Dec. 24, 1940. J. L. BREESE 2,226,216

METHOD OF MAKING BURNER POTS

Original Filed Oct. 14, 1938

Fig. 3

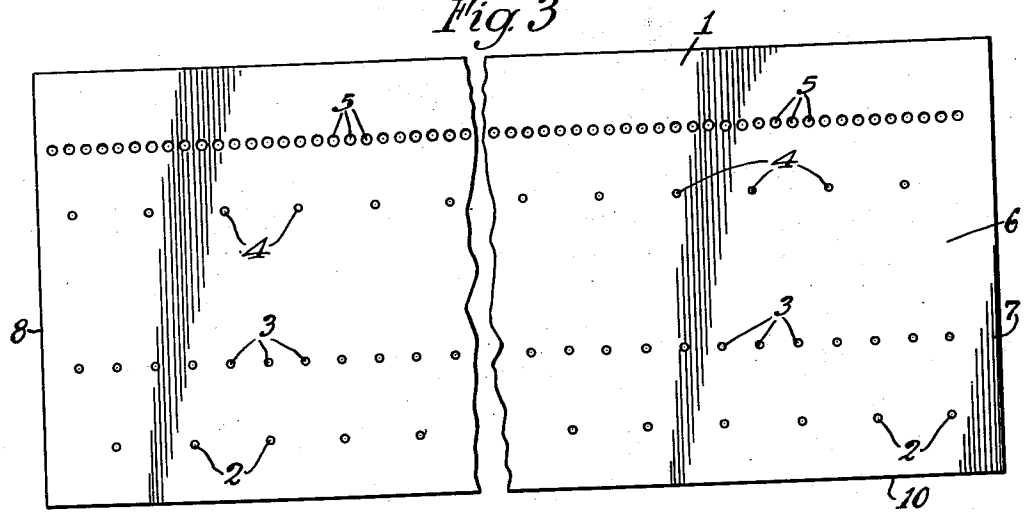


Fig. 1

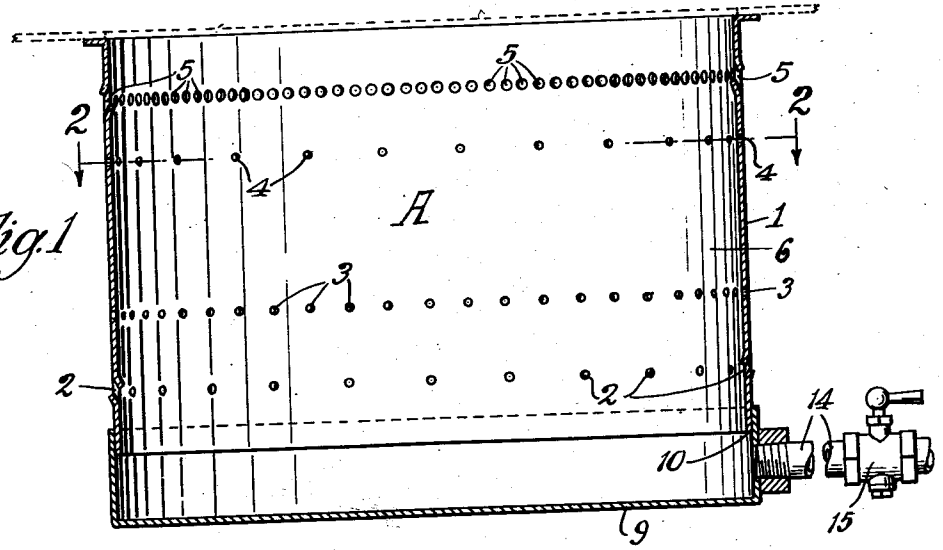
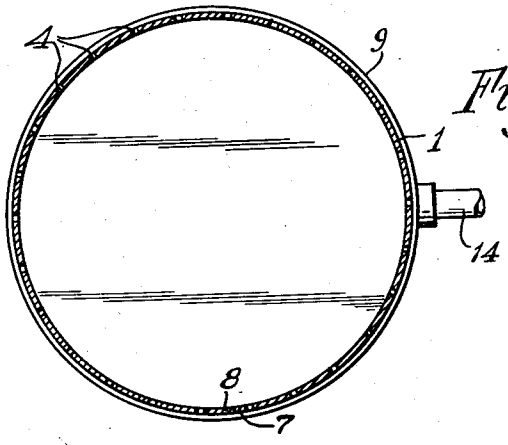


Fig. 2



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METHOD OF MAKING BURNER POTS

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Original application October 14, 1938, Serial No. 234,919. Divided and this application March 17, 1939, Serial No. 262,418

2 Claims. (Cl. 29—148.2)

My invention relates to an improved liquid fuel burner and the process of making it. One purpose is the provision of improved means for manufacturing such a burner. Other purposes will appear from time to time in the course of the specification and claims.

The present application is a division of my co-pending application No. 234,919 filed on October 14, 1938.

I illustrate my invention more or less diagrammatically in the accompanying drawing wherein:

Figure 1 is a vertical axial section through a burner;

Figure 2 is a section taken on the line 2—2 of Figure 1 on a reduced scale; and

Figure 3 is a plan view of the burner wall prior to its assembly into the burner and illustrating the arrangement of air inlet apertures therein.

Like parts are indicated by like symbols throughout the specification and drawing.

Referring to the drawing, 1 generally indicates the side wall of a burner prior to its assembly into a finished burner. It is preferably made from sheet metal stock with the apertures, as below described, punched or otherwise formed in it prior to its assembly in the burner.

As a preferred arrangement of apertures, I illustrate a plurality of rows including a bottom row 2, an intermediate row 3, an upper row of primary air inlet apertures 4, and a still higher row 5 of secondary air inlet apertures. 6 generally indicates an intermediate space between the rows 3 and 4 which is preferably left blank although it will be understood that under some circumstances a row of apertures may be inserted therein. Such a row, when used, would normally have no greater number of holes therein than the rows 2 or 4 and preferably would have an even smaller number of holes.

In assembling the device, the strip 1 may be formed into generally cylindrical form with the abutting edges 7 and 8 welded or otherwise secured together. The bottom member 9 is then welded to the lower edge 10 of the member 1.

It will be noted that the secondary air apertures 5 are considerably more numerous than the apertures in the rows 2, 3 and 4. It will be understood that in the pot type burner of which the present is an example, the liquid fuel, hydrocarbon or the like, is vaporized by the heat of combustion going on above in the chamber generally indicated as A. As the vaporized hydrocarbon rises upwardly through the chamber A formed by the member 1 and the bottom 9, it receives a primary air supply through the rows of apertures 2, 3 and 4. This air supply is sufficient to form an intermediate mixture ready for combustion upon receiving an additional supply of air but with insufficient air to support initial full combustion. The mixture thus formed of air and vaporized hydrocarbon rises upwardly through the pot or chamber A and, when it receives the secondary air supply through the row of apertures 5, is ready for final and complete combustion.

It will be observed, as shown in Fig. 3, that the strip which forms the side wall 1 of the burner member first has the various apertures 2, 3, 4 and 5 punched in it. This punching may be done in a variety of manners, the details of which do not of themselves form part of the present invention. I find it further desirable to deform the lower apertures 2 and the upper apertures 5 by tilting their edges in such fashion that the lower apertures 2 tend to deliver air downwardly and inwardly toward the bottom of the completed pot, whereas the upper apertures 5 tend to deliver air upwardly and inwardly toward the top of the pot. This tilting or deformation of these apertures may take place either before or after the rolling of the strip into the burner pot 1,

The bottom member 9, which may be stamped or otherwise formed, is preferably of sheet metal of about the same gauge as the gauge of the pot 1. After the opposed edges 7 and 8 of the pot have been welded to each other, the bottom 9 is slipped on and welded in position, The result is a strong pot of substantially uniform gauge of material, which may be quickly and cheaply assembled and completed.

I claim:

1. The method of manufacturing a fire pot for liquid burners and the like, which consists in providing a flat rectangular strip of sheet steel stock, the length of which is substantially equal to the circumference of the pot to be formed, punching a plurality of air holes in the blank while the blank is supported in a flat position, said air holes being arranged along a plurality of generally parallel lines, then curling the metal blank to bring the short edges together, and permanently and positively securing them to form a cylinder, thereafter deforming the metal about the row of apertures closest the top of the pot by bending the metal inwardly below them, and bending it outwardly above them, whereby the axis of the apertures is upwardly inclined, and deforming the metal about the lowest row of apertures in the pot by bending the metal above them inwardly and bending the metal below them

outwardly, whereby the axes of the apertures are downwardly inclined, providing a flat circular sheet of sheet steel stock, bending it upwardly about its periphery to provide a relatively short cylindrical flange, then telescoping the lower edge of the pot in interpenetrating relationship with said flange, and permanently and positively securing the cylinder and flange together.

2. The method of manufacturing a fire pot for liquid burners and the like, which consists in providing a flat rectangular strip of sheet steel stock, the length of which is substantially equal to the circumference of the pot to be formed, punching a plurality of air holes in the blank while the blank is supported in a flat position, said air holes being arranged along a plurality of generally parallel lines, then curling the metal blank to bring the short edges together, and permanently and positively securing them to form a cylinder, providing a flat circular sheet of sheet steel stock, bending it upwardly about its periphery to provide a relatively short cylindrical flange, then telescoping the lower edge of the pot in interpenetrating relationship with said flange, and permanently and positively securing the cylinder and flange together, thereafter deforming the metal about the row of apertures closest the top of the pot by bending the metal inwardly below them, and bending it outwardly above them, whereby the axis of the apertures is upwardly inclined, and deforming the metal about the lowest row of apertures in the pot by bending the metal above them inwardly and bending the metal below them outwardly, whereby the axes of the apertures are downwardly inclined.

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