

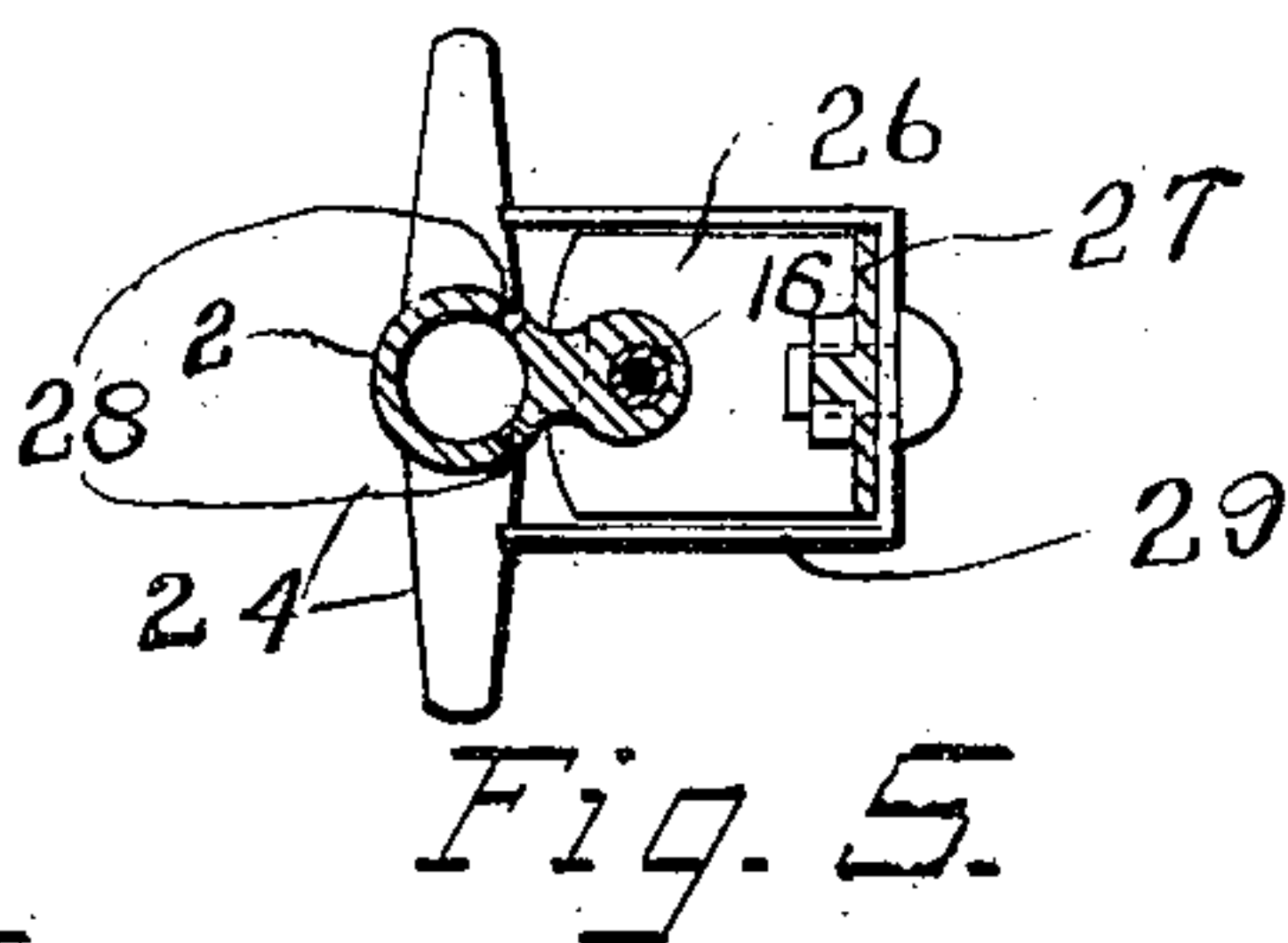
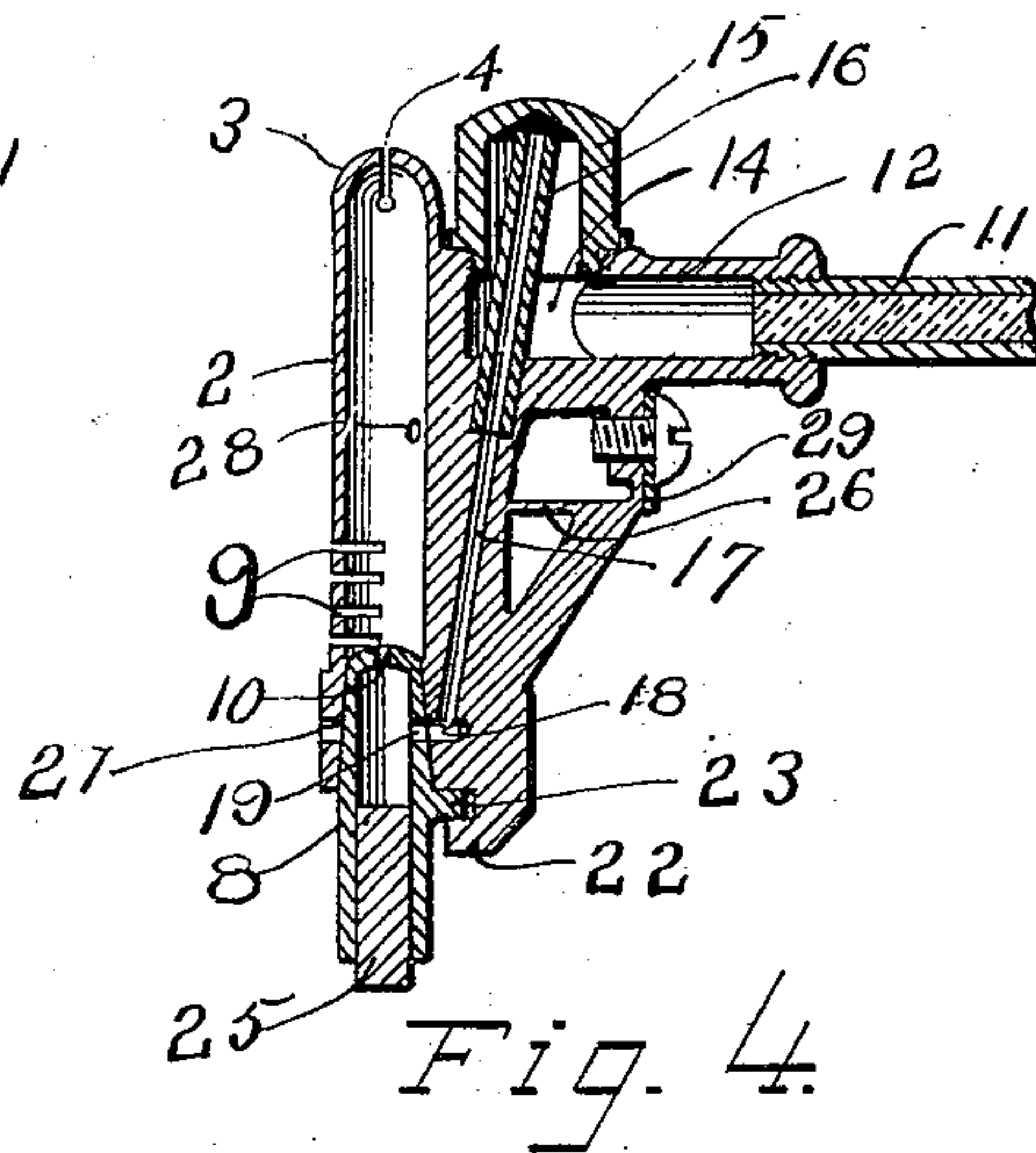
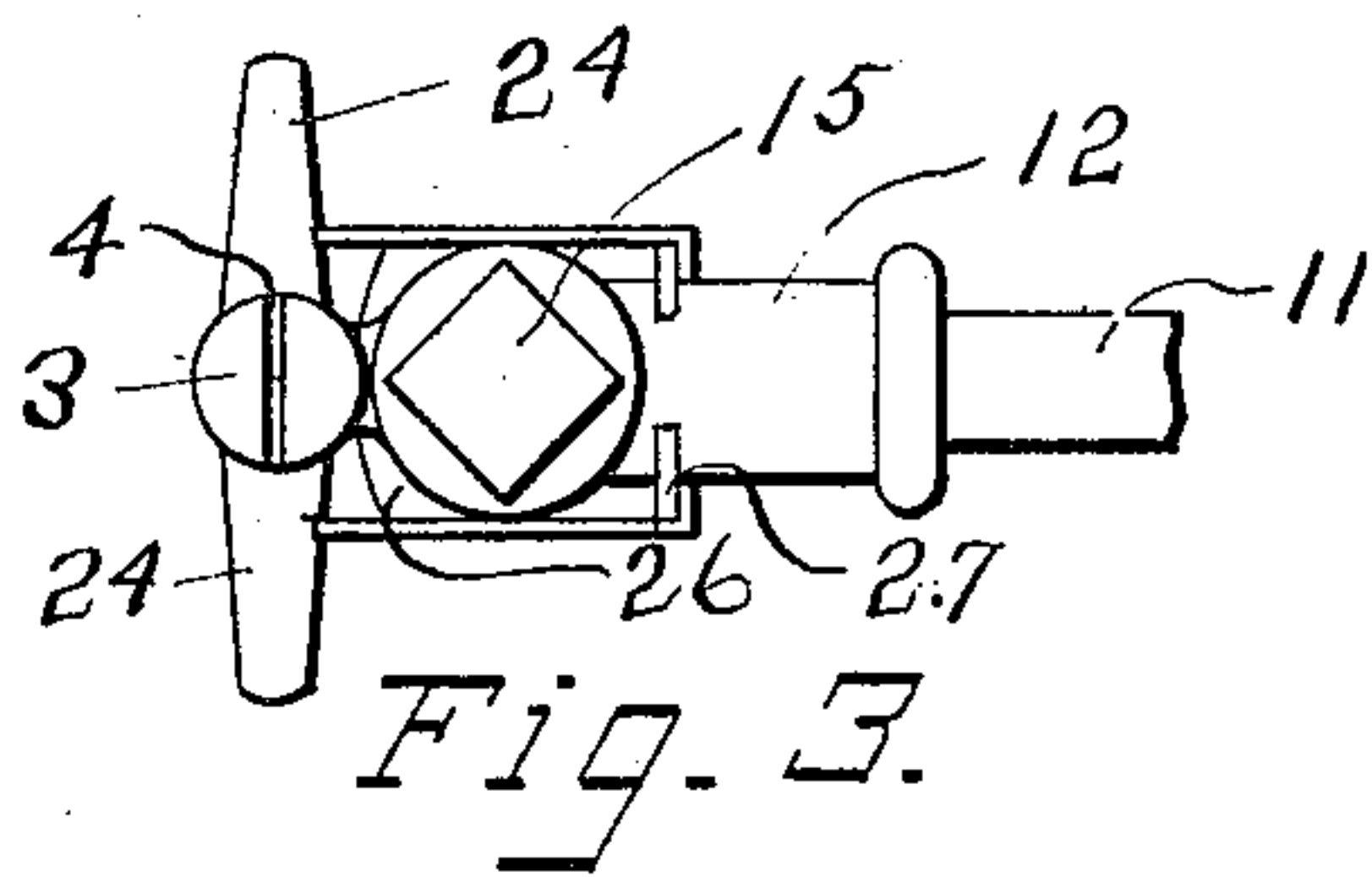
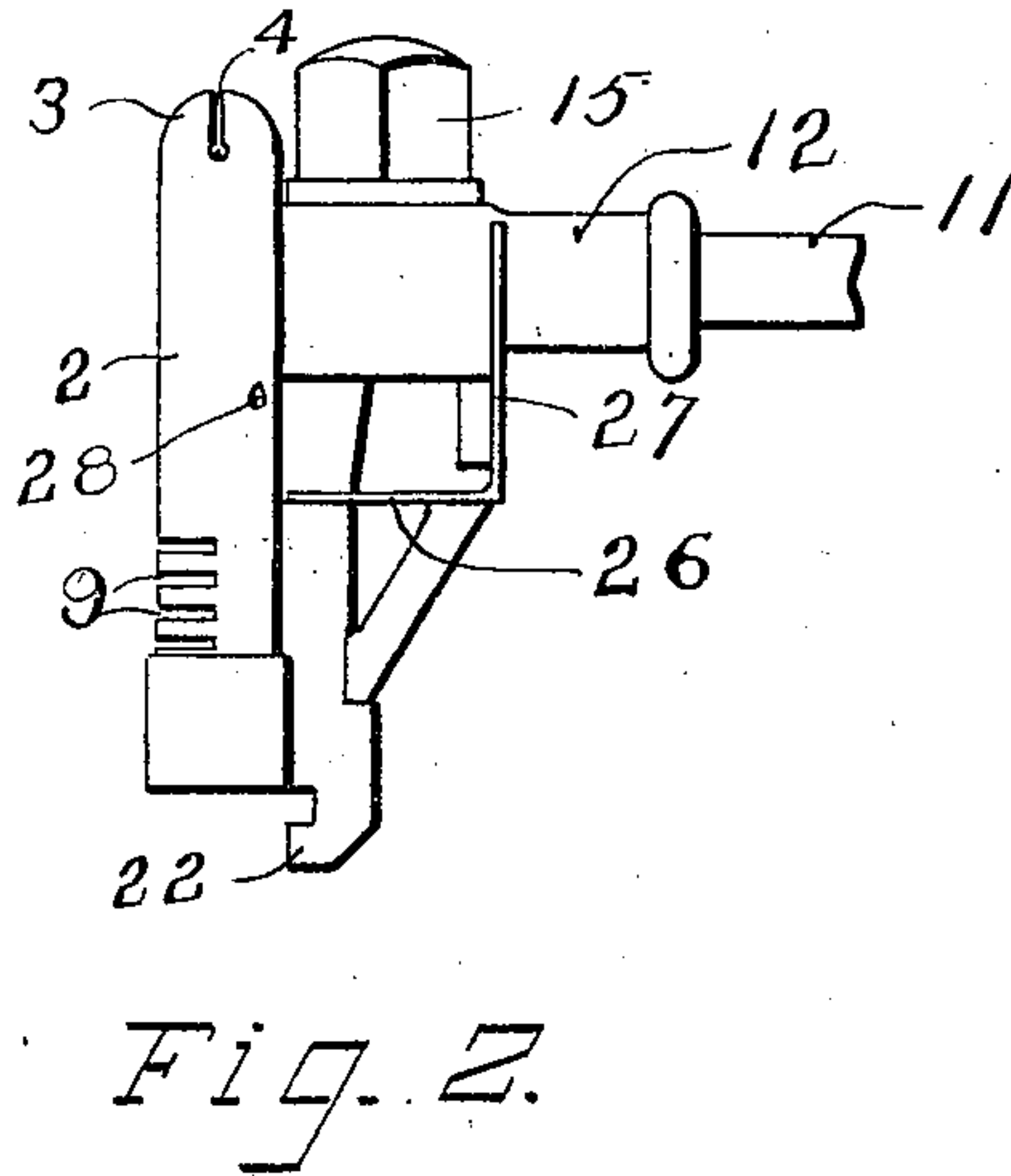
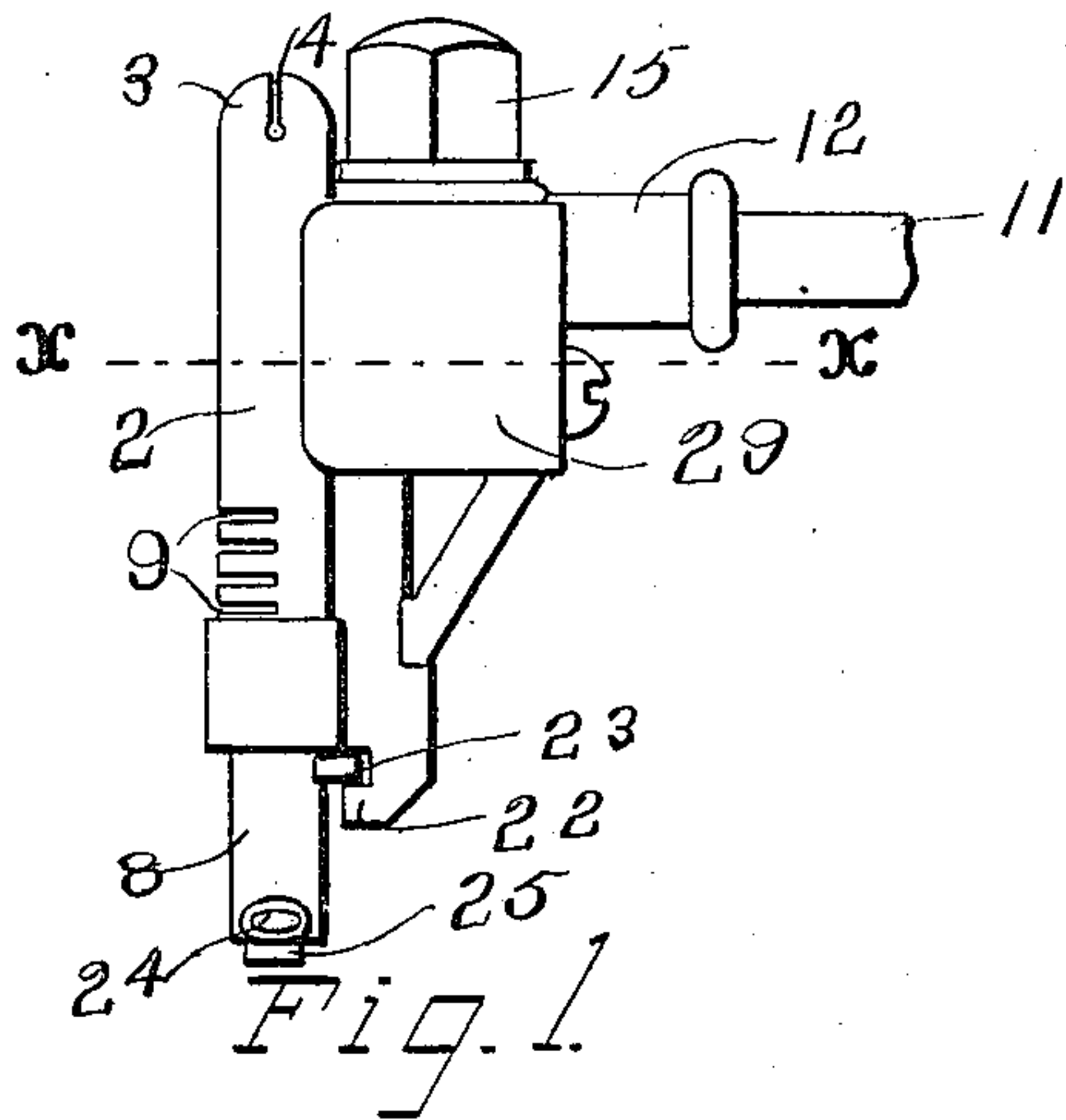
No. 654,287.

Patented July 24, 1900.

R. SEEGER.
VAPOR BURNER.

(Application filed June 9, 1898.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

ROBERT SEEGER, OF ST. PAUL, MINNESOTA, ASSIGNOR TO R. C. JAMES, OF PHILADELPHIA, PENNSYLVANIA.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 654,287, dated July 24, 1900.

Application filed June 9, 1896. Serial No. 594,854. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SEEGER, of St. Paul, Ramsey county, Minnesota, have invented certain new and useful Improvements in Vapor-Burners, of which the following is a specification.

My invention relates to hydrocarbon-burners designed for illuminating purposes; and the object which I have in view is to provide a hydrocarbon-burner particularly adapted for use with street-lamps; and the invention of this application is an improvement upon the invention shown and described in my former application for patent upon vapor-burners, filed November 10, 1894, Serial No. 528,414; and the especial objects of the present invention are to provide means for vaporizing the oil in a suitable retort within the body of the burner and leading the vapor to the removable plug and the mixing-chamber, also to provide improved means for heating the part of the burner within which the oil is vaporized, and also to provide an improved construction which permits the burner to be readily cleaned.

To the above-named ends this invention consists in the constructions and combinations hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of my improved burner. Fig. 2 is a similar view with the shield and the tapered plug removed. Fig. 3 is a plan view. Fig. 4 is a transverse vertical section. Fig. 5 is a horizontal section on the line xx of Fig. 1.

In the drawings, 2 represents the vertical tube, the upper part of which is provided with the tip 3, having a slit 4, and the lower part of which constitutes a mixing-chamber and is provided with the series of horizontal slots 9. The lower end of the tube 2 receives the plug 8. The lower part of the burner is preferably provided with the ear 22 and the plug with the lug 23, having an inclined lower face, by means of which the plug may be locked in position in the burner. The plug is also preferably provided with the handle 24, by means of which it may be grasped and

turned for the purpose of insertion or removal. These parts are all substantially the same as the corresponding parts of the burner shown and described in my former application for patent hereinbefore referred to. The lower end of the plug 8 is preferably provided with the plug 25, which is driven into the lower end of the hollow plug 8 for closing the same. A screw or other means might of course be used if preferred for closing the lower end of this plug. The hollow plug 8 is provided with a small opening 10 in its top through which the vapor passes to the mixing-chamber. The oil is supplied to the burner through a tube or pipe 11, which enters a suitable nipple 12. The tube 11 is preferably provided with a packing of cotton or other suitable material, which forms a strainer for preventing any sediment or similar material from passing into the burner. The nipple 12 opens into a small chamber 14, above which is the hollow dome 15. This dome screws into the top of the chamber 14, and the chamber and dome together form a retort in which the oil passing into the chamber through the pipe 11 is vaporized. A tube 16 has its open end near the top of this retort, its lower end being secured at the bottom of the chamber 14. A duct 17 forms a continuation of the opening of the tube 16 and extends downward, preferably, on an incline to a point near the wall of the tube 2, where it communicates with the horizontal duct 18, which in turn communicates with the tube 2. The hollow plug 8 is provided with an opening 19, which when the plug is in place comes opposite the duct 18, thus permitting the passage of vapor from the retort through the tube 16, the ducts 17 and 18, and into the plug 8. I prefer to form a small opening 21 in the wall of the tube 2 opposite the duct 18, so that when the plug 8 is removed the duct 18 may be cleaned out by means of a wire inserted through the opening 21. As the duct 17 forms a continuation of the opening in the tube 16, both being in a straight line, by removing the dome a wire may be inserted through the tube 16 and duct 17 and the same be thereby cleaned out, and any residuum that collects

therein may be forced downward and into and through the duct 18, the plug 8 being removed, and out through the open lower end of the tube 2. The burner is preferably formed below the retort 14 with the horizontal shelf 26 and the vertical flange 27 extending from the outer edge of the shelf 26 to the outer wall of the retort-chamber. Openings 28 are formed through the wall of the tube 2 (see particularly Fig. 5) into the space above the shelf 26. A shield 29 extends across the flange 27 and incloses the lower walls of the retort-chamber and the space above the shelf 26. The ends of this shield do not extend close to the walls of the tube 2, so that air is permitted to enter between said tube and the ends of said shield. A portion of the gas from the tube 2 escapes through the openings 28, and being ignited a flame is continuously maintained within the shield 29 around the retort-chamber. The upper part of the dome 15 is also in close proximity to the top of the burner, so as to receive a large amount of heat therefrom.

The operation is as follows: The heavy oil employed enters the retort-chamber and is vaporized therein. The vapor passes down through the tube 16 and the ducts 17 and 18 and into the hollow plug 8, from which it escapes through the opening 10. It is mixed with the air which enters the tube 2 through the slots 9 and passes to the burner 3. By removing the plug 8 said plug may be readily cleaned of any residuum that collects in the openings 10 and 19, and by removing the dome 15 the tube 16 and the ducts 17 and 18 may be readily cleaned out.

It will be understood that the tube 16 and ducts 17 and 18 will only occasionally require cleaning. I find it an advantage, however, to remove the plug 8 each day and clean out the small opening 10. In this instance, as in my former patent, the plugs 8 are preferably all made interchangeable.

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

1. The combination, in a hydrocarbon-burner, of the burner-tube, a bracket formed thereon, a retort-chamber at the upper end of said bracket and opposite and near the burner-tip to be heated by the illuminating-flame, a duct leading downward from said chamber and communicating with the interior of said tube, the shelf 26 beneath said chamber, the flange 27 connecting said shelf with the bottom of said chamber, and the openings 28 provided in said burner-tube above said shelf and beneath said chamber, for the purpose set forth.

2. The combination, with the burner-tube, of the integral bracket formed thereon and having in its upper part the retort-chamber, a tube or duct extending from the upper part of said retort-chamber downwardly into communication with the lower part of said burner-

tube, said burner-tube having air-inlet and gas-outlet openings, a shield inclosing the retort portion of the device, the integral floor 26 for said shield, and the integral bracket 70 connecting the same with the lower part of the device, whereby the lower part thereof is also kept hot, substantially as described.

3. In a hydrocarbon-burner, a burner-tube having air-inlet holes and an open lower end, a removable plug fitting within said open end, a chamber 14 of greater diameter than said tube provided at one side thereof and into which the oil passes from a supply-tube, a straightway duct 17 leading from said chamber to a point near the lower end of said tube, a dome provided above said chamber forming therewith a retort wherein the oil is vaporized and said dome being removable to permit said duct 17 to be cleaned and the sediment 85 therein forced down and out through the lower end of said tube, substantially as described.

4. In a hydrocarbon-burner, the combination, with a burner-tube, of a bracket provided on one side of said tube, a retort-chamber provided in the upper part of said bracket and connected with the oil-supply, an inclined duct 17 leading from said chamber to a point near the lower end of said tube, a horizontal duct 18 connecting said duct 17 with said tube, and a hole 21 provided in the wall of said tube opposite and in line with said duct 18 whereby access may be had to the latter for cleansing purposes, substantially as described.

5. A hydrocarbon-burner, comprising a burner-tube having air-inlet holes and an open lower end, a removable plug fitting within said open end, a chamber 14 provided at one side of said tube and connected with an oil-supply pipe, a dome provided above said chamber and forming therewith a retort wherein the oil is vaporized, a duct 17 leading from said chamber to a point at or near the lower end of said tube, and a removable tube 16 in the upper end of said duct and concentric therewith and extending into the top of said dome, substantially as described.

6. The combination, in a hydrocarbon-burner, of the burner-tube, a tip provided therein, a retort provided on the side of said tube opposite and near said tip whereby said retort will be partially heated by the illuminating-flame, a duct leading from said chamber and communicating with the interior of said tube, a bracket provided on said tube beneath said retort, a space being provided between them, a shield inclosing said space and the lower walls of said retort, and openings 28 provided in said tube and leading into the space between said retort and said bracket, for the purpose specified.

7. The combination, in a hydrocarbon-burner, of the burner-tube, a tip, a retort-chamber provided on the side of said tube, a duct leading downward from said chamber and communicating with the interior of said

5 tube, a shelf 26 provided on the side of said tube beneath said retort, a space being formed between them, a flange 27 connecting the outer edge of said shelf and the wall of said retort, a shield 29 inclosing the lower walls of said retort and the space between the same and said shelf, and openings 28 provided in said tube leading into the space between said

retort and said shelf, substantially as described.

In testimony whereof I have hereunto set my hand this 19th day of May, A. D. 1896.

ROBERT SEEGER.

In presence of—

C. G. HAWLEY,
RICHARD PAUL.