

No. 883,216.

PATENTED MAR. 31, 1908.

N. W. LUNDY.  
SOLDERING FURNACE.  
APPLICATION FILED MAY 17, 1907.

3 SHEETS—SHEET 1.

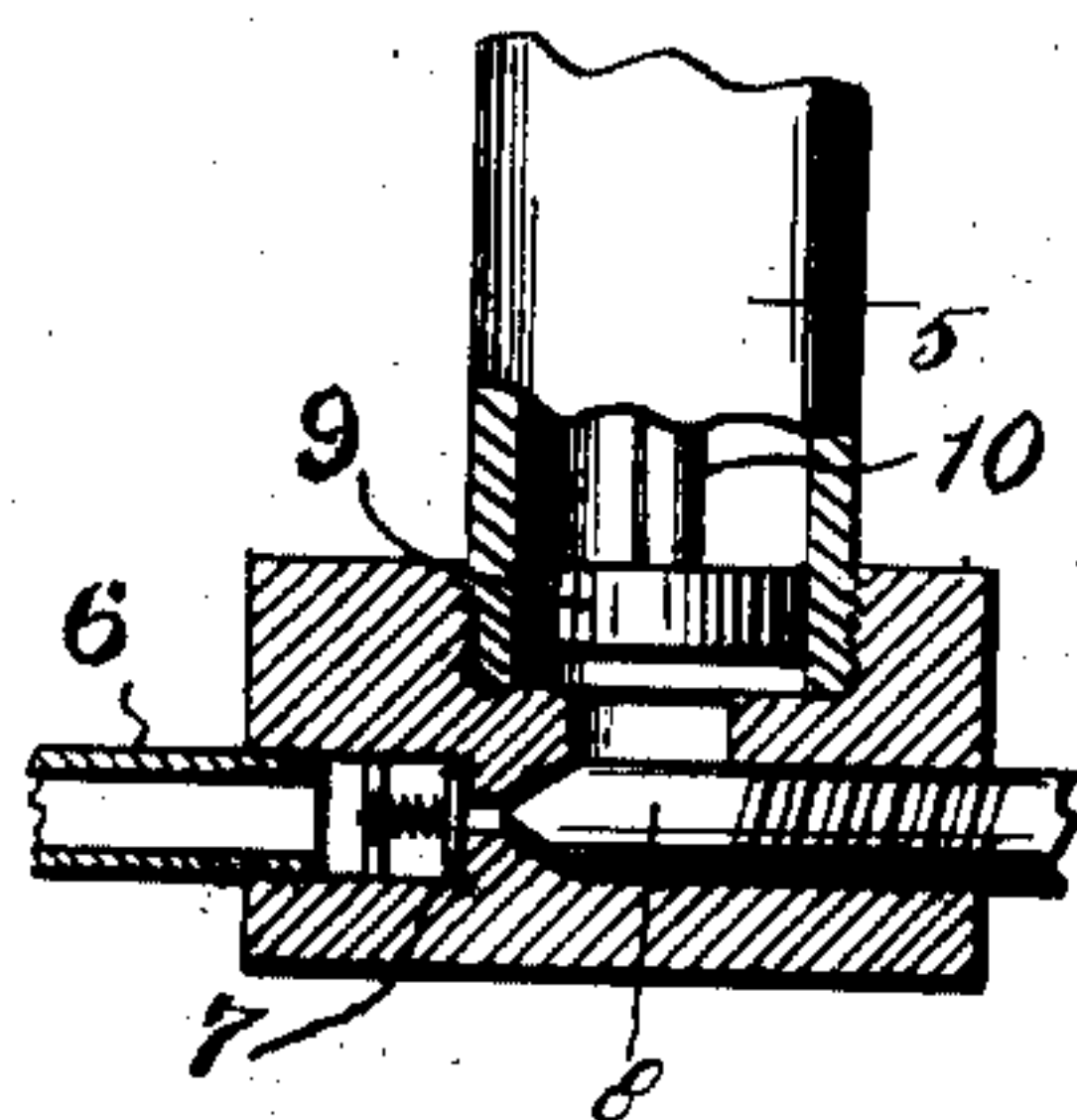
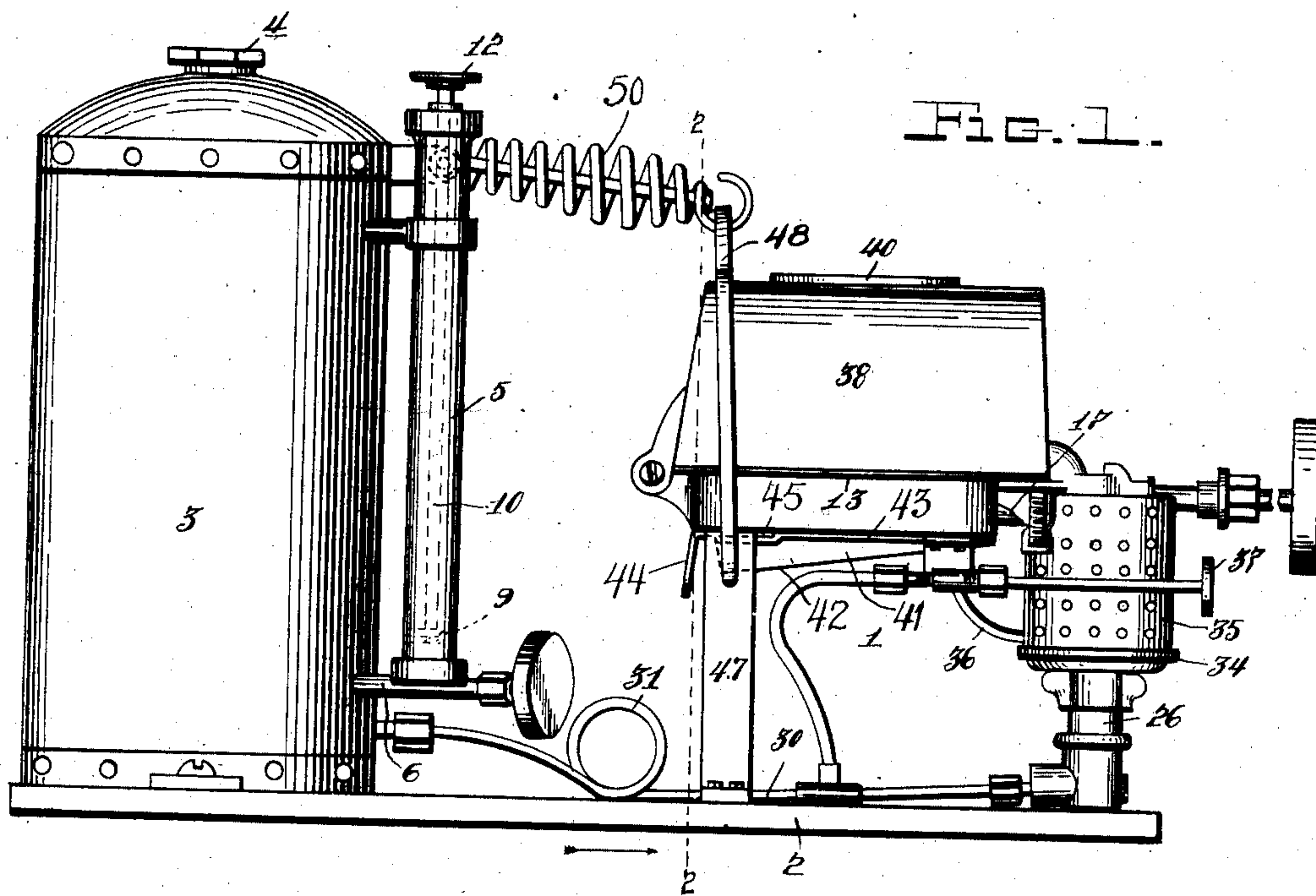


Fig. 7.

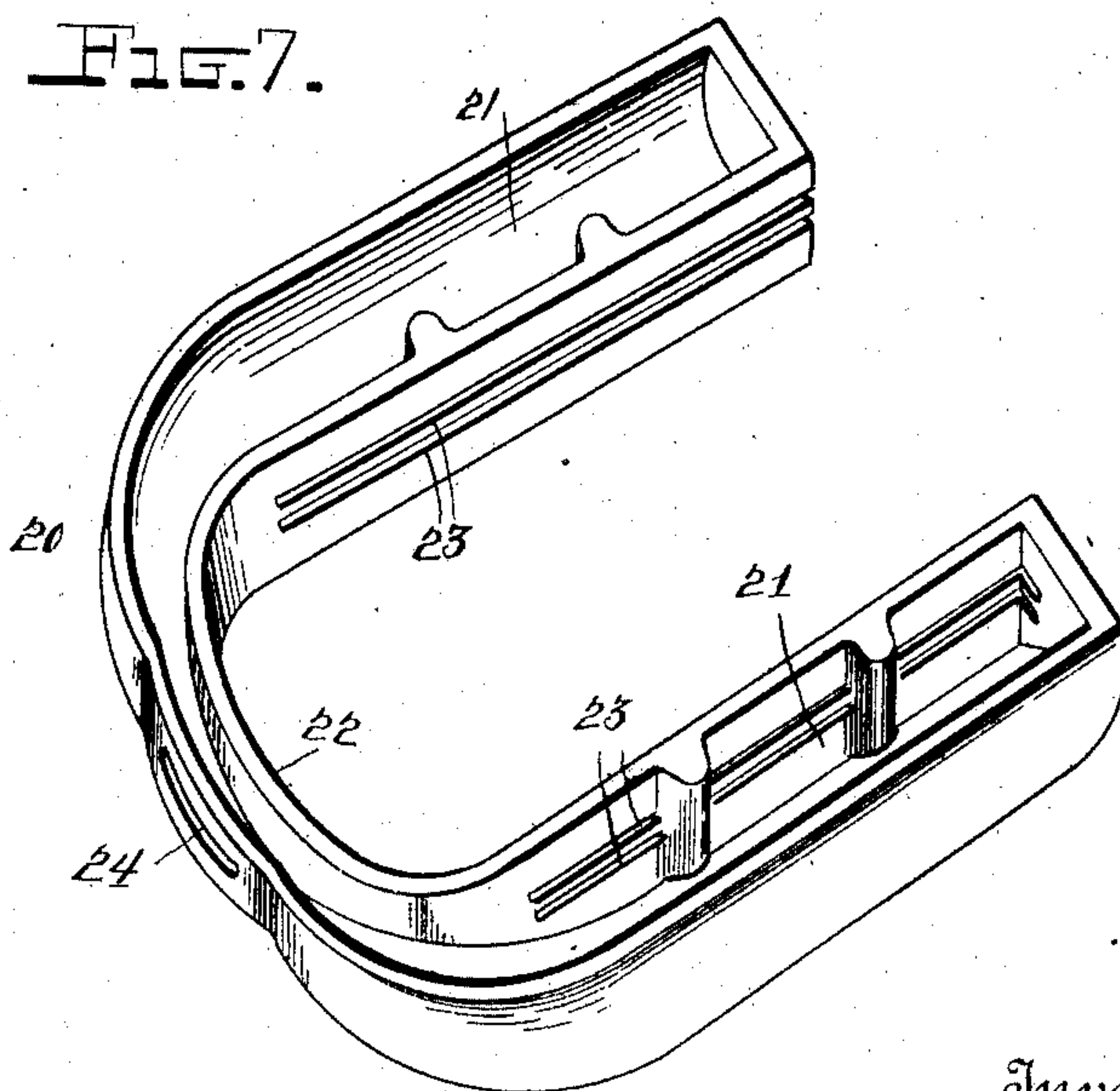


Fig. 6.

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3 SHEETS—SHEET 2.

FIG. 2.

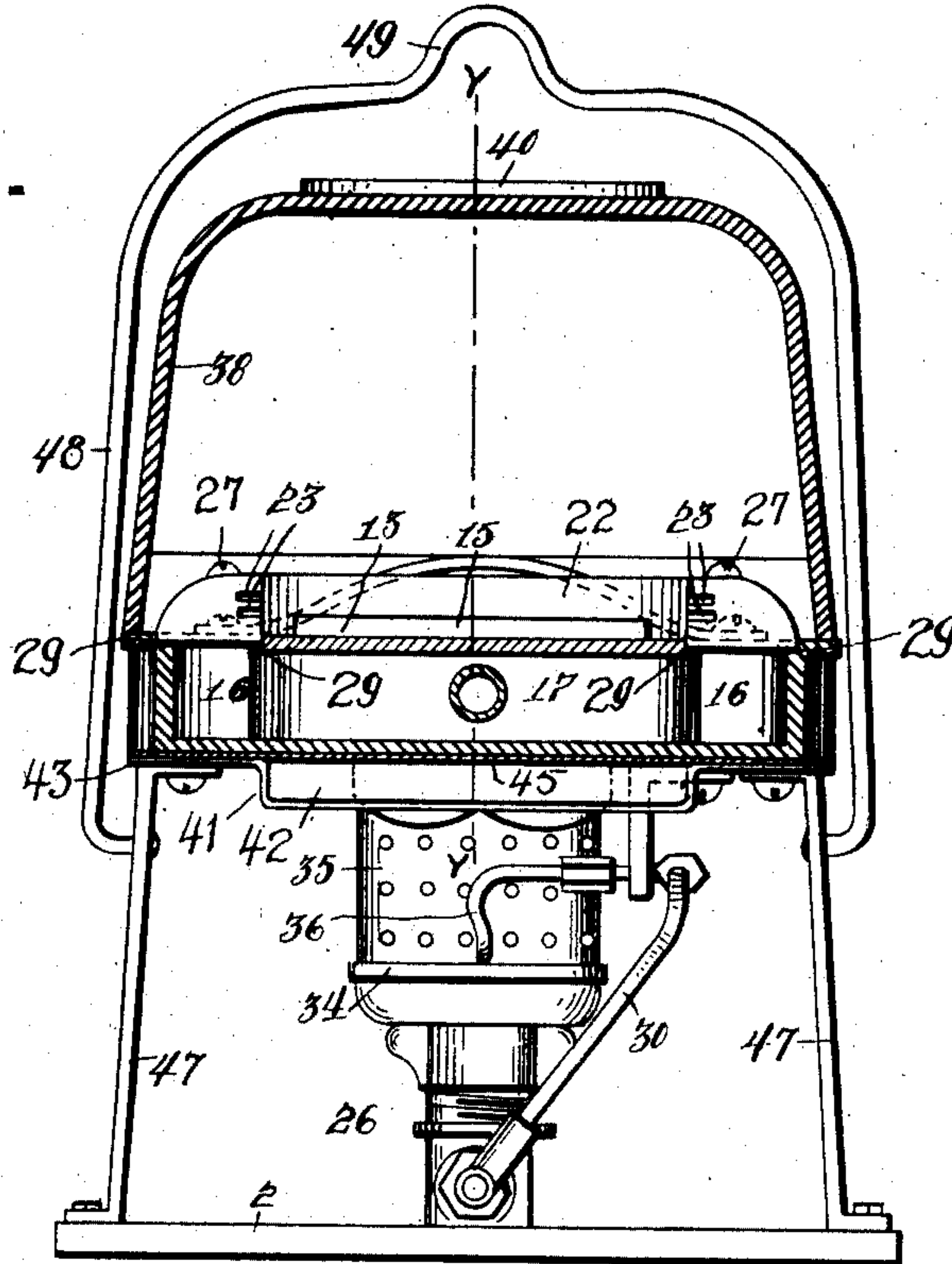
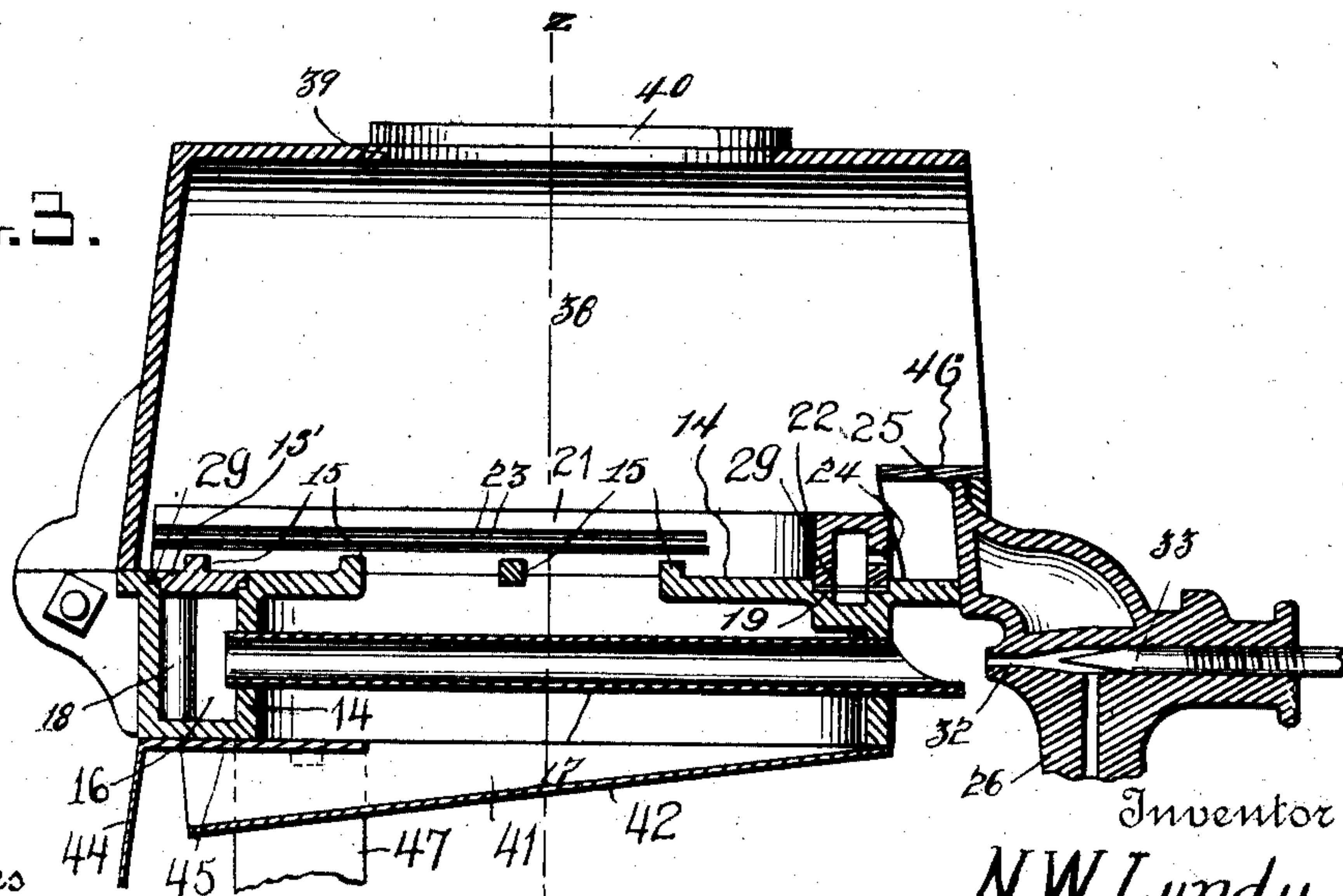


FIG. 3.



Witnesses

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3 SHEETS—SHEET 3.

FIG. 4.

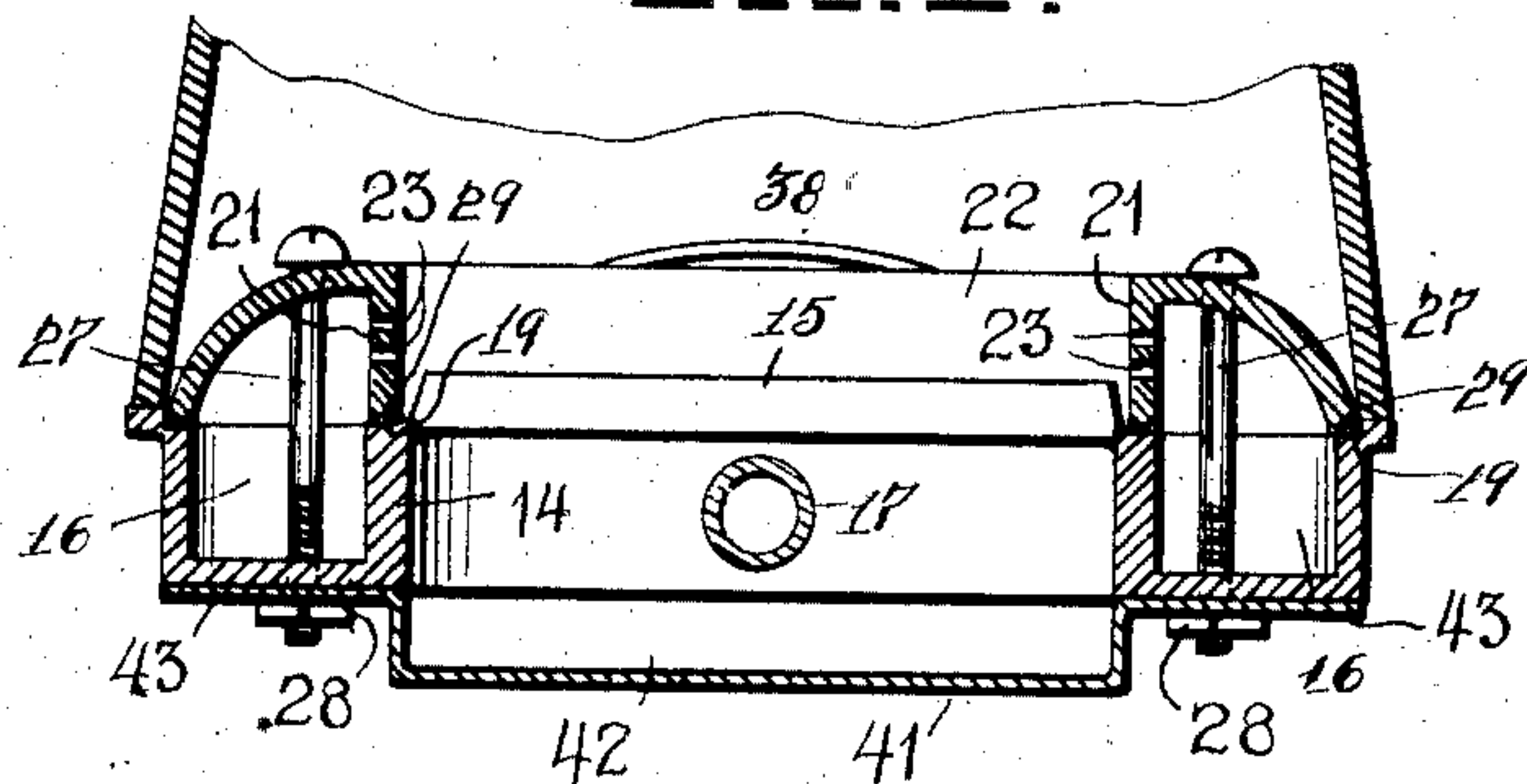
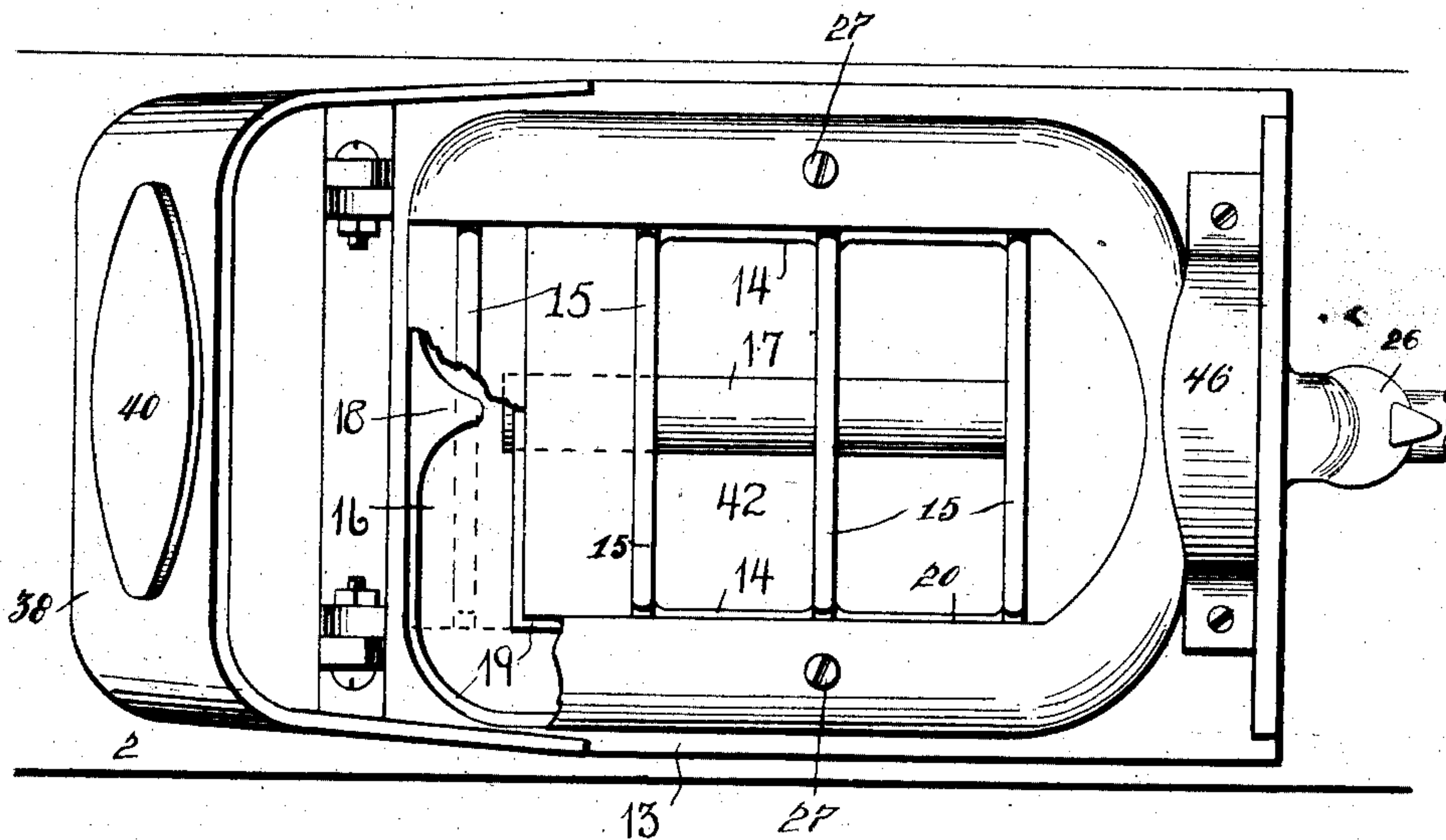


FIG. 5.



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# UNITED STATES PATENT OFFICE.

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## SOLDERING-FURNACE.

No. 883,216.

Specification of Letters Patent.

Patented March 31, 1908.

Application filed May 17, 1907. Serial No. 374,170.

*To all whom it may concern:*

Be it known that I, NATHAN W. LUNDY, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented certain new and useful Improvements in Soldering-Furnaces; 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 soldering furnaces.

The object of the invention is to provide a furnace of this character by means of which soldering irons may be quickly heated, means being provided whereby the heat blasts are forced inwardly onto both sides of the irons, the receptacle for which being entirely closed except at the bottom and at the front end where the irons are inserted will protect the irons from all cold or outside air, thereby insuring a quicker heat with less fuel than is obtained in other furnaces of similar construction.

A further object is to provide a soldering furnace which will be simple, strong and durable in construction, efficient and economical in operation and possessing no small channels or passages to be clogged up.

Another object is to provide a furnace of this character which may be permanently mounted when used in connection with a system, or which may be readily carried around for use.

With the above and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a side view of a soldering furnace constructed in accordance with the invention; Fig. 2 is a vertical cross sectional view, taken on a line 2—2 of Fig. 1; Fig. 3 is a vertical longitudinal sectional view through the heating chamber of the furnace taken on the line Y—Y of Fig. 2; Fig. 4 is a vertical, transverse sectional view through the same produced on the line Z—Z of Fig. 3; Fig. 5 is a plan view of the heating chamber with the cover of the same thrown back and parts broken away to illustrate the interior construction and arrangement of the parts; Fig. 6 is an inverted perspective view of the burner; and Fig. 7 is a detail sectional view

through the lower end of the air pump showing the arrangement of the cut-off valve therein. Fig. 8 is an enlarged detailed view disclosing more particularly the check-valve opposed to the pump cut-off valve.

Referring more particularly to the drawings, 1 denotes the furnace, which comprises a suitable base 2, on one end of which is secured a fuel tank 3 having in its upper end a threaded filling opening adapted to be normally closed by a screw plug 4. Arranged on one side of the tank is an air pump 5, the lower end of which is connected with the tank by an inlet pipe 6, in which is arranged a check valve 7 and a cut-off valve 8. The pump 5 is provided with a piston 9, to which is connected a piston rod 10 having on its upper end a handle or knob 12.

On the opposite end of the base 2 is arranged the furnace proper, which consists of a bottom plate 13 comprising a central open iron supporting portion 14, on which is formed a series of transversely disposed upwardly projecting ribs 15, upon which the soldering irons rest while being heated. In the rear end of the bottom plate 13 between the ends of the burner, is a removable plate, 13', which forms a continuation of the iron supporting portion 14 and provides means for obtaining access to the end of the fuel conducting tube. Around the portion 14 of the plate is formed a fuel conducting channel 16, to the rear end of which is connected a fuel conducting tube 17. The channel, 16, immediately opposite the entrance of the tube 17 is formed with an inwardly projecting substantially V-shaped deflecting lug 18 by means of which the fuel passing from the tube 17 is directed in opposite directions around through the channel 16.

In the plate 13 adjacent to the upper edges of the channel 16 is formed a right angular seat or recess 19, with which is adapted to be engaged a burner 20, said burner consisting of channel-shaped side pieces 21, which are connected at their forward ends by a curved channel shaped cross piece 22. In the inner side of the channel shaped side pieces of the burner are formed horizontal, longitudinally-disposed slits or burner passages 23, through which the fuel passes and burns. The end cross piece 22 of the burner is provided on its outer side with a centrally disposed slot or passage 24, through which a portion of the burning fuel passes and is directed upon a heating plate 25 formed on the upper end of



a stand pipe 26 in the mixing chamber and vaporizer of the furnace. The burner 20 is preferably held in place on the plate 13 by means of fastening bolts 27, which are passed  
5 therethrough and through the plate at the bottom of the channels 16. The projecting ends of said bolts are provided with clamping nuts 28, whereby said burner is removably held in place. Between the lower edges  
10 of the burner and the seat or recess 19 is preferably disposed a packing 29 of asbestos or other suitable material.

Arranged on the forward end of the base 2 is the stand pipe 26, with the lower end of  
15 which is connected a fuel supply pipe 30, the opposite end of said pipe being connected to the lower end of the fuel tank, as shown. The supply pipe 30 is preferably of very small size and is provided in its length with  
20 a coil 31, by means of which the fuel from the tank is properly fed to the stand pipe, the latter being provided with gravel or other material through which the fuel is adapted to filter before entering the burner. In the  
25 upper end of the stand pipe immediately below the heating plate 25 is formed a discharge passage 32 through which the fuel is adapted to be injected into the forward end of the feed tube 17 of the furnace. Ar-  
30 ranged in the upper end of the stand pipe is a needle valve 33 by means of which the fuel may be cut off from the feed pipe or the flow of the fuel regulated. Around the upper end of the stand pipe 26 is arranged a cup 34, in  
35 which is placed the lower end of a perforated cylinder 35, which forms a preliminary heating chamber for the burner. The cup 34 is connected to the fuel supply pipe 30 by means of a branch pipe 36 in which is ar-  
40 ranged a cutoff valve 37.

Hingedly connected to the rear end of the plate 13 is a furnace cover 38, said cover being preferably in the form of a rectangular box, the forward end of which is left open for  
45 the insertion of the soldering irons to be heated. The cover 38 when in closed position upon the plate 25 forms a heating compartment which being closed thereby on all sides except the forward end and bottom  
50 provides a heating chamber from which the cold outside air is prevented from entering thus providing for the quick heating of the irons when placed therein. The arrangement of the burner slits or passages 23 will  
55 cause the flame to be directed inwardly from each side of the burner, thereby coming into contact with all sides of the soldering irons when placed therein, thus facilitating the rapid heating of the same. In the upper  
60 side of the cover 38 is formed an opening 39, which is normally closed by means of the plate 40. The opening 39 is provided for the purpose of receiving a plumber's lead pot or a glue pot by means of which the same or  
65 any other receptacle may be quickly heated.

The central open portion 14 of the base plate 13 is covered on its underside by a plate 41, having a rearwardly and downwardly projecting, inclined central portion,  
42, open at its rear end as shown. Around  
70 the inclined central portion of the cover plate is formed an attaching flange 43 adapted to engage and to be bolted or otherwise secured to the bottom of the fuel channel, as shown. At the open end of the inclined cen-  
75 tral portion 42 of the plate is arranged a depending air deflecting plate or shield 44 having on its upper end an attaching flange 45 adapted to be inserted and secured between the attaching flange 43 of the plate 41 and  
80 the plate 13. The plate 44 is provided to prevent the air from blowing directly into the open portion of the plate 13.

Over the space between the end cross piece 22 of the burner and the heating plate 25 is  
85 arranged a hood 46 formed of a curved strip of metal, as shown.

The plate 13 is preferably supported at its forward end upon legs 47, to which are connected a bail 48, in the upper end of which is  
90 formed a groove or notch 49 with which is adapted to be engaged the forward end of a coil wire handle 50. The opposite end of the handle 50 is pivotally connected to a lug carried by the upper end of the fuel tank. By  
95 this means I am enabled to drop the handle and thus permit it to swing back out of the way so as to facilitate the opening of the furnace cover.

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

Various changes in the form, proportion  
105 and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined in the appended claims.  
110

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

1. In a soldering iron heater, the combination with a supporting base, of a furnace comprising a bottom plate having a fuel conducting channel arranged around the same, a central fuel feeding tube fixed to, and delivering the fuel into said channel, and a deflector secured to the interior of said channel, in  
115 alinement with the interior of said tube for directing the fuel through both arms of said fuel conducting channel and a burner having a forward end cross-piece having an outwardly delivering passage, said fuel conducting  
120 channel also delivering into lateral portions of said burner, and means for utilizing the heating action of the flame delivered through the forward end burner passages.

2. In a soldering iron heater, the combina- 130



tion with a supporting base, of a furnace comprising a bottom plate having fuel conducting channels therein, an iron supporting portion, surrounded by said channel, a fuel conducting tube connected with said channel, an open  
 5 bottomed burner with the lower edges of its lateral walls arranged in a seat around the upper edge of said channel, a packing between said burner and said seat, a vaporizer having  
 10 a valved discharge passage connecting with said fuel conducting tube, means for furnishing a fuel supply to said vaporizer, substantially as described.

3. In a soldering iron heater, the combination with a supporting base, of a furnace comprising a bottom plate having a fuel conducting channel therein, an open iron supporting  
 15 portion surrounded by said channel, a fuel separating and deflecting lug arranged in said channel, a fuel conducting tube connected with the latter, said lug or deflector being arranged in alinement with the interior of said  
 20 tube, a burner comprising two sides and an end piece, said side and end pieces having formed therein a continuous chamber opening downwardly into said channel, said side  
 25 pieces having longitudinal burner passages opening through their inner surfaces and said end piece having burner passages opening through its forward portion, iron supporting  
 30 ribs formed on said open iron supporting portion of the bottom plate between the sides of the burner, and means adapted to receive the heating action of the flame issuing through  
 35 the burner passages in said burner forward

end piece, and mixer connected to said furnace, and means to primarily heat said vaporizer, substantially as described.

4. A soldering iron furnace comprising a base, a furnace arranged thereon, said furnace consisting of a bottom plate having an  
 40 open fuel conducting channel arranged therein, an open centrally disposed iron supporting portion arranged on said plate, a horse-shoe-shaped burner adapted to open downwardly into said fuel channel, a rearwardly  
 45 inclined cover plate arranged below the central open portion of the base plate, a plate over the open end of said cover plate, and means for furnishing fuel supply to said furnace.  
 50

5. A soldering iron heater comprising a base, a furnace arranged thereon, said furnace consisting of a bottom plate having  
 55 an open fuel conducting channel arranged therein, an open central iron supporting portion arranged on said plate, a horse-shoe shaped burner adapted to open downwardly into said fuel channel, and a fuel supply stand-pipe having a heating plate subjected  
 60 to the heating action of the flame issuing from the burner openings in the end of said burner.

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

NATHAN W. LUNDY.

Witnesses:

LUTHER G. McCONNELL,  
 CHARLES CLARKE TRUIT.