May 27, 1924. 1,495,653

O. THOMAS ET AL

SHEET METAL BARREL AND METHOD OF MAKING SAME

Filed June 11, 1919

Fig-1

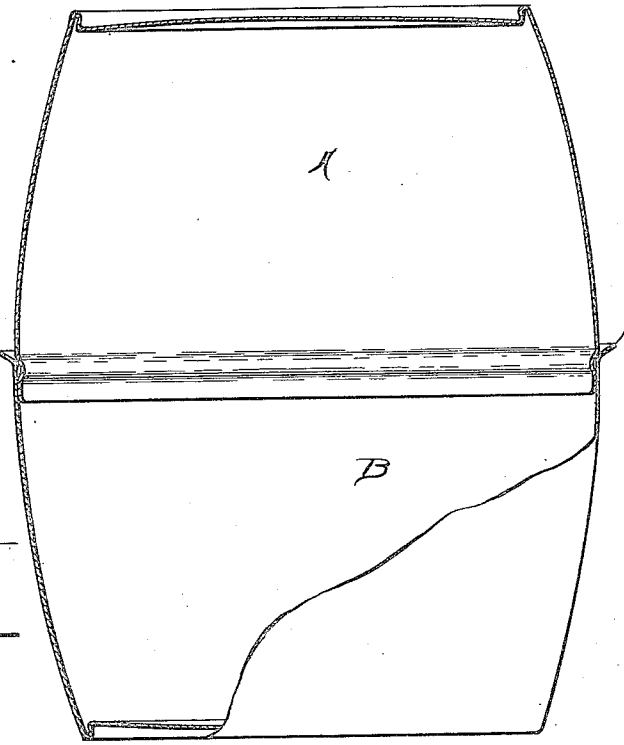


Fig-2

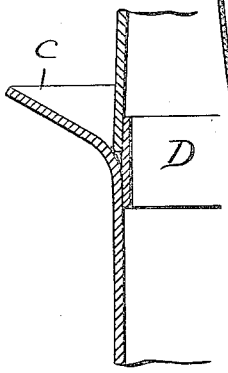
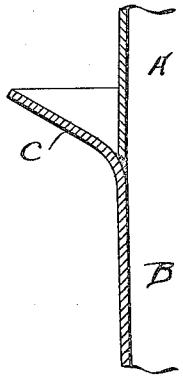


Fig-5



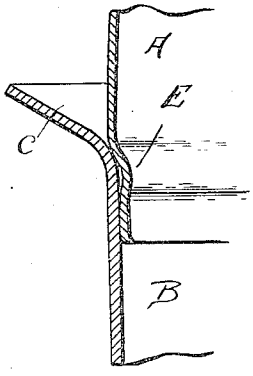


Fig-3

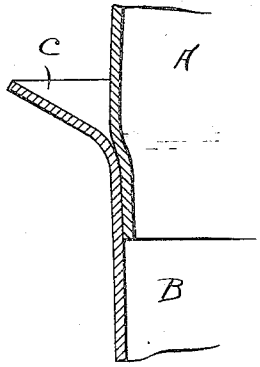
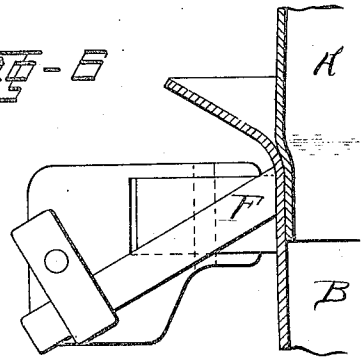


Fig-4

Fig-6



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UNITED STATES PATENT OFFICE.

OWEN THOMAS AND HENRY J. FOSTER, OF CLEVELAND, OHIO, ASSIGNORS TO THE HYDRAULIC PRESSED STEEL COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

SHEET-METAL BARREL AND METHOD OF MAKING SAME.

Application filed June 11, 1919. Serial No. 303,453.

To all whom it may concern:

Be it known that we, OWEN THOMAS and HENRY J. FOSTER, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Sheet-Metal Barrels and Methods of Making Same, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates generally to sheet metal barrels and the method for making the same.

More particularly the invention relates to a barrel composed of two tub like sections united along the transverse center of the barrel, the object being to provide a barrel of minimum weight and one in which the sections are so thoroughly united as to withstand all the ordinary internal pressures. Another object of the invention is to provide a sheet metal barrel composed of two sections united at the transverse center of the barrel without the aid of supplemental connecting rings.

Another object of the invention is to provide a barrel in which the sections can be quickly and easily united in such a nature that when completed the barrel will be of uniform or unbroken contour, that is devoid of lateral or exterior extensions due to the connection of the sections.

Another object of the invention is to provide the sheet metal barrel of two sections so united as to provide the reenforcement at the center thereof and this without the aid of a separate reenforcing member although such reenforcing member may be employed if so desired. With these objects in view, and certain other objects which will become apparent as the description proceeds, the invention consists in the novel features of construction and in the novel method of handling the structural features, all of which will be fully described hereinafter and pointed out in the appended claims.

In the drawings forming a part of this specification Fig. 1 is a sectional elevation showing the two sections of the barrel connected preparatory to brazing or soldering; Fig. 2 is an enlarged detail sectional view of the joint in which a supplemental reenforcing ring is employed; Fig. 3 is an enlarged sectional view of the joint illustrated in Fig. 1; Fig. 4 is a detail sectional view of the slightly modified form of joint; Fig. 5 is a detail sectional view of a still futher modification and Fig. 6 is a detail view showing the manner of removing the surplus flange of the lower tub section.

In the practical embodiment of our invention we employ two tub like sections A and B and for the purpose of this description the section A will be designated the upper section and the section B the lower section, these terms however, being merely relative and arbitrarily adopted for clearness of description. Each section is made from a single piece of sheet metal and as each section is removed from the shaping dies it is provided with an outwardly flaring flange or edge C at its opened end. The sections are so curved initially that when the said sections are properly united a bilged barrel of uniform contour will be provided. It will be understood however that the invention is also applicable to cylindrical drums.

After the two sections have been shaped in the dies the outwardly flaring flange is trimmed from the upper section and the trimmed edge of this upper section is then rolled or spun so as to slightly reduce its diameter so that the reduced edge can be quickly and easily inserted into the flaring end of the lower section.

While it is preferred to slightly contract the lower end of the upper section the same results can be accomplished by producing the upper section initially with the opened end of the proper diameter and then subsequently expanding the major portion of the section in order to conform to the contour of the lower section. It will thus be understood that so far as the broad idea of our invention is concerned it is immaterial how the entering edge of the upper section is shaped so long as it is given that shape which will best permit its ready and proper insertion in the flared end of the lower section. In Fig. 2 we have illustrated a reenforcing band D arranged upon the interior of the lower section and over which the end of the upper section is forced in being seated in the contact with the flaring edge of the lower section but it will be understood that so far as the broad idea of our invention is concerned this reenforcing

band is not necessary. In the construction shown in Figs. 1 and 3 the contracted end of the upper section is shown as having a slight inrolled groove E and it will be noted that when the contracted end of the upper section is inserted in the flared end of the lower section, the end portion of the upper section will contact with the interior surface of the lower section both above and below the inrolled groove and leave an intervening space through said inrolled groove. In the construction shown in Fig. 4 this inrolled groove is omitted and the contracted end of the upper section fits snugly into the end of the lower section and extends a short distance into the same. In the structure shown in Fig. 5 the contracted end of the upper section contacts with and rests upon the extreme inner end of the outwardly flaring edge of the lower section. It will be understood that in all of the structures illustrated the end of the upper section can be quickly and easily inserted into the flared end of the lower section and properly positioned.

After the two sections have been thus properly positioned they are permanently connected by brazing or soldering, welding or otherwise connecting them and in carrying out this portion of the method various schemes may be followed for producing a complete and uniform brazed joint, that is the uniform distribution of the brazing metal can be accomplished in various ways. If desired the meeting edges of the two sections can first be wiped or coated with a mixture of a combination of flux and brazing material or combined flux and brazing material may be applied after the parts have been joined together and by the proper application of heat the brazing material will be caused to flow and will occupy every portion of available space between the contacting surfaces of the two sections thereby providing a perfectly fluid tight joint. In the construction shown in Figs. 1 and 3 in which the inrolled groove is provided there will be an additional quantity of brazing material between the sections which will serve materially as a reenforcement and greatly in giving the barrel as a whole an increased strength and rigidity along its transverse center. In the structure shown in Fig. 5 the brazing material will be applied at the juncture of the contracted end and flaring edge and a portion of the brazing metal will pass in between the contacting edges and affect a strong and secure joint.

After the edges of the two sections have been united and brazed or soldered the surplus flaring edge of the lower section is trimmed off by means of a tool F shown in Fig. 6 thereby leaving the exterior surface perfectly smooth and of uniform contour from end to end of the barrel and after the barrel has been galvanized the joint will be completely concealed owing to the extreme smoothness of the joint after the removal of the surplus projecting flange. It will thus be seen that we provide a barrel consisting of the minimum number of parts securely united along the transverse center of the barrel in such a manner as to provide a secure joint at that point and also one having a material reenforcement and this without the aid of a supplemental or separate reenforcing member although as previously stated such separate reenforcing ring can be employed if desired. The barrel thus constructed will be of uniform contour from end to end and entirely free from extreme projection incidental to the formation of the joint.

Having thus described our invention, what we claim is:—

1. The process of making a barrel which consists in drawing two steel tubs, each having a collared portion at the open end, trimming the collar from one of the tubs and contracting its open end, inserting the contracted end of said tub into the tub having a collar, uniting the contacting parts and trimming the collar from the assembled barrel.

2. The herein described practice of making barrels which consists in providing two tub like sections, one having a flared and the other a contracted end, inserting the contracted end within the flared end, brazing the sections together where they contact, and then removing the surplus portion of the flared end to form a smooth outer surface at said joint.

3. The process of making a sheet metal barrel which consists in providing two sheet metal tub sections, one of which has its edge turned outwardly, inserting the edge of the other section into said outwardly turned portion, uniting said sections at their points of contact, and then removing the outwardly projecting turned portion leaving a barrel of unbroken contour from end to end.

4. The process herein described which consists in providing two sheet metal tub sections, the edge of one section being flared outwardly, inserting the edge of the other section into said flared edge, welding the sections together at their points of contact and then removing the surplus flare and providing a barrel of uniform contour from end to end.

In testimony whereof, we hereunto affix our signatures.

OWEN THOMAS.
HENRY J. FOSTER.