G. F. TINKHAM.

OIL BURNER.

APPLICATION FILED OCT. 3, 1913.

1,092,674. Patented Apr. 7, 1914.

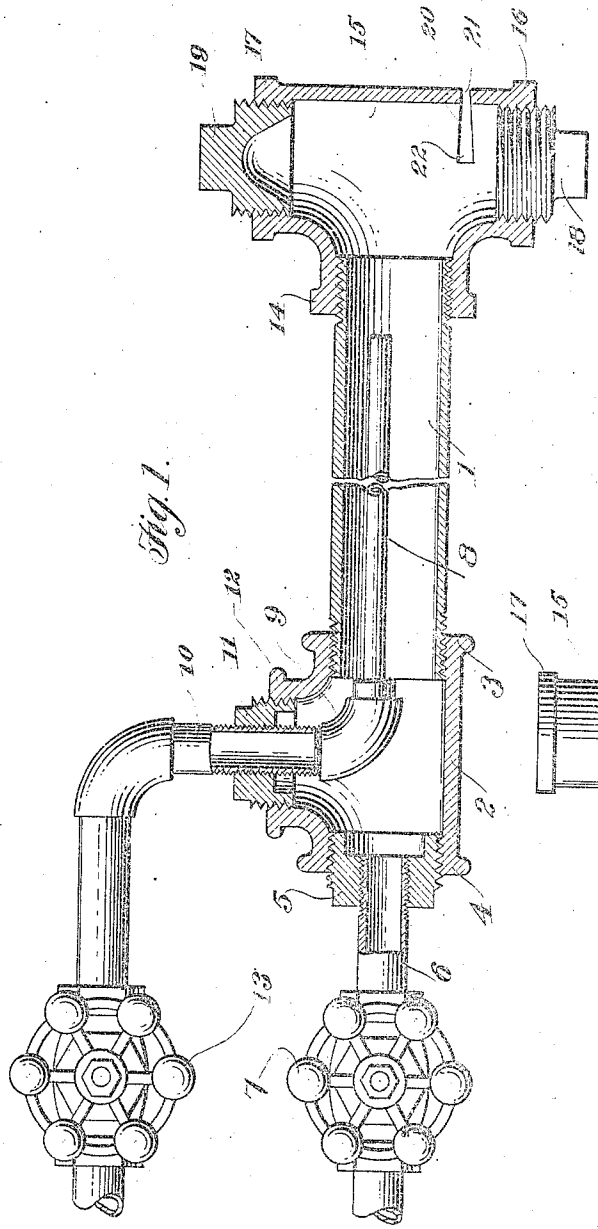


Fig. 1.

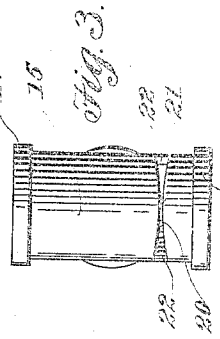


Fig. 3.

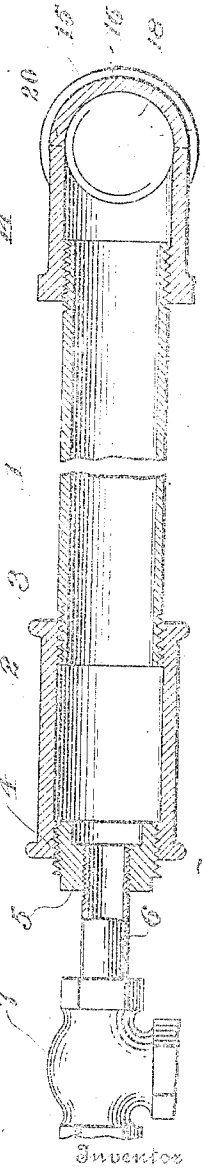


Fig. 2.

Witnesses

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GEORGE F. TINKHAM, OF HOUSTON, TEXAS.

OIL-BURNER.

1,092,674. Specification of Letters Patent. Patented Apr. 7, 1914.

Application filed October 3, 1913. Serial No. 793,231.

To all whom it may concern:

Be it known that I, GEORGE F. TINKHAM, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention is an improved oil burner and the object of the invention is to provide an improved burner of this class in which steam is utilized to heat and vaporize or atomize the oil, and is mixed with the oil and burned therewith, one specific object of the invention being to effect improvements in the construction of the entrance portion of the burner, another object being to effect improvements in the construction of the discharge nozzle thereof.

With the above objects in view the invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawing: Figure 1 is a vertical longitudinal central sectional view of an oil burner constructed in accordance with my invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is an end elevation of the discharge nozzle.

In accordance with my invention I provide a tube 1 of suitable length and diameter and which forms a steam and mixing chamber. The ends of this tube are threaded and to the inner or entrance end thereof is screwed one arm of an entrance T 2. The arm of the T to which the tube 1 is screwed is indicated at 3. The opposite arm 4, which is in line with the arm 3, is provided with a plug 5 which is screwed therein and which has a threaded central opening in which is screwed the discharge end of a steam supply pipe 6. A valve 7 is provided for the said pipe 6.

An oil discharge pipe 8 is arranged longitudinally and near the center of the T 2 and the tube 1 and is screwed at its intake end to an elbow 9 which is screwed to an oil feed pipe 10, the said oil feed pipe being threaded in an opening in a plug 11 which is screwed in the arm 12 of the T 2. Hence the oil pipe enters the burner at one side thereof, the steam pipe entering the inner end of the burner. The oil pipe has a valve 13 to regulate the flow of oil therethrough and hence the supply of oil to the burner.

To the discharge end of the tube 1 is screwed the cross arm 14 of a discharge or nozzle T 15. The opposite arms 16 and 17 of the nozzle T are in line with each other and have a common bore and are provided at their ends with plugs 18 and 19 respectively which are screwed therein. The arm 16 is provided at a point a suitable distance from its plug 18 and somewhat below the arm 14 with a transverse discharge or nozzle slot 20 which extends halfway around the said discharge T, is widened at its ends as at 22 and narrowed at its center as at 21.

In the operation of my improved burner the steam in passing through the tube 1, thoroughly heats the burner and also heats the oil during its passage through the tube 8. As the oil issues from the tube 8 it is atomized by and becomes mixed with the steam and forms a highly combustible mixture which strikes the outer side of the discharge or nozzle T 15 is deflected upwardly and downwardly and caused to strike the upper plug 19 and the lower plug 18 and then escapes from the nozzle or burner slot 20 which serves to spread the mixture and cause it to burn in a wide flat horizontal flame which is limited in length, so that the heat efficiency of the burner is greatly increased. The valves with which the steam and oil pipes are provided enable the steam and oil to be supplied to the burner in varying proportions to obtain the best results under varying conditions. It will be noted that the oil discharge pipe 8 is of reduced diameter as compared with the feed pipe and that its discharge end is spaced from the nozzle a sufficient distance to allow for the expansion of the gases resulting from the vaporization of the oil discharged from the pipe 8.

Having thus described my invention, I claim:

1. An oil burner of the class described comprising a mixing and heating tube, an entrance T secured to and extending longitudinally with the said tube, a steam pipe fitted in a plug at the inner end of the entrance T, an oil supply pipe arranged in the tube longitudinally thereof and having an elbow at its intake end and a supply member arranged in the transverse arm of said entrance T, fitted in a plug in said arm and connected to said elbow, and a discharge or nozzle T arranged transversely with respect to the said tube and having its cross arm secured thereto, the said discharge or nozzle

T being provided with plugs in its ends and being also provided with a transverse burner slot extending about halfway around the same, spaced from the lower plug and out of line with the discharge tube.

2. An oil burner of the class described comprising a mixing and heating tube, an entrance T secured to and extending longitudinally with the said tube, a steam pipe fitted in a plug at the inner end of the entrance T, an oil supply pipe arranged in the tube longitudinally thereof and having an elbow at its intake end and a supply member arranged in the transverse arm of said entrance T, fitted in a plug in said arm and connected to said elbow, and a discharge or nozzle T arranged transversely with respect to the said tube and having its cross arm secured thereto, the said discharge or nozzle T being provided with plugs in its ends and being also provided with a transverse burner slot extending about halfway around the same, spaced from the lower plug and out of line with the discharge tube, the said slot having a narrowed central portion and widening toward its ends.

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

GEORGE F. TINKHAM.

Witnesses:
LAURA TINKHAM,
LYDIA K. JONES.