A. NYSTROM.

OIL BURNER.

APPLICATION FILED AUG. 19, 1915.

1,184,985. Patented May 30, 1916.

Fig. 1

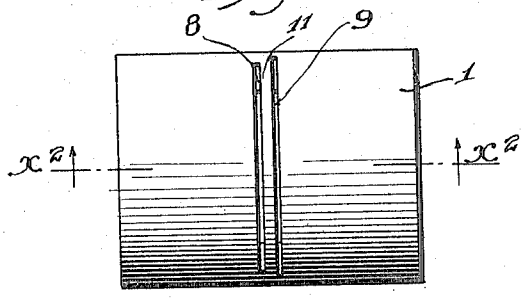


Fig. 2

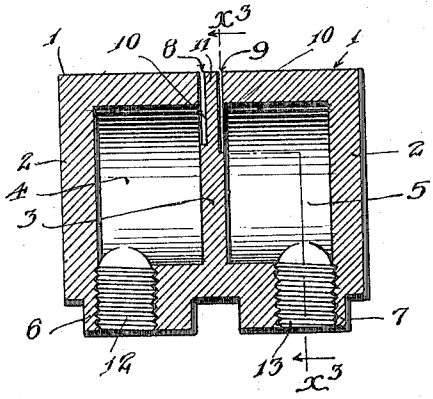
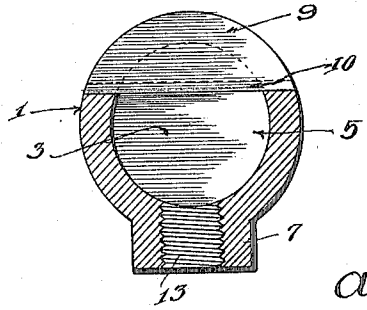


Fig. 3.



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UNITED STATES PATENT OFFICE.

ANTON NYSTROM, OF LOS ANGELES, CALIFORNIA.

OIL-BURNER.

1,184,985. Specification of Letters Patent. Patented May 30, 1916.

Application filed August 19, 1915. Serial No. 46,231.

To all whom it may concern:

Be it known that I, ANTON NYSTROM, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Oil-Burner, of which the following is a specification.

An object of this invention is to produce a burner which has minimum tendency to clog and which is of minimum cost.

Another object is to produce a burner made of a single casting and to so construct a one piece burner that oil flowing through it from the inlet to the nozzle will do so without deflection from obstructions and consequent retardation.

Another object is to so construct the burner as to effect the mixture of the fluid fuel and combustion-supporting agent with maximum thoroughness and to prevent escape of any of the particles of fluid fuel at the edges of the fuel jet.

The accompanying drawings illustrate the invention.

Figure 1 is a side view of a burner constructed in accordance with this invention. Fig. 2 is a longitudinal section on line indicated by x^2—x^2, Fig. 1. Fig. 3 is a transverse section on the irregular line indicated by x^3—x^3, Fig. 2.

The burner is cast in one piece from iron or other suitable metal and is preferably in the form of a hollow cylinder and comprises a peripheral wall 1, end walls or heads 2, a transverse partition 3 dividing the interior into chambers 4, 5, and inlet nipples 6, 7, all integral with one another.

The peripheral wall 1 is provided with nozzle openings formed by saw-kerfs 8, 9 which extend or are cut through said peripheral wall and partly into the opposite faces of the partition 3 to form recesses 10 separated from one another by a thin tongue 11 of the partition, the distance between the inner margins of the openings 8, 9 being less than the thickness of the partition 3, so as to give free entrance to said openings of the operating fluids as they pass from the chambers 4, 5 to bring the jets of fuel and operating fluid as closely together as possible. The chamber 5 may be for the atomizing fluid such as steam or air and the chamber 4 for the fuel oil.

The opening 9 is preferably narrower and longer than the opening 8, as shown, so that the fan shaped jet of operating fluid issuing from the opening 9 will spread out beyond the margin of the fuel jet and thereby effect the mixture of fuel and combustion-supporting agent with maximum thoroughness. Thus when the burner is in use the longer and narrower opening 9 will be below the wider and shorter opening 8 so that upward draft through the fluid jets will spread the edges of the operating fluid jet upward past the edges of the jet of fuel and produce a suitable condition for combustion of the fuel particles at said edges.

In the side of the peripheral wall 1 diametrically opposite the side having the nozzle openings 8, 9, said peripheral wall is provided with inlet passages 12 and 13 communicating with the chambers 4, 5 respectively through the nipples 6, 7 respectively. There being no bolts to be loosened by contraction and expansion of different parts fastened thereby, the size of the nozzle openings remains constant.

It is particularly noted that owing to the openings 8, 9 being diametrically opposite the passages 12, 13, with nothing between to obstruct the flow of the fluids, said fluids will be distributed substantially uniformly from end to end of the nozzle openings so that erosion of the metal at the nozzle openings by friction of the fluids passing therethrough will be uniform from end to end of the nozzles and will not be greater at some portions than at others as would occur if the fluids were deflected and hence not evenly distributed to all parts of the nozzle openings. I am thus enabled to obtain a uniform flame when the burner is new and also a uniform flame after the burner has been in use for a considerable period of time.

The atomizing fluid is supplied to the passage 13 and the oil is supplied to the passage 12 in a manner well understood in the art, and the oil issuing through the nozzle opening 9 mixing with the atomizing fluid issuing through the nozzle 8 is ignited and produces a flame of uniform width from end to end and the uniform character of said flame will not change when erosion of the metal at the nozzle openings takes place, though the flame may become slightly thicker.

The foregoing will enable those skilled in the art to make and use the device.

I claim:

An oil burner formed of a single casting comprising a cylinder closed at opposite ends, and a transverse partition midway between said ends, said cylinder having slots extending circumferentially thereof and extending into the opposite faces respectively of said partition to form recesses therein, one of said slots being longer and narrower than the other and there being inlet passages in the peripheral wall of said cylinder near the ends thereof.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 12th day of August, 1915.

ANTON NYSTROM.

In presence of—
LESTON P. THOMPSON,
ESTHER NYSTROM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington. D. C."