(No Model.) 3 Sheets—Sheet 1.

H. RUPPEL.

VAPOR BURNER.

No. 455,361. Patented July 7, 1891.

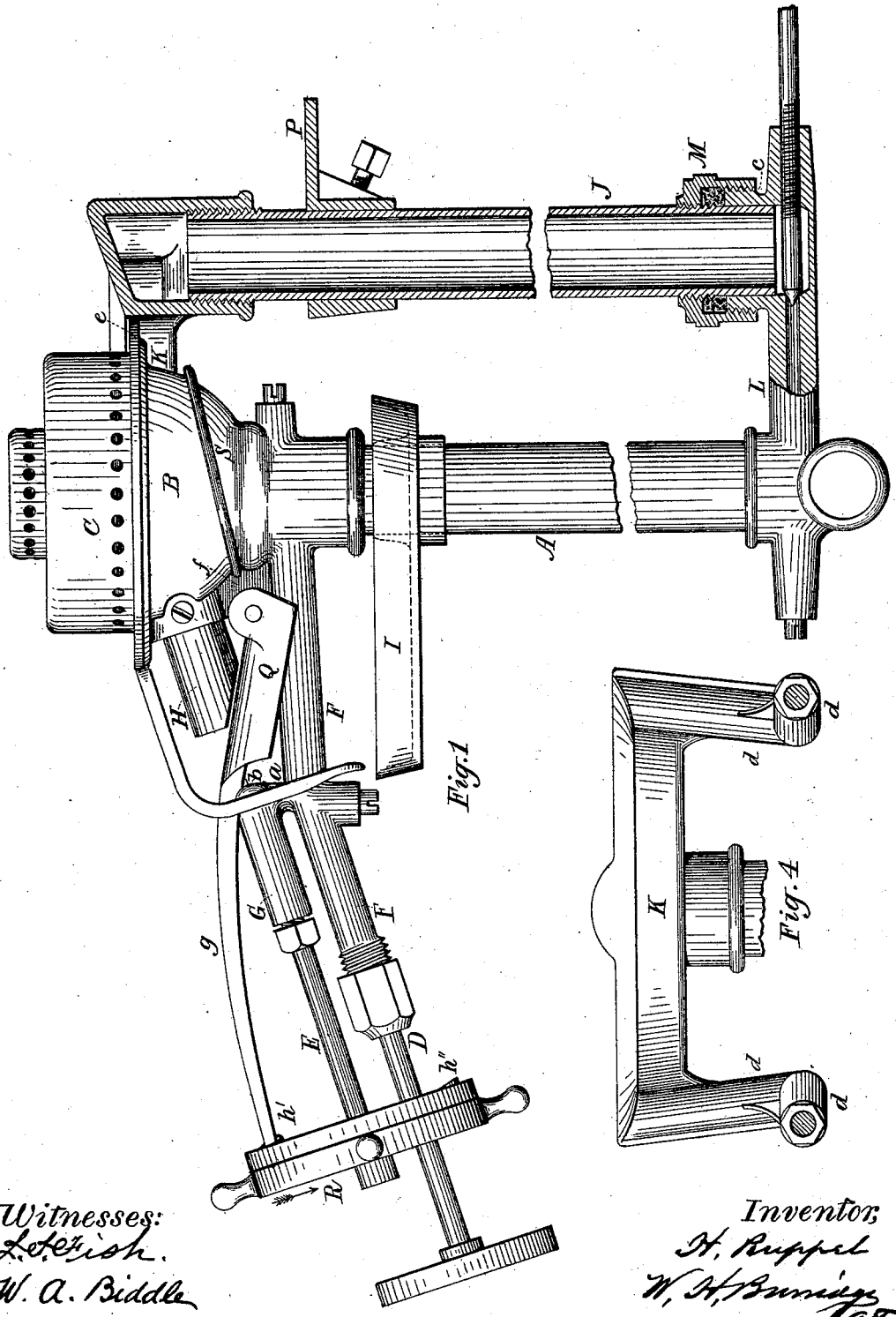

Fig. 1

Fig. 4

Witnesses:
L. F. Fish.
W. A. Biddle

Inventor:
H. Ruppel
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(No Model.) 3 Sheets—Sheet 2.

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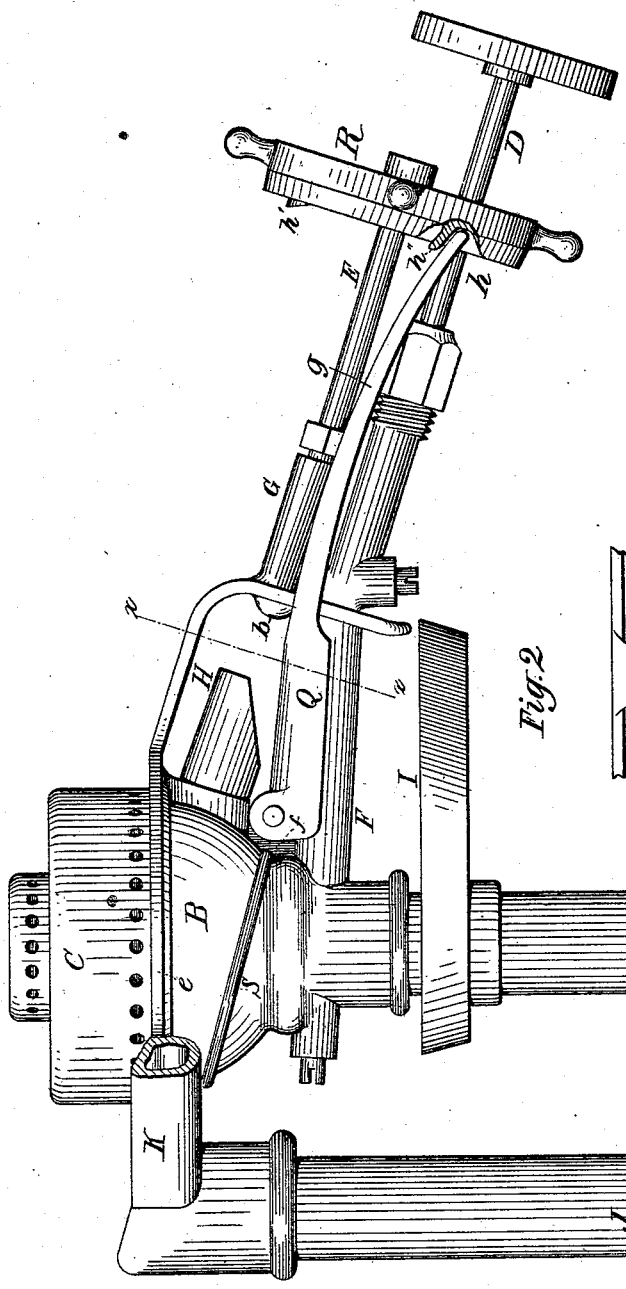

Fig. 2.

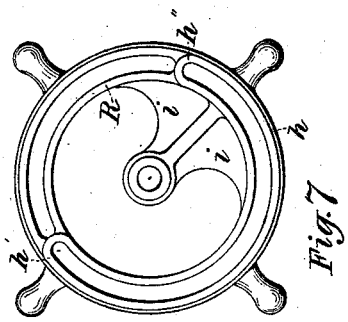

Fig. 7.

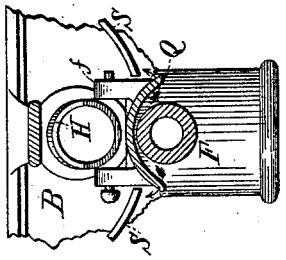

Fig. 6.

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W. A. Biddle

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Atty.

(No Model.) 3 Sheets—Sheet 3.

H. RUPPEL.

VAPOR BURNER.

No. 455,361. Patented July 7, 1891.

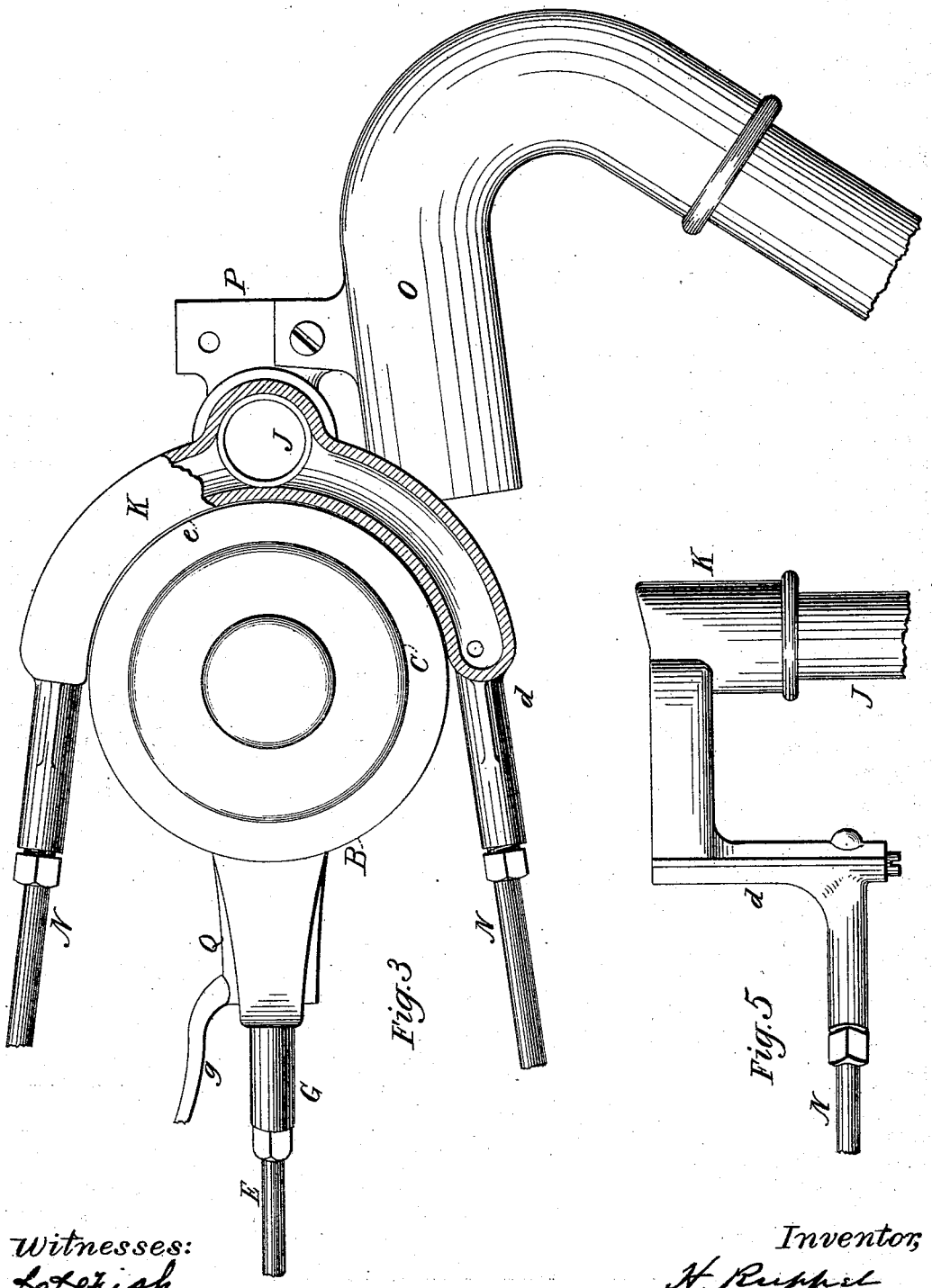

Fig. 3

Fig. 5

Witnesses:
L. L. Fish.
W. A. Biddle

Inventor,
H. Ruppel
W. H. Burridge atty.

UNITED STATES PATENT OFFICE.

HENRY RUPPEL, OF CLEVELAND, OHIO, ASSIGNOR TO THE DANGLER STOVE AND MANUFACTURING COMPANY, OF SAME PLACE.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 455,361, dated July 7, 1891.

Application filed February 7, 1890. Serial No. 339,614. (No model.)

To all whom it may concern:

Be it known that I, HENRY RUPPEL, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Vapor-Burner; and I do hereby declare that the following is a full, clear, and complete description thereof.

My invention relates to vapor-generating burners; and the improvement consists in certain appliances which render the burner more effective in operation as an individual burner, as well as a generating-burner with two or more supplementary burners.

That the invention may be fully seen and understood, reference will be had to the following specification and accompanying drawings, in which—

Figure 1 represents an exterior side view and central section of the burner above referred to. Fig. 2 is an exterior view of the opposite side of Fig. 1. Fig. 3 is a plan view of the same, parts being broken away; and Figs. 4, 5, 6, and 7 are detailed views of the same, to which reference will be made hereinafter.

Like letters of reference denote like parts in the drawings and specification.

The burner, as shown in Figs. 1, 2, and 3, relates to that class technically known as an "individual" burner. Its attachment, however, renders it serviceable as a generating-burner for one or more supplementary burners. Vapor for said supplementary burners is generated while the main burner is or not in operation. If it is desired that the supplementary burners only are to be used, then the vapor therefor is generated by means of an auxiliary device, which is attached to the main burner and operated simultaneously with its needle-valve. The generator of the supplementary or side burners is used in connection with an independent supply-pipe, thus avoiding pulsation of the burners where all of them are in operation.

In Figs. 1 and 2, A represents the stand-pipe of the main burner; B, the heating-cup, and C the burner-cap thereof. A plug-valve D and needle-valve E are arranged to one side of said heating-cup. The plug-valve D is guided and seated in the pipe F, which pipe is extended in an angular position from the lower section of said cup, and in open relation with the stand-pipe A. The sleeve G is located in line with and in close proximity to and above the pipe F, and has at *a* interior connection therewith. The induction-tube H leads the vapor from the orifice *b* of the needle-valve E, together with the necessary quantity of air to the interior of the cap C or combustion-chamber of the burner. The drip-cup I is used in the initial heating of the burner, more especially so of the section F, within which vapor is generated for the burner above described.

For side or supplementary burners the secondary stand-pipe J and the retort K are provided, which parts are arranged in open relation with the supply-pipe leading to the gasoline-tank by the same means which set the pipe A in open relation therewith—namely, the combination T-pipe L. The packing-nut M is threaded over the exterior of the collar *c* and thus serves as a means for holding the pipe J in vapor-tight connection with the T-pipe L. The upper end of the pipe J is threaded into the retort K, which is of semicircular form, having at the ends the angular conduit-arms *d d* depending therefrom. The horizontal parts of said arms *d* serve as guides for the needle-valves N N, Figs. 3, 4, and 5.

In Fig. 3, O represents an angular induction-tube, at the end of which is a burner. (Not shown in the drawings.) The bracket P, Figs. 1 and 3, serves as a means of support for said pipe O in adjusting said pipes in proper relation to the orifice of the needle-valves N N.

As shown in Figs. 1 and 3, the retort K fits closely onto the flange *e* of the heating-cup B about even with the line of direction in which the vapor issues from the openings in the burner-cap C, and it is thus that the gasoline which rises in the stand-pipe J is generated into vapor for the supply of the supplementary burners.

The auxiliary heating device, which has been above referred to, consists of the adjustable diverting-shield Q, Figs. 1, 2, and 6, the latter figure being a partial view of the heating-cup, showing the diverting-shield in cross-section, also an end view of the induc-

tion-tube seen from section-line x x, Fig. 2. Said shield Q is hinged to a flange f on the generator and has from the opposite side an arm g extending in loose connection with the hand-wheel R of the needle-valve E—that is, the free end of said arm g, engages with the groove or slot h of said hand-wheel, of which Fig. 7 represents an inner face view. The groove h has stops at h' h'', of which h' on turning the hand-wheel R in direction of the arrow, Fig. 1, comes to bear under said arm g to lift it in the position as indicated in Fig. 1. The turning of the wheel is arrested when either side of its partition i strikes the valve D, which extends through said hand-wheel. If the wheel is turned in direction as indicated, then the needle-valve approaches its orifice, while simultaneously and gradually the shield Q is lifted in front thereof to divert the vapor to the rear side of the cup B and under the retort K. The so-diverted vapor is ignited before the flame from the main burner is extinguished, and heats the retort K for the generation of vapor for the supplementary burners.

A small amount of vapor issuing from the orifice of the needle-valve E will be sufficient to maintain the main burner in ready condition for use. This vapor-diverting shield is then of double use when arranged as shown, while the extra stand-pipe J prevents pulsation of the burners when all of them are used at the same time, in so far as the pressure of vapor in one stand-pipe is counteracted by that within the other. S in Figs. 1 and 2 indicates a guide directing the vapor toward the retort K.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A vapor-burner consisting of a main stand-pipe, heating-cup, cap, valves, and induction-tube, in combination with a secondary stand-pipe and a semicircular retort partially circumscribing the main burner, constructed and arranged substantially in the manner and for the purpose set forth.

2. In a generating-burner for vapor-stoves, the combination of the main burner, main stand-pipe A, a heating-cup B of said burner, the semicircular retort and its stand-pipe, and the angular conduit-arms with needle-valves arranged in conjoint relation to the side burners through their induction-tubes, substantially as and for the purpose set forth.

3. In a vapor-burner, the hand-wheel of the needle-valve, having a groove or slot h extending partially around the rim of said wheel, in combination with a diverting-shield the arm of which engages with said slot, and the diverting-shield having a hinged connection with the burner in conjoint adjustment with the needle-valve, whereby the flame may be diverted from the induction-tube to the under side of the generator or from the generator to the induction-tube, in the manner as and for the purpose substantially as specified.

4. The combination of the main burner and its stand-pipe with a semicircular retort partially circumscribing the heating-cap of said burner in conjoint operation with the diverting-shield Q and a secondary stand-pipe arranged in co-operative connection with the retort K and its needle-valves, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY RUPPEL.

Witnesses:
JOS. WALSH,
A. E. GILBERT.