May 24, 1932. R. S. DODD ET AL 1,859,961

GAS BURNER

Filed Dec. 31, 1929

Fig. 1.

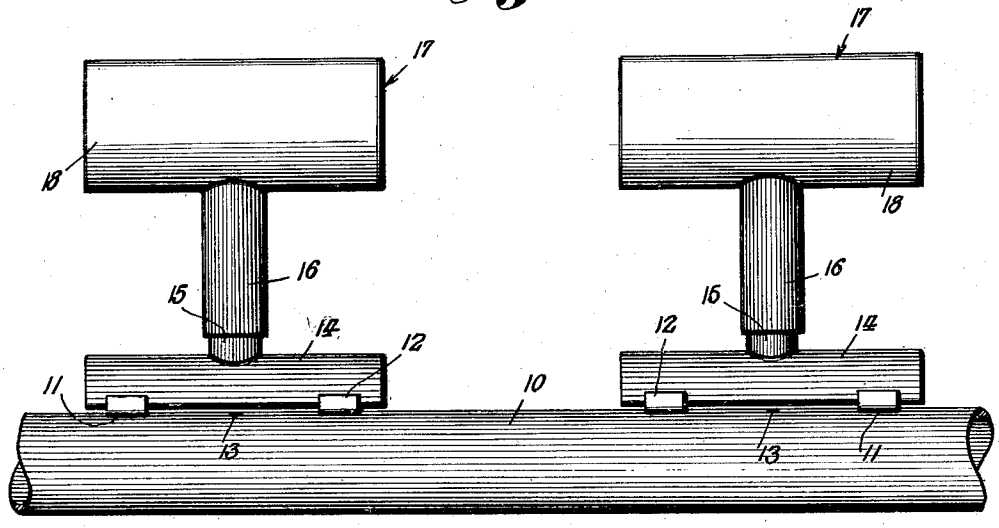


Fig. 2.

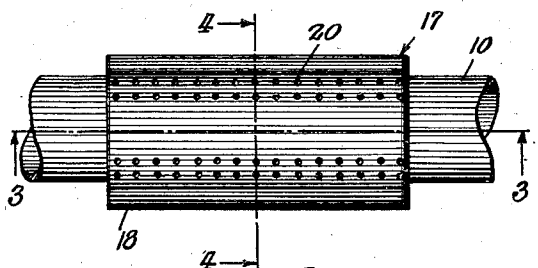
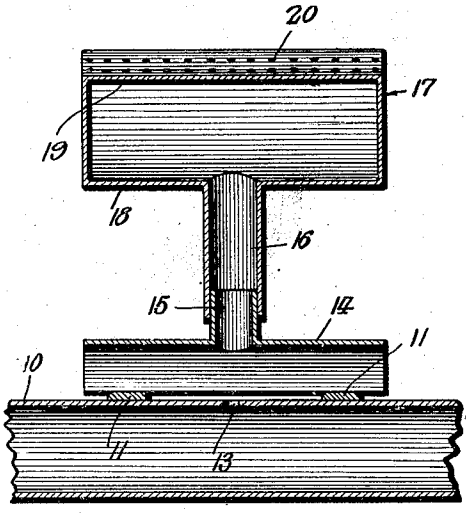


Fig. 3.



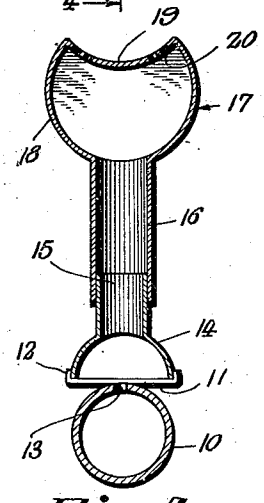


Fig. 4.

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UNITED STATES PATENT OFFICE

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GAS BURNER

Application filed December 31, 1929. Serial No. 417,759.

This invention relates to new and useful improvements in burners, and particularly to burners for use in connection with natural gas.

One object of the invention is to provide a burner which is especially adapted for use in connection with large boilers and furnaces, and which will produce the maximum amount of heat with the expenditure of the minimum amount of fuel.

Another object is to provide a burner of this character which is adapted to be used in series or gangs, and wherein each burner will receive the same amount of gas and air, and wherein such air will be fed to the burners in proportion to the pressure of the gas.

A further object is to provide a burner wherein, when used in series or gangs, each individual burner unit may be readily and easily removed and replaced, without disturbing the remaining units.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawings.

In the drawings:

Figure 1 is an elevation of a gang or series of burners made in accordance with the present invention.

Figure 2 is a top plan view of one of the burners.

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 2.

Figure 4 is a sectional view on the line 4—4 of Figure 2.

Referring particularly to the accompanying drawings, 10 represents a tube or pipe which conveys the gas to the burners, one end being connected with a source of gas supply, while the other end is closed. Welded, or otherwise properly secured, on the upper face of this pipe 10, and extending transversely thereof, are the pairs of bars 11, each having its ends turned upwardly and inwardly, as shown at 12. In the upper side of the pipe 10, intermediate the pairs of bars 11 is a gas opening 13. An elongated, semicylindrical guard plate 14 is disposed over each of the openings 13, and has its marginal edges engaged with the upturned ends 12, of the bars 11, whereby said plate is properly held in position. In the intermediate portion of the crest of the plate 14 there is secured an upwardly extending nipple 15, the upper end of which is engaged in the lower end of the vertical pipe 16. On the upper end of the pipe 16 is mounted the burner head, represented as a whole by the numeral 17, said head comprising an approximately cylindrical body 18 the upper face of which is depressed longitudinally, as shown at 19, and formed in the wall 19, adjacent each long edge, are the longitudinal series of gas outlet openings 20, such openings being so arranged that the flames from one set of openings will be directed at an angle toward the other set of flames. It will be particularly noted that the openings 13 are arranged directly beneath, but in spaced relation below the lower end of the nipple 15, so that as the gas passes from said opening to said nipple, it passes across an air space and mixes with, and draws air up into the nipple, and thence through the pipe 16 to the burner head.

It will be further noted that the gas outlet openings 20 are of smaller diameter than the entrance opening from the pipe 16 to the burner head, whereby gas will collect in said head and issue from the openings 20 with great force, thus greatly increasing the intensity of the flame.

When a burner is to be replaced by a new one, due to the fact that the old one has become worn out, such old burner may be easily and quickly removed, without disturbing the remaining burners, by simply detaching the pipe 16 from the nipple 15, and engaging the pipe of the new burner with said nipple.

While we have shown individual plates 14, for the burners, we wish it understood that there may be provided a long plate having a plurality of the nipples 15, regularly spaced, for receiving the tubes 16. Also, while we have shown the heads 17 as arranged in longitudinal alinement, such heads may be disposed transversely of the pipe 10, so as to lie in parallel relation to each other.

What is claimed is:

A gas burner comprising a supply pipe

having a gas outlet in its upper side, transverse supports on the pipe, an elongated arcuate guard mounted on the supports having a nipple extending from its upper side directly over said outlet, a burner head of approximately cylindrical form having its upper side depressed longitudinally and having longitudinal series of gas orifices adjacent its sides, and a pipe carried by the burner head and detachably engaged on the nipple.

In testimony whereof we affix our signatures.

ROY S. DODD.
LAWRENCE J. EVANS.