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METHOD OF MAKING CONDUITS.

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My present invention relates to a method of making a stack or other conduit from pliable sheet material, such as sheet iron or steel.

My invention will be best understood by referring to the accompanying drawings which illustrate a form of my invention and to the following description which sets forth a manner of making or constructing a conduit or stack by the process contemplated in my invention.

In the accompanying drawings, Fig. 1 represents a punched sheet ready for bending; Fig. 2 shows a method of curving the sheet by rolls; Fig. 3 is a view of one unit or tube such as will form the conduit; Fig. 4 shows a section of riveted conduit with the lap joints staggered; Fig. 5 is a section on line 5—5 of Fig. 4, and Fig. 6 is an enlarged section on line 6—6 of Fig. 4.

Like reference characters indicate like parts throughout the drawings.

In the form illustrated, rectangular sheets A are punched or drilled with a row of holes 10 along at least the opposed edges A1 and A2, with the holes 10 along these opposite edges preferably uniformly spaced, or at least spaced alike on the two edges, so that there is a hole on one edge exactly opposite a hole on the other edge.

In the form illustrated, the plates are then bent into a cylinder by a stand 15 of bending rolls, the upper roll 16 having an enlargement 16' at one end and the other rolls 17 each having a corresponding depression 17', the enlargement and depressions being arranged so that one edge of the plate is bent outward or expanded a distance equal to the thickness of the plate. The edges of the tube thus formed may be joined either with a lap joint 13, as shown or with a butt joint, to form the cylinder 12, either by rivets as shown or by welding.

The stack or conduit is then completed by inserting an unexpanded or belled portion of a cylinder 12 into an expanded portion 19, and the holes 10 of the two sections will exactly match, so that they can be connected by rivets 18. Since the portion 19 was bent outward the thickness of the plate, it will be obvious that this expanded portion will fit over the unexpanded portion, and although the spacing of the holes 10 in this expanded portion must be greater than the spacing in the unexpanded portion, this increased spacing is obtained by the stretching of the metal when the edge of the plate is expanded.

By the method described, all of the holes can be punched for both the opposite edges 60 which form the top and the bottom of the cylinder, with the same setting of the punches or drills in a multiple punch or drill, which would not be the case if the edge of the sheet were bent or flared before the holes were punched or drilled.

Preferably in forming a stack, the lap joints 13 of the sections will be staggered, as shown in Fig. 4.

It will be understood that my method can be used in forming stacks or conduits of other sections than cylindrical, the only thing necessary being the punching or forming of the holes 10 with the same spacing and before one edge of the sheet is bent or flared outward.

It will also be understood that the edge of the sheet may be bent outward before the sheet is shaped into a tube, though preferably the two operations are performed simultaneously, as shown.

I claim:

1. The method of making a conduit formed of a plurality of similar sections which comprises punching equally spaced holes along opposite edges of substantially rectangular sheets of material, expanding one edge of each sheet, connecting together the other two edges of each sheet to form sections with bell ends, inserting the unexpanded end of one section into the bell end of another section, and inserting fastening means through the registering holes in the two sections.

2. The method of making a conduit formed of a plurality of sections, each section having a bell end to receive an end of the adjacent section and said sections being riveted together, which comprises forming holes in opposite edges of a sheet of material with the holes in one edge spaced similarly to those in the other edge, and then uniformly expanding one of said edges to form the bell portion of the section, whereby the hole spacing in the bell portion will be uniformly increased, and whereby the holes in that portion will register with those in a section end inserted in the bell.

3. The method of making a conduit formed of a plurality of sections, each sec-
tion having a bell end to receive an end of the adjacent section and said sections being riveted together, which comprises forming holes in opposite edges of a sheet of material with the holes in one edge spaced similarly to those in the other edge, and then uniformly expanding one of said edges to form the bell portion of the section while bending the sheet to form a conduit section, whereby the holes spacing in the bell portion will be uniformly increased, and whereby the holes in that portion will register with those in a section end inserted in the bell.

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