T. E. MURRAY.

ELECTRICALLY WELDED TUBE AND FLANGE.

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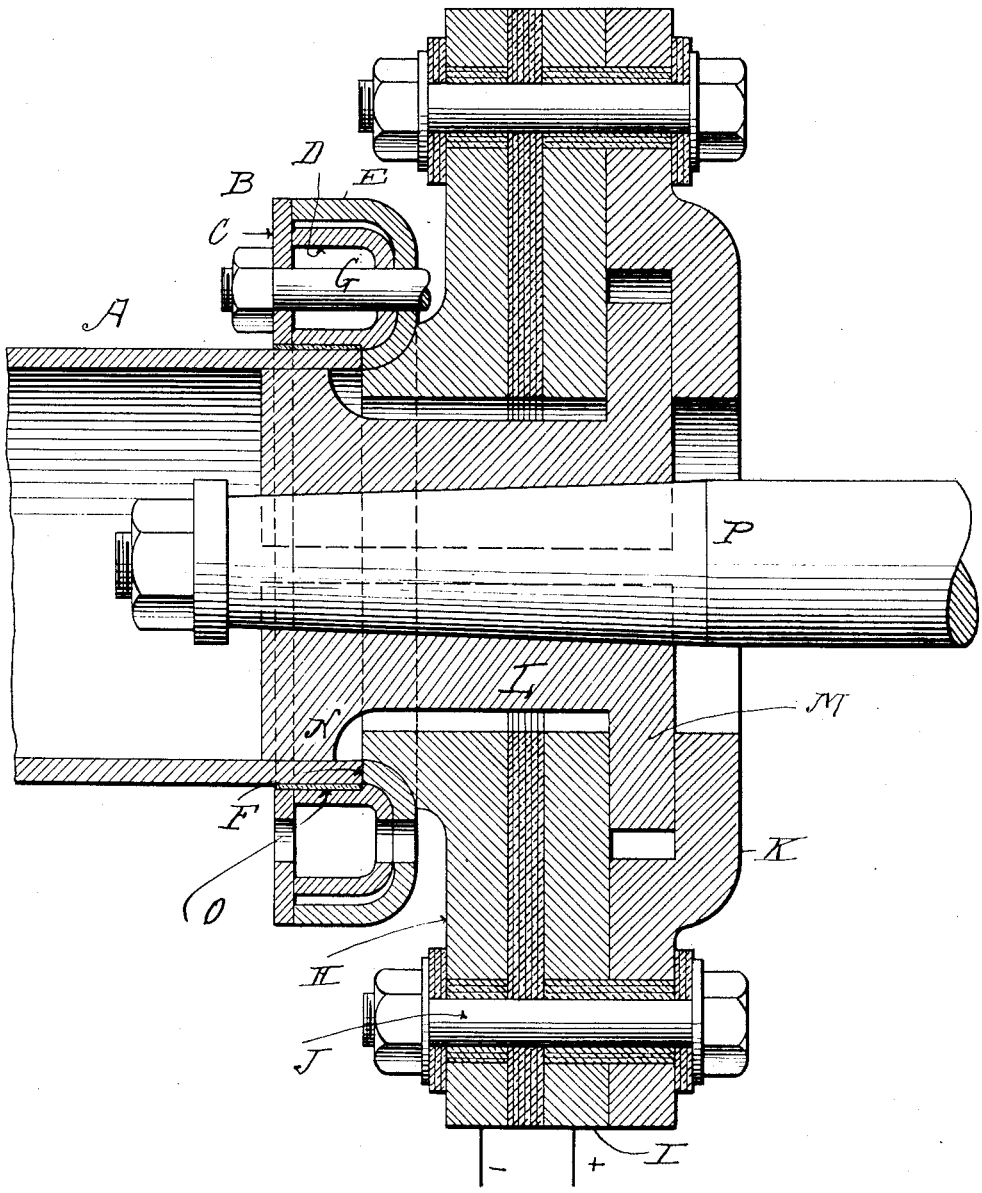
1,219,138. Patented Mar. 13, 1917.



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UNITED STATES PATENT OFFICE.

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ELECTRICALLY-WELDED TUBE AND FLANGE.

1,219,138. Specification of Letters Patent. Patented Mar. 13, 1917.

Application filed November 29, 1916. Serial No. 134,008.

To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Electrically-Welded Tubes and Flanges, of which the following is a specification.

The invention relates to an electrically welded tube and flange, and consists in the construction of said flange of bent or struck up plate metal, and the provision thereon of an internal shoulder, to which the end of the tube is welded.

The accompanying drawing shows the tube and flange in section, these parts being held between the electrodes of a welding machine, whereby the welded joint between the tube and flange is formed.

A is the tube. B generally designates the flange, which is constructed of bent or struck up plate or sheet metal. Said flange is formed of an annular plate C, an inner reinforcing ring D, which is U-shaped in cross section and has its edges bearing upon the plate C, and a covering ring E, substantially of U shape, the edge of the outer wall of which rests on said plate C, and said ring being arched to extend partially over ring D, the edge of the inner wall of ring E thus forming a shoulder at F. The tube A fits in the plate C and ring D, and bears at its butt end against the shoulder F of ring E. The aforesaid parts of the flange are connected by bolts, as G, passing through suitable openings. When the flanges of two tubes are to be coupled, the bolts G may be made long enough to pass through said flanges and then be set up by nuts in the usual way.

I make a welded joint between the tube end and the shoulder F, or edge of the ring E, preferably as follows. The flange B with its parts connected, as described, is seated against an electrode H, preferably of copper. Electrode H is connected to an annular plate I by bolts J, said bolts being insulated, and said plate and said electrode being insulated from one another. Outside of the plate I is a cover plate K, also secured in place by said bolts J.

L is an electrode, tubular in form and formed in two half sections, as indicated in dotted lines. Electrode L has a flange M on one end, which rests upon the plate I, and a flange N at its opposite end adapted to enter tube A. The outer surface of the tube within flange B, or the inner surface of said flange, is coated with any fluid insulating material, indicated at O. After the tube is inserted between electrode N and flange B, a tapered mandrel P, placed in the opening between the sections of electrode N, is driven in, thus expanding said electrode, and causing the tube to be tightly clamped between electrode N and flange B. The welding current is then established, thus causing the tube A and ring E to be welded together at the ring edge or shoulder F.

In this way, I provide on the tube, a flange made wholly of plate or sheet metal, the parts of which may be bent or struck up separately and afterward bolted together. This flange is extremely strong.

I claim:

1. A tube, and a hollow flange of plate metal having a shoulder on its inner periphery; the said tube being received in said flange and butt-welded to said shoulder.

2. A tube, a hollow flange of plate metal having a shoulder on its inner periphery, and a reinforcing ring of plate metal within said hollow flange; the said tube being received in said flange and butt-welded to said shoulder.

3. A tube, a metal ring of substantially U-shaped cross section having the edge of its inner wall welded to the end of said tube and its outer wall extending over the welded joint, an annular plate inclosing said tube and making face contact with the edge of said outer wall, and means for securing together said plate and said ring.

4. A tube, a metal ring of substantially U-shaped cross section having the edge of its inner wall welded to the end of said tube and its outer wall extending over the weld-

ed joint, a metal ring of U-shaped cross section seated in said first-named ring, an annular plate inclosing said tube and making face contact with the edge of both walls of said inner ring and with the edge of the outer wall of said outer ring, and means for securing together said plate and said rings.

In testimony whereof I have affixed my signature in presence of two witnesses.

THOMAS E. MURRAY.

Witnesses:
GERTRUDE T. PORTER,
MAY T. MCGARRY.