

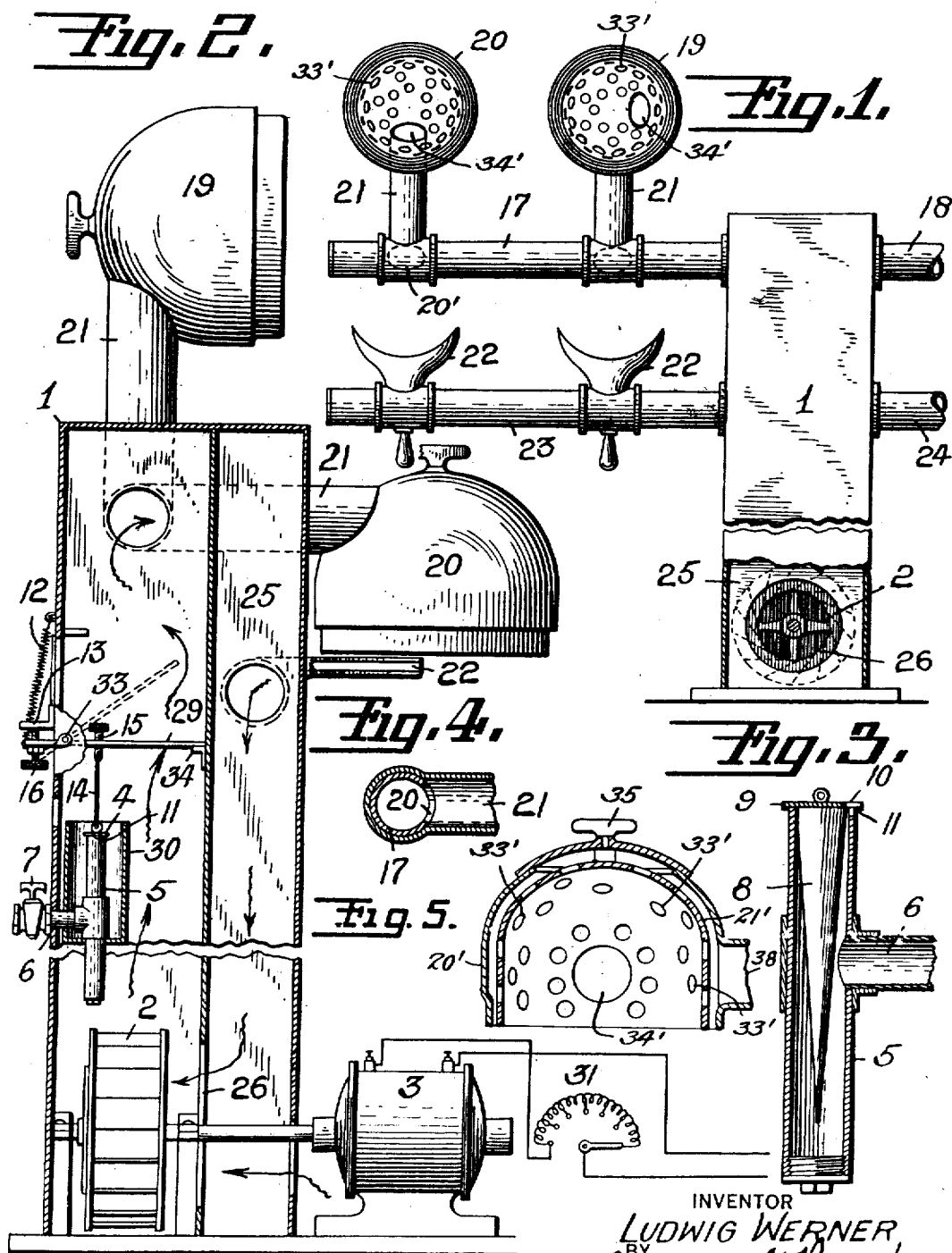
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L. WERNER

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HAIR DRYING APPARATUS

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INVENTOR
LUDWIG WERNER
 BY
Herbert H. Thompson
 his ATTORNEY.

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HAIR DRYING APPARATUS

Ludwig Werner, Brooklyn, N. Y.

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This invention relates to apparatus for the rapid drying of the hair in beauty and tonsorial parlours. Most of the hair drying machines now on the market are of the individual, electrically heated type. The expense of operating such dryers, however, in large shops becomes excessive, both on account of the heavy cost of the electric current used in the heating elements and also the cost of installing and maintaining in repair a large number of machines. By my invention I have devised a compact heating unit, preferably heated by gas, and which may supply a number of hoods or head-drying caps.

More particularly my invention constitutes an improvement in the type of hair drying machine shown in my prior application for Letters Patent, Serial No. 549,366, filed July 8, 1931 for Hair drying apparatus. In such machines, especially where one heating chamber supplies a number of hair drying units, the amount of warm air required and consequently the amount of heat to be supplied are constantly changing from zero to a maximum full load. To attempt to regulate both the blower speed and the size of the gas flame by hand would obviously require careful attention with the danger of getting the air too hot or too cold. According to my present invention I provide an automatic means for regulating the heat supplied in accordance with the air supply, and as the latter varies automatically with the number of drying units in operation my heater, when started up, will maintain a uniformly heated air supply and be very economical in gas consumption.

Referring to the drawing,

Fig. 1 is a front elevation, with parts broken away, of a complete drying unit.

Fig. 2 is a vertical section of the same taken at right angles to Fig. 1.

Fig. 3 is a sectional detail on a larger scale of the gas burner and controlling valve therefor.

Fig. 4 is a sectional detail of the shut-off valve mechanism between each drying cap and the main supply pipe.

Fig. 5 is a sectional view of one of the hair drying domes.

In the embodiment shown, I locate in the main combustion chamber or flue 1 a centrifugal blower or fan 2 driven from motor 3 located preferably outside of the flue. The air expelled from the periphery rises up the flue with a velocity which varies with the back pressure encountered, which in turn varies with the number of outlets in operation. Within the chamber is a gas burner 4 which is preferably in the form of a vertical

pipe 5 open at its upper end, producing a yellow flame characteristic of gas burned in air without being premixed with air as in the Bunsen burner. I prefer this type of flame since it is less likely to be blown out by the blower and the air from the blower prevents all smoke and soot, when properly adjusted. The burner may further be enclosed on all sides except the top by a shield or partition 30 to protect the small pilot flame from too violent a draft. It should be noted that both the open end of the burner 11 and the shield 30 are placed to one side of the rectangular flue between the blower 2 and the outlet to the hair dryers. Gas is led into pipe 5 from main pipe 6 in which is located a pet cock 7.

Normally resting within pipe 5 is a conical or wedge-shaped valve 8, having a top 9 seated on the top of the pipe. A notch 10 is shown at the inner side of the top (and possibly also in the top of the pipe as at 11) to permit some gas to escape even when closed, so that a pilot light remains even when the blower is shut down. It will readily be seen, however, that as valve 8 is lifted, more and more gas will escape and more and more heat produced.

Located above the flame and across the flue is a shutter or damper 29 pivoted at 33 and normally held down against stop 34 either by gravity or by tension spring 12 or both. Spring 12 is shown as secured at its lower end to an arm 13 on a pivot pin 33 of shutter 29 and at its upper end to the flue. An adjustable stop 16 may be provided for the shutter outside of the flue so that the closed position may be regulated.

Between the shutter and valve 8 is a link 14 preferably adjustably secured to the shutter as by set screw 15 so that the position of the valve may be adjusted with respect to the shutter. It will readily be seen that when the blower is started and if one or more hair drying units are in use, the up draft of the air will raise the shutter as shown in dotted lines in Fig. 2 and lift valve 8, thus causing a big gas flame. The amount the shutter is lifted depends on the velocity of the air, so that the heat is automatically regulated in accordance with the air taken.

From the top of the chamber 1 the heated air passes out through transverse pipes 17 and 18 to a plurality of drying domes or caps 19, 20, etc. Said domes are swivelled on pipes 17 and 18 when not in use stand upright and out of the way. In this position no air can escape therefrom because the aperture 20' in pipe 17 is then out of alignment with the hollow stem 21 of the cap, but when the stem and cap are turned horizontal-

ly, air readily escapes into the stem and cap (see Fig. 4). Also, by partially raising a dome, the air flow and consequently the heat supplied may be reduced by the resultant partial closing of the valve 20. Also the swivel mounting of the pipe permits ready adaptation of the hoods to different size subjects. The caps are shown as provided with a plurality of apertures 27 and may be constructed substantially as described in my aforesaid prior application. Thus each cap has an outer shell connected to the pipe 21 through aperture 38' and an inner part 21' swivelled within the outer part and provided with a plurality of small apertures 33', an extra large opening 34' and the dome 21' made rotatable as by thumb piece 35', so that aperture 34' may either be turned away from the entrance pipe 38' or in line with the same. The former position is for ordinary drying operations, but the latter position is especially effective for drying the heavy back hair characteristic of the present styles of hair bobbing, because it directs the main volume of air directly on this part of the hair. By this means also the main volume of air emerging through opening 34 may be directed against any desired portion of the hair and also the volume of air emitted varied, since more air will emerge when the aperture 34' and pipe 38' are in line. This also results in regulation of the gas flame to conform to the amount of air emitted.

Preferably I also provide a means for preventing the escaping heated air from overheating the shop. To this end I locate adjacent each cap in its lowered position an air intake device 22, each of which is on a transverse pipe 23, 24 below pipes 17 and 18. Said pipes 23 and 24 enter a down draft flue 25 located preferably beside chamber 1 and having an opening 26 thereinto adjacent the center or intake portion of the blower, which is preferably closed at its opposite side. Air is thus sucked in through intake devices 22 and carried through the heater again, thus both saving gas and keeping the shop or beauty parlor cooler. The blower motor speed may be regulated as by rheostat 31, but with my invention close or frequent regulation is unnecessary, as explained.

The operation of my device is as follows: Assuming all or most of the drying domes to be in use, a free outlet for the heated air is provided at the top of the flue through the pipes 17 and 18. Therefore, the flap valve 29 will be fully opened and the throttle or needle valve 8 opened to produce a maximum flame. In the event that all of the hair drying domes are thrown upwardly to the inoperative position, thus closing all of apertures 20 in pipes 17 and 18, no air can escape from the top of the flue, and flap valve 29 will close to the full line position shown in Figs. 2 and 3. In this position a small yellow flame will emerge from openings 10 and 11 but no smoke will be produced for two reasons. First, although the amount of gas escaping has been greatly reduced, the velocity has not been impaired and in fact has been increased so that the flame shoots out with sufficient velocity to assure proper burning with a yellow flame burner. In addition the shield 30 acts as a dividing partition between the burner and the other part of the flue so that even though flap valve 29 is closed

and air cannot pass up the flue, by reason of the closure of all apertures 20, sufficient air will continue to be supplied to keep the burner lighted by the fact that the flue is divided by the partition so that the air heated by the flame may return downwardly and back to the blower on the outside of the partition. As the domes are thrown downwardly and thus brought into operation, the flap valve 29 is gradually raised thus increasing the size of the flame in proportion to the number of burners in operation. A large portion of the heated air emerging from the domes is sucked in through intakes 22 and returned to the blower through outer flue 25.

In accordance with the provisions of the patent statutes, I have herein described the principle and operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means. Also, while it is designed to use the various features and elements in the combination and relations described, some of these may be altered and others omitted without interfering with the more general results outlined, and the invention extends to such use.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. In a hair drier, a casing containing a means for heating air and a fan, a conduit connected to said casing for conducting heated air to a plurality of hair drying helmets disposed along the length of said conduit, and a second conduit connected to the suction side of said fan, said second conduit having a plurality of inlets disposed along its length, one inlet for each helmet separate therefrom and disposed below the lower edge of and near the back of each helmet, said helmets being movable with respect to said inlets.

2. A hair drier, comprising a casing containing a heating means and a fan, a conduit connected to and communicating with said casing, a series of openings in one vertical side of the conduit, a sleeve rotatably fitted over each of said openings, each sleeve having a pipe leading to a hair drying helmet, said pipe completely registering with the opening in the conduit when the pipe is in a horizontal position and said pipe being completely out of registration with said opening when in a vertical position.

3. A device as in claim 2 having in addition a second conduit connected to and communicating with the suction side of said fan, said second conduit having a series of inlets, one for each helmet and located below and at the lower edge of and near the back of each helmet when said pipe is in its horizontal position.

4. A hair drying hood, comprising an outer stationary helmet, an inner helmet spaced from said outer helmet, means for delivering a drying medium to the space between the helmets, said inner helmet having spaced small perforations and one large opening and being rotatably mounted at the top about the axis of the helmets so that by rotating said inner helmet the larger flow of air through said large opening may be directed to any part of the head being treated.

LUDWIG WERNER.