIG. 8

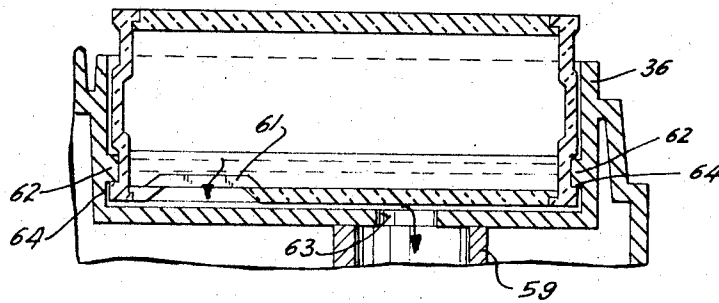


FIG. 8a

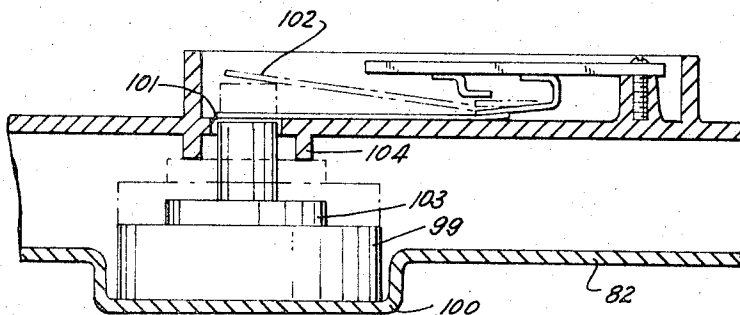


FIG. 14

INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
BY ROBERT R. REAM

Kane, Dobson, Kane, Sullivan & Kurycz
ATTORNEYS

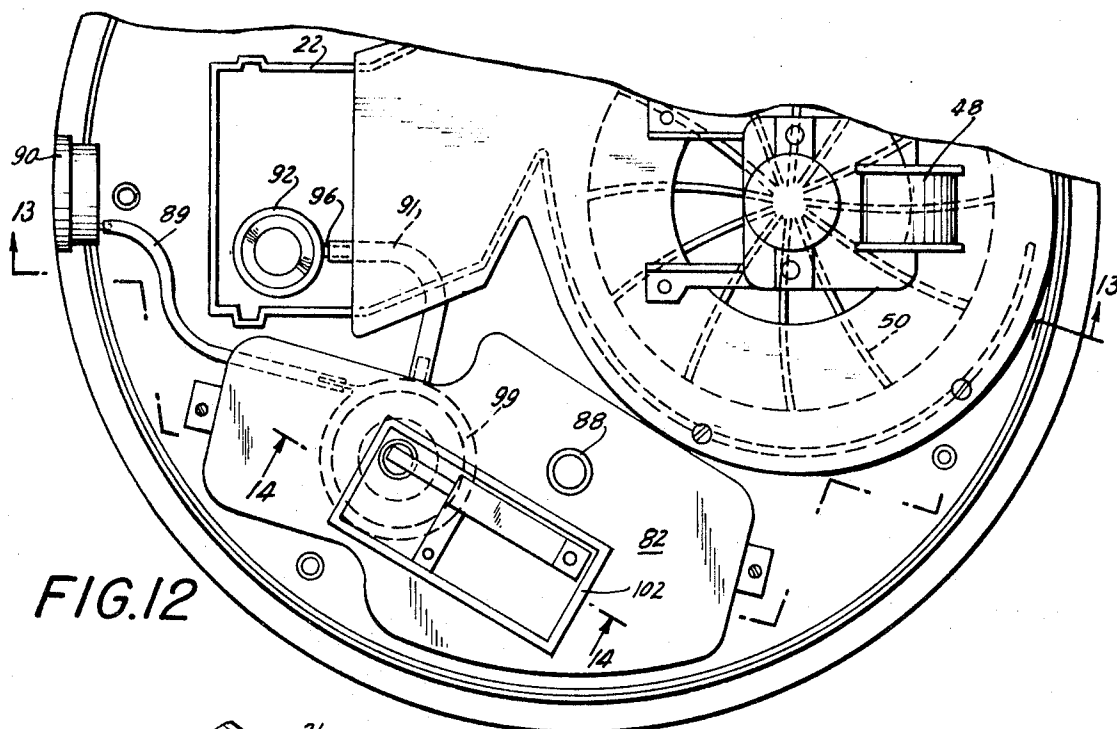


FIG. 12

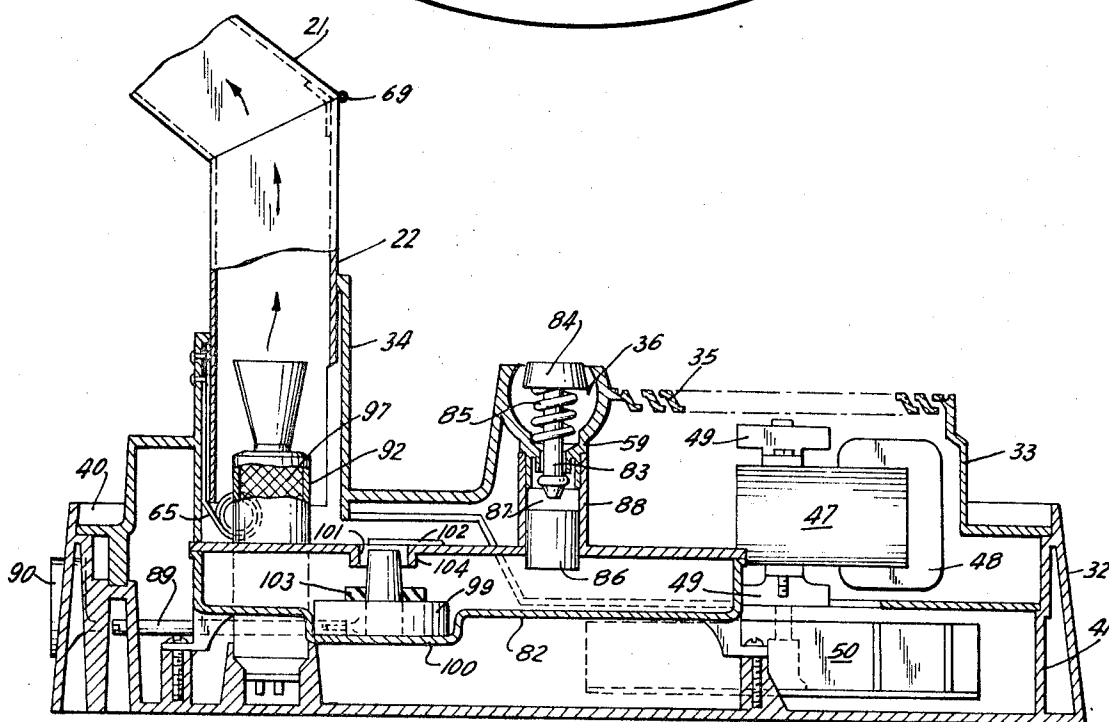


FIG. 13

INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
ROBERT R. REAN

BY
Kane, Salmon, Kane, Sullivan & Kung
ATTORNEYS

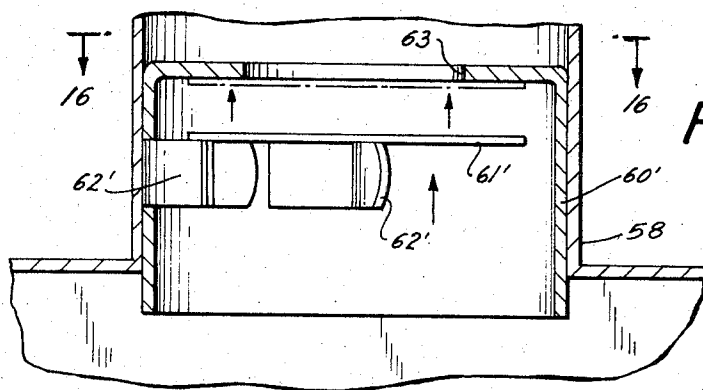


FIG. 15

FIG. 16

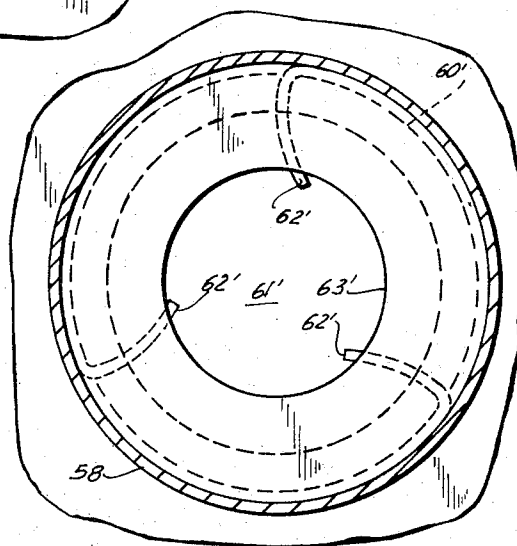
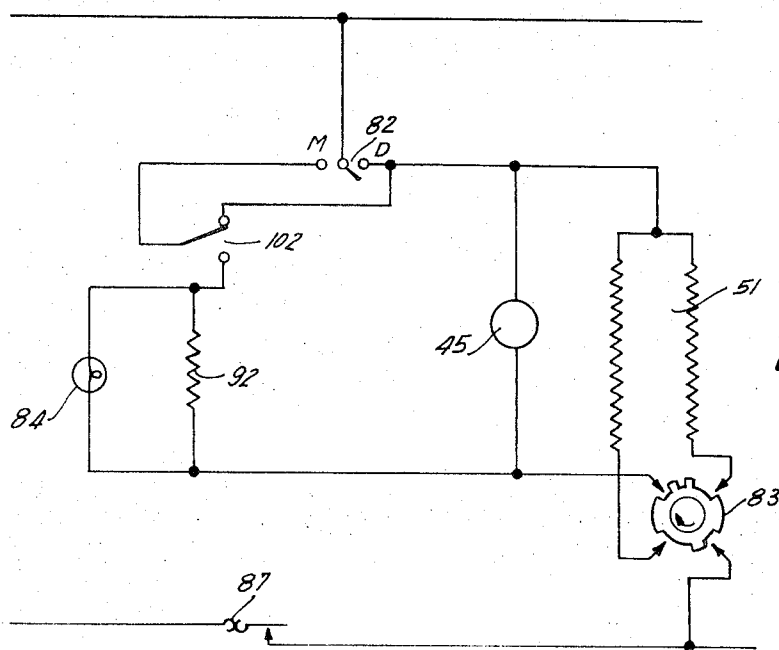


FIG. 17

INVENTORS
HENRY J. WALTER
EDWARD J. DOYLE
ROBERT R. REAM
BY

Kane, DeBorja, Kane, Sullivan & Kuehny
ATTORNEYS

HAIR SETTING-DRYING DEVICE

CROSS-REFERENCE TO RELATED APPLICATION

This is a continuation of application Ser. No. 649,209, filed June 27, 1967, now abandoned.

BACKGROUND OF THE INVENTION

Hair consists of keratin held together by disulfide chains. To "set hair," — change its shape, the disulfide bond must be broken and reconstituted in the new shape. Steam will penetrate the outer hair shaft by osmosis faster and more completely than water and will swell the hair and soften the disulfide bridges.

When the hair is then treated with hot dry air, the moisture evaporates and the hair solidifies, setting the hair in the new shape. As less moisture is brought to the hair solidifies, setting the hair in the new shape. As less moisture is brought to the hair by application of steam than in washing, less drying time is required so that the entire hair setting cycle is shorter than the conventional drying cycle after washing. And, of course, the hair does not have to be washed.

Further, when steam is used it is actually distilled water devoid of all insoluble mineral matter which is applied and this accounts for better moisture penetration through the hair shaft and a softener, cleaner, and healthier looking curl.

Since steam will penetrate hair deeper and better than a cold liquid, the use of steam can improve color penetration in coloring and the use of elevated temperature increases the chemical reaction time. Hence coloring of hair can be achieved in a fraction of the normal time and hard to color hair (gray) can accept the color better. Again, the swelling and penetrating function of steam speeds all treatment processes and insures better penetration of the treatment chemical.

SUMMARY OF THE INVENTION

A portable device energized by electrical house current having a duct system with a fan disposed therein for drawing air into the duct. A heating unit is disposed in the duct system which system terminates in a hood so that heated air can be dispensed from said hood. A tank for receipt of liquid disposed in the unit with steam generating means for transforming the liquid into steam for injection into the duct system to be dispensed by the hood. Suitable electrical controls for regulating the cycle of operation.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a hair setting-drying device constructed in accordance with the teachings of this invention assembled for storage or transport;

FIG. 2 is a perspective view of the device shown in FIG. 1 in open position and ready for use;

FIG. 3 is an enlarged vertical section taken along the line 3—3 in the direction of the arrows in FIG. 1;

FIG. 4 is a horizontal sectional view taken along the line 4—4 in the direction of the arrows in FIG. 3;

FIG. 5 is a fragmentary vertical sectional view taken along the line 5—5 in the direction of the arrows in FIG. 4 illustrating the device in open position;

FIG. 6 is a plan view of the base of the device taken along the line 6—6 in the direction of the arrows in FIG. 2;

FIG. 7 is a view of the air heater taken along the line 7—7 in the direction of the arrows in FIG. 4;

FIG. 8 is a sectional view taken along the line 8—8 in the direction of the arrows in FIG. 5 illustrating the filling capsule of the device partially inserted in its receiving cavity;

FIG. 8a is a view similar to FIG. 8 illustrating the filling capsule fully inserted within its receiving cavity;

FIG. 9 is an enlarged partially sectional view taken along the line 9—9 in the direction of the arrows in FIG. 5 illustrating the lockable pivotal connection of upper duct and inner hood liner;

FIG. 10 is a plan view of the filling capsule;

FIG. 11 is a schematic of the control circuitry used in the device;

FIG. 12 is a horizontal sectional view with portions cut away of a second embodiment of the device in which an alternate means for steam generation and control is utilized;

FIG. 13 is a vertical sectional view of the second embodiment of the device taken along the line 13—13 in the direction of the arrows in FIG. 12;

FIG. 14 is a partially sectional view taken along the line 14—14 in the direction of the arrows in FIG. 12 illustrating the modified form of control for steam generation utilized in this embodiment;

FIG. 15 is a partially sectional view of the blow back valve used in the embodiment of the invention shown in FIG. 5;

FIG. 16 is a partially sectional view taken along the line 16—16 in the direction of the arrows in FIG. 15;

FIG. 17 is a schematic of the control circuitry used in the embodiment of the invention illustrated in FIGS. 12 through 16; and

FIG. 18 is a partially sectional enlarged side view of the steam generator utilized in the embodiment of the invention illustrated in FIGS. 12 through 17.

The device as illustrated in the Figures has a hood 20 connected by upper and lower ducts 21 and 22, respectively to base 23 through a series of hinged connections which will be described below which allow for transition between the closed position shown in FIG. 1 and the open position shown in FIG. 2 without separation of the parts. Hood, base and ducts are molded of polystyrene or otherwise formed of a suitable material.

Hood 20 which is dome shaped with a substantially round opening to embrace the base in the closed position consists of solid outer hood 24 with an attached carrying handle 25 and an inner hood or liner 26 spaced therefrom and provided with a plurality of circular orifices 27 of varying size arranged in a pattern to achieve even distribution of air and steam, as will be explained below. In the preferred embodiment no orifices are placed in positions which will be adjacent a user's ears in order to reduce noise and eliminate discomfort.

The outer hood 24 is provided with a recessed upper surface 28 to accommodate the fingers when carried by handle 25, and an annular peripheral flange 29 for connection to the hood liner 26 through means of removable ring 30 and annular peripheral flange 31 of the liner. Such a connection of outer hood and liner, being the sole connection between the two, permits the inside of the hood to be readily cleaned.

The base 23 consists of compartmentalized shell 32 and deck or cover 33 fitted thereto. The deck is pro-

vided with a vertical protrusion 34 into which lower duct 22 is slidably fitted, an air inlet grid 35, chamber 36 for receipt of filling capsule 37, switch control chambers 38 and 39 and annular peripheral ledge 40 upon which the lower edge of the hood rests in the closed position of the device.

As seen best in FIGS. 3 and 4, upstanding molded walls 41 and cover plate 42 provide a scroll duct in the base with circular opening 43 of the cover plate 42 beneath grill 35. Motor support brackets 44 bridge opening 43 and support motor 45 consisting essentially of shaft 46, laminations 47 and windings 48. The motor shaft 46 is journaled in bearings 49 which are supported by fastening to the laminations 47. One end of shaft 46 projects through opening 43 and into the scroll duct whereat fan blades 50 are attached to the shaft. Upon rotation of the shaft 46 air is drawn by blades 50 through grill 35 and opening 43 in the direction of the arrows in FIG. 4 passed through heater 51 suspended from cover plate 42 and forced to enter lower duct 22 through vertical protrusion 34. Suitable switches and circuitry is provided for control of motor and heater as will appear below.

In addition to the fan and heater, there is provided means for generating and introducing steam into the lower duct 22.

In the embodiment of the invention shown in FIGS. 1-11, stainless steel tank 52 rests on hermetically sealed electric heater 53 within heat shield 54 supported by heat barrier 55. Tank 52 has an outlet steam tube 56 with a hole 57 drilled therein close to the top to prevent bursting if the top of the tube becomes clogged. Tube 56 extends through protrusion 34 into lower duct 22. Inlet tube 58 extends upwardly and over depending tube 59 of filling chamber 36 and the two are covered over with a silicon rubber sleeve to prevent leakage.

The water or tank filling device which is a plastic transparent container shown in FIGS. 8, 8a and 10 and indicated by the numeral 37 is graduated in steaming minutes by the amount of water used. The amount of water needed varies with the density and length of hair of the user as well as with the application of the equipment. Setting of hair, however, in all cases requires less steam than dying. Container 37 is designed to be received within cavity 36 by insertion and rotation. The container is placed within cavity 36 with opening 61 facing upwardly. Pins 62 in the wall of the cavity space the container away from the opening 63 formed in the bottom of the cavity above tube 59 through eighty degrees of rotation to prevent a water lock. As the container is rotated further, the container drops to the bottom of the cavity pins 62 engage cam surfaces 64 in the ends of the container and further rotation locks the container in place with opening 61 facing downwardly. In the final position of the container, the water in the container can flow through opening 61 and between container and cavity wall to enter tube 59 through opening 63.

Blow back prevention valve assembly 61' is set in inlet tube 58 to prevent steam from being blown out. The blow back valve assembly includes a valve disc 61' which is in the down position during fill as shown in FIGS. 15 and 16, resting upon stationary tabs 62' allowing water to center the tank through opening 63'.

Back pressure raises the disc 61' causing it to seat against the valve body and seal opening 63'.

Duct 22 and protrusion 34 can be extended in telescopic relationship to dryer base. The duct is counter-balanced by a constant force spring 65. Raising and lowering of the duct changes the height of the hood without changing its horizontal position. The lower duct 22 carries a slidable duct seal 66 at its lower end and to insure guidance tongues 67 and deck extrusion grooves 68 are provided (FIG. 6). The upper duct 21 is hingedly connected to the upper end of the lower duct at an angle by recessed hinge 69 and cam surfaces 21' and 22' of the upper and lower ducts respectively abut in the open hood position as shown in FIG. 5 to determine an angle between said ducts with said upper ducting projecting upwardly and outwardly of said base. The inner hood liner 26 is hinged to the upper duct at 70 and locked with two independent locking pins, one of which is shown in FIGS. 5 and 9 wherein resilient spring member 71 which is attached to the duct at one end 72 carries knobs 73 and 74 which project outwardly through openings 75 and 76 respectively in the duct in normal position. Upon pressing knob 74, member 71 and knob 73 move to the position shown in broken lines in FIG. 9. An opening 77 is provided in the hood liner within which knob 73 resides in open condition of hood. A like arrangement is provided on the other side of the duct. Hence, positive independent locking of each side of hood into position is provided. Depression of the knobs permits hinging the hood back for storage. The end of the upper duct is in the shape of a portion of the liner so that in the closed position it appears as a completion or part of the liner. Orifices 78 are provided in the duct, which together with deflector 79 direct the steam and hot air against the bottom portion of the user's head.

The hood is at such an angle and the duct attached to the lowest point of the inner liner that any condensation collecting in the hood will flow down the duct and be caught by an asbestos pad 80 cemented to the bottom of the base under the duct. Warm air during dryer operation will dry pad 80 and remove any accumulated condensation from it as well as from any other parts of the ducting or hood.

In order to use the device, container 37 is removed from the cavity and water inserted into the container, which is then returned to the cavity and rotated, emptying the water out of the container, filling the water tank 52 and sealing the opening.

The user connects the electrical cord 81 into an outlet, sets the "steam-dry" switch 82 (FIG. 6) to "steam," air temperature switch 83 to either "hot," "medium," "warm," or "cold." A pilot light 84 glows indicating that the steam cycle is on. The user then sits under the dryer. After a few minutes, steam emits from the orifices in the inner hood and penetrates the hair.

After the entire water supply is used up, the dryer automatically starts to blow dry warm air on the user's head. The temperature of the drying air is controlled by the previous setting of the air temperature dial.

After completion of the drying cycle, the dryer is manually shut off. If only drying is required, no water is used and the "dry-steam" switch is set to "dry."

In order to accomplish this, suitable controls as shown in FIG. 11 are provided

The liquid tank 52 will approximately have the temperature of the liquid it contains. In the device shown, the total energy delivered by the heater 53 is absorbed by the water which is turned into steam. During the period that there is water in the tank 52, the temperature of the tank walls will be approximately in the range of 210° - 220°F. After the water boils away, the tank wall temperature will rise rapidly.

Two thermostats are mounted on top of the tank. A normally closed one 85 in series with the tank heater 53 and a normally open one 86 in series with the dryer heater 51 and motor 45.

The thermostats are set to react at a temperature above that which is reached when the tank contains water. As the water boils away and tank wall temperature rises, the normally closed tank heater thermostat 85 opens and the tank heater 53 is disconnected. The normally open thermostat 86 closes, connecting current to the dryer motor 45 and heater 51. Automatic operation of the dryer motor 45 after steaming is accomplished.

As the dryer operates and the tank heater 53 is shut off, the tank wall cools off and the thermostats have a tendency to reset and make the unit cycle. To prevent this, a maintaining heater 51', shown only in FIG. 11, is mounted underneath control thermostats 85 and 86 wired in parallel with the dryer heater 51 to maintain a high ambient temperature under the thermostat and prevent resetting.

A safety thermostat 87 is located upstream from the dryer heater, under the steam tube and adjacent to the water tank heater. This normally closed thermostat is in the main equipment supply line. Any malfunction of any control component, motor, etc., that will cause excessive temperatures in the equipment will activate this thermostat and interrupt power to the equipment.

When the steam dry switch 82 is switched to "dry" steam generating and sensing circuit is cut out.

The Neon light 84 is in parallel with the steam heater to indicate that steam is being generated.

In FIGS. 12 through 18, a hair setting-drying device constructed in accordance with the invention is shown in which an alternate means is provided for steam generation. The casing and remaining portions of the device are the same as described earlier and are indicated in FIGS. 12 through 18 by the numerals previously assigned.

Plastic tank 82 is located beneath cavity 36 and may be filled by insertion of liquid in cavity 36. Plunger 83 terminating in button 84 is yieldingly urged upwardly by spring 85 to block tube 59. The cavity 36 is capable of containing a specific quantity of liquid such as the equivalent of 5 minutes of operation. It is contemplated that the user would fill the cavity 36 and then depress button 84, allowing the liquid to flow into the tank. The number of fills of cavity 36 would establish the steam time. When the water level in the tank 82 reaches extension 86 of the filler neck 87, the filler neck and tube 88 will become water-logged and no further liquid can enter tank 82.

Tube 89 connects 82 with level indicator 90 which is vented at its top so that the tank can be emptied for storage.

Tank 82 is connected by hose 91 to steam generator 92.

Steam generator 92 is shown in FIG. 18 and consists of a water-tight heating element 93 which is an electrically energized chrome alloy wire embedded in ceramic, set in a sleeve 94, which, in turn, is disposed within jacket 95. Water or other liquid to be converted into steam is introduced into jacket 95 by hose 91 at inlet 96. A strip of wire mesh 97 is wound about a vertical axis and vertically disposed within jacket 95, as shown in FIG. 13, to break the surface tension of boiling water in the steam generator. In operation, water introduced into the jacket contacts the heated sleeve 94 and is converted to steam — rising to leave the jacket at open end 98. As a rising bubble hits the hot wire mesh 97, the bubble expands and bursts, leaving as steam.

Float 99 is located in well 100 in tank 82 and can rise with the level of liquid in the tank to project through opening 101 in the tank cover to actuate switch 102 which is connected in the circuit of electrically energized steam generator 92. The float 99 has a sealing washer 103 on its stem so that it will seal against the rim 104 of opening 101 when the tank is full, preventing overflow. When the float is in the upward position, the steam generator will be energized; however, after the water is depleted, the float will sink, changing the position of switch 102, disconnecting the steam generator and connecting the heater 51 and fan motor 45.

In the operation of this embodiment after filling, the user connects electrical cord 81 into an outlet, sets the "steam-dry" switch 82 to "mist," the air temperature switch 83 to either "hot," "medium," "warm," or "cold." Pilot light 84 glows indicating that the steam cycle is on. The user then sits under the dryer. Steam emits from the hood orifices and penetrates the hair. The position of float switch 102 which has been in the position to energize the steam generator 92 is changed when the water in the tank has been used, to disconnect the steam generator and connect the heater 51 and fan motor 45. The safety thermostat 87 is also included in this embodiment of the invention. As indicated by the numerals 80' and 80'' in FIG. 3, asbestos pad and/or sponge respectively can be included as condensation absorbers.

We claim:

1. A hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, a heating unit disposed in said duct system, a hood attached to the portion of said duct system which projects from said base housing, said hood consisting of an unperforated outer portion and an inner dome-shaped portion spaced from said outer portion providing a steam chamber forming a terminal portion of said duct system, a plurality of orifices in said inner portion providing passages out of said duct system, fan means for drawing air into said duct system to be ejected thereby through said orifices, steam generating means supported by said base housing, and means for injecting steam from said steam generating means into said duct system to rise into said steam chamber and to be ejected through said orifices into the void of said dome.

2. A hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, a heating unit disposed in said duct system,

a hard hood attached to the portion of said duct system which projects from said base housing, orifices in said hood providing passages out of said duct system, a tank for receipt of liquid disposed within said housing, a steam tube from said tank to said duct system, fan means for drawing air into said duct system to be ejected thereby through said orifices, a liquid heater in operative relationship with said tank, actuating means for actuating said liquid heater and liquid sensing means for sensing the absence of liquid in said tank and deactivating said actuating means in the absence of liquid therein, a capsule for containing a predetermined quantity of liquid, a capsule outlet formed on said capsule, and said base housing provided with a socket means for receiving said capsule with said capsule outlet operatively disposed for emitting liquid contained therein into said tank.

3. A hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, a heating unit disposed in said duct system, a hard hood attached to the portion of said duct system which projects from said base housing, orifices in said hood providing passages out of said duct system, a tank for receipt of liquid disposed within said housing, a steam tube from said tank to said duct system, fan means for drawing air into said duct system to be ejected thereby through said orifices, a liquid heater in operative relationship with said tank, actuating means for actuating said liquid heater and liquid sensing means for sensing the absence of liquid in said tank and deactivating said actuating means in the absence of liquid therein, a capsule for containing a predetermined quantity of liquid, a capsule outlet formed on said capsule, said base housing provided with a socket means for receiving said capsule with said capsule outlet operatively disposed for emitting liquid contained therein into said tank, said base housing containing an upper deck in which said socket is formed above said tank and said tank including an inlet tube which is attached to said capsule outlet for gravity feed of liquid from said capsule to said tank.

4. A hair treating device in accordance with claim 3 in which blow back prevention valve means are provided in said inlet to prevent flow of the contents of said tank into said capsule.

5. A hair treating device in accordance with claim 4 in which said blow back prevention valve means consists of a body within said inlet, an opening formed in said body, radially inwardly projecting tabs spaced beneath said opening, a valve disc movably disposed between said tabs and said opening, said valve disc normally resting upon said tabs and being movable toward said opening by contents of said tank to seal said opening upon the movement of the contents of said tank through said inlet in the direction of said opening.

6. A hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, a heating unit disposed in said duct system, a hard hood attached to the portion of said duct system which projects from said base housing, orifices in said hood providing passages out of said duct system, a tank for receipt of liquid disposed within said housing, a steam tube from said tank to said duct system, fan

means for drawing air into said duct system to be ejected thereby through said orifices, a liquid heater in operative relationship with said tank, actuating means for actuating said liquid heater and liquid sensing means for sensing the absence of liquid in said tank and deactivating said actuating means in the absence of liquid therein, a capsule for containing a predetermined quantity of liquid, a capsule outlet formed on said capsule, said base housing provided with a socket means for receiving said capsule with said capsule outlet operatively disposed for emitting liquid contained therein into said tank, said socket having pins projecting outwardly therefrom, said pins spacing, said capsule from the wall of said socket during insertion within said socket and said capsule having projections which interlock with said pins upon rotation of said capsule within said socket.

7. A hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, a heating unit disposed in said duct system, a hard hood attached to the portion of said duct system which projects from said base housing, orifices in said hood providing passages out of said duct system, fan means for drawing air into said duct system to be ejected thereby through said orifices, a vertically disposed jacket supported by said housing, an electrically energizable heating element within said jacket, means for introducing liquid within said jacket, means for energizing said heating element whereby liquid within said jacket is converted to steam, and means for injecting steam from said jacket into said duct system to be ejected through said orifices.

8. A hair treating device in accordance with claim 7 in which the means for introducing liquid into said jacket includes a tank for receipt of liquid disposed within said housing, and a hose connecting the interior of said tank with the interior of said jacket.

9. A hair treating device in accordance with claim 8 in which said energizing means is a switch having an arm and a float is provided within said tank abutting said arm to effect said energizing means and energizing said heating element above a predetermined level of liquid within said tank.

10. A hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, a heating unit disposed in said duct system, a hard hood attached to the portion of said duct system which projects from said base housing, orifices in said hood providing passages out of said duct system, fan means for drawing air into said duct system to be ejected thereby through said orifices, a vertically disposed jacket supported by said housing, an electrically energizable heating element within said jacket, means for introducing liquid within said jacket, means for energizing said heating element whereby liquid within said jacket is converted to steam, means for injecting steam from said jacket into said duct system to be ejected through said orifices, said means for introducing liquid into said jacket including a tank for receipt of liquid disposed within said housing, a hose connecting the interior of said tank with the interior of said jacket, a cavity of predetermined volume provided in said housing above said tank, a tube connecting said

tank and said cavity, a plunger within said tube, spring means yieldingly urging said plunger in blocking relationship with said tube whereby depression of said plunger against the force of said spring can unblock said tube allowing liquid to flow from said cavity into said tank.

11. A hair treating device including, in combination, a base housing, a vertical protrusion of said base housing, a lower duct slidably fitted within said protrusion for vertical movement telescopically therewith, an upper duct pivotally connected to said lower duct at one side thereof, first and second surfaces of said lower and upper duct respectively for abutment to determine an angle between said upper and lower ducts in the open position of said device with said upper duct projecting upwardly and outwardly of said base, a dome shaped hard hood formed of a substantially rigid material and pivotally connected to the remaining end of said upper duct, orifices in said hood providing passages out of said upper duct, a heating unit, fan means for drawing air over said heating unit and into said lower duct, and locking means operatively connected to said hood and said upper duct to prevent relative motion thereof in the open position of said device.

12. A device in accordance with claim 11 in which said lower duct and said vertical protrusion are provided with complementary channels for guidance during relative motion thereof.

13. A device in accordance with claim 11 in which a constant force spring is attached at one end to said vertical protrusion in continued abutment with said lower duct to support said lower duct against gravitational forces in the open position of said device.

14. A device in accordance with claim 11 in which said hood comprises an outer hood and an inner liner, said liner and outer hood being spaced for receipt of the output of said duct system there-between, said liner being provided with a plurality of circular orifices, and the end of said upper duct having the configuration of a piece of said liner and pivotally connected to said liner whereby to complete the said liner in the open position.

15. A device in accordance with claim 11 in which said locking means consists of first and second locking pins attached to said duct, first and second openings formed in said hood to receive said locking pins respectively and spring means yieldingly urging said pins into said respective openings in the open position to lock said hood relative to said upper duct.

16. A device in accordance with claim 14 in which said outer hood and said liner are separable and have annular peripheral flanges and a removable ring is provided to embrace said flanges as the sole attachment means of said liner and outer hood.

17. In a hair treating device including in combination a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, fan means for drawing air into said duct

system, a hood attached to the portion of said duct system which projects from said base housing, orifices in said hood permitting passage of air out of said duct system, said duct system including a vertical protrusion of said base housing, a lower duct slidably fitted within said protrusion for vertical movement telescopically therewith, an upper duct pivotally connected to said lower duct at one side thereof, first and second cam surfaces of said lower and upper duct respectively for abutment to determine an angle between said upper and lower ducts in the open position of said device with said upper duct projecting upwardly and outwardly of said base, said hood being dome shaped and formed of a substantially rigid material and pivotally connected to the remaining end of said upper duct, locking means operatively connected to said hood and said upper duct to prevent relative motion thereof in the open position of said device, and a constant force spring attached at one end to said vertical protrusion in continued abutment with said lower duct to support said lower duct against gravitational forces in the open position of said device.

18. A device in accordance with claim 11 in which said locking means consists of first and second locking pins attached to said duct, first and second openings formed in said hood to receive said locking pins respectively and spring means yieldingly urging said pins into said respective openings in the open position to lock said hood relative to said upper duct.

19. In a hair treating device including, in combination, a base housing, a duct system partially supported within said base housing with a portion thereof projecting therefrom, fan means for drawing air into said duct system, a hood attached to the portion of said duct system which projects from said base housing, orifices in said hood permitting passage of air out of said duct system, said duct system including a vertical protrusion of said base housing, a lower duct slidably fitted within said protrusion for vertical movement telescopically therewith, an upper duct pivotally connected to said lower duct at one side thereof, first and second cam surfaces of said lower and upper duct respectively for abutment to determine an angle between said upper and lower ducts in the open position of said device with said upper duct projecting upwardly and outwardly of said base, said hood being dome shaped and formed of a substantially rigid material and pivotally connected to the remaining end of said upper duct, locking means operatively connected to said hood and said upper duct to prevent relative motion thereof in the open position of said device, and said hood comprising an outer hood and an inner liner, said liner and outer hood being spaced for receipt of the output of said duct system there-between, said liner being provided with a plurality of circular orifices, and the end of said upper duct having the configuration of a piece of said liner and pivotally connected to said liner whereby to complete the said liner in the open position.

* * * * *