Oct. 25, 1932. J. E. MILLER 1,884,083

BURNER

Filed June 20, 1930

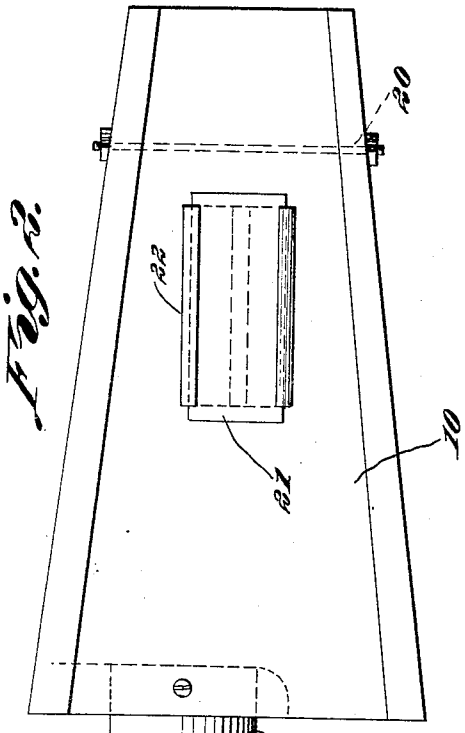


Fig. 2.

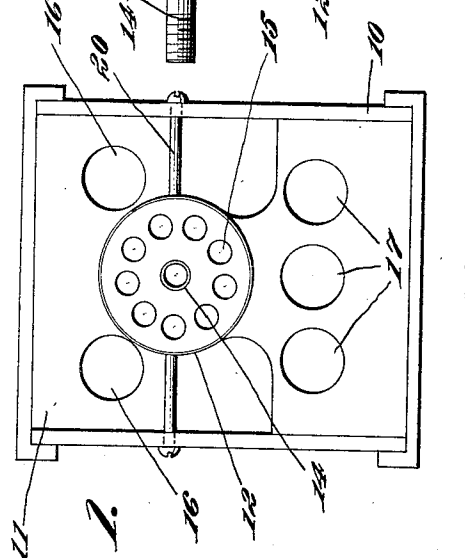


Fig. 1.

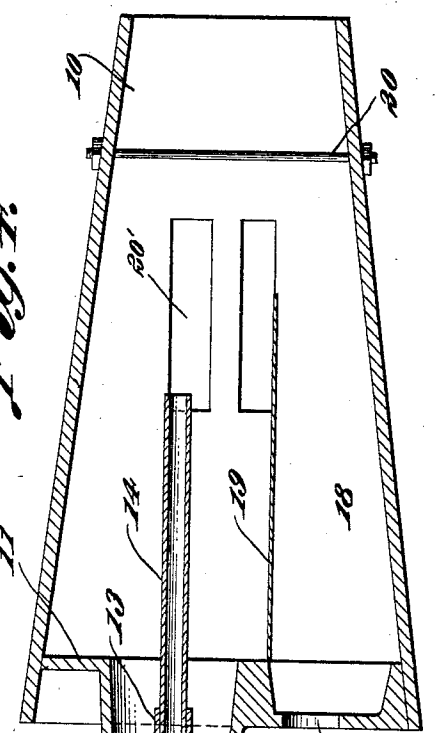


Fig. 4.

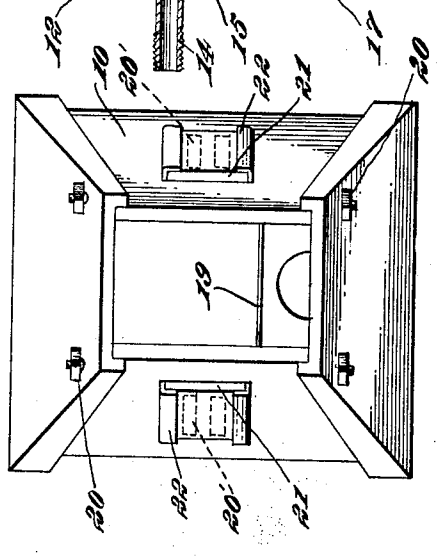


Fig. 3.

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# UNITED STATES PATENT OFFICE

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## BURNER

Application filed June 20, 1930. Serial No. 462,576.

This invention relates to burners of a type and nature designed for accommodation within the fire-pots of furnaces and the like.

One of the principal objects of the invention consists of a burner of this character having air inlets for the mixing of air with the fuel at intervals to produce intensified heat.

An additional object of the invention contemplates the provision and arrangement of auxiliary adjustable ports to regulate the quantity, combustion and blast of the fuel.

With the above and other obects in view, the invention further consists of the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claim.

In the drawing:—

Figure 1 is a rear elevation of a burner constructed in accordance with an embodiment of my invention.

Figure 2 is a side elevation thereof as illustrated in Figure 1.

Figure 3 is a front elevation of the invention as herein disclosed.

Figure 4 is a longitudinal sectional view taken along substantially the transverse center of the burner as illustrated in Figure 1.

Referring to the drawing in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates generally the burner housing which, as shown, tapers in end to end relation and is of sectional formation although this is not absolutely necessary in that the housing may be cast or otherwise constructed in one piece and serve to equal advantage.

The narrower end is the discharge end and the wider end is closed by a partition or head 11. A boss 12, carried by and rearwardly projecting from the partition or head 11, is provided with a central opening in registration with the bore of a sleeve member 13 to slidingly accommodate a gas injector pipe 14. A series of circumferentially arranged openings 15 are arranged in the cup-shaped member 12 about the centrally disposed opening. Ports 16 are arranged within the upper portion of the partition and a series of openings 17 are arranged adjacent the bottom. The latter mentioned openings have communication with the interior of the housing through a compartment 18 formed beneath a partition wall 19 to facilitate emptying of the compartment 18 or mixing of the air with the fuel outwardly and beyond the innermost projecting end of the injector pipe 14. Bolt members 20, mounted upon the housing, are employed for the purpose of securing the partition or head 11 in the manner suggested in Figure 4 of the drawing whereby the injector pipe 14 will be maintained in a position elevated from the partition 19, permitting ingress of air through the ports 15 around and about the injector pipe forwardly toward the jet or burner end thereof. The housing is provided with slots 20′ at intervals to facilitate the projecting of lighted matches and other igniting devices to light the burner while at other times the slots are employed for the purpose of admitting air and in order to regulate the flow or ingress of air therethrough, I provide slides 21 mounted between oppositely disposed channel members 22, especially provided for the purpose upon the immediate portions of the housing.

As will be understood from the foregoing description and accompanying drawing, the air drawn within the burner housing through the openings 15 and 16 will mix with the fuel adjacent the burner end of the injector pipe 14 whereas the air admitted through the openings 17 will be allowed to mix with the fuel mixture only beyond the innermost projecting extremity of the injector tube, before the fuel has been consumed whereby a more highly combustible fuel mixture will be produced which, when finally blown outwardly through the discharge end of the burner housing, will prove more effective for the purpose of heating furnace boilers and the like due to the intensity of the heat derived.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention, what is claimed is:

A burner comprising a housing having an open inner discharge end, a wall of said housing being inclined inwardly from the outer end of the housing, a head for closing the outer end of the housing, a fuel pipe extending through the head and terminating in the housing a material distance inwardly of the inner end, said fuel pipe being disposed in paralled relation to the longitudinal axis of the housing, a partition disposed in the housing intermediate said fuel pipe and said inclined wall and terminating inwardly of the inner end of said pipe, said head having openings therethrough communicating with the space between the partition and the wall whereby to permit air to enter the housing at an angle to the line of the fuel discharged from said fuel pipe for deflecting the ignited fuel in a plane substantially coplanar with the plane of said inclined wall, opposed walls of the housing having elongated slots at the same side of the partition as the fuel pipe and terminating closely adjacent to the inner end of said fuel pipe, said slots also extending beyond the inner end of the partition, and means for closing said slots.

In testimony whereof I affix my signature.

JOHN E. MILLER.