

No. 843,381.

PATENTED FEB. 5, 1907.

G. E. WITT.
OIL BURNER.

APPLICATION FILED AUG. 23, 1905.

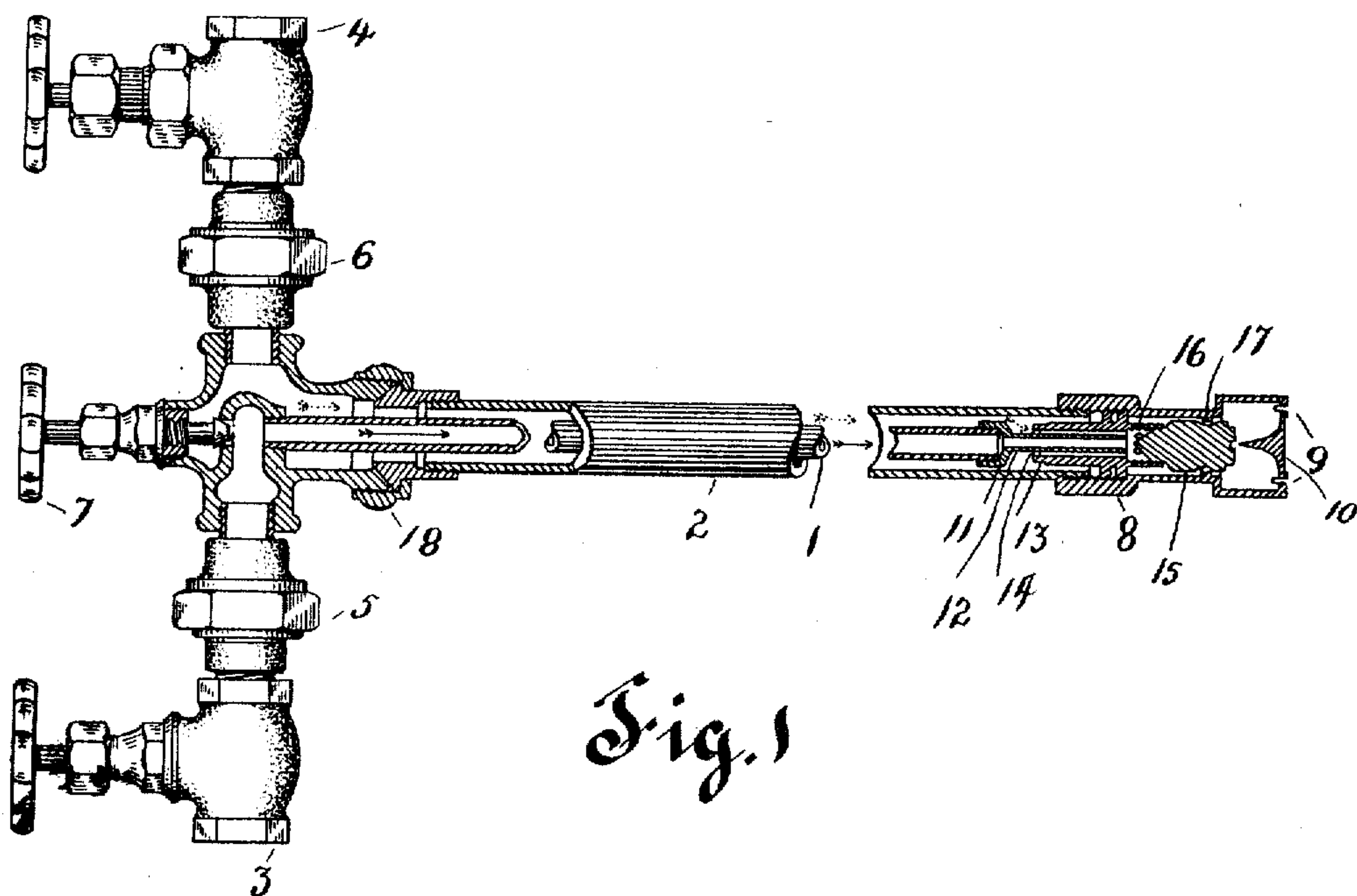


Fig. 1

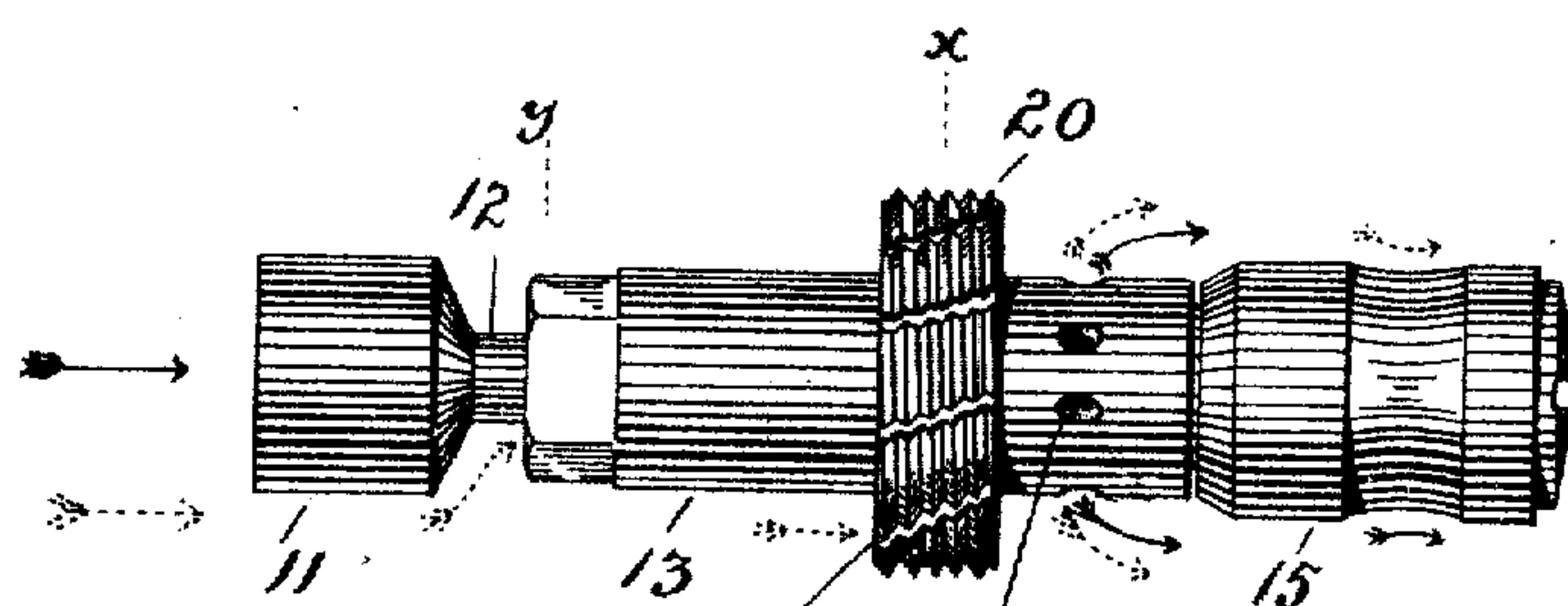


Fig. 2

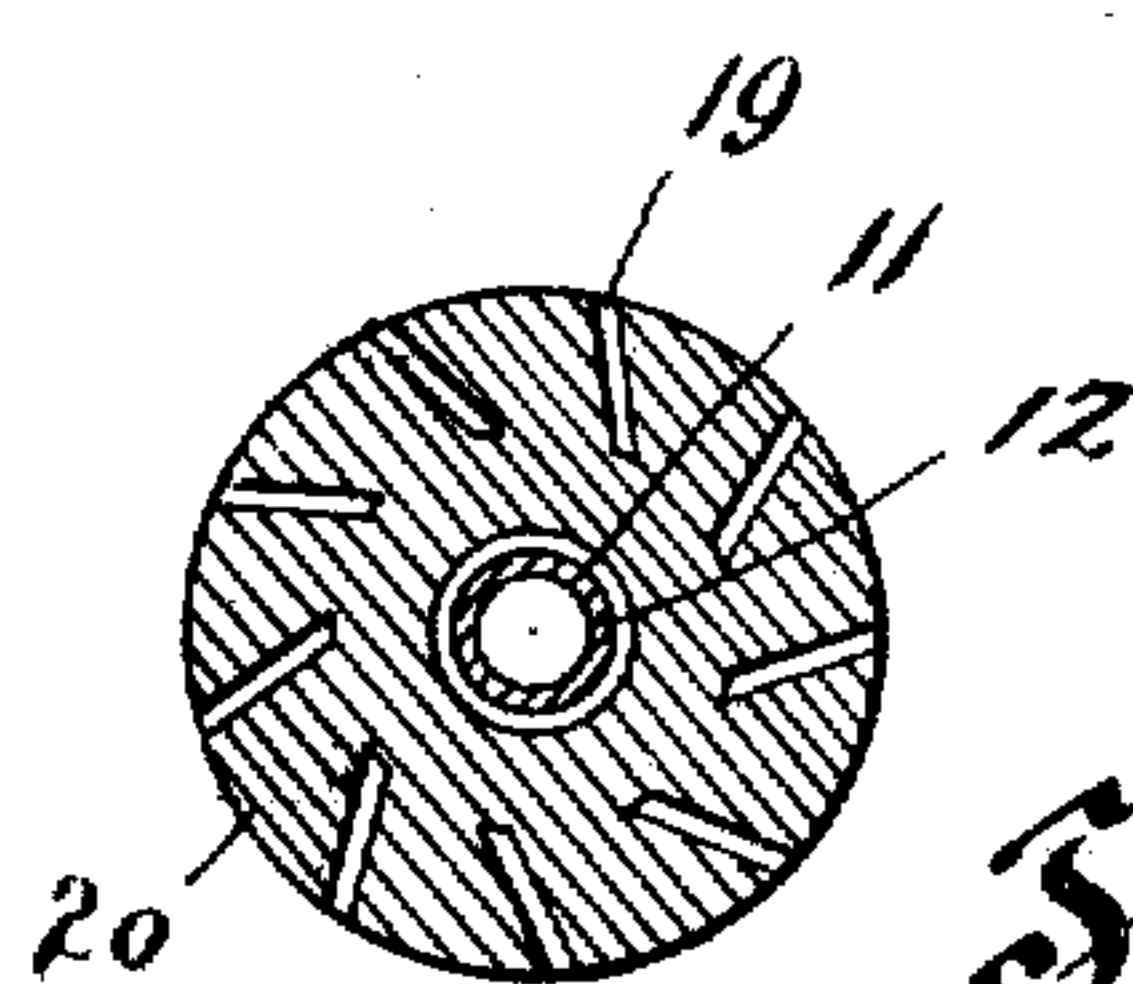


Fig. 3

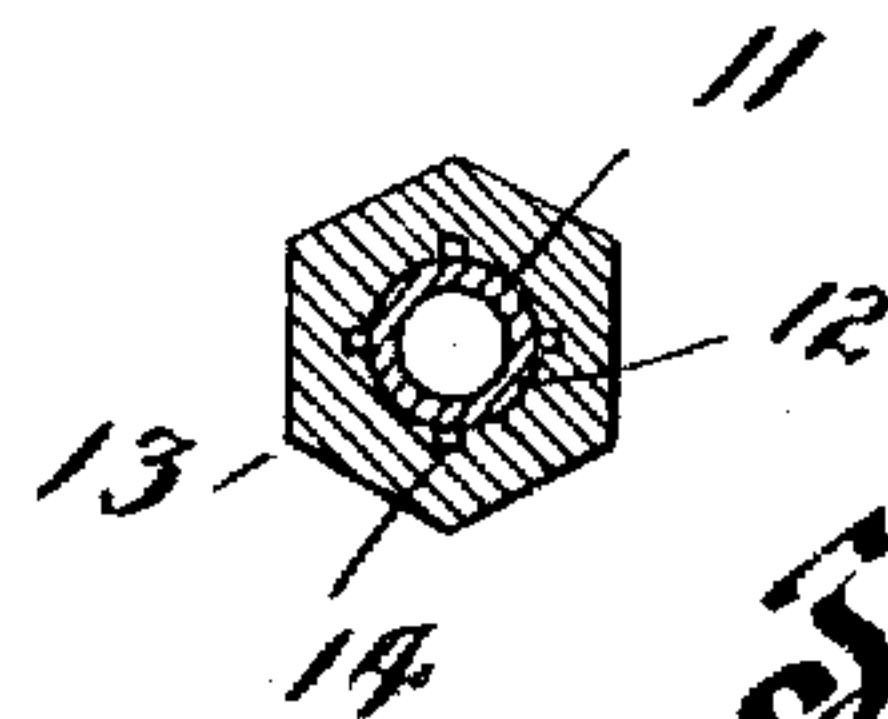


Fig. 4

WITNESSES:

Ediz. Kincaid.
Orpha Le Poo.

INVENTOR

George E. Witt

BY
Kincaid & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE E. WITT, OF SAN FRANCISCO, CALIFORNIA.

OIL-BURNER.

No. 843,381.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed August 23, 1905. Serial No. 275,493.

To all whom it may concern:

Be it known that I, GEORGE E. WITT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Oil-Burners; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

The subject of my present invention is an improvement on the oil-burner shown in my former patent, No. 741,867, October 20, 1903.

In addition to fulfilling all the objects set forth in said former patent my present oil-burner is so arranged as to operate successfully with a minimum oil-pressure, and, further, the steam is so thoroughly intermingled with the oil before they issue from the nozzle of the burner as to insure against the carbonizing and choking up of the burner.

I have made provision whereby the interior of the burner can be instantaneously cleaned without the detaching or removing of any of its parts.

I have set forth fully hereinafter the details of the construction and the essential features thereof and illustrated them in the accompanying drawings, in which—

Figure 1 is a side elevation and partial section of the complete burner. Fig. 2 is a side elevation of the inner plug of the nozzle. Fig. 3 is a transverse section on the line *x* of Fig. 2. Fig. 4 is a transverse section on the line *y* of Fig. 2.

Referring now to the above views by numeral, 1 and 2 represent the oil and steam pipes of the burner, respectively, the latter encircling the former. The oil-pipe 1 is provided with a valve 3, while the steam-pipe 2 is connected to the valve 4, the unions 5 and 6 being provided to facilitate making the desired connections. The intermediate globe-valve 7 is for the purpose of introducing a head of steam to the oil-pipe 1 for purposes of cleansing. The outer extremity of the pipe 2 is threaded to the head 8, the outer extremity of which is formed with the twin slots 9, from which the intermingled steam and oil issue. Within the head 8 is the curved central deflecting-web 10, which prevents the heavy oil from falling to the bottom of the head and issuing from the lower

slot, but causes it to issue evenly from both slots.

The outer extremity of the oil-pipe 1 is threaded to the nozzle 11, the hollow stem of which enters the member 13, the latter being threaded against a shoulder in the head 8. The member 13 is counterbored to form an encircling cavity about the stem 12, into which small jets of steam are conducted through the grooves 14. Screwed into the outer extremity of the member 13 is the plug 15, the inner extremity of which is conical and is adapted to deflect the oil and steam and throw it through the perforation 16 where it strikes against the inner wall of the head 8. The oil and steam are next interrupted and caused to intermingle by means of the interior flange 17, which is in line with the depressed circumferential groove in the plug 15.

The construction and arrangement of the several parts of my invention being thus made known, the operation of the same will, it is thought, be readily understood by following the solid and dotted arrows, which indicate the course of the oil and steam, respectively.

The parts are so arranged as to be readily connected, as the adjustable stem 12 and union 18 afford ample means for adjustment.

In order to further add to the thoroughness with which the steam and oil are intermingled, I have formed the diagonal grooves 19 in the threaded flange 20, which directs the steam to travel in a spiral course about the member 13.

The peculiar construction and combination of parts enables the burner to be run with a very low fire, and owing to the narrowness of the oil and steam conduits the burner operates with a steady flame without puffing or blowing.

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

1. In an oil-burner, the combination with concentric steam and oil pipes and a head fixed to the end of the steam-pipe said head having a burner portion, of a member fixed within the head having front and rear extensions, said rear extensions receiving the end of the oil-pipe and having passages for the flow of steam from said steam-pipe, and a plug fitted to and closing the front extension of said member, said front extension being

2

perforated back of the plug and forming a chamber into which the steam and oil are admitted, and finally discharged through said perforations into the burner portion of the head.

2. In an oil-burner, the combination with concentric steam and oil pipes and a burner-head having discharge-apertures, of a member disposed within the steam-passage and having a threaded flange at its intermediate portion adapted to screw into engagement with the interior of the head, said member extending front and rear of the flange and having a passage longitudinally through it for the reception of the nozzle end of the oil-pipe, and said front extension forming a chamber into which steam and oil are delivered, a plug closing the front end of the front extension of the member said front extension being radially perforated to allow the mingled oil and steam to escape into the burner-head.

3. The combination of a steam-pipe, a burner-head secured to one end thereof, a member within the steam-passage having an enlarged threaded flange at its central por-

tion engaging threads on the interior of the head, said member having a chambered radially-perforated front end and having a central opening which connects at one end with the steam-pipe and at the opposite end connects with said chamber, an oil-pipe entering said central opening in the member, a conical plug closing the chamber at the front end of the member except for the said perforations, said front and rear ends of the member being of less diameter than said flange and the interior of the steam-pipe, and said flange having diagonal passages for imparting a spiral motion to a portion of the steam and for directing this portion of the steam into the burner-head in the presence of the oil and steam delivered by the front end of the said member.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE E. WITT.

Witnesses:

GEORGE PATTISON,
ORPHA C. POOR.