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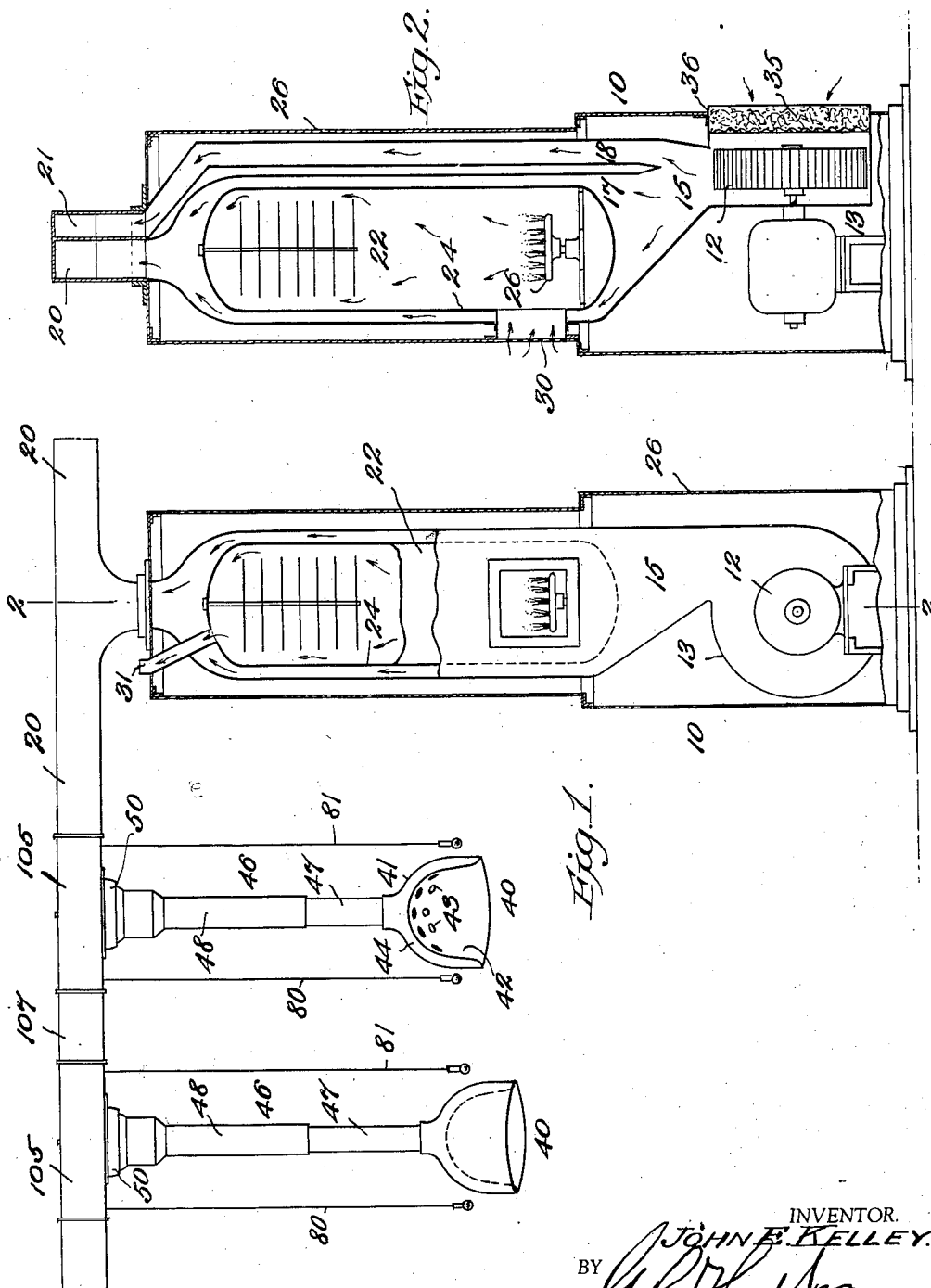
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2,057,033

MULTIPLE SERVICE HAIR DRIER OR THE LIKE

Filed July 17, 1935

2 Sheets-Sheet 1



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Fig. 3.

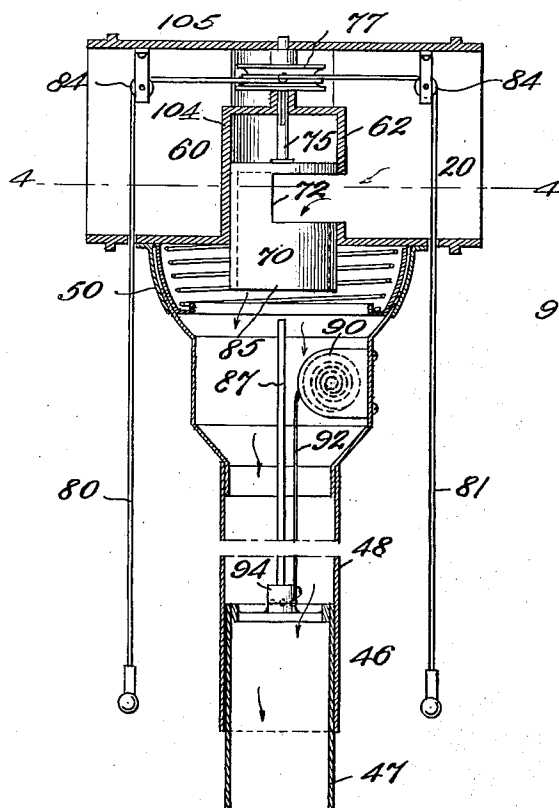


Fig. 5.

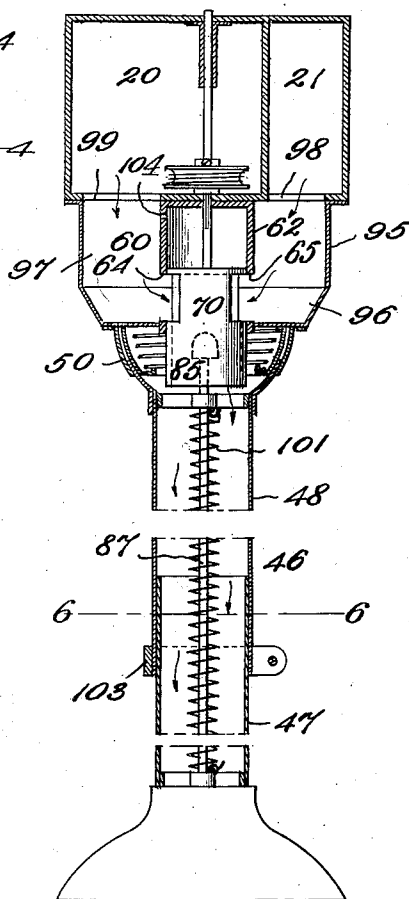


Fig. 4.

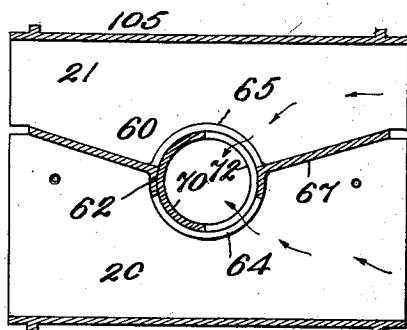
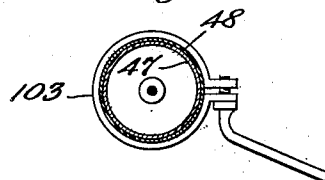


Fig. 6.



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MULTIPLE SERVICE HAIR DRIER
OR THE LIKE

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7 Claims. (Cl. 34-26)

This invention relates to multiple service hair driers or the like, and provides improvements therein:

This invention provides an improved apparatus comprising a plurality of feeder ducts and a plurality of delivery devices, such for example as hoods adapted to partially surround a head, by which air from one or another of the feeder ducts, or in any desired proportions from the plurality of ducts, may be admitted to the delivery devices and which proportions may be different for each delivery device. That is, for example, cold or unheated air may be admitted from one feeder duct to one delivery device, hot air from another feeder duct to a second delivery device, mixtures of hot and cold or unheated air in a desired proportion may be admitted from two feeder ducts to a third delivery device, and mixtures of hot and cold air in a different desired proportion may be admitted from the two feeder ducts to a fourth delivery device and so on.

By the present improvements means for regulating the admission of air are provided by which the area for the admission of air to the delivery devices, whether it be from one or another of the feeder ducts, or from two of the feeder ducts, remains constant.

By the present improvements also means may be provided at each delivery device for effecting remote control of the regulating means thereat, so that a person whose head is in a hood having her hair dried, can effect changes in the temperature of the air to suit her comfort.

The invention may also further provide means for automatically cutting off the flow of air to one or more of the hoods after the use thereof has finished to prevent idle flow of air from the delivery device or devices.

The invention further provides a novel arrangement of the elements of a multiple service hair drier by which the device is simplified, made more economical to construct, and is enhanced in utility.

An embodiment of the invention is illustrated in the accompanying drawings wherein:

Fig. 1 is a front elevation, with parts in section, illustrating so much of the apparatus as is necessary to illustrate the invention.

Fig. 2 is a vertical sectional view on the line 2-2, Fig. 1.

Fig. 3 is an enlarged vertical sectional view illustrating the means for regulating the flow from the feeder-ducts to air delivery.

Fig. 4 is a horizontal sectional view on the line 4-4, Fig. 3.

Fig. 5 is a vertical sectional view taken transversely of the feeder ducts, and showing a modified form of the means for regulating the flow of air from the feeder ducts to a delivery device.

Fig. 6 is a cross-section on the line 6-6, Fig. 5. Referring to said drawings, numeral 10 designates a central air-blower comprising a motor driven fan 12, a fan casing 13, an air receiver 15 in communication with the fan casing 13, and also in communication with vertical flues 17 and 18, which flues communicate with feeder ducts 20, 21.

One of the flues, as the flue 18, conducts cold or unheated air from the reservoir 15 to one of the feeder ducts, as the duct 21. The designation of air in this flue 18 as being cold or unheated air does not exclude the air having some warmth, as the air drawn in by the fan 12 may become warmed by the heat given off by the machine, by recirculation of the air, or otherwise.

Means are provided for heating the air which is conducted through the feeder ducts 20. This means preferably comprises a heater 22 located in the flue 17. The heater 22 is located above the receiver 15, so that air in the receiver 15 may distribute in the flues 17, 18 in accordance with the variations of resistance to flow offered by these flues and the other parts of the apparatus in communication therewith, but flow of hot air from the flue 17 to the flue 18 will not occur. The heater 22 is preferably in the form of a drum 24 closed to the flue 17, and containing a suitable heating element 26, preferably in the form of a gas burner. The fan, air receiver and flues are preferably contained in a housing 26. The drum 24 is in communication with the exterior of the housing 26 by means of openings 30, 31 and passages passing through the flue 17 to the interior of the drum. The drum 24, being heated, transfers heat to the air flowing around it in the flue 17.

The air drawn in by the fan 12 may be conditioned, as for example by being cleaned and moistened, by positioning a suitable air conditioning element 35 in the passage 36 leading to the intake side of the fan 12.

A plurality of air delivery devices 40 (two only being shown) are provided, so that with one apparatus a considerable number of persons may be treated at the same time. The air delivery devices 40, as here shown, are in the form of hoods comprising an outer shell 41 and an inner dome or shell 42 having holes or orifices 43 therein for directing air from the chamber 44 between the shells 41, 42 to the hair of a person whose head is placed within the hood. The chamber 44 of

each hood is in communication with each of the feeder ducts 20, 21 through a tube 46. Each of the tubes 46 is preferably made in two parts 47, 48, one telescoping in the other, to provide for the raising and lowering of the hood over the head of a person. Each of the tubes is also preferably connected to its support by means of a ball and socket connection 50 to provide for movement around the axis of the tube to better accommodate the hood to the position of the head of a person whose hair is being dried.

A means 60 is provided for regulating the flow from the feeder ducts 20, 21, in reciprocal proportion, one to the other, to each of the air delivery devices 40 and the tubes 46 connected therewith. The regulating means 60 acts in such a manner that the area for the admission of air to each of the delivery devices 40 and to the tubes 46 associated therewith, whether admission be from one or another of the feeder ducts 20, 21, or from two of the feeder-ducts, remains constant. One form of regulating means 60 for this purpose is shown in Figs. 1, 3 and 4 and another form or modification in Fig. 5.

Referring to the form of regulating means shown in Figs. 1 and 3, numeral 62 designates a cylinder in communication with ducts 20, and 21 through ports 64, 65 of substantially equal area. As here shown, the cylinder is preferably located in the partition wall 67 between the two ducts 20, 21 running side by side. Within the cylinder 62 is a sleeve valve 70 having a port 72 therein the area of which is approximately equal to the area of one or the other of the ports 64, 65, plus one-half of the closed circumference of the cylinder. The sleeve valve is rotatably, and also preferably axially movable in the cylinder 62. For this purpose the sleeve valve 70 may be carried by a shaft 75. The shaft 75 preferably has a pulley 77 splined thereon, and passing around the pulley are pull-cords 80, 81 which pass over suitable idle pulleys 84 and extend through the feeder-ducts alongside of the air delivery devices, in such manner that by pulling on the cords 80, 81 the sleeve valve 70 may be rotated, and the admission of air to the air delivery devices, from one or the other of the feeder ducts, or from both of the feeder ducts, regulated. The form and relation of the ports 64, 65 and 72 are such that the sleeve valve 70 in one position will completely shut off communication from one of the feeder ducts, as the feeder duct 20, to the air delivery device 40 and at the same time fully open the air delivery device to the other feeder duct 21; in another position of the sleeve valve 70 the said valve will completely shut off communication from one feeder duct 21 to the air delivery device and at the same time fully open the feeder duct 20 and establish communication between the feeder duct 20 and the air delivery device; and in other rotated positions of the valve 70, communication will be established between each of the feeder ducts 20 and 21 and an air delivery device. Depending on the rotated position of the sleeve valve 70 more or less air will flow through the valve from one feeder duct than from the other, and thereby any desired temperature of the air may be obtained by the person whose hair is being dried by the air delivery device 40. Moreover, the quantity of air flowing to the air delivery device 40 will always be the same irrespective of the sleeve valve 70, because the open area through the ports remains substantially unchanged throughout the rotary movements of the sleeve valve 70.

The sleeve valve 70 is also preferably provided with a skirt 85, the function of the skirt 85 being to close the ports 64, 65 when the sleeve valve 70 is slid axially. Suitable means are provided for effecting axial movement of the sleeve valve 70. These means are preferably of such a nature that axial movement of the sleeve valve 70 to port-closing position is effected automatically with the lifting of the hood from the head of a person. The means for axially moving the valve 70 is conveniently in the form of a rod 87 carried by the telescoping part 47 of the tube 46. As the hood 40 is lifted the portion 47 of the tube 46 rises carrying with it the rod 87. In the course of the upward movement of the tube section 47, the rod 87 strikes the sleeve valve 70 and thereafter further movement of the tube section 47 causes the rod 87 to shift the sleeve valve 70 to the position where the skirt 85 closes the ports 64, 65. In this way failure to shut off the flow of air through an individual hood, when such individual hood is not being used, through the inattention of the attendant, is prevented, the use of air conserved, and the discharge of unnecessary quantities of heated air into the room avoided.

The weight of the hood and of the tube part 47 is preferably counterbalanced, so that the hood may be adjusted to, and remain at, a vertical position of use suited to the height of the person whose hair is being dried. Means for this purpose are indicated at 90. The means 90 preferably comprises a long spring of the coil type, known in the trade as a "pullman type" spring. A strap 92 connects the spring with the tube part 47 and the connection is preferably through a swivel joint 94, so that the tube section 47 may turn without twisting the strap 92. The friction of the counterbalancing spring of the device 90 against its casing, and also the friction between the tube sections 47, 48 is such that the tube section will remain in any position to which it is moved against the tension of the spring. The friction is overcome by manual force exercised in raising and lowering the hood, the counterbalancing spring of the device 90 acting with a force substantially equal to that necessary to overcome the weight of the hood and of the tube section 47.

Referring to Fig. 5 an outer chamber 95 is provided within which the air regulating device 60 is located. The chamber 95 has the divided parts 96, 97 and the part 96 is in communication with one feeder duct, as for example, the feeder duct 21 through an opening 98 and the other divided part 97 of the chamber is in communication with the other feeder duct 20 through an opening 99. The port 64 of the valve 60 opens into the divided part 97 of the chamber and the port 65 opens into the divided part 96 of the chamber 95.

In the modification shown in Fig. 5 the tube section 47 is acted upon by spring 101 having a force sufficient to lift the hood 40 and the tube section 47 to the uppermost positions thereof. The telescoping parts 47, 48 are held in their different positions of adjustment by means of a friction clamp or the like 103. In adjusting the hood to the head of a sitter the hood is pushed down to the desired position against the force of the spring 101, and then fastened in said adjusted position by operation of the clamp 103. If the drying operation has been completed the clamp 103 is loosened whereupon the spring 101 raises the hood to its upper position, and during such movement, the rod 87 mounted on a tele-

scoping part 47 comes in contact with the sleeve valve 70 and slides axially to a position where the skirt 85 thereon closes the ports 64, 65.

5 A vent 104 may be provided in the cylinder 62, and by suitably choosing the size of the vent, the rate of moving and stopping of the hood 40 may be regulated in the end part of the movement thereof.

10 To facilitate the manufacture of multiple service hair-driers with variations in the number of air-delivery devices according to the wants of different customers, the device preferably comprises a number of units 105, one of which is shown in Figs. 3 and 4. Each of these units includes short sections of the feeder-ducts, 20, 21, 15 a means 60 for governing the flow of air to a hood or delivery device 40, and a tube section 48; a delivery-device 40 may also be included as a part of the unit. In constructing a multiple 20 drier, the central blower and a number of units 105 corresponding to the number of air-delivery devices desired are shipped and the apparatus set up by connecting the units 105 with sections of tubing 107 which can be cut of a length to give 25 the desired spacing between the air delivery devices, and the units 105 and sections 107 joined by a slip joint and held together in any suitable manner.

30 The invention may receive other embodiments than those herein specifically illustrated and described.

What is claimed is:

1. A multiple service hair-drier or the like, comprising a central air-blower, a plurality of feeder-ducts extending from said blower, a plurality of 35 air-delivery devices, and means for regulating the flow from each of said feeder-ducts to each of said delivery devices, said means comprising a cylinder having a port in communication with each of said feeder ducts and a rotatable sleeve-valve having a port therein, said ports in said cylinder each being of substantially equal area, and said port in said valve being equal to the area of one of said cylinder ports plus one-half 40 of the closed circumference of the cylinder the arrangement being such that, when the valve is rotated, the port therein may register with the port in the cylinder in communication with the hot-air-feeder duct, the port in communication 45 with the unheated air feeder-duct, or simultaneously with the ports in communication with both said feeder-ducts the open port area of said valve remaining substantially the same in all of the positions of said valve.

2. A multiple service hair-drier or the like, comprising a central air-blower, a plurality of feeder-ducts extending from said blower, a plurality of air-delivery devices, and means for regulating the flow from each of said feeder-ducts 5 to each of said delivery devices, said means comprising a cylinder having a port in communication with each of said feeder ducts and a rotatable and axially movable sleeve-valve having a port therein and a skirt, the arrangement being 10 such that, when the valve is rotated, the port therein may register with the port in the cylinder in communication with the hot-air feeder-duct, the port in communication with the unheated air-feeder-duct, or simultaneously with 15 the ports in communication with both said feeder-ducts, and, when said sleeve-valve is shifted axially, the skirt thereon closes said ports in said cylinder.

3. Apparatus according to claim 2, wherein said 20 air-delivery device comprises a telescoping tube and means thereon for shifting said sleeve-valve axially.

4. Apparatus according to claim 2, wherein said 25 air delivery device comprises a telescoping tube, means thereon for shifting said sleeve-valve axially, means tending to move said telescoping tube in a direction to cause the valve-shifting means to close said valve, and means for retaining said 30 telescoping tube in different positions of adjustment thereof.

5. Apparatus according to claim 2, wherein said air delivery device comprises a telescoping tube, means thereon for shifting said sleeve-valve 35 axially, and means for counter-balancing said telescoping tube and parts carried thereby, said telescoping tube in the course of telescoping movement imparted thereto causing said valve-shifting means to automatically move said sleeve valve to closing position. 40

6. Apparatus according to claim 2, wherein the means for regulating the flow from each of said feeder ducts to each of said delivery devices 45 comprises a divided chamber at the outside of said ducts, each division of which is in communication with each of said feeder ducts, and with a port in said cylinder, said cylinder and valve being located in said chamber.

7. Apparatus according to claim 2, wherein said cylinder is located partly within each of said 50 feeder ducts.

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