J. KRAUER.

APPARATUS FOR DRYING HAIR.

APPLICATION FILED APR. 29, 1920.

1,372,237.

Patented Mar. 22, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

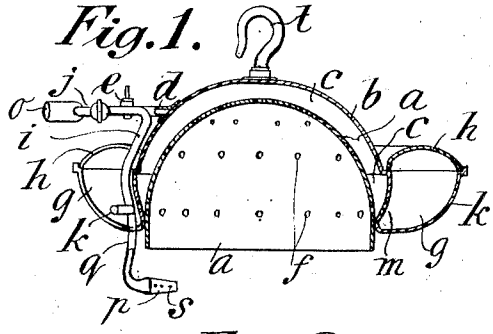


Fig. 3.

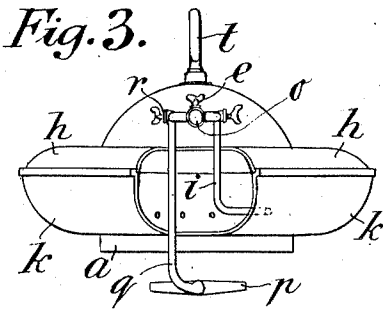


Fig. 2.

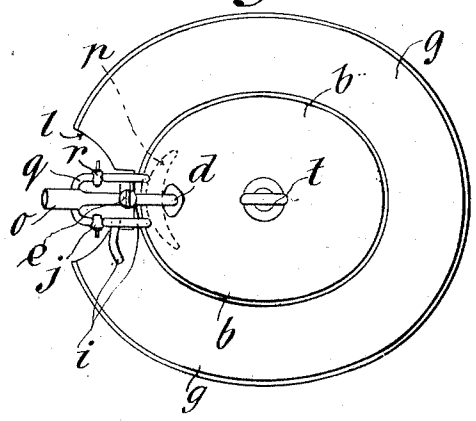
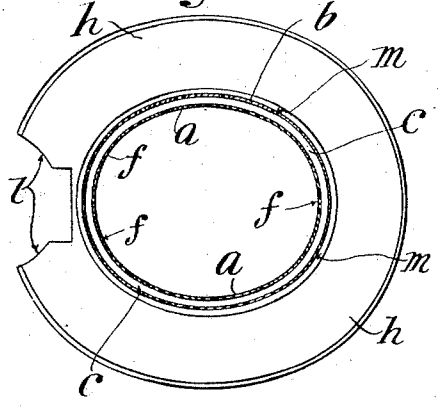


Fig. 4.



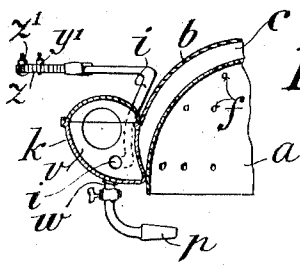


Fig. 5.

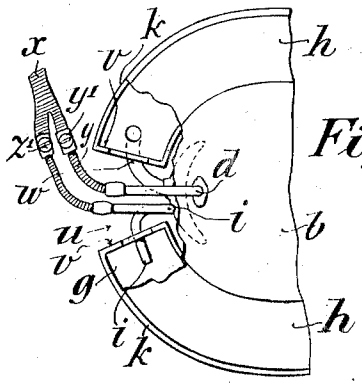
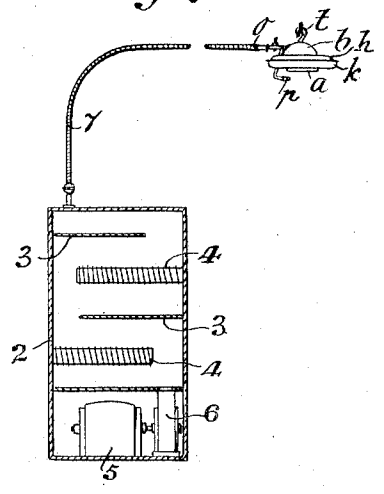


Fig. 6.

Fig. 7.



Inventor.

Joseph Krauer.

Per Ferdinand Brosler Borkhardt

Attorney.

J. KRAUER.

APPARATUS FOR DRYING HAIR.

APPLICATION FILED APR. 29, 1920.

1,372,237.

Patented Mar. 22, 1921.

2 SHEETS—SHEET 2.

Fig. 8.

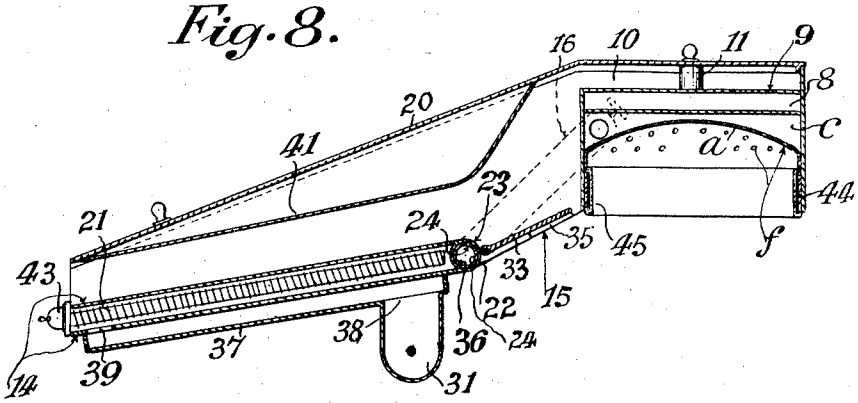


Fig. 9.

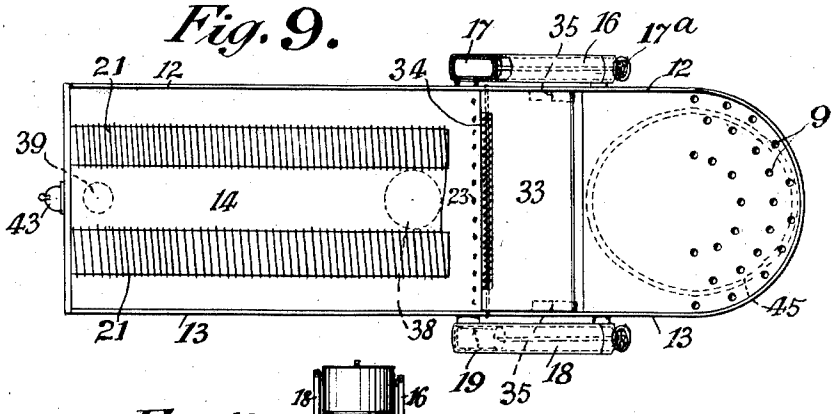


Fig. 10.

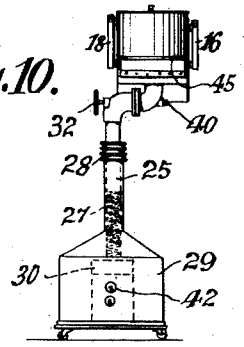
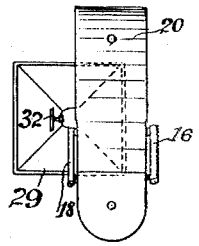


Fig. 11.



Inventor.

Joseph Krauer.

Per Ferdinand Brooker Bosshardt

Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH KRAUER, OF HEATON CHAPEL, NEAR MANCHESTER, ENGLAND.

APPARATUS FOR DRYING HAIR.

1,372,237. Specification of Letters Patent. Patented Mar. 22, 1921.

Application filed April 29, 1920. Serial No. 377,657.

To all whom it may concern:

Be it known that I, JOSEPH KRAUER, a Swiss citizen, residing at Heaton Chapel, near Manchester, in the county of Lancaster, England, have invented certain useful Improvements in Apparatus for Drying Hair, of which the following is a specification.

This invention relates to apparatus for drying hair by a heated gaseous medium and is more particularly applicable to the drying of hair on the head.

The object of the said invention is to enable the drying operation to proceed expeditiously without unduly or uncomfortably heating the scalp, and in the case of long hair, to insure that the hanging portion of the hair is thoroughly dried in the same time as is taken to dry the scalp and that part of the hair which lies in close proximity thereto.

An apparatus in accordance with my invention comprises two parts one of which consists of a hollow chamber fitting loosely on the head and having holes in its inner wall and is adapted to direct hot gaseous medium onto the scalp and the other of which consists of a receptacle connected to the exterior of said chamber and adapted to receive the hanging portion of the hair and enable the hot gaseous medium to play thereon, both the chamber and the receptacle being connected to a source of hot gaseous medium and means being preferably provided whereby the action of the hot gaseous medium on the scalp and the action thereof on the hanging portion of the hair can be independently controlled.

I attain this object by the apparatus illustrated in the accompanying two sheets of drawings, in which—

Figure 1 is a sectional side view of a hair drying apparatus,

Fig. 2 is a plan view,

Fig. 3 is an elevational rear view, and

Fig. 4 is a part sectional plan view.

Fig. 5 is a detached sectional side view illustrating a modified form of apparatus, and

Fig. 6 is a detached plan with a portion broken away, of Fig. 5.

Fig. 7 is a sectional side view showing a device for supplying a flow of heated air to the hair drying apparatus.

Fig. 8 is a sectional side view of another hair drying apparatus, and

Fig. 9 is a plan view thereof.

Fig. 10 is a front elevation of the drying apparatus combined with a blower and mounted on a support, and

Fig. 11 is a plan view of Fig. 10.

In the construction illustrated in Figs. 1 to 4, that part of the apparatus which is used for drying the hair close to the head comprises a dome *a* to which is secured a second dome *b*, and these two parts form a double walled member adapted to fit on the head in a similar manner to a hat or to be supported or suspended above or partly above the head. The space *c* between the walls of said member is connected by a pipe *d* to a hot air or other drying medium supply and a suitable control tap *e* or valve is provided in the pipe *d*. A plurality of holes *f* is provided in the dome *a*, said dome being so shaped and said holes so positioned as to direct the drying medium onto all parts of the scalp in numerous streams. The drying is thereby distributed over the whole of the scalp in a gentle flow, whereby the whole of the scalp and hair adjacent thereto is simultaneously heated and dried, without the need of a strong blast of heating medium which would produce an uncomfortable burning sensation.

The part provided for drying the hanging portion of the hair comprises a chamber *g* extending partially or wholly around the dome *c* and adapted to be opened at the upper part. Said chamber is in the form of a brim *k* formed on the dome *b* of the double walled member and is closed by an annular inverted trough-shaped lid *h* fitting around the dome *b* and constituting when in position the top or upper half of the chamber *g*. The brim *k* has a gap *l* at the rear to receive that part of the hanging hair which is nearest the head. The chamber *g* is also connected to the supply of hot air or other gaseous medium by an independent pipe *i* provided with a suitable control tap *j* or valve and is adapted to receive the hanging

portion of the hair which after being brought into the gap *l* is laid therein in a single strand so as to form a coil or partial coil around the dome *b*. The pipe *i* directs the heating medium current in such a manner that it tends to travel along the chamber *g* around the dome *b* before it leaves the chamber *g*, the gap *l* tending to direct the heating medium issuing therefrom onto the hair in the gap and on the nape of the neck.

Thus it will be appreciated that there are separate feeds of heating medium for the scalp and the hanging hair and this enables the flow to be so controlled and adjusted by the taps *e* and *j* or the like that a large and swift current of heating medium can be supplied to the hanging hair, while a gentle and distributed flow of such medium can be allowed to play on the scalp. Furthermore the whole length of the hanging hair is subjected in a continuous manner to the action of the heating medium owing to the medium flowing in the direction of the length of the hair which can be conveniently dealt with in any length owing to it being possible to coil it around in said chamber an indefinite number of times. By this feature of applying independently controlled currents to different parts of the hair, the hanging hair can be dried as quickly as that in proximity to the scalp.

Holes *m* are preferably provided in the dome *b* adapted to lead heating medium from the chamber *c* into the chamber *g* and supplement the flow of heating medium into the latter.

For the purpose of drying the hair in the nape of the neck, I preferably suspend from the feed pipe *o* a nozzle *p* by a pipe *q* provided with a control tap *r* or the like, and form holes *s* in the nozzle to direct the heating medium onto the nape of the neck. The hook *t* serves for the suspension of the apparatus in working position on or over the head.

In Figs. 5 and 6 a modified arrangement of gap is illustrated. The gap *u* extends to the dome *b* and walls *v* are formed at the open ends of the brim *k*, having a gap through which the hair passes. The lid *h* is also provided with walls having gaps and the two walls retain the hair in a compact mass where it passes through the gaps therein and causes the hair to prevent the flow of heating medium from the brim into the gap direct. A pipe *w* communicates with the chamber *g* and leads the heating medium from the chamber onto the nape of the neck.

The hereinbefore described apparatus may be connected up to hot air supply tubes as usually provided in hair dressing establishments, for example as shown in Figs. 5 and 6, by means of a flexible pipe *x* having two branches *y* and *z* provided with control taps *y'* and *z'* or valves and connected to the two parts of the apparatus respectively, the pipes *y* and *z* being arranged to be readily coupled and uncoupled with the tubes *d* and *i*.

In order however to obtain the best results I may provide a device for heating the drying medium constructed substantially as illustrated in Fig. 7.

Inside a receptacle 2 I provide a number of baffles 3 and arrange heaters 4 preferably in the form of electric heaters, in the passages formed by the baffles. I provide a motor 5 and a fan or blower 6 arranged to drive air into or draw same through an inlet in the receptacle. I connect a flexible supply pipe 7 to the opposite end of the receptacle and to the pipe *o*, Figs. 1, 2 and 3, or to the pipes *y* and *z*, Figs. 5 and 6. The control valves or taps are not opened until the fan or blower and heaters have been operating for a short time and the air in the receptacle has been thoroughly heated, therefore no cold air can play on and chill the head.

In the construction illustrated in Figs. 8 and 9, which is the preferred construction, *a* is a dome which fits loosely on the head and is provided with holes *f* for the heating medium to flow onto the scalp from the chamber *c*. Another chamber 8 is provided above the chamber *c* and has holes 9 through which heating medium can flow into the chamber 10 which contains a cylindrical member 11. The side walls 12 and 13 of the chambers *c*, 8 and 10 extend rearwardly and form the side walls of a box 14, a gap 15 being provided between the box 14 and the chambers *c*, 8 and 10. The chamber *c* is connected to the box 14 by a pipe 16, which has a damper 17 or the like provided with a control handle 17^a and adapted to control the passage of heating medium from the box 14 to the chamber *c*. The chamber 8 is also connected to the box 14 by a pipe 18 which has a handle controlled damper 19 or the like adapted to control the flow of heating medium to the chamber 8. A removable spring ring 44 is provided and is covered with a renewable covering of soft material such as felt 45, for the purpose of preventing contact of the head with the metal portion of the dome *a*. A flap 33 is hinged to the sides 12 and 13 and is pressed downwardly by a spring 34 against two stops 35 on said sides.

The apparatus is adjusted in position on the head and the hanging hair is drawn through the gap 15 after the flap 33 has been pushed upward. The hanging hair is then carried around the member 11, across the gap 15 and onto the box 14, and the removable lid 20 is then placed in position on

the apparatus. The flap 33 automatically closes as far as possible and reduces the opening of the gap not filled with air.

The box 14 contains one or more heaters 21 and is formed with holes 22 and 23, the holes 23 being adapted to direct heating medium onto the hair in the gap 15 and the holes 22 to direct heating medium onto the nape of the neck. An adjustable slide 36 having holes 24 is provided inside the box 14 to control the air flowing from the holes 22 and 23. A box 37 is provided below the box 14 and has an inlet 38 for the air or the like delivered to the apparatus. At the opposite end it is provided with an outlet 39 to the interior of the box 14.

The apparatus may be suspended, or it may be mounted on a telescopic support 25 having a spring 27 which is sufficiently strong to retain the support in its extended state. A fastening nut 28 is provided to retain the apparatus at any suitable height after adjustment of the same by means of the telescopic support.

The telescopic support is mounted on a cabinet 29 which contains a blower and electric motor 30 and the telescopic support is constructed of hollow tubes which serve as air tubes, the delivery outlet of the blower being connected to the lower end of the hollow telescopic support. In the upper part of the support I provide a hollow swivel joint 31 whereby the apparatus can be adjusted in a vertical plane and can therefore be turned to point upward and occupy the same space in plan as the cabinet 29. This joint can be fixed in the desired position by the handle 32 secured on a spindle which screws into the nut 40 and prevents movement of the apparatus by creating friction between the two parts of the joint.

The lid 20 is formed with a false top 41 which is shaped to cause the air or the like flowing over the box 14 to come into contact with the hair lying on said box. The box 37 produces preheating of the air or the like before it enters the box 14 owing to the bottom of the box 14 being heated by the heaters 21.

A switch 42 is provided on the cabinet 29 to control the motor and a switch 43 is provided on the box 14 to control the heaters.

I claim:

1. An apparatus for drying hair comprising in combination, a hollow chamber fitting loosely on the head; holes in its inner wall; a receptacle connected to the exterior of the hollow chamber and adapted to receive the hanging portion of the hair; a source of supply of hot gaseous medium; and means connecting both the hollow chamber and the receptacle to the source of supply of hot gaseous medium; for the hereinbefore specified purpose.

2. An apparatus for drying hair comprising in combination, a hollow chamber fitting loosely on the head and having holes in its inner wall; a receptacle connected to the exterior of the hollow chamber adapted to receive the hanging portion of the hair; a source of supply of hot gaseous medium; means connecting both the hollow chamber and the receptacle to the source of supply of hot gaseous medium; and control means on the apparatus to control the flow of hot gaseous medium to the hollow chamber and to the receptacle; for the hereinbefore specified purpose.

3. An apparatus for drying hair comprising in combination, a hollow chamber fitting loosely on the head and having holes in its inner wall; a receptacle connected to the exterior of the hollow chamber adapted to receive the hanging portion of the hair; a source of supply of hot gaseous medium under pressure; means connecting both the hollow chamber and the receptacle to the supply of hot gaseous medium; and means on the apparatus adapted to direct some of the hot gaseous medium onto the nape of the neck; for the hereinbefore specified purpose.

4. An apparatus for drying hair, comprising in combination, a box; a perforated receptacle within the box for applying drying medium to the scalp portion of the head; a box extending from above the first named box in a rearward direction; a lid on the second named box; a third box provided in the rearwardly extending part of the second named box; heating means inside the third named box; and means on connection with the third named box adapted to supply hot gaseous medium by the aid of said heaters to the first and second named boxes and to the nape of the neck; for the hereinbefore specified purpose.

5. An apparatus for drying hair comprising in combination, a box; a perforated receptacle within the box; a second box connected to the first named box; a lid on the second box; a heating chamber in the second box; a chamber below the heating chamber; an inlet at one end of the second named chamber; an outlet at the other end thereof opening into the heating chamber; and means in connection with the second named chamber and the heating chamber for driving gaseous medium through said chambers to the first and second named boxes and to the nape of the neck; for the hereinbefore specified purpose.

6. An apparatus for drying hair comprising in combination, a box; a perforated receptacle within the box; a second box connected to the first named box; a lid on the second box; a heating chamber in the second box; a chamber below the heating chamber; an inlet at one end of the second named chamber; an outlet at the other end thereof opening into the heating chamber; passages

leading from the heating chamber to the perforated receptacle and the second box; a telescopic tube supporting the apparatus and connected to the second named chamber; a swivel joint in one part of the telescopic tube; a receptacle supporting the telescopic tube; an electric motor in said receptacle; and a blower in said receptacle connected to the motor and with its delivery outlet to said telescopic tube; for the hereinbefore specified purpose.

Signed at Manchester, in the county of Lancaster, England, this 9th day of April, 1920.

JOSEPH KRAUER.