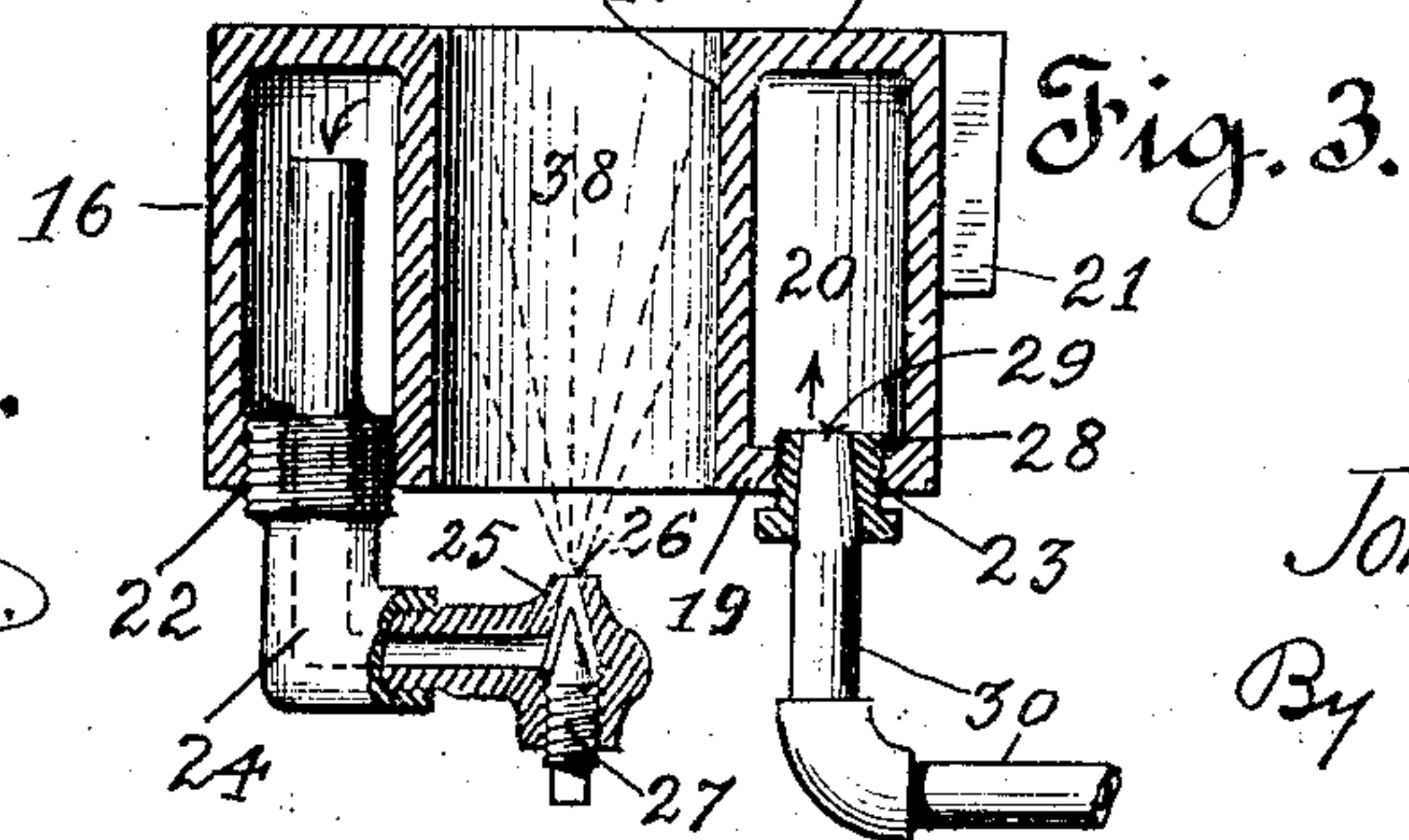
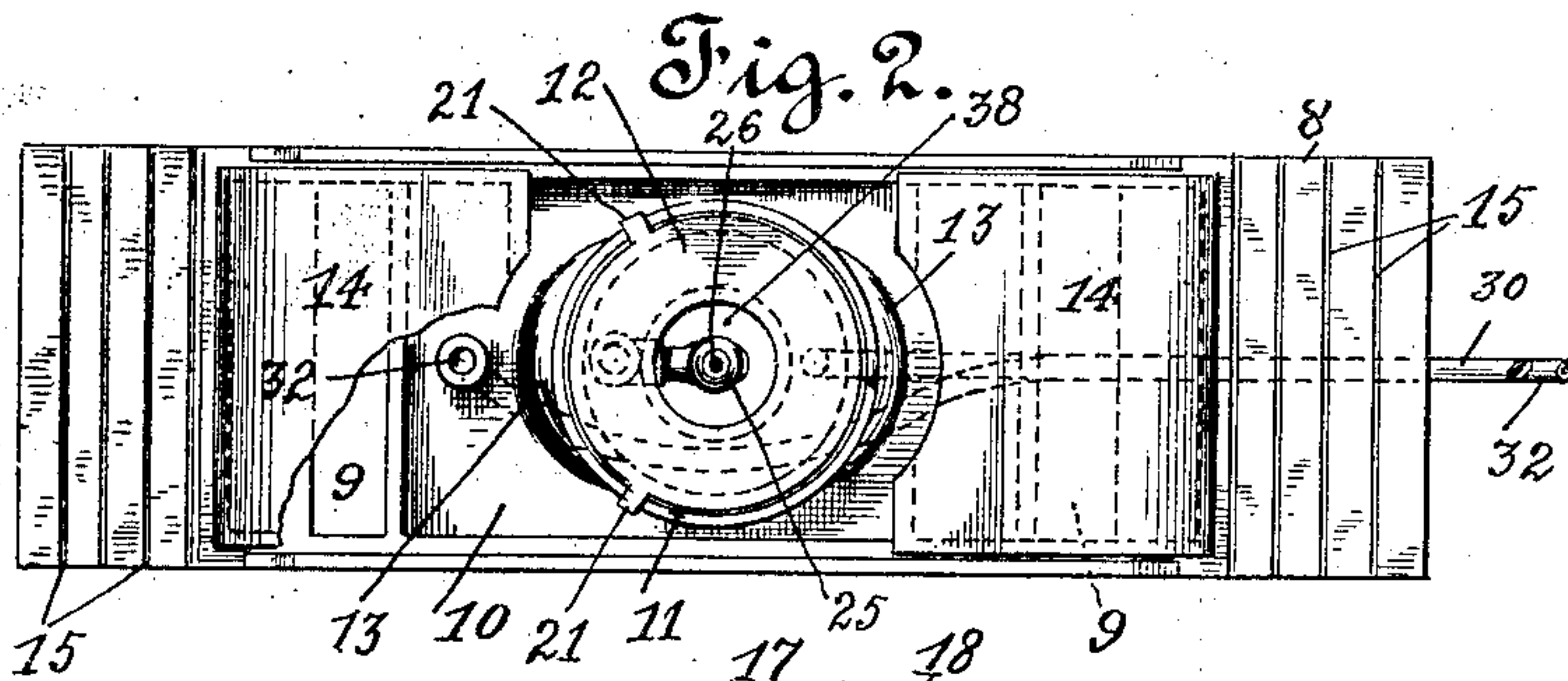
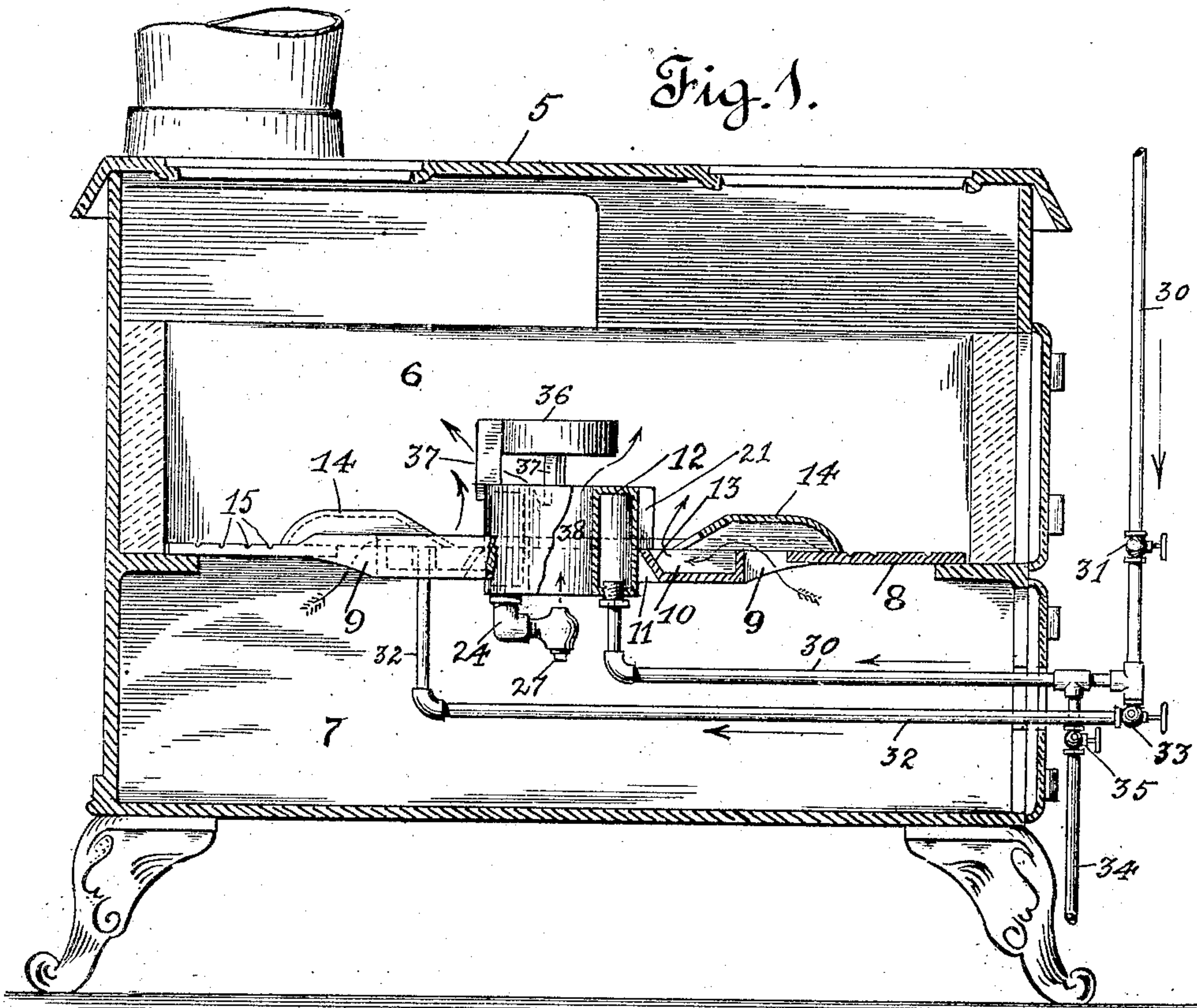


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HYDROCARBON BURNER.
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953,147.

Patented Mar. 29, 1910.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN C. KENMONTH, OF LOS ANGELES, CALIFORNIA.

HYDROCARBON-BURNER.

953.147.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN C. KENMONTH, a citizen of the United States, residing at Los Angeles, county of Los Angeles, and State of California, have invented new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

My invention relates to a burner for use in stoves and furnaces and the object thereof is to produce a burner for such uses which will burn the lighter liquid hydrocarbons without the use of an expansible fluid and without producing soot.

Another object is to produce a simple and inexpensive burner which is self cleaning and will not clog up.

Another object is a burner in which the retort is separable from the other parts and which can be easily inspected and cleaned when necessary.

Further objects will be pointed out hereafter.

I accomplish these objects by the burner described herein and illustrated in the accompanying drawings, in which;

Figure 1 is a longitudinal section of the fire box and ash pit of a cook stove with my improved burner located therein, the same being partly in section. Fig. 2 is a plan of the burner. Fig. 3 is an enlarged central vertical section of the retort.

In the drawings 5 is a cook stove of any approved construction. 6 is the fire box and 7 the ash pit of such stove.

Before installing my improved burner the ordinary grate not shown is removed and in the place of such grate I place therein a bed plate 8 having draft openings 9 there-through near the ends thereof which extend transversely the plate preferably nearly the width thereof. These draft openings are wide enough to permit the maximum amount of air for combustion to pass therethrough. Between the draft openings is the firing pan 10 which has in the center thereof a circular opening 11 in which is received the retort 12. A small portion of the bottom of the pan on opposite sides of the retort preferably slopes upward as shown at 13 in Figs. 1 and 2, so that when starting a fire the fuel when ignited will burn most freely adjacent the retort, thereby quickly heating the same. Draft regulating slides or covers 14 are provided on each side of the retort and are longitudinally movable to-

ward or from the retort, thereby regulating the amount of air coming through the draft openings in the bed plate. These covers are preferably concave on their under side to cause the air passing thereunder to pass close to the surface of the fuel in the pan. The edges of these covers adjacent to the retort are preferably nearly semi-circular so as to fit closely the retort and thereby cut off nearly all the draft through the draft openings in the bed plate when desired.

The bed plate and pan are preferably cast integral and at the ends of the bed plate are transverse grooves 15 so that the plate can be easily broken at these grooves if the same should be too long for the stove to which it is to be fitted.

The retort is composed of concentric outer walls 16 and inner walls 17 united by the top wall 18 and bottom wall 19, thereby forming an annular vaporizing chamber 20. On the outer upper side of the outer wall are cast or otherwise secured thereto stop lugs 21 of which there are preferably three, but any other number may be used, or they may be dispensed with. I prefer their use as they rest on the top wall of the firing pan and hold the retort vertical to the plane of the bed plate and keep the retort from slipping down too far into the ash pit.

In the bottom plate of the vapor chamber are openings 22 and 23 the walls of which are screw threaded. In opening 22 is screwed the vapor tube 24, the upper end of which is preferably reduced in size and extends to nearly the top of the chamber. A tip 25 having a port 26 in the top thereof is connected to the vapor tube. A regulating valve 27 is provided for controlling the flow of vapor from port 26. In opening 23 is screwed a reducer 28. The opening 29 through this reducer is smooth and is tapered upwardly. In the opening 29 is received the tapered end of supply pipe 30 which runs to a source of liquid fuel supply not shown, and is provided with a valve 31 to regulate and control the flow of fuel there-through. A branch pipe 32 provided with a cock 33 runs from pipe 30 to the firing pan. Between the connection between pipe 30 and branch pipe 32 and the retort there is connected to pipe 30 a blow off pipe 34 provided with cock 35. This blow off pipe may run to a suitable receptacle not shown in the cellar or outside the building.

A spreader 36 having legs 37 rests upon

the top of the retort and holds the spreader elevated about one and one half inches above the retort. This spreader is provided to cause the vapor which passes through the central channel 38 of the retort when lighted to burn close enough to the top of the retort to heat the retort so as to vaporize the liquid fuel therein. By having the lower portion of the retort projecting into the ash pit, the retort is kept cool enough to keep the fuel from carbonizing therein and thus prevents clogging the retort.

In the operation of my burner a supply of liquid fuel would be first fed into the firing pan and lighted and cock 31 would be partly closed so that the supply of fuel furnished the pan would equal that consumed. It will be observed that at the same time fuel will also pass into the retort. As the fuel burns in the pan the fuel in the retort quickly becomes heated and vapor forms in the retort, passes out through port 26 and up to the spreader which deflects it and causes it to become lighted from the flame from the pan. Should there be any sticky residuum on the walls of the chamber it will boil off while the retort is being heated. As soon as the vapor begins to burn, cock 33 is closed and thereafter all fuel is preferably passed through the retort. Where an excessively hot fire is wanted, fuel would be supplied at the same time to both the retort and pan. When there is no longer any use for the fire cocks 31 and 33 would be closed and cock 35 would be opened. The pressure in the retort would then blow any thick residuum which might be in the retort, out through pipe 34.

By thus construction it will be observed that the flame from the pan will heat the retort and the stove as well and that as soon as the retort is hot enough to vaporize the fuel the further use of the pan may be dispensed with but that it can be used if desired. It will also be observed that any impurities which may collect on the inner walls of the retort when the fire is being put out will be boiled off while the retort is being heated and when the fire is put out these and any other impurities collected when the fire is burning may be blown out through the blow off pipe. By having a ground connection between the retort and the supply pipe a tight joint is made between the parts and a removable retort is provided which can easily be removed from the stove for cleaning or repairs and easily put back. By practical experience I have found that by having the vapor pass up in a central channel in the retort it entrains air and thereby produces better combustion than if the air *was* not entrained and enables me to use a heavier grade of fuel with-

out producing soot than can be used when air is not thus entrained. The draft covers cause the air passing through the draft openings in the bed plate to pass up close to the retort and thereby enter the flame to aid combustion.

Having described my invention what I claim is;

1. A hydrocarbon burner comprising a bed plate having draft openings near the ends thereof and a central opening therein; a retort having an annular chamber therein and a central channel therethrough; a spreader upon the top of said retort; and draft covers over said draft openings and longitudinally movable toward or away from said retort whereby the air passing through the openings is caused to pass closer to or farther away from the retort.

2. A hydrocarbon burner comprising a bed plate having draft openings near the ends thereof, a firing pan having a central opening therein intermediate said openings; a retort having an annular chamber therein and a central opening therethrough in said opening; a spreader upon said retort; means to supply liquid fuel to said pan and retort; means to lead the vapor from the retort and discharge the same in the central opening at the bottom thereof; and draft covers longitudinally movable toward or from said retort whereby the air passing through the draft openings will be caused to approach closely the retort.

3. A hydrocarbon burner comprising a bed plate having draft openings near the ends thereof; a firing pan intermediate said openings; and draft covers longitudinally movable to project more or less over the firing pan whereby the draft is caused to pass over the pan in close proximity to its surface.

4. A hydrocarbon burner comprising a bed plate having draft openings near the ends and a retort opening in the center thereof; a retort in said opening, the lower portion of which projects below the bed plate and the upper portion of which retort projects above the bed plate and draft covers above the draft openings and projecting toward the retort and longitudinally movable toward and from the retort whereby the air passing through the draft openings is caused to pass more or less closely to the retort.

In witness that I claim the foregoing I have hereunto subscribed my name this 2nd day of January, 1909.

JOHN C. KENMONT.

Witnesses:

G. E. HARPAM,
S. B. AUSTIN.