

No. 846,990.

PATENTED MAR. 12, 1907.

J. C. FITZSIMMONS.

OIL BURNER.

APPLICATION FILED DEC. 31, 1906.

Fig. 1.

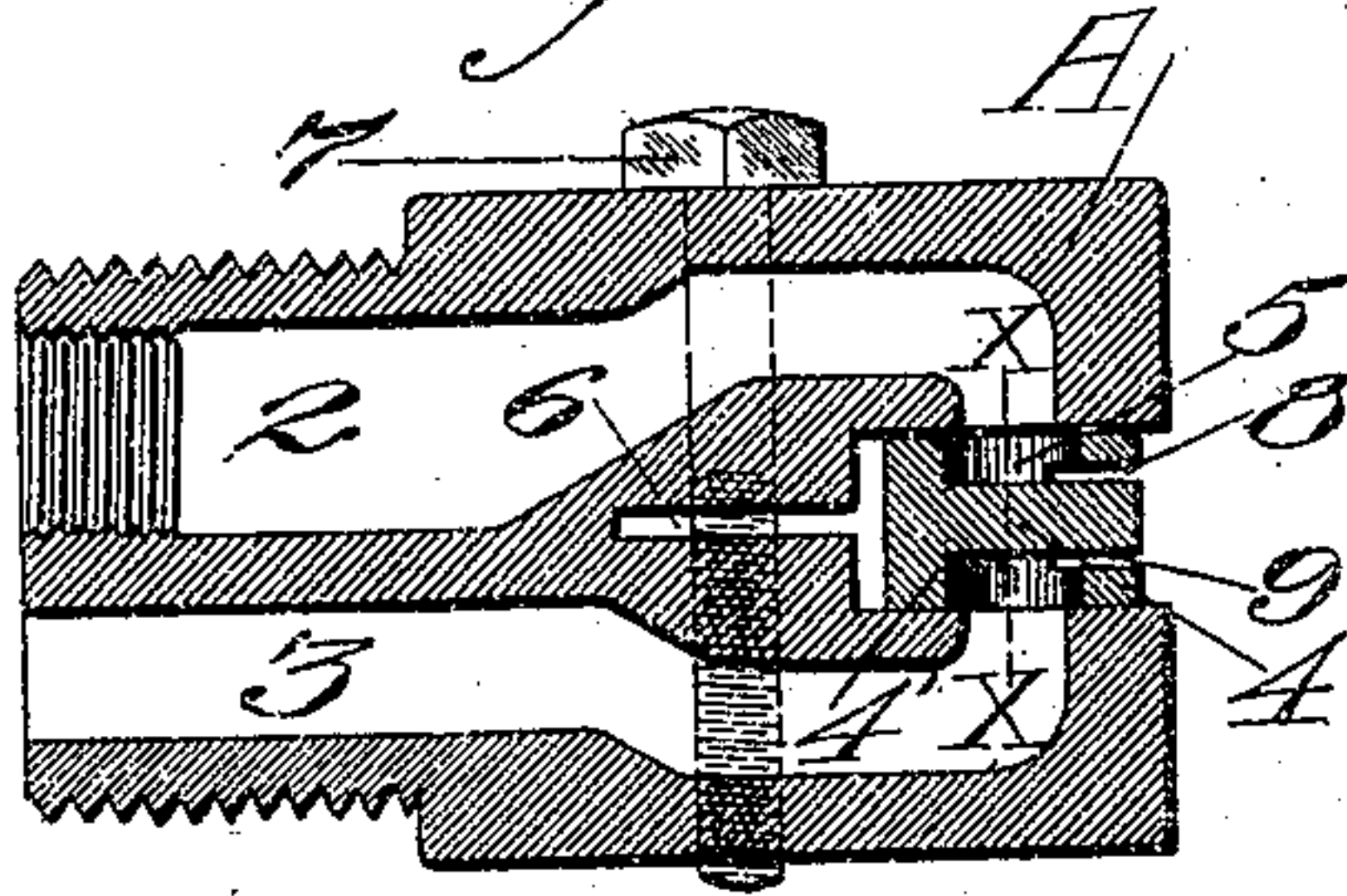


Fig. 2.

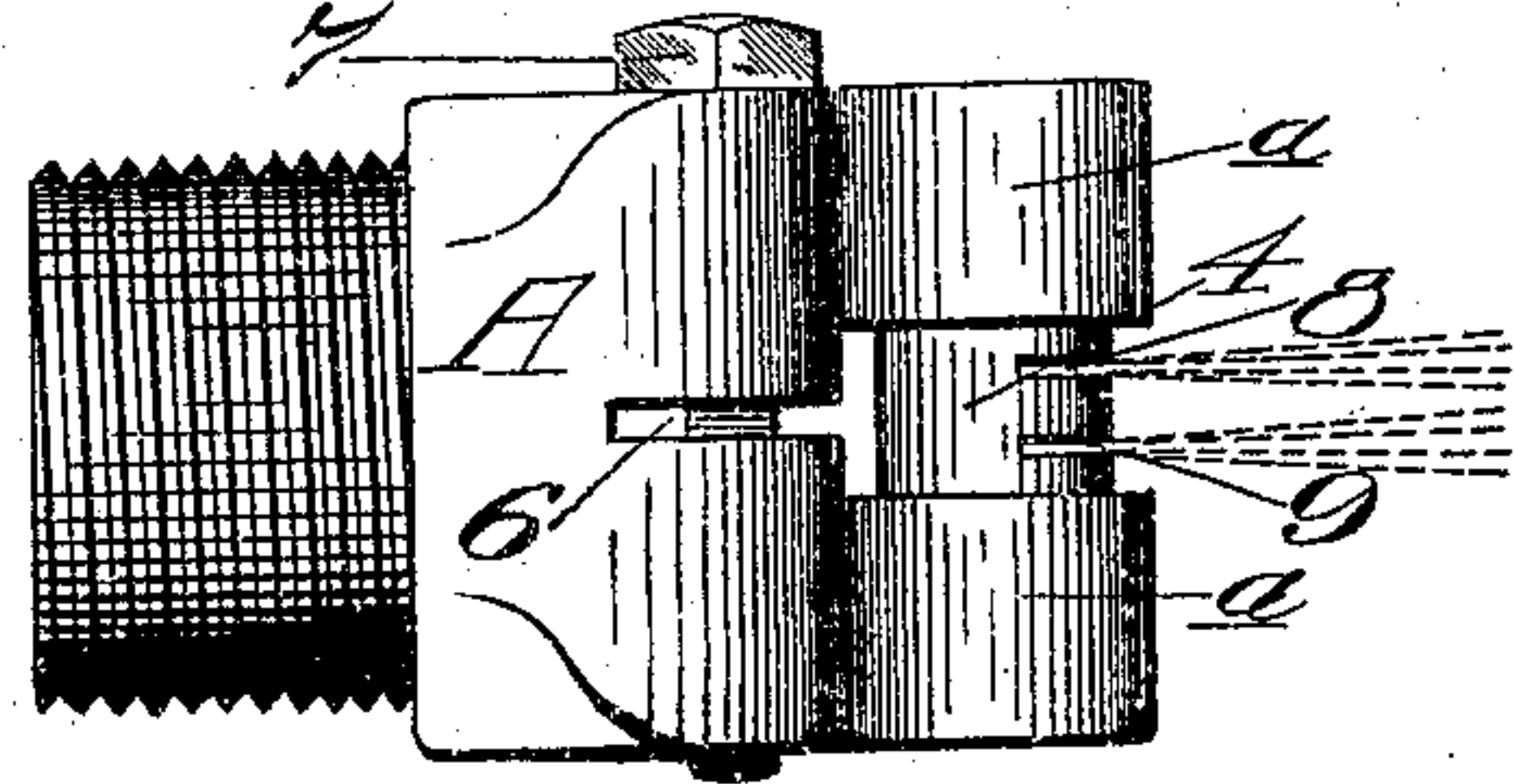


Fig. 3.

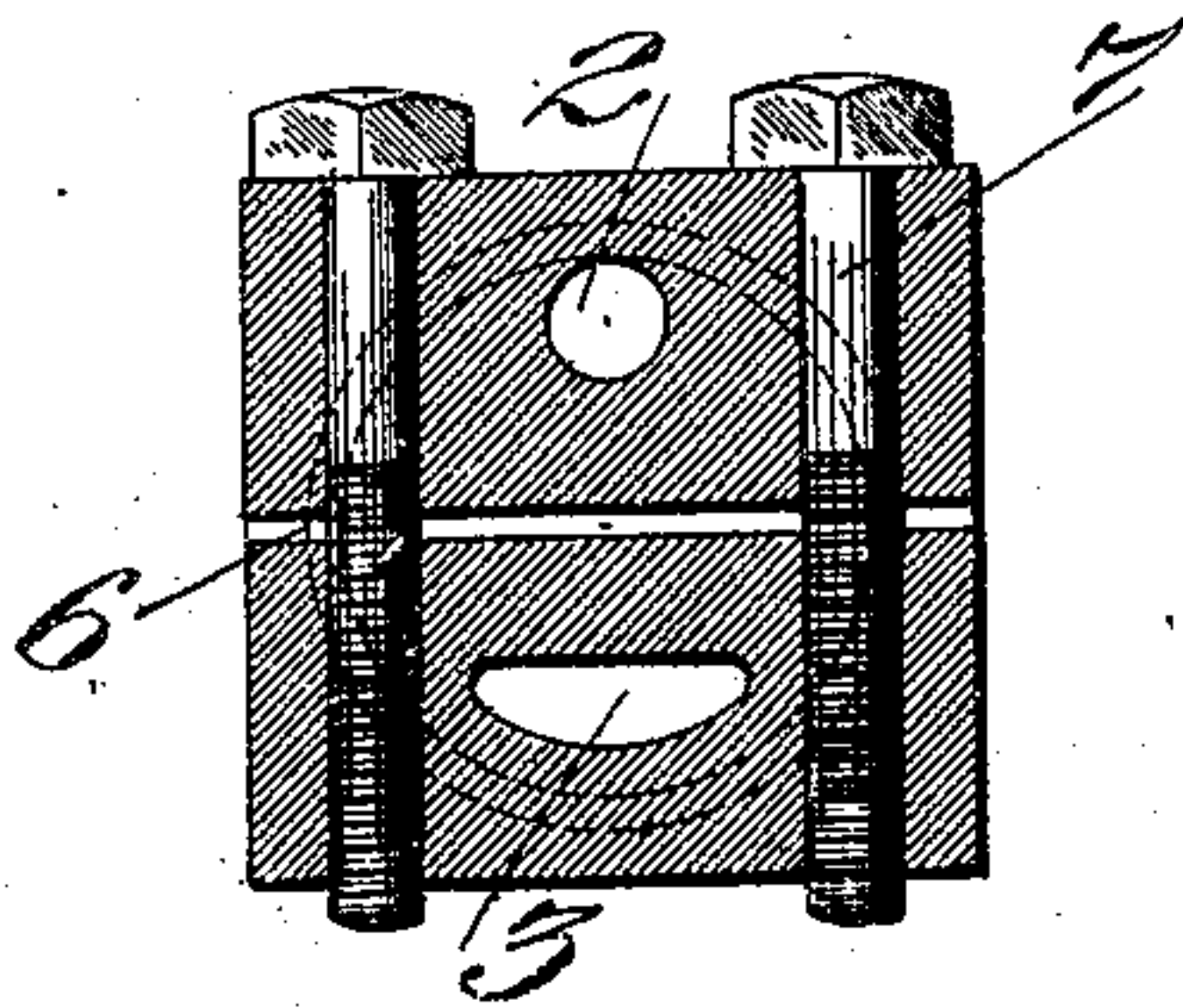


Fig. 4.

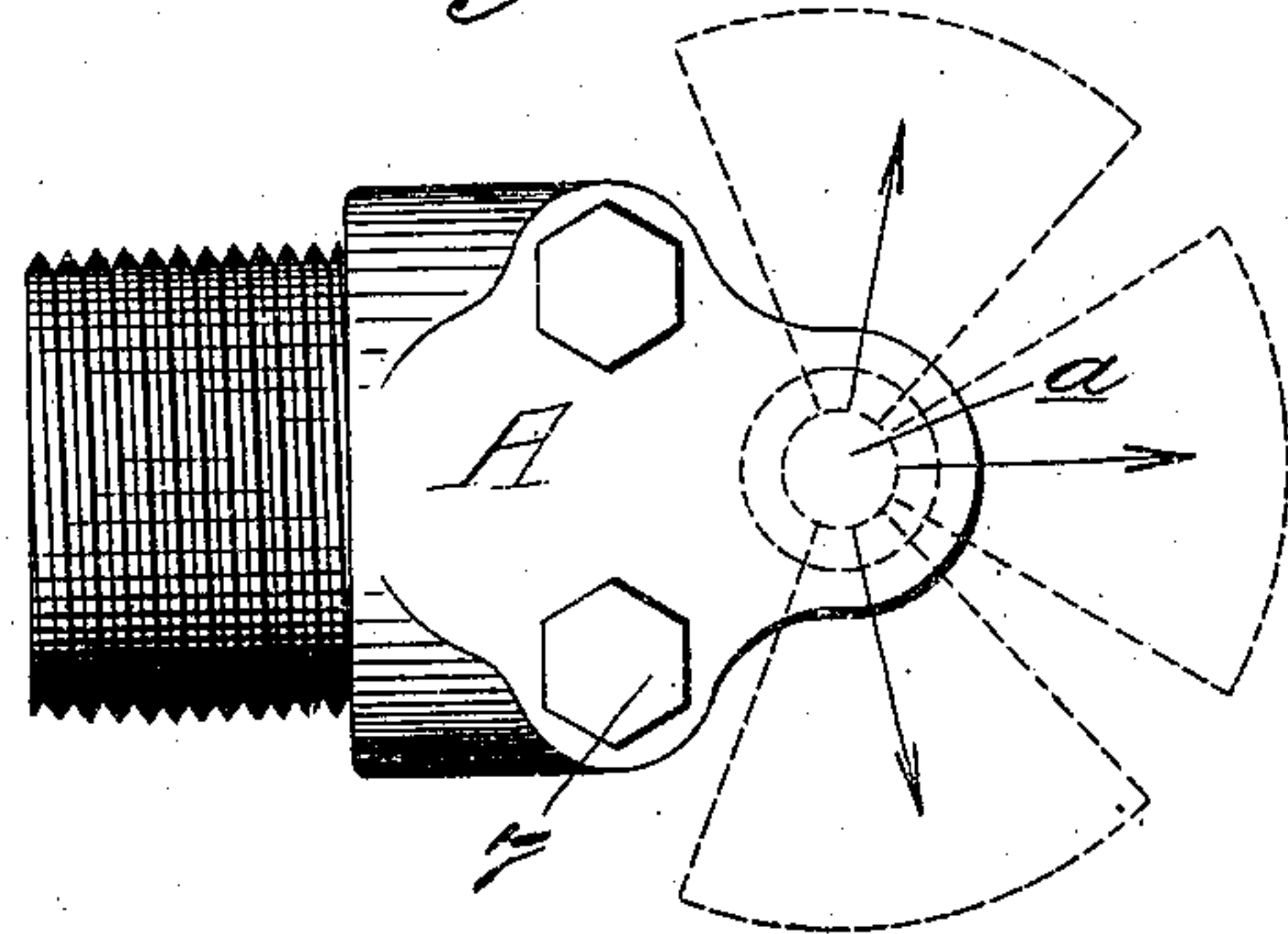


Fig. 5.

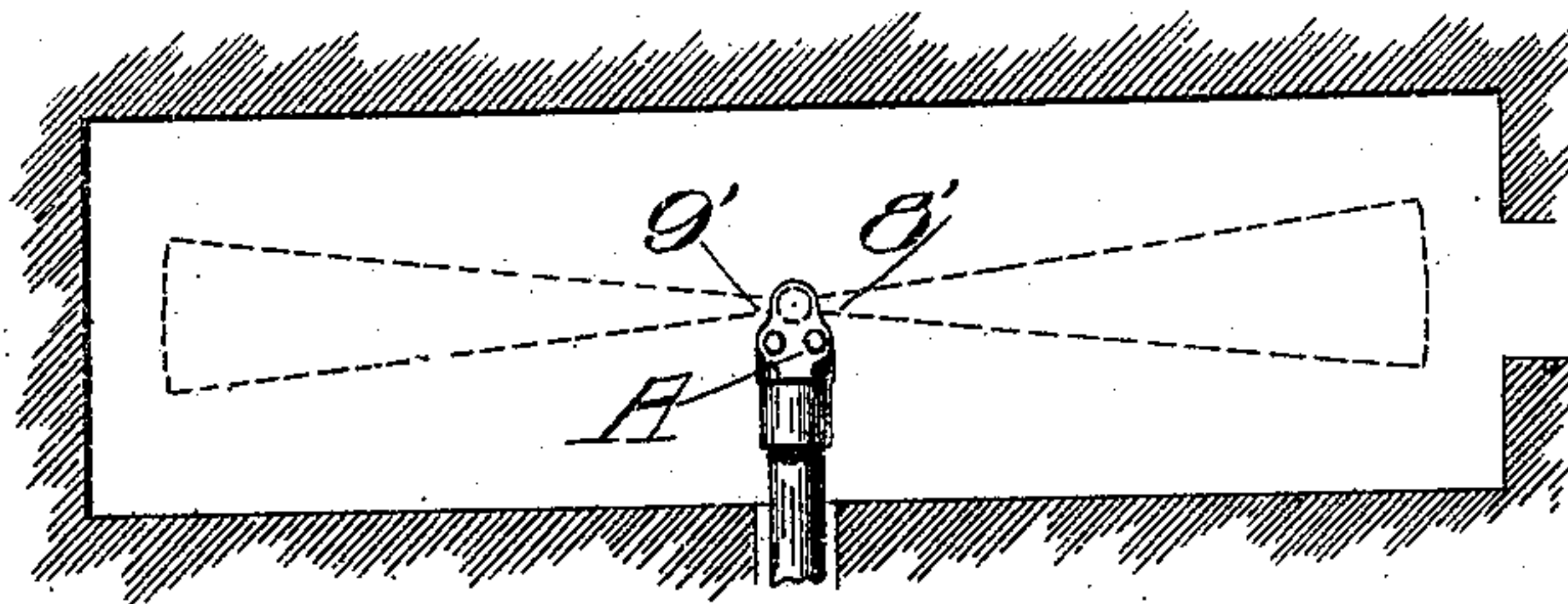
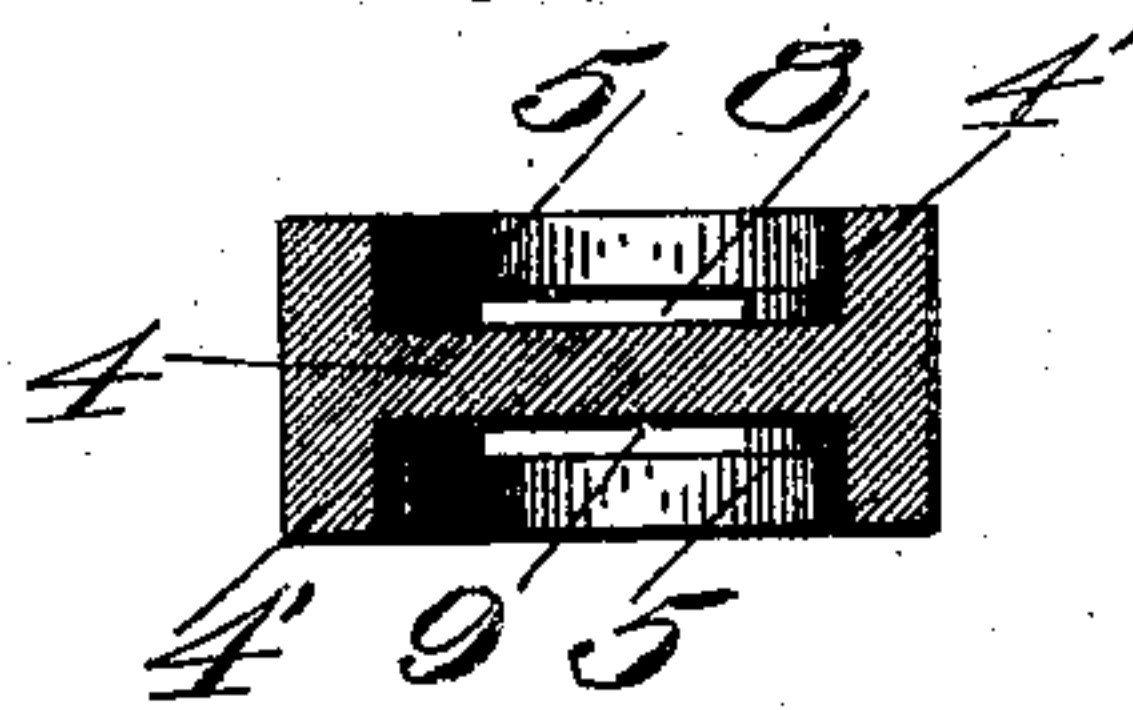


Fig. 6.



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JAMES C. FITZSIMMONS, OF OAKLAND, CALIFORNIA.

OIL-BURNER.

No. 846,990.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed December 31, 1906. Serial No. 350,280.

To all whom it may concern:

Be it known that I, JAMES C. FITZSIMMONS, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

My invention relates to oil-burners. Its object is to provide a burner of simple construction and improved efficiency, wherein a flame may be directed to one side or the other of the axial line of the burner, if desired, also to provide a burner whereby a "fan-shape" flame or a "straight-shot" or any other desired shape of flame may be obtained or whereby a split or divided flame may be had, if needed.

The invention consists of the parts and the construction and the combination of parts, as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of an oil-burner embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a cross-sectional view of the burner on the clamp-screws. Fig. 4 is a plan view of Fig. 2. Fig. 5 shows the application of the burner in a furnace having a long narrow fire-box. Fig. 6 is a sectional view of the line X X of Fig. 1.

A represents a burner head or tip provided with the respective oil and steam passages 2 3. The front end of this head or tip is made with a horizontally-bifurcated rounded nose portion *a*, and the passages 2 3 extend forward into the forks of this projecting nose and open at opposite sides into the space formed between the upper and lower portions of the nose.

4 is a deflector and spreader setting in the recess formed between the upper and lower forks of the nose. This spreader and deflector constitutes, in conjunction with the slotted nose, my invention and consists of a disk having upper and lower annular flanges 4', which flanges inclose the recesses 5. The recesses 5 are registrable with the respective discharge-openings of the passages 2 3 when the disk is in operative position in the burner. The slot in the burner-head is sufficiently large to allow of the ready insertion and removal of this spreader and deflector member 4, the head being split, as shown at 6, behind the recess which receives the deflector 4 to

give sufficient springiness to the head, so that when the clamp-screws 7 are screwed down tight the member 4 will be tightly clamped in position in axial line with the discharge-orifices of the passages 2 3.

The walls of the member 4 on each side of the central diaphragm are slotted, as shown at 8 9, to provide respective outlets for the oil and steam. The slotted nose being made semicircular in conformity with the outline of the member 4 and projecting beyond the clamp-screws 7 a distance preferably equal to or greater than the diameter of the member 4 allows the latter to be set in position so as to discharge either straight ahead or to have an unobstructed discharge to either side of the axial line of the burner. This ability to adjust the disk 4 so as to get a lateral discharge, if necessary, is advantageous in some cases, as where it is not possible to place a burner in the center of a furnace or where two or more burners might advantageously be used in the same fire-box.

The member 4 can be turned so as to discharge at any desired angle with respect to the axial line of the burner, as indicated in dotted lines in Fig. 4.

In operation the oil and steam enter and pass through their respective passages 2 3, the oil striking the top of the disk 4 and passing thence out through the slot 8, whereupon it comes in contact with the steam. The steam on striking the under side of the plate is deflected through the slot 9, whereupon the oil is spread out in the form of an inflammable vapor in the fire-box. By varying the shape and width of the slots or discharge-orifices 8 9 any desired shape may be given to the flame. By slitting the flanges of the member 4 quite a distance back a "half-round" flame is readily secured. If the burner is to be used in a furnace having a long and narrow fire-box and it is desired to heat the same at both ends, the member 4 may have its upper and lower flanges slotted at opposite points, as shown at 8' 9', Fig. 5, so that the discharge will be divided and nearly at right angles to the axis of the burner. In this case the burner would enter the furnace at one side and midway thereof and with one flame directed toward the front of the fire-box and another flame directed in the opposite direction toward the rear. Not only is this flanged disk turnable to send a flame in any desired direction, but it is possible

ble to use any one of a number of disks having each a different character of slots 8 9, according to the character of the flame to be produced. Any one of said disks may be used 5 in the same burner.

By having the disk or deflector clamped from the top by the screws 7, as shown, it leaves the front end of the burner and deflector entirely unobstructed, so that a more 10 perfectly-shaped flame may be had, besides admitting of the use of a divided flame, as just described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 15

1. In an oil-burner, a head having a rounded, slotted, nose portion, said head having respective oil and steam passages opening into opposite sides of the slot in said nose 20 portion, a disk provided with annular flanges on the two sides fitting in said slot with the spaces bounded by said flanges communicating with respective of said oil and steam passages, said flanges slotted above and below 25 the disk for the egress of the oil and steam, said disk being turnably mounted to direct the flame to either side of the axial line of the burner and means for securing said disk in position in the head.

30 2. In an oil-burner, a burner-head having a transverse slot and provided with upper and lower oil and steam passages discharging

into said slot, a disk having upper and lower flanges, fitting in said slot, the space inclosed by one of said flanges registrable with the discharge-opening of said oil-passage and the 35 space inclosed by the other of said flanges registrable with the discharge-opening of said steam-passage, said flanges slitted to provide respective oil and steam outlets, and 40 means for removably holding said flanged disk in position in said head, said disk being turnable in a plane at right angles to the axis of the head whereby it may direct the flame 45 to either side of the axial line of the burner or straight ahead.

3. In an oil-burner, a forked head having respective oil and steam passages opening into the slot in the head, a deflector fitting in 50 said slot and having respective discharge-orifices in communication with said oil and steam passages, said deflector being turnable in a plane at right angles to the axis of the head, and means for compressing the 55 forked portion of said head to grip said deflector to hold it in operative position.

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

JAMES C. FITZSIMMONS.

Witnesses:

S. H. NOURSE,

JESSIE C. BRODIE.