June 9, 1925. 1,541,061

T. E. MURRAY

MAKING COUPLINGS AND SIMILAR OBJECTS

Filed May 26, 1922

Fig. 1.

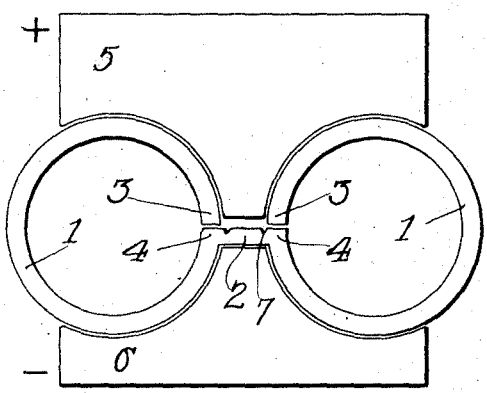


Fig. 2.

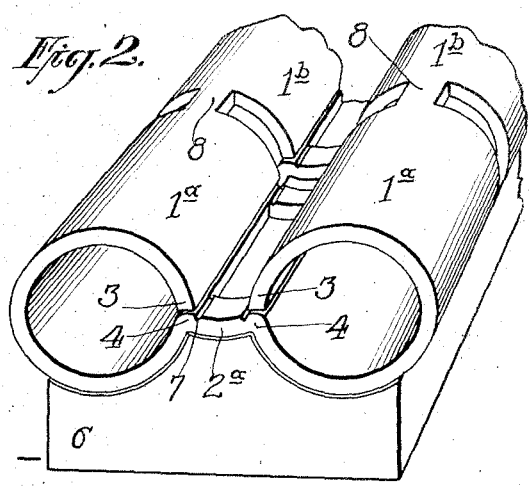


Fig. 3.

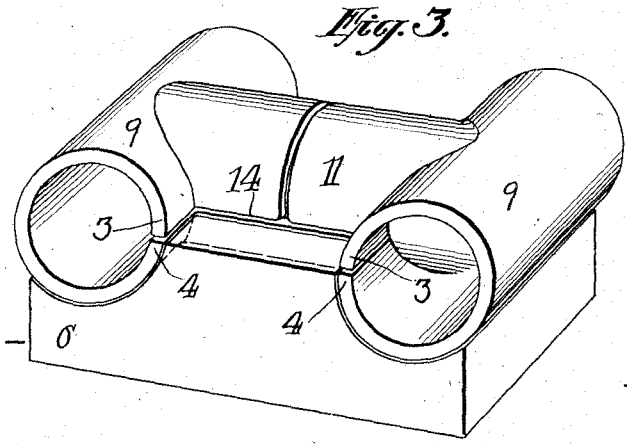


Fig. 4.

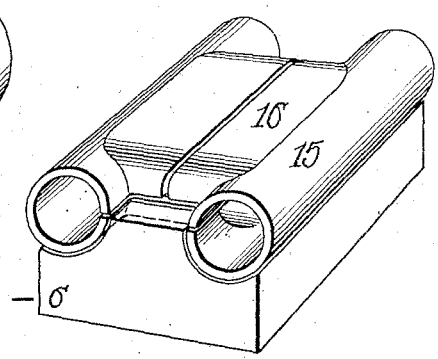


Fig. 5.

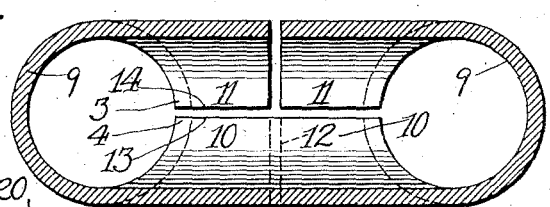
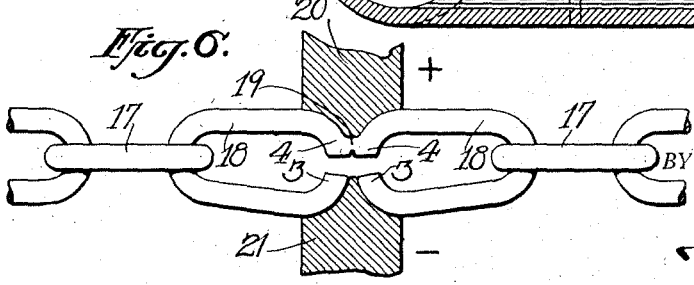


Fig. 6.



INVENTOR.
THOMAS E. MURRAY
BY
D. Anthony Usina
ATTORNEY.

Patented June 9, 1925. 1,541,061

UNITED STATES PATENT OFFICE.

THOMAS E. MURRAY, OF BROOKLYN, NEW YORK.

MAKING COUPLINGS AND SIMILAR OBJECTS.

Application filed May 26, 1922. Serial No. 563,943.

To all whom it may concern:

Be it known that I, THOMAS E. MURRAY, a citizen of the United States, residing in Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in Making Couplings and Similar Objects, of which the following is a specification.

My invention aims to provide a method of producing couplings, T's and various other tubular and similar articles, and producing a plurality of such articles in a single operation.

In a previous patent of Thomas E. Murray No. 1,350,829 and a previous application Serial No. 509,938 it has been proposed to make a plurality of couplings or like tubular objects by first forming a series of segments, such as semi-cylinders, connected to each other end to end, uniting said segments along their side edges to form the complete tubes, and then destroying or removing the end connections. According to the present method the blank is bent in such a way as to form a plurality of tubular articles alongside of each other, instead of end to end as in the aforesaid patent and application, and the edges of the articles thus formed are then welded; and, assuming that they are to be separated, the connecting web between them is removed.

The accompanying drawings illustrate embodiments of the invention.

Fig. 1 is an end elevation of the method of forming two short tubes for couplings;

Fig. 2 is a perspective view of a similar operation;

Fig. 3 is a perspective view illustrating the making of two T's;

Fig. 4 is a similar view illustrating the making of two condulets;

Fig. 5 is a transverse sectional view through the branches of the T's of Fig. 3 or the condulets of Fig. 4;

Fig. 6 is an elevation illustrating the application of the process to the progressive manufacture and assembly of the links of a chain.

Referring to the embodiments of the invention illustrated, and first to Fig. 1, a sheet of steel or other metal is bent in such a way as to provide a pair of tubes 1 alongside of each other and connected by means of a web 2. The ends 3 of the blank are brought around opposite to the beginnings of the tubes so as to provide a tube with a continuous integral wall and with a single seam or joint when the end 3 is welded to the edge 4 opposite it.

The welding may be accomplished in a variety of ways. I have illustrated positive and negative electrodes 5 and 6, between which the blank is pressed so as to bring the edges 3 into contact with the edges 4 and to hold them there under pressure while a current is passed preferably of high amperage and of brief duration.

The blank, of which one end only is shown in Fig. 1, may extend for any desired length; and instead of a single pair of tubes 1 there may be a number of such pairs of tubes in line connected end to end as in my previous application above referred to.

The method illustrated gives an increased output compared with that described in the previous patent and application together with greater reliability in operation because of a better distribution of the current to the points where the welding is to take place. The electrodes enter in part between the two tubes, and the two joints to be made are close together. At the same time the opposed edges 3 and 4 of each joint are integrally connected to each other, around the circumference of the tube, so that there is little or no tendency for the edges 3 and 4 to be displaced with relation to each other. The web 2 is partially separated from the edges 4 of the tubes by notches 7 which facilitate the removal of it cleanly after the welding operation and which facilitate the making of a good joint between the edges 3 and 4.

In Fig. 2 I have shown each of the tubes into which the sheet is first bent, in the form of a series of tubular sections 1^a, 1^b, etc. connected together at their ends by means of webs 8; which are to be removed after the welding operation. The electrode 6 is shown extending continuously under the entire length of such series of tubes, and it will be understood that the upper electrode 5 is similarly extended.

In referring to Fig. 1 it was contemplated that the web 2 should be continuous throughout its length. In Fig. 2 a modification in this respect is illustrated, the web being divided into short sections 2^a by suitably perforating the blank before bending it. In this way the metal which has to be removed after the welding operation is reduced in amount.

Fig. 3 shows the application of the invention to the making of T's. Here the blank is bent into the shape shown to form a pair of tubes 9 with tubular branches extending sidewise therefrom. As shown in Fig. 5 each of the tubular branches comprises a lower half 10 and an upper half 11, and the lower halves of such branches are connected by a part 12, the dimensions of which I have indicated by dotted lines and which constitutes a web or connection similar to that shown at 2 and 2^a in the previous figures.

The lower electrode 6 is shown fitting the bottom and inner sides of the tubes 9 and fitting the parts 10 of the intermediate branches; and it will be understood that the upper electrode 5 is of the same shape inverted. When the electrodes are pressed together and the current passed the tubes 9 will be welded along the edges 3 and 4, and the branches 10 and 11, will be welded along the edges 13 and 14. Thereafter by cutting out the part 12 we will have a pair of complete T's. The principle of extension lengthwise, to produce a multiplicity of T's connected end to end, as illustrated in Fig. 2, may be extended equally to the T's of Fig. 3; and also to the condulets of Fig. 4 described below.

The condulets of Fig. 4 consist of lengthwise tubes 15, connected by oblong branches made up of upper portions 16 and correspondingly shaped lower portions similar to the parts 10 of Fig. 5 with an integral connection which, after welding of the joints of the longitudinal tubes and the lateral branches, are removed to leave two separate and distinct condulets.

The invention is applicable not only to cylindrical tubes as indicated in the above figures but also to closed figures of various other shapes than circles, and to various other materials than sheet metal. For example, the method is shown in Fig. 6 applied to the making of oblong links 17 of a chain made preferably of round rods of steel or iron or other metal. By this method the links are progressively assembled as they are made. The two links shown complete at 17 are connected by a blank or rod shaped as shown to form two incomplete links 18 connected by a web of metal 19. The ends 3 and 4 of the blanks are then pressed together between the positive and negative electrodes 20 and 21 and a welding current passed to make two joints. Thereafter the connecting web 19 is removed, the two links 18, now completed, are separated and the operation is repeated with a new blank connecting these two links.

The parts produced by the method above described may be subjected to other operations either before or after the welding and separating operations described; and various modifications in detail may be effected in the method itself and in the shapes of the blanks. For example, as described in my previous application above referred to, the parts which are meant for couplings may be threaded before welding and they may be welded along only portions of the joint in some cases.

Though I have described with great particularity of detail certain embodiments of my invention, yet it is not to be understood therefrom that the invention is restricted to the particular embodiments disclosed. Various modifications thereof in detail and in the steps of the process may be made by those skilled in the art without departing from the invention as defined in the following claims.

What I claim is—

1. The method of making tubular articles which consists in bending opposite edges of a blank to meet the blank at intermediate points so as to form two of such articles connected alongside of each other, welding said edges to the intermediate points of the blank and separating the articles thus formed.

2. The method of making tubular articles which consists in bending opposite edges of a blank to meet the blank at intermediate points so as to form two of such articles connected by a web extending sidewise therefrom, welding the edges to the intermediate portions of the blank and removing said web.

3. The method of making tubular articles which consists in bending up sheet metal to provide two tubular members held together alongside of and parallel to each other with the registering edges of each tubular member adjacent to the other tubular member, pressing together the edges of each of said tubular members, passing a welding current between such edges to form two complete tubular members with welded edges and separating the same from each other.

In witness whereof, I have hereunto signed my name.

THOMAS E. MURRAY