

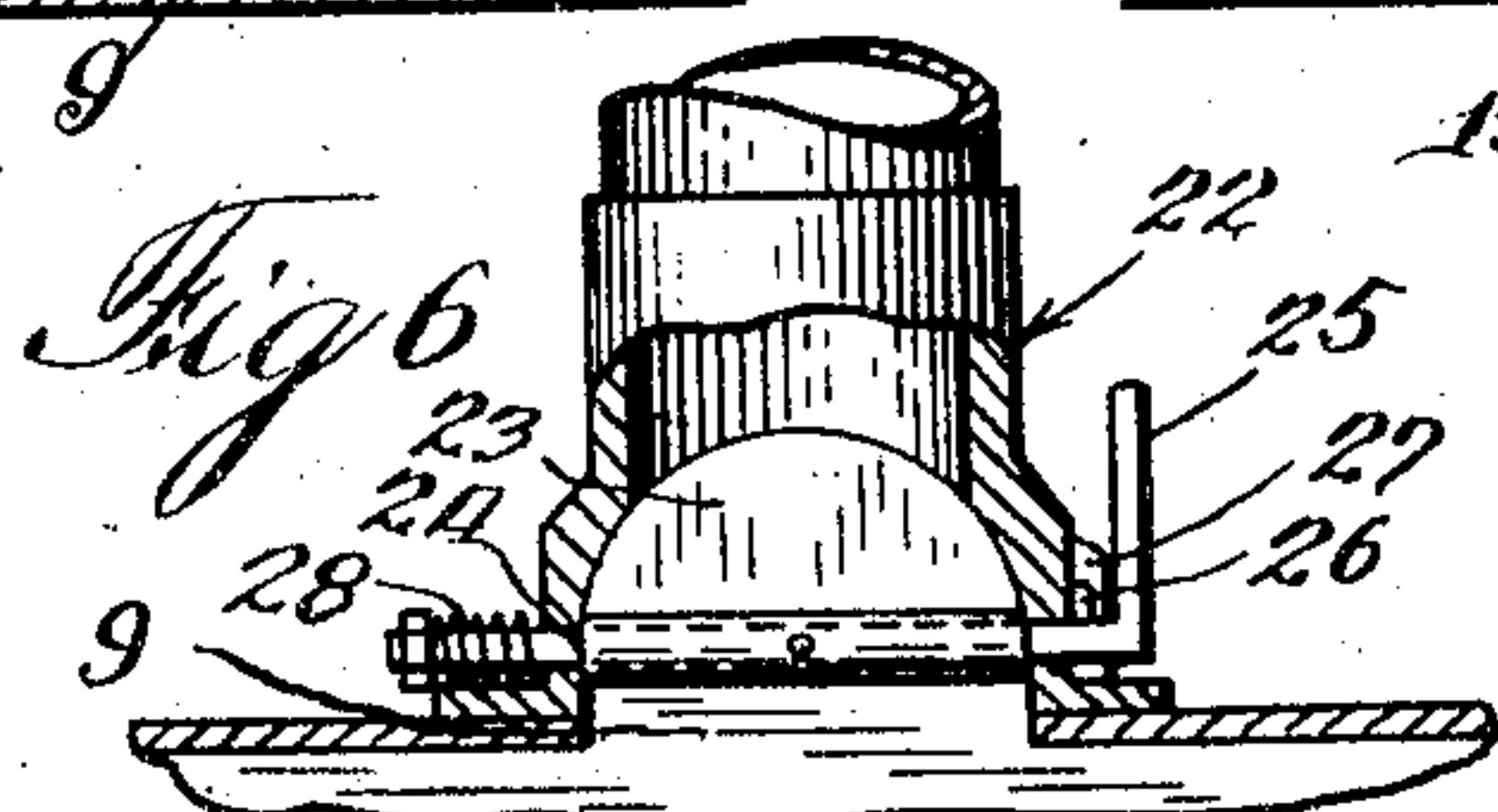
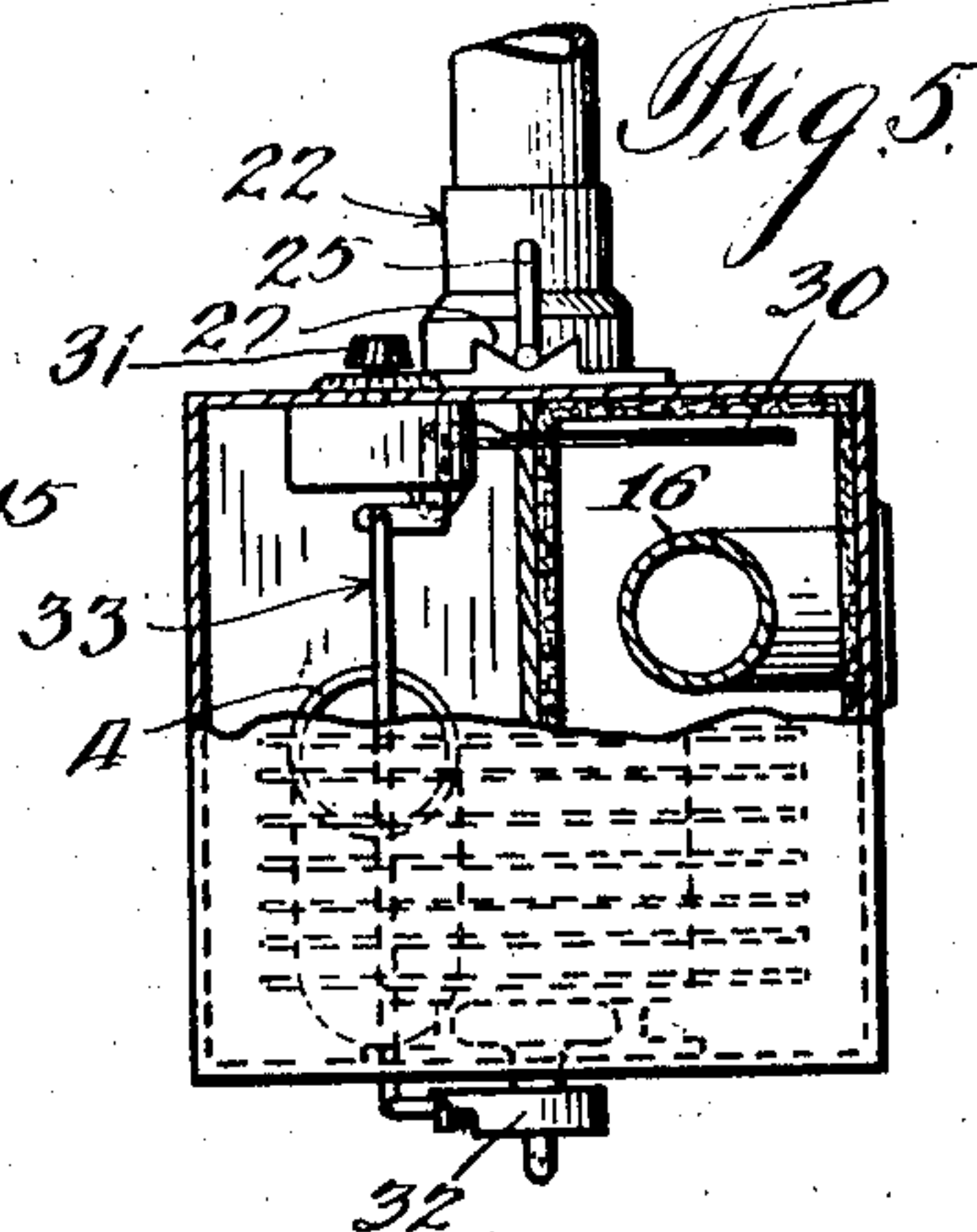
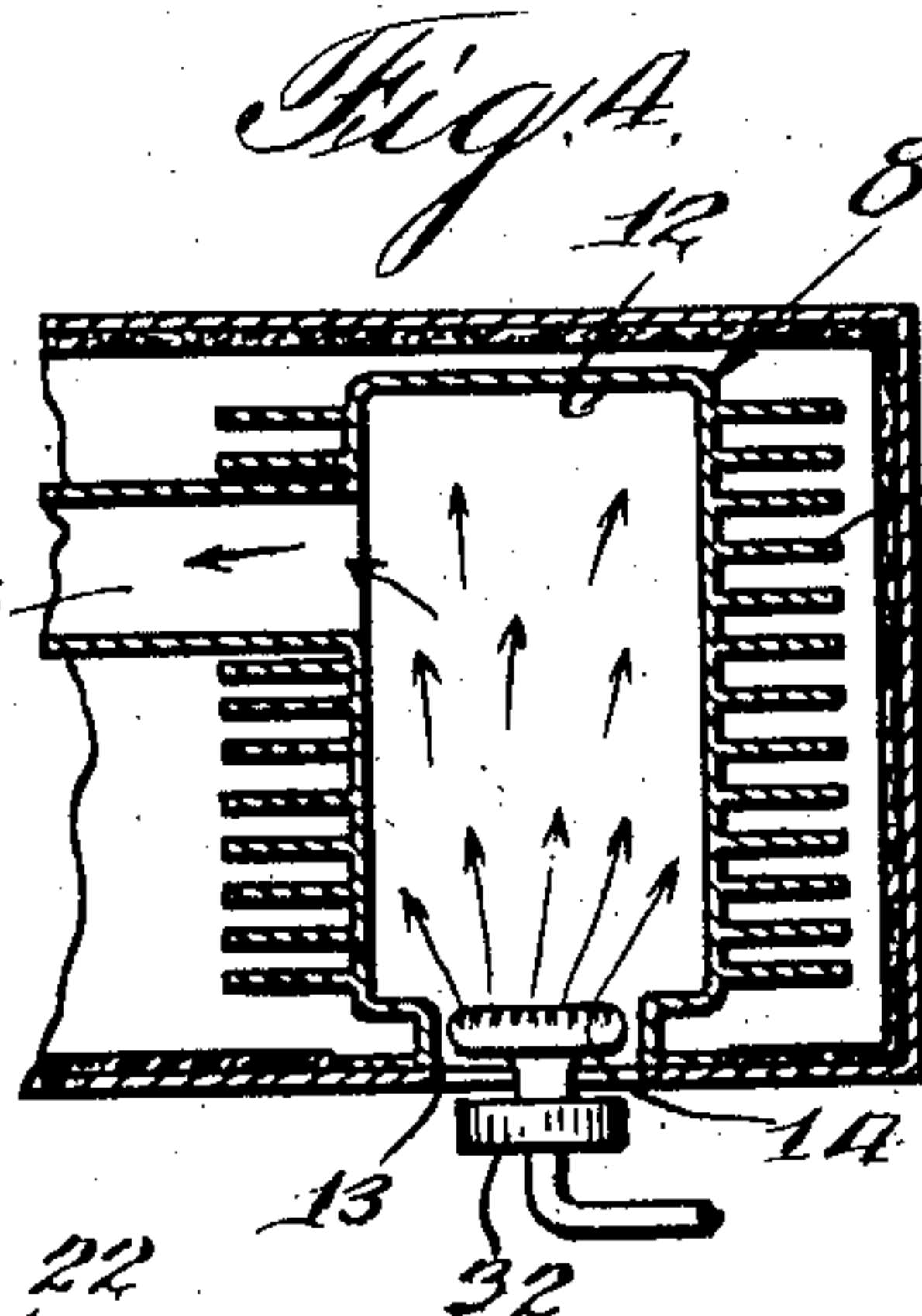
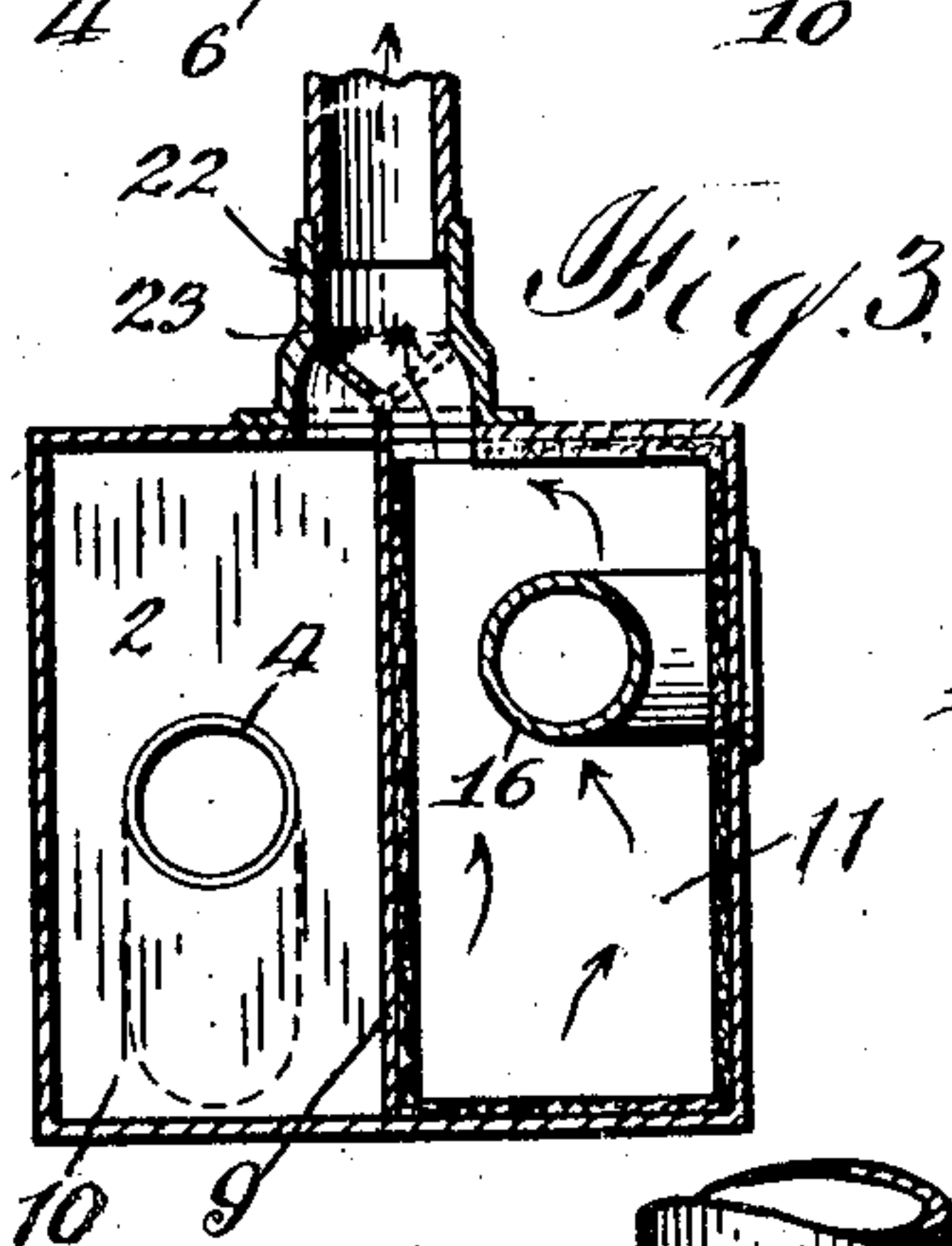
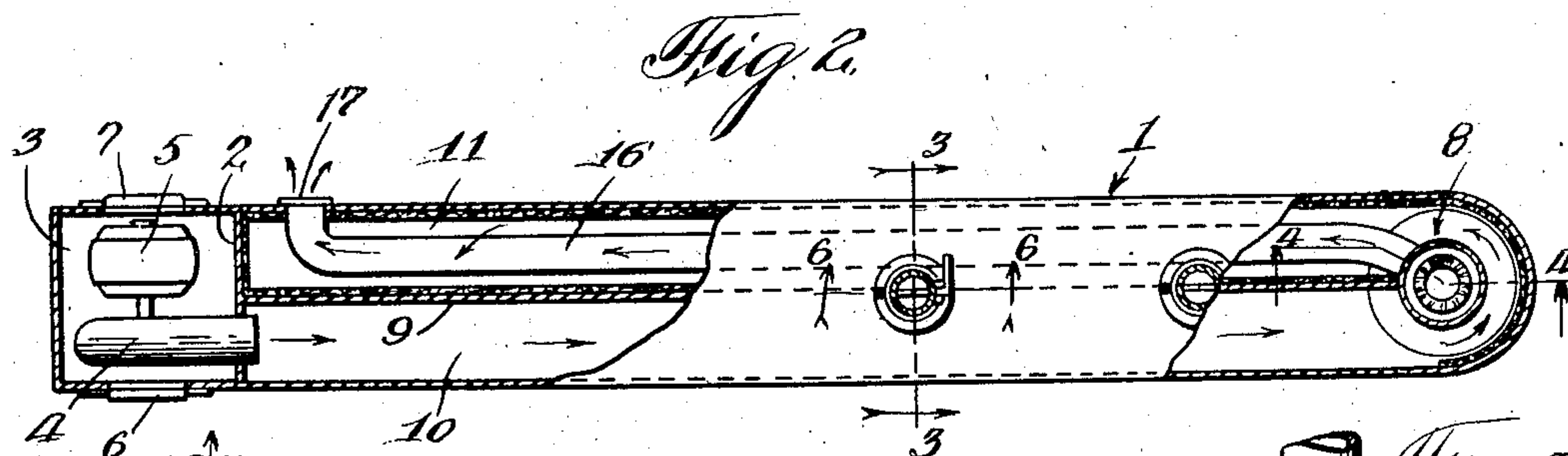
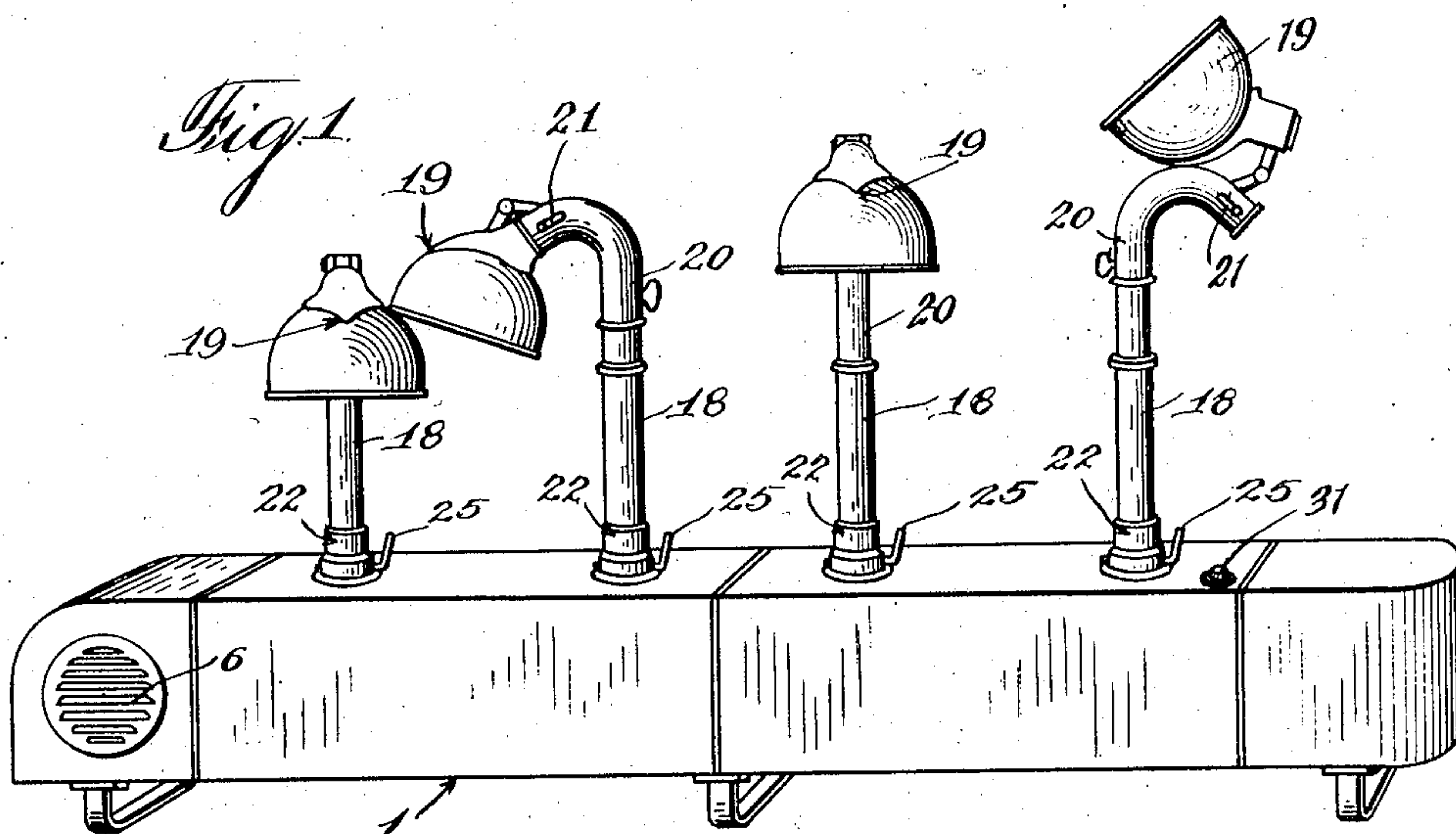
Nov. 26, 1935.

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2,022,237

HAIR DRIER

Filed March 14, 1935



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UNITED STATES PATENT OFFICE

2,022,237

HAIR DRIER

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Application March 14, 1935, Serial No. 10,995

9 Claims. (Cl. 34—26)

This invention relates to hair drying apparatus and more particularly to devices whereby a plurality of hair drying hoods or helmets may be used simultaneously, or otherwise, and in which the temperature of the air directed to any of the hoods may be easily controlled.

The device is adapted for use in beauty parlors and hair dressing establishments, and is particularly desirable for maintaining a constant air pressure when desired and preventing the direction of sudden blasts of either hot or cold air onto the head of the user.

It is common practice to provide individual portable hair drying machines in hair dressing establishments. Such machines entail considerable expense as they are usually each provided with a blower and heater. It is therefore an object of the present invention to provide a comparatively small portable device having a plurality of hoods which may be used simultaneously if desired and which are connected to a single combined air heating and blowing device in a manner whereby the air pressure directed to the various hoods may be substantially equalized and the temperature conveniently controlled.

It is a further object of my invention to provide a multiple hair drying device which is comparatively small and compact and relatively cheap to manufacture.

Further objects will be apparent from the specification and the appended claims.

In the drawing:

Figure 1 is a perspective view of one embodiment of the invention.

Fig. 2 is a top view of the embodiment illustrated in Fig. 1, with the hood supports and a part of casing and heater broken away for purposes of illustration.

Fig. 3 is a transverse sectional view taken on a line substantially corresponding to line 3—3 of Fig. 2. This view also illustrates one of the mixing or control valves whereby the temperature of the air directed to its respective hood may be easily controlled.

Fig. 4 is a vertical section through the heater and taken on a line substantially corresponding to line 4—4 of Fig. 2.

Fig. 5 is an end elevation of the heater end of the device as illustrated in Figs. 1 and 2, and is broken away for the purpose of illustrating the position of the thermostat and manual control therefor.

Fig. 6 is a fragmentary detail section taken on a line substantially corresponding to line 6—6 of Fig. 2 and illustrates the valve in vertical position, that is, when an equal volume flow of cool and warm air is being admitted to the hood conduit.

Referring to the drawing in detail, the embodiment illustrated comprises an elongated casing 1. This casing is preferably made of sheet metal and is provided with a transverse partition 2 adjacent one end to form a comparatively small blower chamber 3. A blower 4 is mounted in this chamber and may be of any of the usual centrifugal types, and is driven by means of a motor 5 which may be connected to a suitable electrical power source. Louvers are arranged in the side of the blower chamber to provide an air inlet 6, and additional louvers 7 may be provided for suitable ventilation of the motor. The blower 4 is arranged to direct air under pressure through the partition 2, as illustrated.

A gas heater 8 is mounted in the opposite end of the casing 1 and the casing is provided with a vertical partition 9 which extends from the partition 2 to a point adjacent the heater 8. This partition 9 divides the casing into two substantially equal longitudinal chambers 10 and 11. These chambers form, in effect, a substantially continuous U-shaped conduit, the cross-sectional area of which is somewhat restricted adjacent the heater 8.

The heater 8 is illustrated in detail in Fig. 4 and comprises a vertical shell or casing 12 having an opening 13 at the bottom to receive a gas burner 14 which may be suitably supported on the casing 1. The heater shell 12 is provided with annular fins 15 for heat radiation whereby the air is heated to a desired temperature during its movement through the restricted passage around the heater. The heater is also provided with an exhaust pipe 16 which is preferably located in the chamber 11, as illustrated in Fig. 2, and extends substantially the entire length of the chamber. The pipe 16 is provided with an outlet 17 whereby a pipe may be connected thereto if desired to carry away the exhaust gases.

It will be apparent that the chamber 10 contains cool air which is maintained under pressure by means of the blower 4, and that this cool air is heated during its passage around the heater 8. A constant pressure of warm air is, therefore, maintained in the chamber 11 and the temperature is substantially equalized therein by the exhaust pipe 16.

A plurality of vertical hood conduits 18 are mounted on the casing 1 substantially in alignment and preferably positioned directly over the longitudinal partition 9. Air drying hoods 19 are

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telescopically mounted in the conduits 18 by means of suitable conduit extensions 20 which are slidably and rotatably mounted therein. The conduit extensions 20 are provided with valves 21 which are preferably of the ordinary damper type whereby the conduits may be completely or partially closed and the volume flow of air passing to the hood may be controlled. The hoods are preferably hinged as shown and may be adjusted vertically to a desired height, and may be rotated so that they may be used in any desired position and from either side of the device.

As previously stated, and as indicated in Fig. 3, the conduits 18 are preferably mounted directly over the vertical partition 19 and are supported on the casing 1 by means of a valve housing 22. This valve housing has a substantially hemispherical valve chamber therein providing an opening on each side of the partition 9 and communicating with the cool and warm air chambers 10 and 11, respectively. A leaf valve is mounted in the housing 22 and comprises a semi-circular leaf 23 (Fig. 6) secured to an oscillatable valve stem 24 which is mounted in the housing and is provided with a handle 25. The valve stem is also provided with a stop pin 26 arranged to engage suitable stops 27 on the housing to limit the movement of the valve. The valve may be moved from the full-line position shown in Fig. 3 to the dotted line position. The valve stem is retained in frictional relation with the housing 22 by means of a spring 28, and it will be apparent that the valve leaf 23 may be accurately adjusted to and retained in any position intermediate the positions shown in Fig. 3 and thereby accurately control the proportionate amount of hot and cold air entering the conduit 18 from the chambers 10 and 11, respectively. The temperature of the air admitted to each hood 19 through its respective conduit 18 may be determined by the user without changing the flow. Also, the flow of this mixed air to each hood at a desired temperature may be controlled by means of their respective valves 21.

The invention provides a very desirable method of equalizing the pressures and temperatures to the various hoods. The chambers 10 and 11 (which in reality form a substantially continuous conduit) are of substantially the same cross-sectional area; however, the passage around the heater 8 is somewhat restricted. This restricted flow, however, is compensated for by the expansion of the air as it leaves the heater and it is retained at substantially the same temperature and pressure throughout the entire length of the chamber 11. The heated exhaust conduit 16 also tends to equalize the temperature throughout the chamber 11. It will therefore be found that the pressure in the cool air chamber 9 and the warm air chamber 11 is substantially equal over the entire length of the pressure chambers. Therefore, when any of the hood conduits are open to the same degree, the pressures and temperatures of the air delivered to the various hoods will be substantially equal. The chamber 11 is preferably provided with a lining comprising a suitable insulating material 29.

In order to maintain a constant predetermined temperature of the air in the chamber 11, an automatic control may be provided for the burner 14. This may comprise a thermostat 30 (Fig. 5) which extends into the warm air chamber 11 and is provided with an adjusting dial 31. The dial may be provided with suitable legends

whereby the thermostat may be adjusted to control the burner to maintain a maximum temperature, that is, the dial 31 may be adjusted to indicate a suitable desired maximum temperature, say 130°, and a suitable burner valve 32 will be automatically closed by the thermostat when this maximum temperature is reached in chamber 11. The valve will be reopened by the thermostat as soon as the temperature drops below 130°. The thermostat may be of any of the usual types and may be connected to the valve by a suitable link and lever mechanism 33.

It will be understood that the burner may be provided with the usual pilot light, or the thermostat may be arranged to only partially close the valve. An electric heater may be used if desired and the thermostat may be arranged to control the electrical circuit in the usual manner of thermostatic circuit control.

The present invention presents many advantages in that it occupies a comparatively small space and is easily portable. It may be supported on casters or on runners as shown in Fig. 1. The usual type of hood and extensible support therefor may be used and the temperatures and pressures are so controlled and equalized that sudden blasts of either hot or cold air are not directed to the hoods. The invention also provides a very desirable air conditioning device in that when the valves 23 are positioned to shut off the warm air, cool air may be circulated in the room through the hoods 19. For instance, one of the hoods may be in use for hair drying while one or more of the other hoods may be used to direct cool air, as desired.

The entire device is comparatively small. However, the cross-sectional areas of the chambers 10 and 11 are relatively large and the walls are preferably smooth and free from obstructions to reduce resistance to air flow and to equalize air pressure.

Modifications may be made by those skilled in the art without departing from the spirit of the invention. Therefore, it is desired that the invention be limited only by the prior art and the scope of the appended claims.

Having thus described this invention, what is claimed and desired to be secured by Letters Patent is:

1. A hair drier comprising an elongated conduit, means at one end of said conduit for forcing cool air therethrough, an air heater intermediate the ends of said conduit, a mixing conduit arranged to direct air from both sides of said heater to the hair, and a mixing valve arranged to vary the relative volumes of hot and cool air directed to the hair while maintaining the same total volume flow.

2. A hair drier comprising a casing having an elongated chamber therein, means for maintaining air pressure therein, a heater intermediate the ends of said chamber and providing a restricted air passage past said heater, a conduit arranged to receive air under pressure from both sides of said heater and directing it to the hair, and means for varying the amount of air received from either side.

3. A hair drier comprising an elongated casing, a partition in said casing and terminating adjacent one end thereof to provide a substantially U-shaped air conduit, means for directing air through said conduit, an air heater adjacent the open end of said partition, the air passage being restricted adjacent said heater, an outlet conduit communicating with both arms of said

U-shaped conduit, and means for varying the proportionate volumes of cool and hot air admitted to said conduit.

4. A hair drier of the character described comprising an elongated casing, a longitudinal partition in said casing and terminating adjacent one end to form an enlarged returned conduit, a heater in said casing and adjacent the open end of said partition, said partition and said heater serving to separate said casing into a hot air compartment and a cool air compartment, means for forcing air under pressure into said cool air compartment and past said heater into said hot air compartment, a plurality of hoods, adjustable conduits supporting said hoods, and a mixing valve associated with each conduit to admit air from each compartment thereto to control the temperature of the air directed to said hoods.

5. A hair drier of the character described comprising an elongated casing, a longitudinal partition in said casing and terminating adjacent one end to form an enlarged returned conduit, a heater in said casing and adjacent the open end of said partition, said partition and said heater serving to separate said casing into a hot air compartment and a cool air compartment, means for forcing air under pressure into said cool air compartment and past said heater into said hot air compartment, a heater exhaust pipe extending substantially the entire length of said hot air compartment, a plurality of hoods, adjustable conduits supporting said hoods, and a mixing valve associated with each conduit to admit air from each compartment thereto to control the temperature of the air directed to said hoods.

6. A hair drier of the character described comprising an elongated casing, a longitudinal partition in said casing and terminating adjacent one end to form an enlarged returned conduit, a heater in said casing and adjacent the open end of said partition, said partition and said heater serving to separate said casing into a hot air com-

partment and a cool air compartment, means for forcing air under pressure into said cool air compartment and past said heater into said hot air compartment, a plurality of hoods, adjustable conduits supporting said hoods, a mixing valve associated with each conduit to admit air from each compartment thereto to control the temperature of the air directed to said hoods, a temperature responsive means in said hot air compartment and operably connected to said heater to limit the temperature to a predetermined maximum, and adjustable means to predetermine the maximum temperature.

7. A hair drier comprising substantially parallel elongated chambers communicating adjacent one end, a heater adjacent said end, means communicating with the opposite end of one chamber to force air past said heater into the other chamber, and means for simultaneously directing air from both chambers to the hair.

8. A hair drier comprising an elongated casing comparatively small in cross section and having substantially parallel chambers therein communicating adjacent one end, a heater adjacent said end, means communicating with the opposite end of one chamber to force air past said heater into the other chamber, all of said elements being substantially within the small cross sectional contour of said casing, and means for simultaneously directing air from both chambers to the hair.

9. A hair drier comprising an elongated air container, means for directing air at room temperature through said container, a heater intermediate the ends of said container and in the path of said air, a plurality of hoods and means for directing air to each hood from opposite sides of said heater, and means to control the relative proportion entering each hood from each side of said heater.

SAMUEL GRANT.