

C. ECKLAND.
OIL BURNER.

APPLICATION FILED MAR. 25, 1908.

939,816.

Patented Nov. 9, 1909.

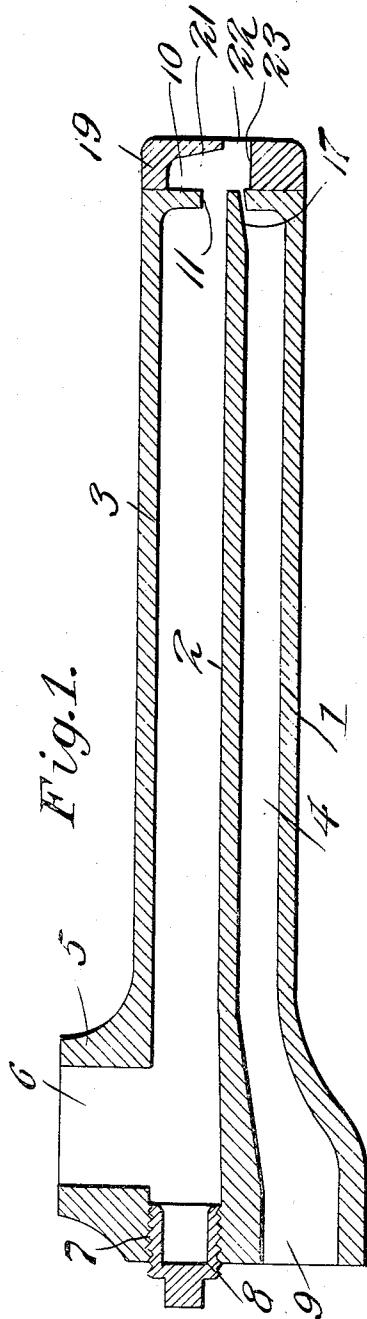


Fig. 1.

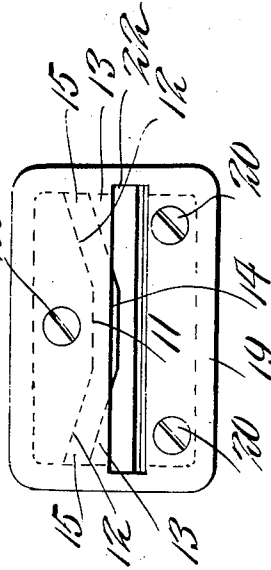
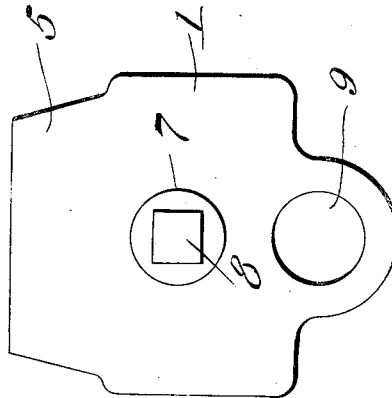


Fig. 2.



Witnessed:—

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UNITED STATES PATENT OFFICE.

CHARLES ECKLAND, OF STOCKTON, CALIFORNIA.

OIL-BURNER.

939,816.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed March 25, 1908. Serial No. 423,233.

To all whom it may concern:

Be it known that I, CHARLES ECKLAND, a citizen of the United States, residing at Stockton, in the county of San Joaquin 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 of that type employing steam as an atomizing agent, and, broadly and generally speaking, it consists of a body provided with parallel oil and steam passages.

One object of my invention is the provision of an oil burner wherein the discharge opening of the oil passage is constructed to regulate the horizontal dimension of the discharging column of oil in proportion to the quantity of oil fed to the passage.

A further object of my invention is the provision of an oil burner with means adapted to protect the inner end thereof from the flame and to prevent the oil from carbonizing over the discharge opening of the oil passage.

A further object of my invention is the provision of an oil burner constructed to permit the oil passage to be readily and quickly cleaned.

A still further object of my invention is to provide an oil burner which is simple, durable and efficient, and which can be manufactured and sold at a comparatively low cost.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts hereinafter fully described, claimed and illustrated in the accompanying drawing, wherein:

Figure 1 is a sectional view taken on a plane extending vertically and longitudinally through an oil burner constructed in accordance with my invention. Fig. 2 is a view in end elevation thereof, looking in the direction of the inner end of the burner, and Fig. 3 is a view in end elevation, looking in the direction of the outer end of the burner.

Referring to the drawing by reference numerals, 1 designates the body of the burner which is of a pronounced elongated form, and which is hollow throughout its entire length. The body 1 is divided by means of a partition 2, to provide longitudinally extending parallel oil and steam passages 3 and 4, respectively, the steam passage being preferably of greater vertical extent than

the oil passage. The body 1 is provided at a point adjacent its outer end with a vertically rising boss 5 having a passage 6 communicating with the oil passage 3. Oil is conveyed to the passage 3 through the medium of a pipe, not shown, secured to the boss 5 and communicating with the passage 6 thereof. The passage 6 is arranged at right angles to the plane of the passage 3, thus permitting the use of a clean-out opening 7 communicating with the oil passage 3 and adapted to be closed by a removable plug 8. Steam is conveyed to the steam passage 2 by means of a pipe, not shown, adapted to be secured to the inlet end of the passage, said inlet end being made circular, as at 9, to permit the application of the pipe. A flange 10 depends from the upper wall of the passage 3, and is provided with a horizontally disposed bottom edge 11 and upwardly and laterally inclined side edges 12, said horizontally disposed edge being arranged in parallel relation with the lower wall of the passage 3.

Rising from the lower wall of the passage 3 are flanges 13 provided with upwardly and laterally inclined edges, said edges extending from the lower wall of the passage 3 from points in vertical alinement with the ends of the horizontally disposed edge 11 of the flange 10 to the side walls of the passage. The edges of the flange 13 are arranged in parallel relation with the edges 12 of the flange 10. The flanges 10 and 13 provide the oil passage 3 with a horizontally disposed discharge opening 14 having laterally and upwardly inclined branches 15. When a certain quantity of oil is fed to the passage 3, the horizontal dimension of the discharged column thereof is equal to the horizontal dimensions of the discharge opening 14. An increase in the quantity of oil fed to the passage 3 will cause an increase in the horizontal dimension of the discharged column, the column spreading equally in both of the branches 15.

A flange 16 which is coextensive in width with the transverse extent of the steam passage 4, rises vertically from the lower wall of said passage and terminates a short distance from the upwardly and inwardly inclined portion 17 of the upper wall of said passage. The upper edge of the flange 16 is inclined, thus providing in conjunction with the inclined portion 17, a discharge opening which will direct the discharged steam up-

wardly and across the discharge opening of the oil passage 3, whereby to thoroughly atomize the discharged oil.

A block 19 is removably secured to the inner end of the burner by means of bolts 20 or their equivalents, and is designed to protect the inner end of the burner from the heat of the flame. The block 19 is provided in its inner surface with a recess 21 having its outer wall provided with an opening 22. The recess 21 communicates with the discharge openings of the oil and steam passages, and the lower walls 23 of the recess 21 and opening 22 lie in a plane below the plane of the discharge opening of the steam passage 4, providing a plate which prevents the oil from dripping from the burner. The discharge opening of the steam passage 4 is disposed in an upwardly inclined plane which intersects the plane of the discharge opening of the oil passage, whereby it will be impossible for any oil to escape through the opening 22 without first being thoroughly atomized by the steam. The recess 21 provides a chamber in which oil and steam are thoroughly mixed, the mixed oil and steam discharging through the opening 22 in the block 19.

It should be apparent from the above description taken in connection with the accompanying drawing, that I provide an oil burner wherein the oil will be thoroughly atomized, wherein the horizontal dimension of the discharging column of oil will be regulated in proportion to the quantity of oil fed to the oil passage, and wherein the inner end of the burner will be protected from the heat of the flame. As the block 20 may be removably secured in applied position, it can be replaced at small cost when unfit for use.

Changes in the form proportions and minor details of construction may be made

within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

Having fully described and illustrated my invention, what I claim is:

1. An oil burner comprising a body provided with oil and steam passages, a flange formed on the upper wall of the oil passage at the discharge end thereof, said flange being provided with a horizontally disposed edge and with laterally inclined side edges, and flanges formed on the lower wall of the oil passage at the discharge end thereof, the edges of said last-named flanges being arranged in parallel relation to the inclined edges of the first-named flange, said flanges providing the oil passage with a horizontal discharge opening having laterally and upwardly inclined branches.

2. An oil burner comprising a body provided with oil and steam passages, the oil passage being provided with a horizontally disposed discharge opening having upwardly and laterally inclined branches, the steam passage being provided with a discharge opening disposed in an upwardly inclined plane, and a block secured to the inner end of the body and provided in its inner side with a recess communicating with the discharge openings of the passages, the outer wall of the recess being provided with an opening through which the mixed oil and steam are discharged, the bottom walls of the recess and opening in the block forming a horizontal plate disposed below the discharge opening of the steam passage.

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

CHARLES ECKLAND.

Witnesses:

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