

W. W. LAMB.
SAD IRON.

APPLICATION FILED MAR. 24, 1903.

NO MODEL.

2 SHEETS—SHEET 1

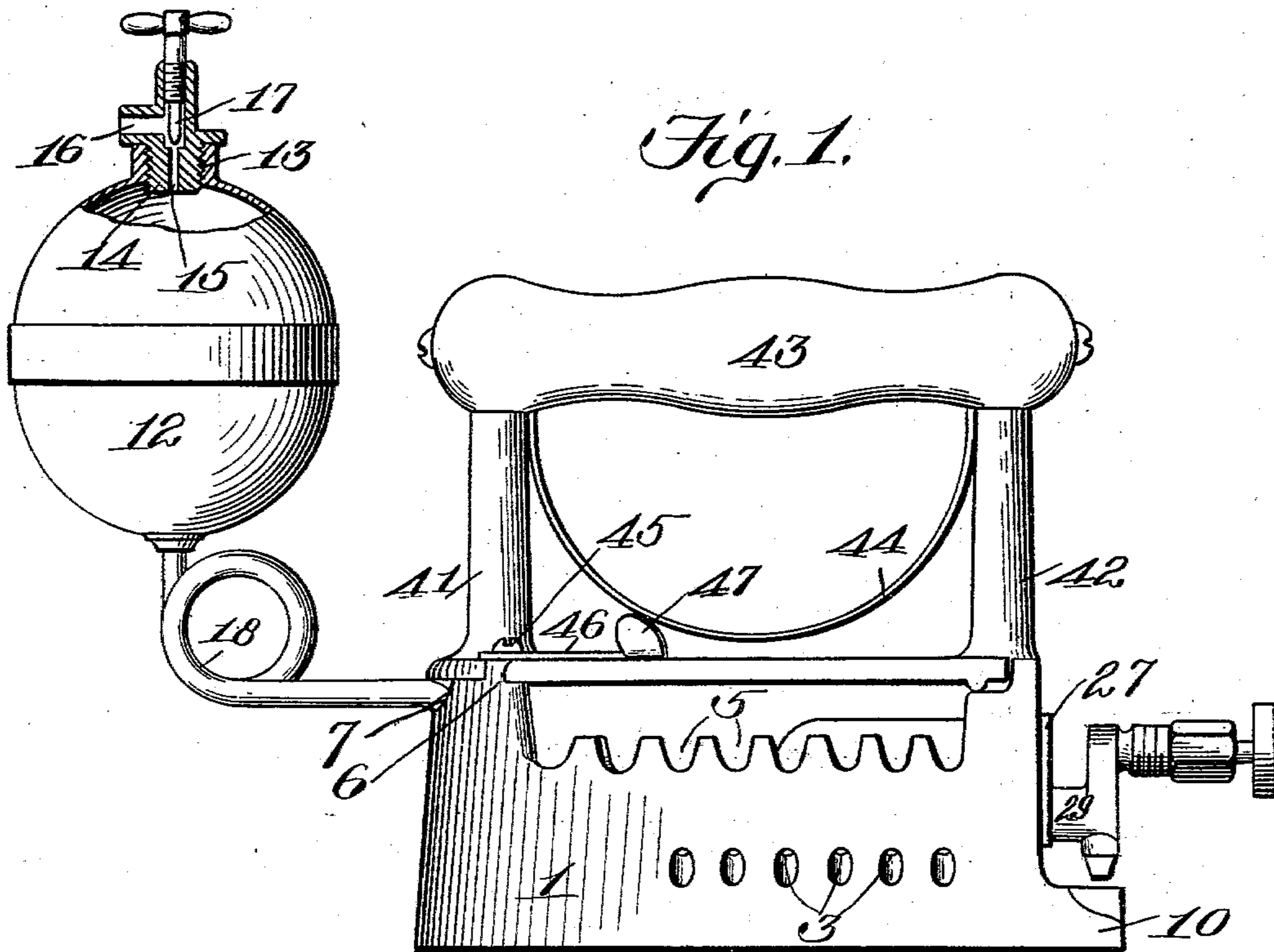
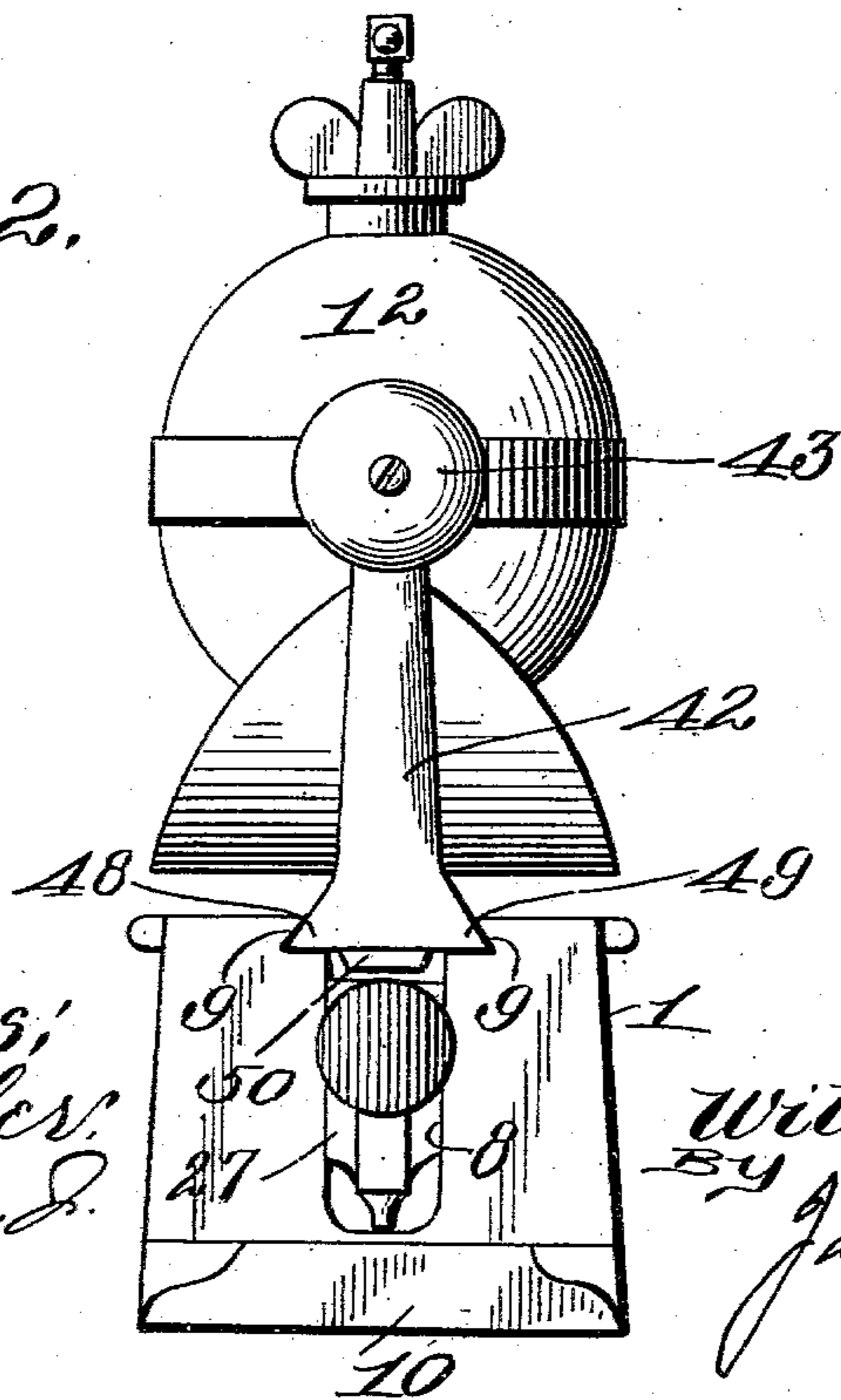


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

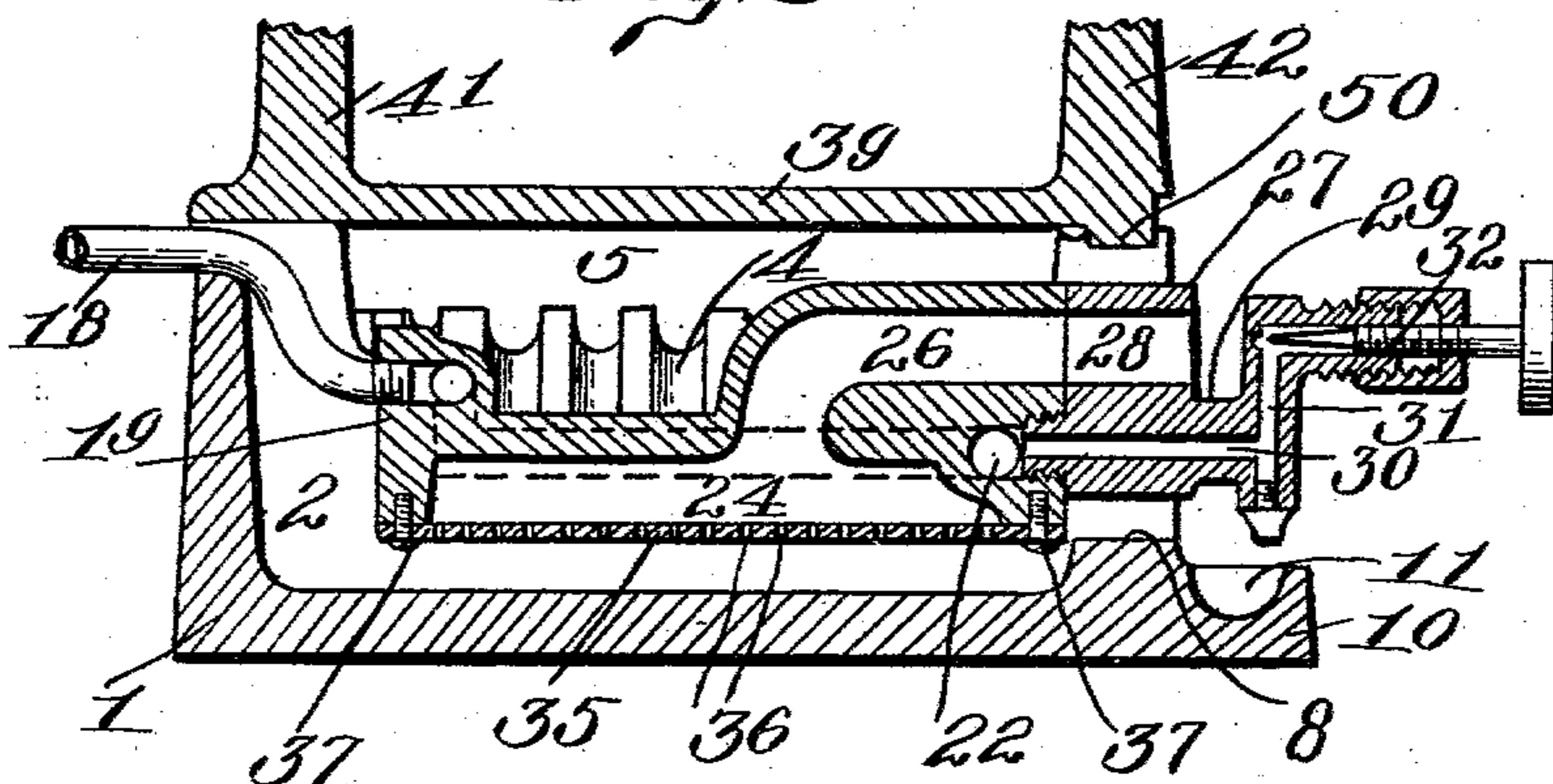


Fig. 4.

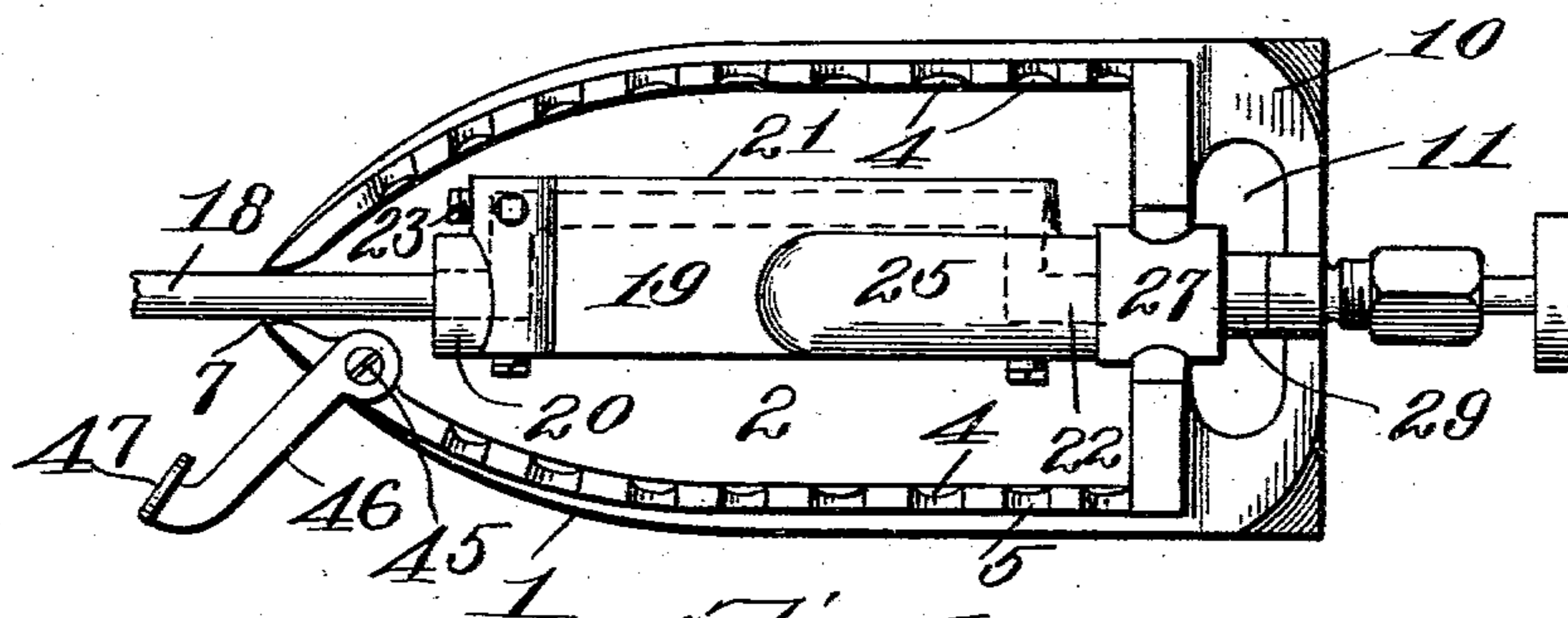


Fig. 5.

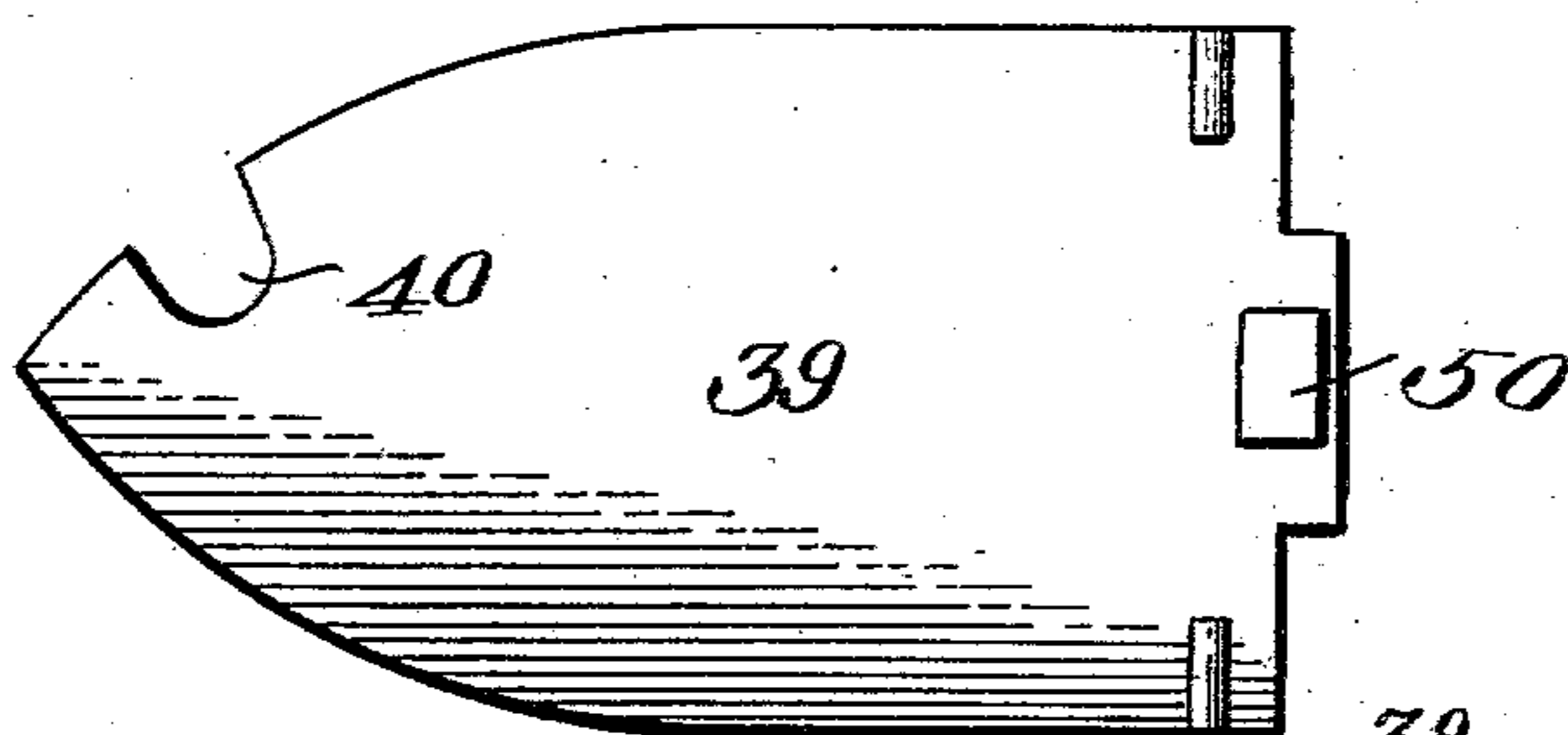


Fig. 7.

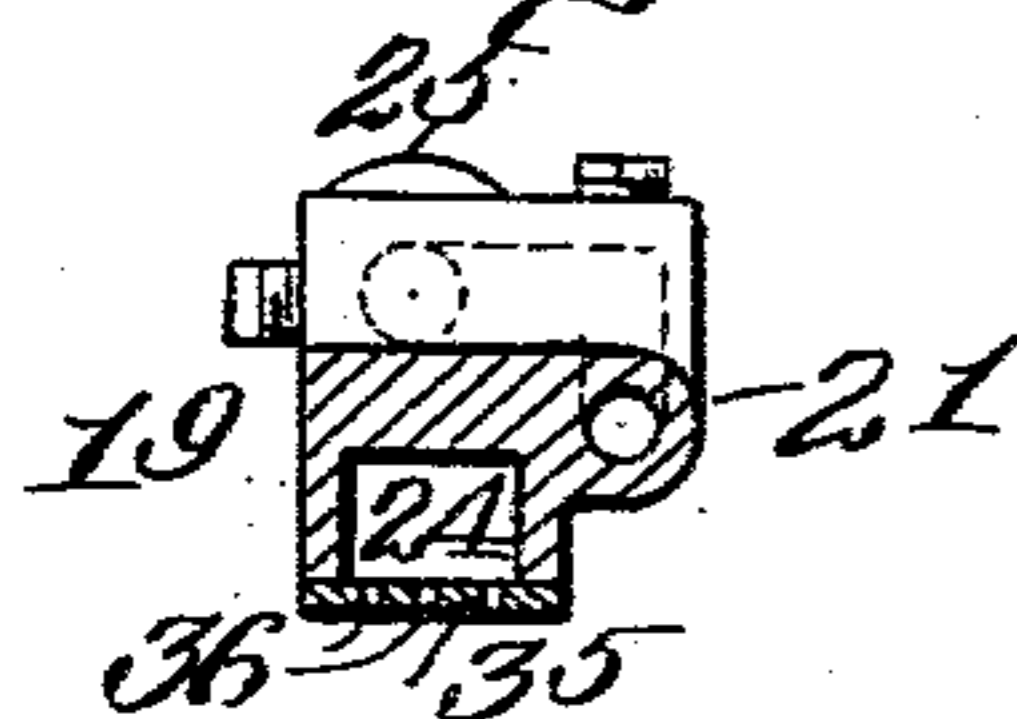


Fig. 8.

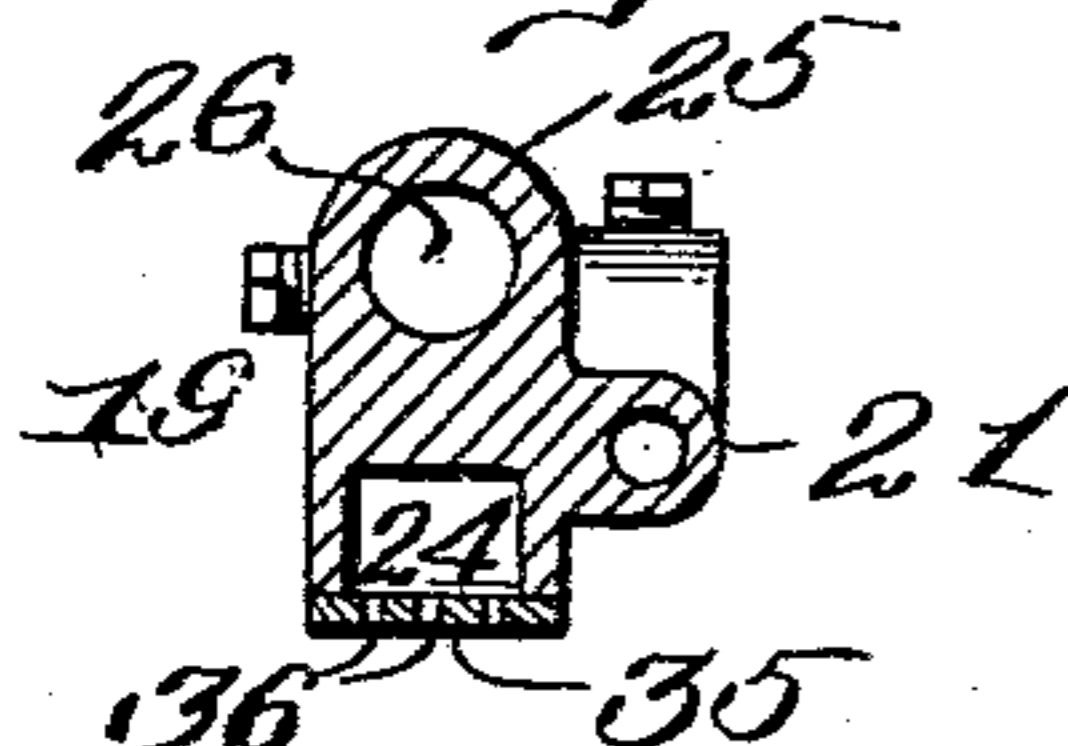
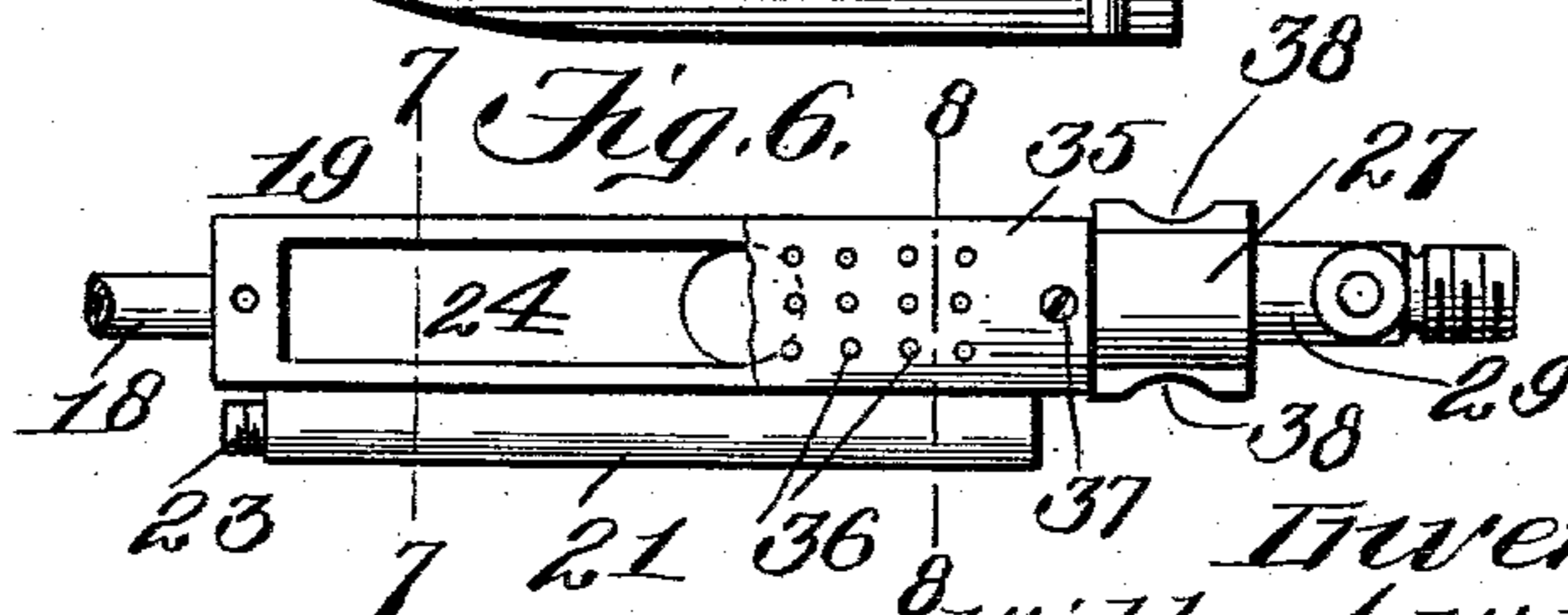


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILBERT W. LAMB, OF SOUTH SIOUX CITY, NEBRASKA, ASSIGNOR TO
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SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 743,648, dated November 10, 1903.

Application filed March 24, 1903. Serial No. 149,296. (No model.)

To all whom it may concern:

Be it known that I, WILBERT W. LAMB, a citizen of the United States, residing at South Sioux City, in the county of Dakota and State of Nebraska, have invented new and useful Improvements in Sad-Irons, of which the following is a specification.

This invention relates generally to gas generators and feeders, and particularly to a device of this character which is adapted for application to a sad-iron.

The invention has for its object the provision of a gas generator and feeder which is simple and inexpensive in construction and thoroughly effective in operation.

Other objects and advantages of the invention will be apparent from the following detailed description, and its novel features will be set forth in the claims.

In the accompanying drawings, forming a part of this specification, I have illustrated my improved gas generator and feeder in connection with a sad-iron, though the device may be adapted for use in other connections.

Referring to the drawings, Figure 1 is a side elevation of my improved gas generator and feeder applied to a sad-iron. Fig. 2 is a rear elevation. Fig. 3 is a longitudinal central vertical section of the gas generator and feeder. Fig. 4 is a plan view of the iron with the cover-plate removed. Fig. 5 is a bottom plan of the cover-plate. Fig. 6 is a bottom plan of the gas generator and feeder, a portion of the perforated plate being broken away. Fig. 7 is a transverse section on the line 7 7 of Fig. 6, and Fig. 8 is a similar section on the line 8 8 of Fig. 6.

Like characters of reference indicate corresponding parts throughout the several views.

The reference-numeral 1 indicates the base of a sad-iron adapted for use in connection with my improved generator and feeder. At its interior the base 1 is hollowed out to provide a combustion-chamber 2. Extending through the side walls of the base 1 is a plurality of lateral air-passages 3. Each of the air-passages 3 is preferably upwardly inclined, so that its inner end is in a higher plane than its outer end, and each passage terminates in a groove 4, which extends upwardly along the inner wall of the combus-

tion-chamber. At its upper end each of the grooves 4 terminates in a cut-away portion 5.

The base 1 at its forward end is provided with an upwardly-extending column 6, upon the upper end of which is mounted a swinging arm 46, having an upwardly-extending lug or thumb-piece 47 thereon. The arm 46 is provided to hold the cover-plate of the iron in position, as will be apparent.

Adjacent to the column 6 in the extreme forward upper end of the base 1 is a semicircular cut-away portion 7, which is provided to receive the supply-pipe leading from the hydrocarbon-reservoir. The rear wall of the base 1 is cut away, as shown at 8, to receive the rear end of the gas-generator, hereinafter to be described. Adjacent to the upper ends of the cut-away portion 8 are provided the V-shaped notches 9, the purpose of which will be hereinafter set forth.

At the lower rear end of the base 1 an extension 10 is provided. In its upper surface adjacent to the cut-away portion 8 the extension 10 is provided with a cup-shaped depression 11, which serves as a receptacle to receive a supply of hydrocarbon for initially heating the gas-generator, as will be more fully set forth hereinafter.

The base 1 and the parts described in connection therewith may be cast in one piece for convenience and also to reduce the expense of manufacture.

The reference-numeral 12 indicates a hydrocarbon-reservoir, which may be of any desired shape and construction. At its upper end the reservoir 12 is provided with an inlet 13, by which it may be filled. The inlet 13 is screw-threaded to receive the closing-plug 14. Extending vertically through the closing-plug 14 is a passage 15, with which communicates a laterally-extending passage 16. The upper end of the vertical passage 15 is screw-threaded to receive a needle-valve 17, which controls the vertically and laterally extending passages 15 and 16. The passages 15 and 16 are provided to permit the entrance of air into the reservoir 12 as hydrocarbon liquid is exhausted therefrom.

Leading from the lower end of the reservoir 12 is a supply-pipe 18, which communicates with the gas generator and feeder 19.

The gas generator and feeder 19 is preferably cast in one piece from metal, and its upper forward end is enlarged, as shown at 20. The enlargement 20 is bored out and screw-threaded to receive the lower end of the supply-pipe 18. The passage through the gas generator and feeder 19 first extends from the end of the supply-pipe 18 in a lateral direction through the enlargement 20, then in a downward direction, then along the side 21 of the generator, then in a lateral direction at the rear end thereof, and then passes out at the rear end of the generator, as shown at 22. The passage just described through the generator may be produced by suitable boring-tools, and the holes through which the boring-tools are passed may be closed by screw-plugs 23, as will be readily understood.

On its under surface, at the side opposite the portion 21, the gas generator and feeder is hollowed out along substantially its entire length, as shown at 24. A longitudinal projection 25 is cast on the upper surface of the gas generator and heater above the hollowed-out portion just described. Extending through the longitudinal projection 25 from the rear end thereof and terminating at the center of the hollowed-out portion 24 is a passage 26, the purpose of which will be hereinafter explained. A plate 35, provided with a plurality of perforations 36, is held in place by screws 37 on the under surface of the generator and feeder 19 and covers the hollowed-out portion 24 therein.

The reference-numeral 27 indicates a block of any suitable metal or other material secured to the rear end of the gas generator and feeder 19. The block 27 at its upper end is provided with a passage 28, which registers with and forms a continuation of the passage 26, extending through the projection 25 of the gas generator and feeder. At its lower end the block 27 is provided with an integral extension 29. Extending through the lower portion of the block 27 and through the extension 29 thereon is a passage 30, which registers with the rear end 22 of the passage leading through the gas generator and feeder from the supply-pipe 18. The upper end of the passage 30 terminates in a small-sized aperture 31, which is directed toward the upper passage 28 in the block 27. A needle-valve 32 controls the passage through the aperture 31. The sides of the block 27 are slightly concaved in a vertical direction, as shown at 38, to facilitate the fitting of said block in the cut-away portion 8 in the rear wall of the base when the gas generator and feeder is in position, with its supply-pipe 18 fitting in the cut-away portion 7 at the front end of the base 1.

A cover-plate 39, provided with a cut-away portion 40 to receive the upper end of the column 6 on the base 1 and also provided with an upright 41 at its forward end and an upright 42 at its rear end, is provided to retain the generator and feeder firmly in posi-

tion within the combustion-chamber of the base 1. A handle 43 for the iron is attached to the upper ends of the uprights 41 42, and a circular heat-guard 44, attached at its ends to the uprights 41 42, is provided below the handle 43.

The lower end of the rear upright 42 on the cover-plate 39 is flared outwardly at its base, as shown at 48 49, and a downwardly-extending lug 50 is provided upon the lower end of said upright, as shown. When the cover-plate is in position upon the base 1, the flared portions 48 49 of the upright 42 fit into the V-shaped notches 9 at the upper end of the cut-away portion 8 in the rear wall of the base, and the lug 50 rests upon the top of the block 27, attached to the rear end of the gas generator and feeder, effectually holding said block within the cut-away portion 8 of the rear wall of the base.

It will be seen that the V-shaped notches 9 in the rear wall of the base, the flared portions 48 49 of the upright 42, and the screw 47, passing through the eye in the arm 46 into the column 6 of the base 1, provide means for firmly retaining the cover-plate 39 upon the base 1.

Constructed as above described the operation of my improved device will be readily understood. The gas generator and feeder is first placed within the combustion-chamber of the base 1, the block 27 fitting in the cut-away portion 8 in the rear wall of the base and the supply-pipe 18 fitting in the cut-away portion 7 at the forward upper end of the base 1. The cover-plate 39 is then applied and firmly secured in position, as described. By opening the needle-valve 17 in the plug 14 of the hydrocarbon-reservoir and the needle-valve 32 in the block 27 a supply of hydrocarbon liquid is permitted to flow into the cup-shaped depression 11 of the base 1. This supply of hydrocarbon liquid when ignited serves to initially heat the block 27 and vaporize the hydrocarbon passing through the passage therein. The hydrocarbon vapor jets through the aperture 31 into the upper passage 28 of the block 27 and passage 26 of the gas generator and feeder. Passing along the passage 26 the vapor enters the hollowed-out portion 24 at the lower end of the gas generator and feeder and is ignited below the perforated plate 35. The flame emerging from the perforations of the plate 35 serves to effectually heat the sad-iron.

It will be observed that the passage through the gas generator and feeder from the supply-pipe of the reservoir to the delivery-aperture 31 passes alongside of the hollowed-out portion 24, as shown at 21. When the burner is in operation, the portion 21 of the gas generator and feeder through which hydrocarbon passes is highly heated, and the hydrocarbon is consequently thoroughly vaporized when it reaches the delivery-aperture 31.

With self-heating sad-irons as usually constructed the hydrocarbon vapor from the de-

livery-aperture 31 is jetted into a perforated tube, which extends longitudinally of the combustion-chamber in the base of the iron. The objection to this form of iron is that the force with which the hydrocarbon vapor enters the perforated tube from the delivery-aperture causes it to pass to the forward end of the perforated tube before it is effectually mixed with air and ignited. This results in the forward end of the sad-iron being heated to an excessive degree, while the rear end thereof is only slightly heated. By my arrangement the vapor is delivered in a downward direction to the center of the hollowed-out portion 24 at the bottom of the generator and feeder and is evenly distributed throughout the combustion-chamber of the iron, causing all the parts thereof to be uniformly heated. It will be observed that the jet of vapor issuing from the aperture 31 is supplied with air as it enters the passage 28 of the block 27 and also receives an additional supply of air through the lateral passages 3 in the base of the iron.

If desired, compressed air may be supplied to the hydrocarbon-reservoir through its closing-plug from any suitable source of supply. Such compressed air will produce a steadier and stronger flame and aid combustion generally.

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

1. In a sad-iron, the combination with a base having a combustion-chamber and a cut-away rear wall provided with notches, the cut-away portion of said wall being open at its upper end, a gas generator and feeder in said base removably fitted at one end into said cut-away rear wall, said gas generator and feeder comprising an integral body having a hollowed-out portion, a supply-passage leading into said hollowed-out portion, and a vaporizing-passage adjacent to said hollowed-out portion; and a removable cover-plate for retaining said gas generator and feeder in position, said cover-plate having a dovetailed portion adapted to fit the notches in the rear wall of said base.

2. In a sad-iron, the combination of a base

having a combustion-chamber and a cut-away rear wall provided with notches, the cut-away portion of said rear wall being open at its upper end, a gas generator and feeder in said base removably fitted at one end into said cut-away rear wall, said gas generator and feeder comprising an integral body having a hollowed-out portion, a supply-passage extending along said body and leading into said hollowed-out portion at an angle, and a vaporizing-passage extending around said hollowed-out portion; and a removable cover-plate for retaining said gas generator and feeder in position, said cover-plate having a dovetailed portion adapted to fit the notches in the rear wall of said base.

3. In a sad-iron, the combination of a base having a combustion-chamber and a cut-away rear wall provided with notches, the cut-away portion of said rear wall being open at its upper end, a gas generator and feeder in said base, removably fitted at its rear end in said cut-away wall, said gas generator and feeder comprising a body having a hollowed-out portion, a perforated plate covering said hollowed-out portion, a passage integral with said body extending along the upper surface and leading downwardly into said hollowed-out portion, and a vaporizing-passage extending around said hollowed-out portion; and a removable cover-plate for retaining said gas generator and feeder in position, said cover-plate having a dovetailed portion adapted to fit the notches in the rear wall of said base.

4. In a sad-iron the combination of a base having a combustion-chamber and a cut-away and notched rear wall, a gas generator and feeder in said base, the rear end of said gas generator and feeder fitting into said cut-away rear wall, a cover-plate having a dovetail portion fitting into the notches of said rear wall, and means for retaining the forward end of said cover-plate in position upon said base.

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

WILBERT W. LAMB.

Witnesses:

A. J. KRAMPER,
C. W. TAYLOR.