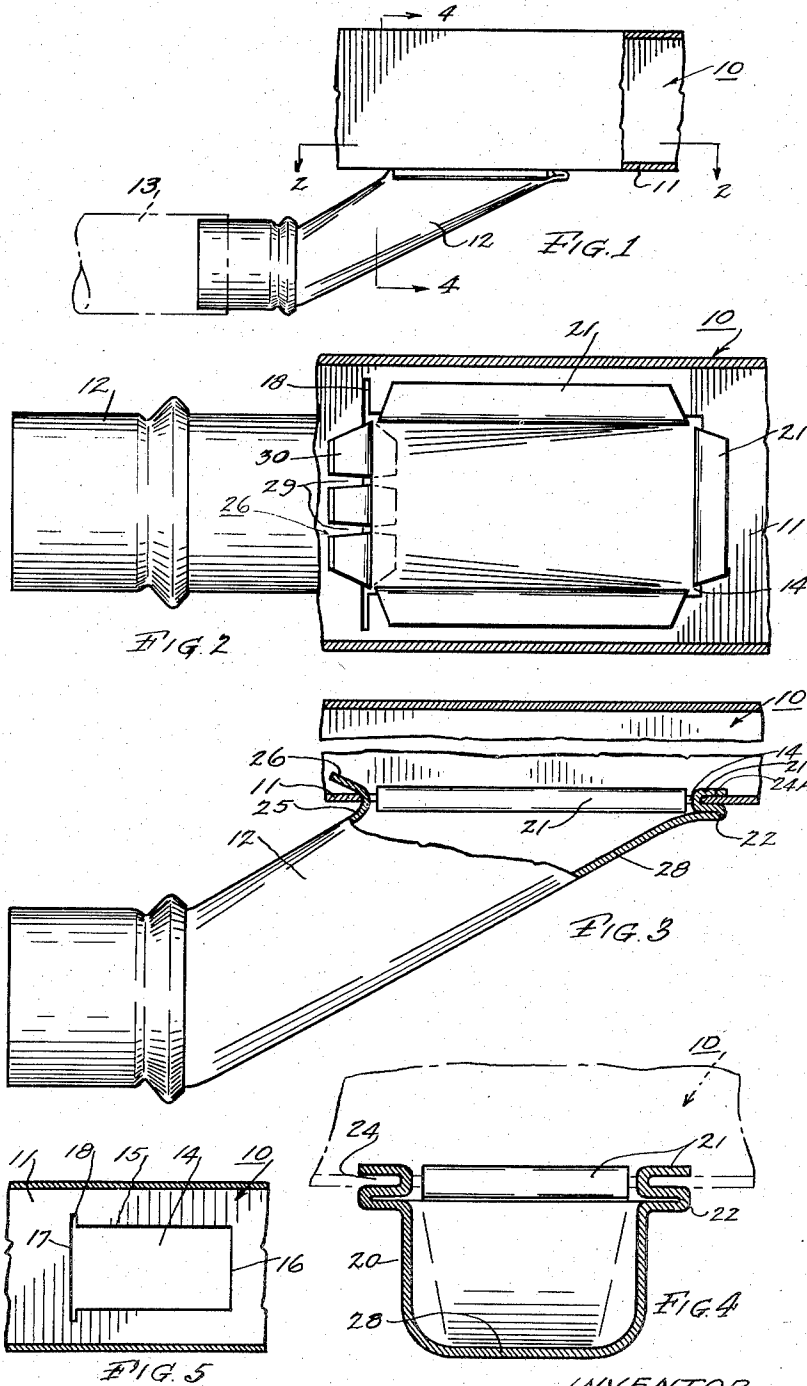


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END TO SIDE SHEET METAL FITTING HAVING
AN OPENING WITH SLITS IN THE SIDE
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END TO SIDE SHEET METAL FITTING HAVING
AN OPENING WITH SLITS IN THE SIDE

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5 Claims. (Cl. 285—189)

This invention relates to a pipe connection.
More particularly, the invention relates to a sheet metal tubular or rectangularly hollow member and sheet metal plate connection.

In the application of the invention as shown herein, for purposes of illustration, a sheet metal elbow is attached to a sheet metal duct.

The objects of the invention, generally, are to improve on known sheet metal connections.

A specific object of the invention is to provide a tubular member for operative connection with a duct or the like, such that it can be easily applied into operative position, and can be removed as easily.

Another specific object of the invention is to provide a novel construction of duct or the like and tubular member which permits of their coupling or assembling in a novel and easy manner, the tubular member being releasably locked to the duct without attaching means such as bolts and the like.

In the drawing, wherein is shown the preferred form of the invention,

Figure 1 is a side elevation of a duct and elbow, connected together in accordance with this invention;

Figure 2 is a section on line 2—2 in Figure 1, on an enlarged scale;

Figure 3 is a part-elevation, part-sectional view of Figure 1 on an enlarged scale;

Figure 4 is a section on about line 4—4 in Figure 1; and,

Figure 5 is a section on line 2—2 in Figure 1, with elbow omitted.

Referring now by numerals to the drawing, wherein like numerals of reference indicate corresponding parts in the various figures, there is shown a sheet metal duct 10 of rectangular cross section, in part defined by a flat bottom wall 11, and an elbow 12 connected to the duct in accordance with the preferred form of the invention. The elbow is intended operatively to open into the duct, so that a duct 13, fitting on one end of the elbow, may be operatively connected to the duct 10 through a rectangular opening 14 through the wall 11 of the duct, the opening being defined by two straight side edges 15 and two straight end edges 16 and 17.

The wall 11 of the duct 10 is slit for a short distance as at 18, on either side of, and in alignment with one of the end edges, namely, the rear edge 17, as shown in Figure 5.

As the elbow is to be operatively connected to the duct 10, the forward end portion of the elbow is of rectangular cross section to present a mouth substantially to register with the opening 14 of the duct 10. The forward end portion of the elbow thus presents parallel side walls 20, a lower or "rear" wall 28, and an upper or "forward" wall 25.

The side walls 20 of the elbow 12 are folded to form parallel, laterally-extending marginal portions or flanges 21 and 22 spaced to present outwardly-opening or oriented side channels or guides 24 adapted to receive the side edges 15 of the opening 14 and encompass marginal portions of the plate or wall 11.

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The lower wall 28 of the elbow is similarly formed with parallel spaced flanges presenting an end or rear channel 24A into which is received the edge 16 of the wall 11.

The forward wall 25 of the elbow 12 is of such length as to extend above the plane of the flanges 21 so that an end marginal portion or tongue, shown as 26 (Figure 3), of such wall will project into the opening 14, as seen in chain lines in Figure 2, and preferably engage the rear edge 17 of the opening when the elbow is in operative position.

To assemble the elbow to the duct, the elbow is moved parallel with the wall 11 to present the side channels 24 to the incised edges or slits 18 so that the channels may receive the edges 15 of the plate 11. The elbow is pushed home, to operative position, the end channel 24A encompassing the edge 16 of the plate. When the elbow is in such position, the rear marginal portion or tongue 26 of the upper wall 25 of the elbow lies within the opening, adjacent the edge 17.

The portion or tongue 26 is preferably formed with slits 29 forming fingers 30 (Figure 2) which when the elbow is in operative position are bent or turned back so as to overlie the edge 17. The bending of the fingers 30 is accomplished by the operator thrusting his hand through the throat of the elbow and manually turning them back.

I claim:

1. A sheet metal duct connection comprising a flat sheet having a rectangular opening with slits extending in line with one side edge of said opening outwardly from the two adjacent side edges in opposite directions, a duct having a rectangularly formed mouth adaptable for attachment to said rectangular opening, three of the edges of said mouth being folded substantially S-shaped to form external channels around the corresponding three sides of said mouth for slipping over the remaining edges of said rectangular opening, the distance between the bottoms of the channels in the opposed edges of said duct mouth being less than the distance between opposed edges of the opposed sides of the said remaining three sides of the opening, the distance between outer edges of said opposed channels being greater than the distance between said opposed edges but less than the length of one side edge with its slits, the fourth edge of said mouth having an inwardly bent flange for bending over the said one side edge of said rectangular opening to fix said connection after the side channels have been slipped into place by starting them over the slitted ends of the opposite side edges of said rectangular opening and moving the mouth over said opening.

2. A connection as defined in claim 1, wherein said duct is tubular and said mouth is formed at an angle to the axis of said duct.

3. A connection as defined in claim 1, and a rectangular duct, said flat sheet comprising one of the side walls of said rectangular duct.

4. A connection as defined in claim 2, and a rectangular duct one side of which forms said flat sheet.

5. A connection as defined in claim 4, wherein the axes of said rectangular and tubular ducts are coplanar.

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