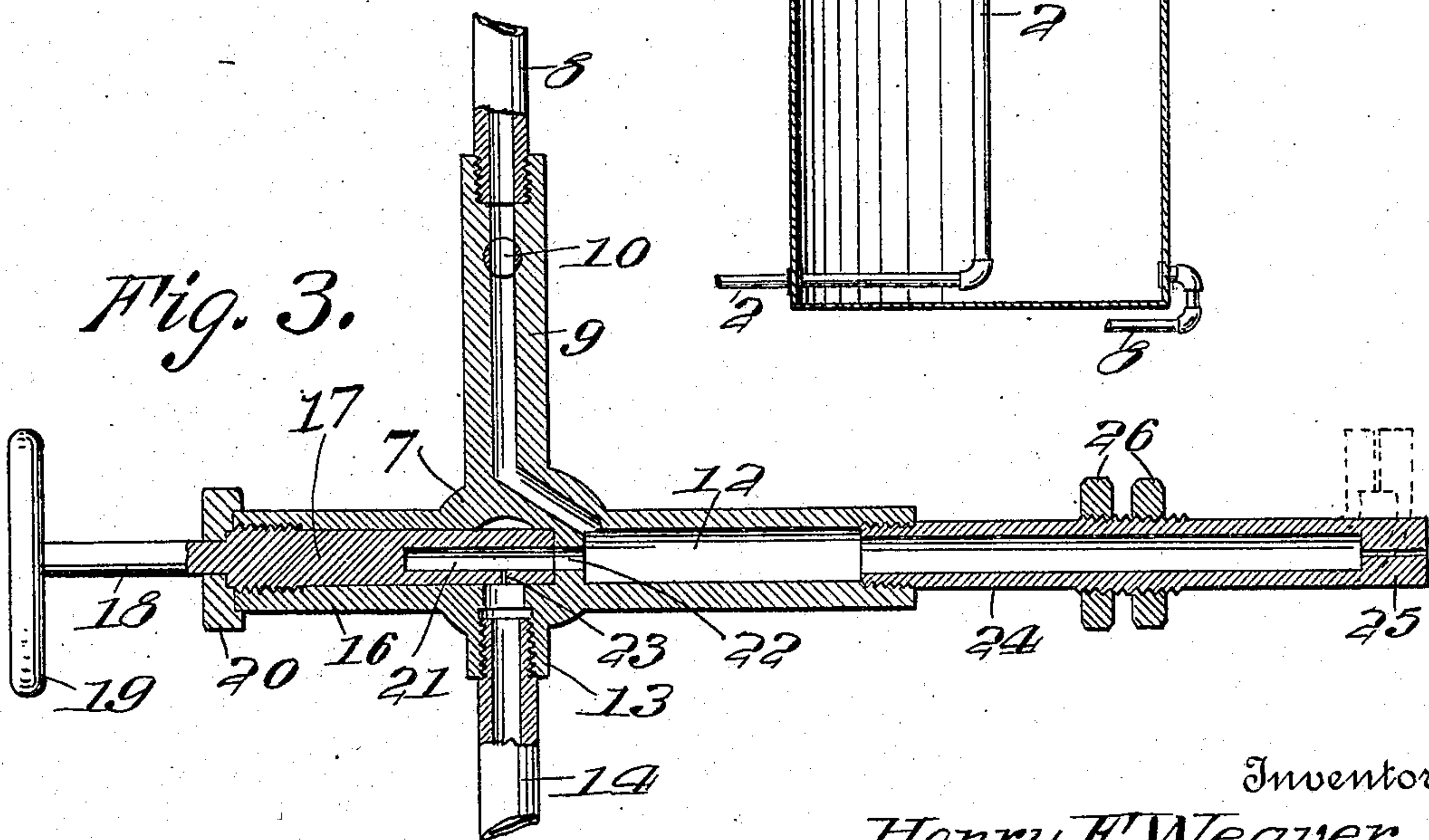
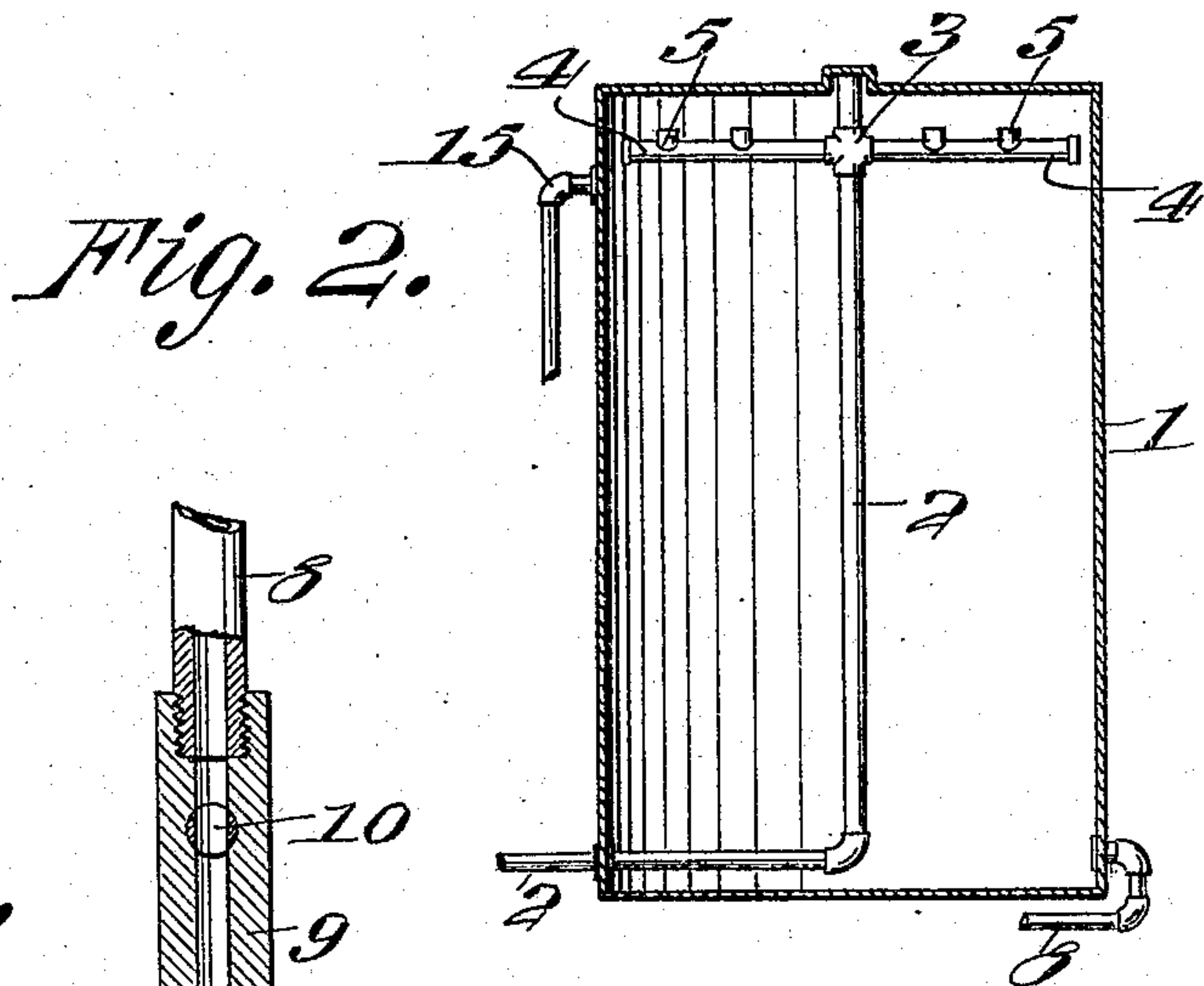
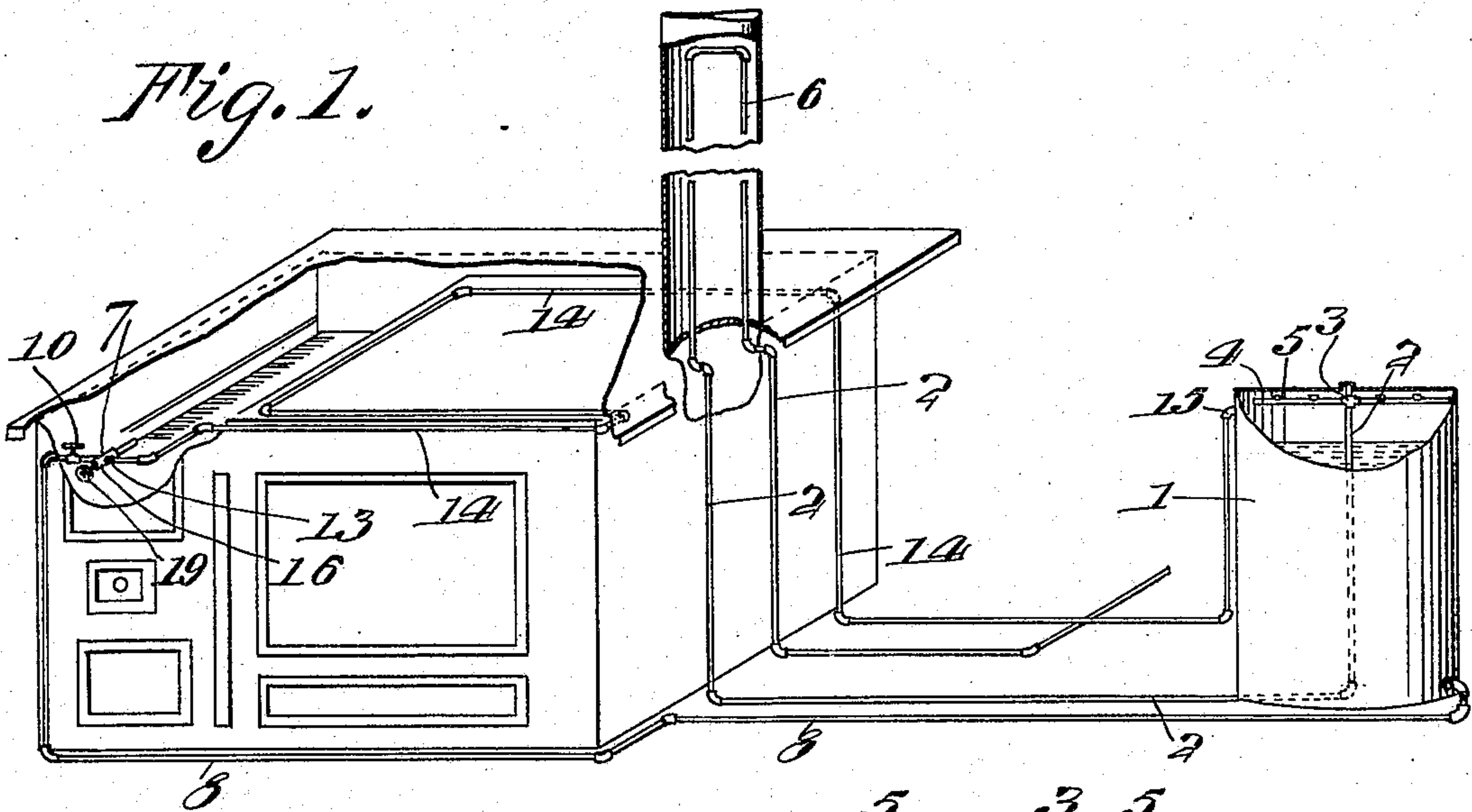


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 APPARATUS FOR SUPPLYING, HEATING, AND BURNING CRUDE OIL AND AIR.
 APPLICATION FILED JAN. 14, 1909.

936,688.

Patented Oct. 12, 1909.



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UNITED STATES PATENT OFFICE.

HENRY ELLIS WEAVER, OF DALLAS, TEXAS.

APPARATUS FOR SUPPLYING, HEATING, AND BURNING CRUDE OIL AND AIR.

936,688.

Specification of Letters Patent.

Patented Oct. 12, 1909.

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To all whom it may concern:

Be it known that I, HENRY ELLIS WEAVER, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Apparatus for Supplying, Heating, and Burning Crude Oil and Air; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in apparatus for supplying, heating and burning crude oil and air.

The object of the invention is to provide an apparatus of this character in which the air and oil are warmed before being supplied to the burner and in which the warm or heated air before passing to the burner is employed to warm the oil as well as to exert a pressure thereon.

A further object is to provide an improved form of burner having means whereby a certain amount of air is continuously passing to the burner, thus preventing the same from becoming clogged.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a diagrammatic perspective view of a cooking stove showing the apparatus applied thereto; Fig. 2 is a vertical sectional view through the oil tank showing the arrangement of the oil and air pipes therein; Fig. 3 is a detail sectional view through the burner and the adjacent ends of the oil and air supply pipes.

In the embodiment of the invention as shown in the accompanying drawings wherein the apparatus is shown as being applied to an ordinary cook stove, 1 denotes an oil tank with which is connected a compressed air supply pipe 2, said pipe preferably entering the tank at the bottom and passing upwardly therethrough to the top of the same, as shown at 3, where said pipe is connected to a transversely disposed discharge pipe 4 in which is formed a series of air discharging ports 5. The air supply pipe 2 is connected at its opposite end to an air pump or other source of compressed air supply (not shown).

The pipe 2 before entering the tank 1 is provided with a loop shaped extension 6 which is arranged within the smoke pipe of the stove and is heated therein so that the air passing from the pipe 2 is heated before entering the tank and said heated air in coming in contact with the oil after being discharged through the ports 5 warms the oil and at the same time exerts a pressure thereon.

In the fire box of the stove is arranged a burner 7 with which is connected an oil supply pipe 8 which passes around the outside of the stove and is connected to the lower end of the tank 1, as shown. The burner 7 is provided with a branch 9 with which one end of the oil supply pipe is connected and said branch 9 with a regulating valve 10 whereby the supply of oil to the burner is controlled. The branch 9 communicates with a mixing chamber 12 arranged in the burner.

Formed on the burner is a nipple 13 with which is connected the end of an air conducting pipe 14 which preferably extends around through the upper portion of the stove above the oven and is connected to the upper portion of the tank above the oil, as shown at 15, whereby the heated air discharged into the upper end of the tank from the ports 5 of the cross pipe 4 is conducted to the burner.

On the burner is formed a branch 16 in which is screwed a clean out plug 17 on the outer end of which is arranged an operating stem 18 having a hand wheel 19 whereby the plug may be unscrewed and removed from the burner when desired. The outer end of the branch 16 is preferably provided with a packing gland 20 arranged around the stem 18 of the plug. In the inner end of the plug is formed a socket or passage 21 which communicates with a passage 22 opening into the mixing chamber 12. To one side of the plug 17 and communicating with the passage 21 is a small air port or passage 23 which communicates at its outer end with the nipple 13 and the end of the air conducting pipe 14. Through the reduced port or passage 23 the warmed compressed air is admitted to the passages 21 and 22 and from thence enters the mixing chamber 12 where it is mixed with the oil and passes through a conducting tube 24 to the burner tip 25 arranged on the outer end of the tube 24, as shown. The burner tip 25 is preferably formed in alignment with the tube 24 as shown in full lines when the burner is used in connection with the cooking stove. When the burner is to be

employed in connection with a heating stove, the tip 25 is preferably arranged at right angles to the tube 24 as shown in dotted lines in Fig. 3 of the drawings. On the tube 24
5 is formed a threaded enlargement on which is screwed clamping nuts 26 which are adapted to be engaged with a suitable part of the stove to clamp the burner into engagement therewith.

10 From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

15 Various changes in the form, proportion and the minor details of construction, may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended
20 claim.

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

In an apparatus of the character described,

an oil tank, an air supply pipe connected to 25 the upper portion of the tank, means whereby the air is heated in said pipe before being discharged therefrom into the oil tank, a burner having formed thereon a valved branch, an oil conducting pipe to connect 30 said branch of the burner with said oil tank, an air conducting pipe to connect said burner with the upper portion of the oil tank, a plug arranged in said burner, said plug having formed therein an air conducting passage 35 and an air port, a mixing chamber formed in said burner and communicating with the oil supply branch and with the air passage and port in said plug, a tip arranged on said burner, and means whereby the burner is 40 secured in the fire box of the stove.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY ELLIS WEAVER.

Witnesses:

OTTO H. LANG,

FRANK O. MITCHELL.