E. R. MAYER.

OIL BURNER.

APPLICATION FILED JULY 13, 1917.

1,276,243. Patented Aug. 20, 1918.

FIG. 1.

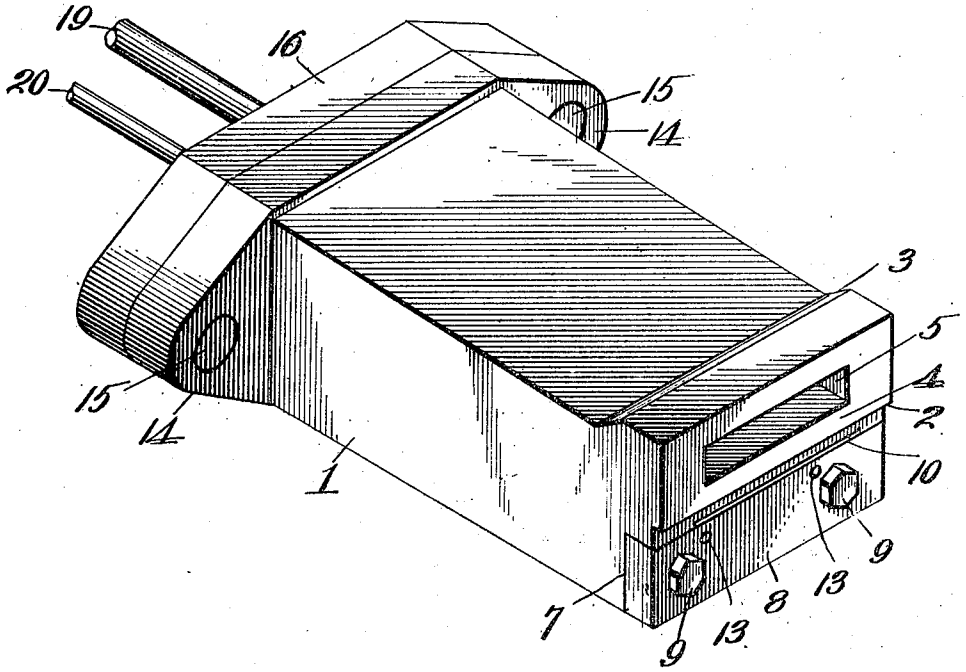
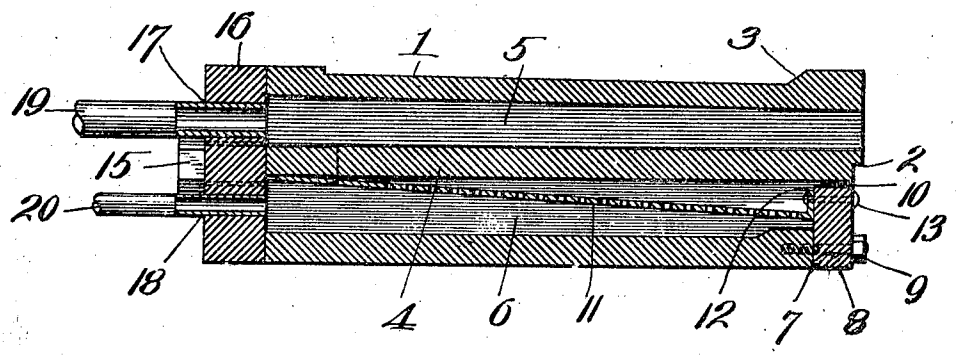


FIG. 2.



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OIL-BURNER.

1,276,243. Specification of Letters Patent. Patented Aug. 20, 1918.

Application filed July 13, 1917. Serial No. 180,447.

To all whom it may concern:

Be it known that I, EDWARD R. MAYER, a citizen of the United States, residing at Amarillo, in the county of Potter and State of Texas, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to oil burners, and has for its object to produce an efficient burner of simple, strong, durable and inexpensive construction, in which the oil will be atomized by and thoroughly mixed with air or steam under pressure and if used in the presence of steam be preheated before admixture therewith. A further object is to produce an oil burner susceptible of use in power plants and in stoves, furnaces and the like.

With these objects in view and others as may hereinafter appear, the invention consists in certain novel and peculiar features of construction and organization of parts as hereinafter described and claimed, and in order that the invention may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1, is a perspective view of the burner.

Fig. 2, is a vertical longitudinal section of the burner.

In the said drawing, 1 indicates a burner which is generally of oblong rectangular form and raised at its front end to provide a drip shoulder 2. Near the front end it is also provided at its upper side with an upwardly and forwardly inclined shoulder 3. The functions of shoulders 2 and 3 are hereinafter explained.

The burner is divided by a horizontal partition 4 into an upper or oil passage 5 which extends to the front face of the shoulder 2, and a lower or fluid passage 6. The burner at the front end of passage 6 is recessed at 7, and fitting in said recess is a removable plug 8 held in place by screw bolts 9. The front face of the plug 8 coincides with the face of the recess at the front end of the burner and hence stands slightly back of the drip shoulder 2, and the upper edge of the block 8, is spaced slightly from the upper wall of the passage 6 so that said passage shall terminate at its front end in a thin outlet 10 which preferably is of substantially the same width though it may be wider than the passage 5.

11 is a perforated partition extending downwardly and forwardly in passage 6, the front end of the partition having an upwardly projecting arm 12 riveted or otherwise secured as at 13, to the block 8, so that the block shall form a support for the partition and when removed withdraw the same from the passage to facilitate the cleaning of same.

At its rear end the burner is provided with a pair of laterally projecting ears 14 for engagement by screw bolts 15 employed to clamp a cross head 16 against the rear end of the burner, and said head 16 is provided with openings 17 and 18 for the reception of supply pipes 19 and 20 respectively, the former being employed to supply oil to the chamber 5, and the pipe 20 to supply air or steam under pressure to chamber 6. When air is employed, the perforated plate is functionless but does not hinder the operation, but when steam is employed, scale and other fine particles entering with it, are trapped in the lower part of the chamber, while the steam passes through the perforated partition to the upper part of said passage and is discharged in a thin flat sheet through the outlet 10, the sheet spreading out in fan shape, as will be readily understood. Air discharged from the nozzle will also be in the form of a thin flat and substantially fan shaped sheet, and the oil from passage 5 will drip down onto the blast of air or steam, and be atomized thereby and thoroughly admixed therewith so as to produce a combustible spray. Where the burner is used with steam, air will be permitted to be drawn to the front end of the burner to insure perfect combustion, only at the top of the burner, and to guard against such air being drawn downward close to the front end of the burner the shoulder 3 is provided, this shoulder tending to deflect the air upwardly so that it shall commingle with the steam after the same has effected the atomization and become mixed with the oil.

As hereinbefore suggested this burner can be employed with great efficiency for domestic use as well as in connection with power plants. By providing the burner with a large oil chamber, the oil supplied thereto is caused to thinly spread over a wide area and is thus retarded in its flow to give ample time for the horizontal partition which is highly heated by the steam, to

effectively preheat the oil and thus render it more susceptible to quick atomization when it comes in contact with the blast of steam. It will also be understood that by causing the steam to change its direction of flow through the instrumentality of the perforated partition, scale and the like is strained from the steam and collected in the lower or trap portion of the steam passage.

While I have illustrated and described the preferred embodiment of the invention, it is to be understood that it is susceptible of modification in form, proportion, detail construction and organization without departing from the spirit and scope of the appended claim.

I claim:

An oil burner provided with a pair of superposed passages and recessed below the front end of the upper passage to provide a drip shoulder therefor forward of the discharge end of the lower passage, a removable block secured across the front end of the lower passage and leaving uncovered a part of same to form an outlet for discharging a broad and thin sheet of fluid, and a perforated partition secured to said removable block and extending upwardly and rearwardly within the said lower passage.

In testimony whereof, I affix my signature.

EDWARD R. MAYER.