

Sept. 28, 1926.

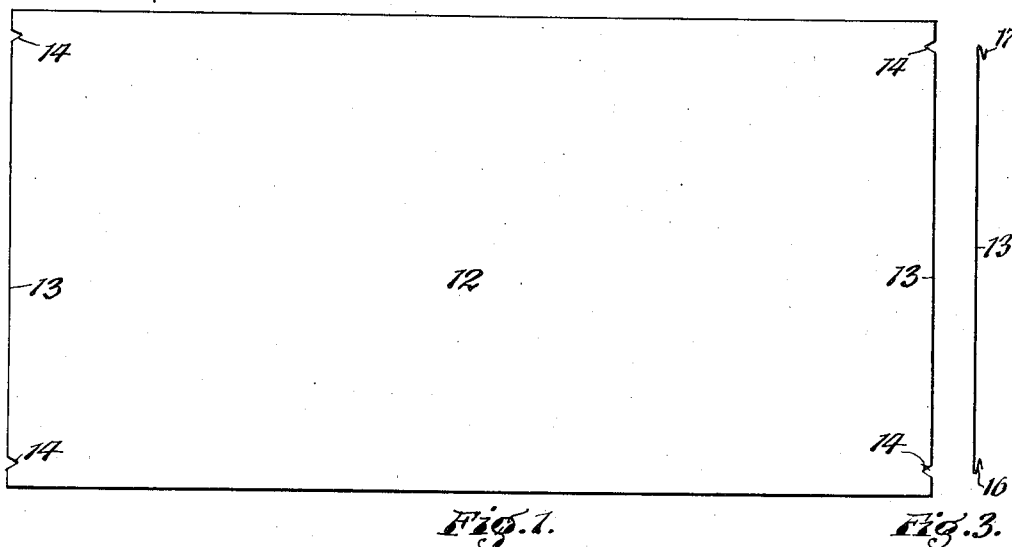
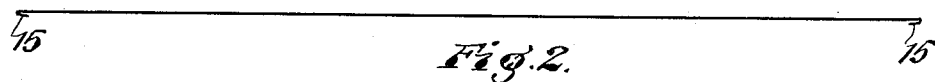
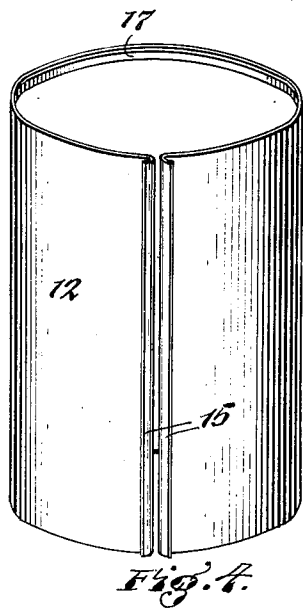
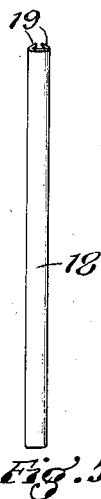
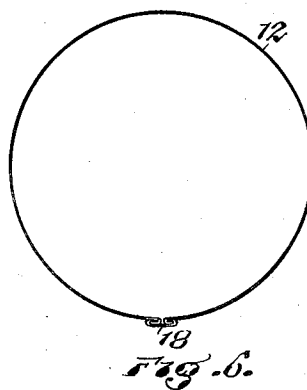
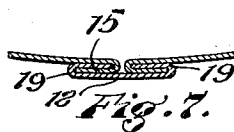
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1,601,180

SHEET METAL BARREL AND METHOD OF MAKING THE SAME

Filed May 19, 1923

2 Sheets-Sheet 1



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SHEET METAL BARREL AND METHOD OF MAKING THE SAME

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2 Sheets-Sheet 2

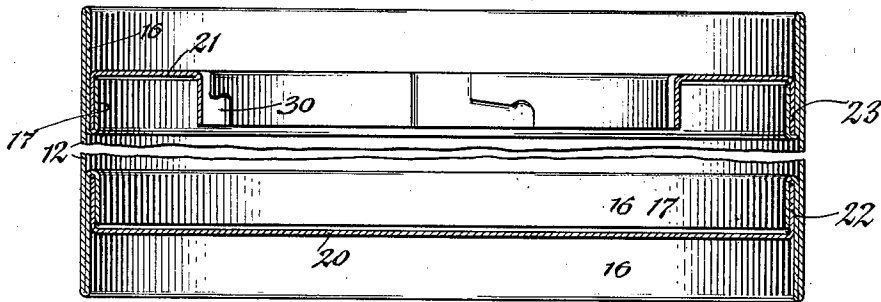


Fig. 8.

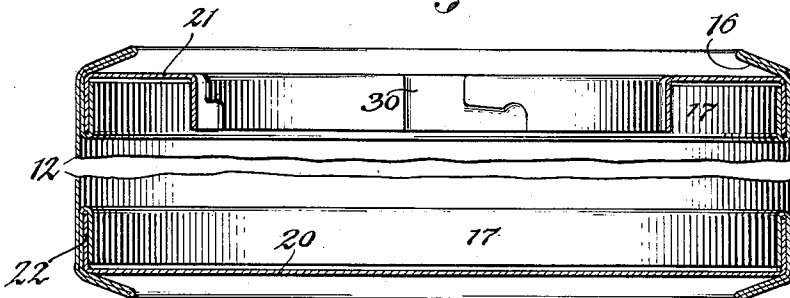


Fig. 9.

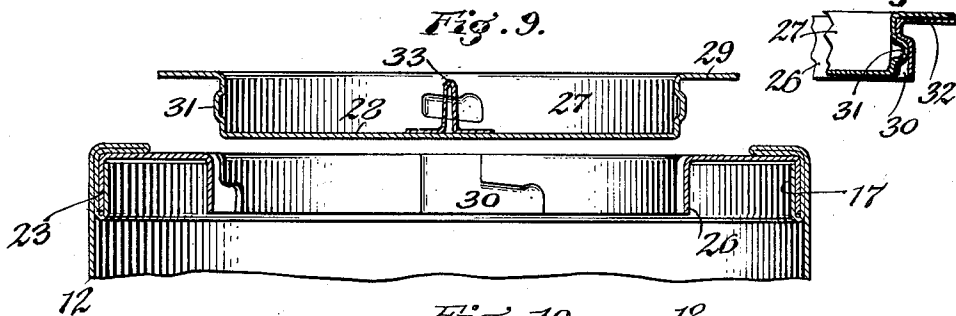


Fig. 10.

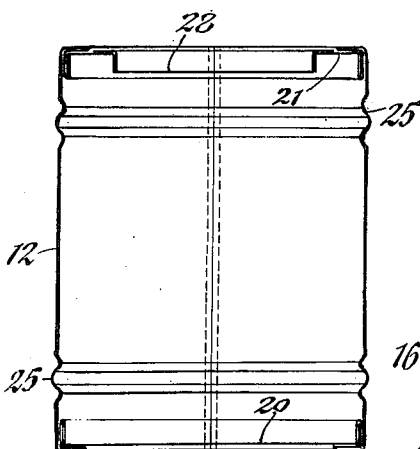


Fig. 11.

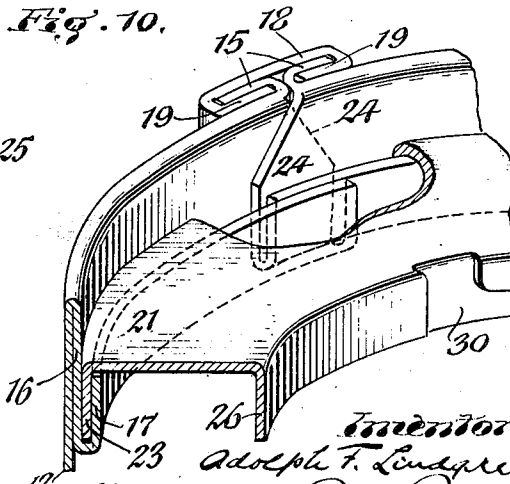


Fig. 12.

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SHEET-METAL BARREL AND METHOD OF MAKING THE SAME.

Application filed May 19, 1923. Serial No. 640,174.

This invention relates to a sheet metal barrel and has for its object the production of a barrel of this character which can be manufactured at low cost, which is strong and durable, leak tight and capable of being readily shipped in knock-down condition for reducing the cost of transportation.

In the accompanying drawings:

Figure 1 is a plan view of a prepared blank of sheet metal of which the body of my improved barrel is made. Figure 2 is an end view of this blank with the longitudinal edges bent or folded backwardly to form locking hooks thereon. Figure 3 is an edge view of one of the longitudinal edges of the blank showing the opposite ends of the same provided with a double fold for use in fastening the heads to the opposite ends of the body. Figure 4 is a perspective view of the body of the barrel after the longitudinal edges and its opposite ends have been provided with locking hooks and head receiving double folds, respectively, and the body has been rolled or bent into a cylindrical form. Figure 5 is a similar view of the locking bar which is utilized for connecting the opposing longitudinal edges of the sheet of metal forming the body of the barrel. Figure 6 is a diagrammatic cross section of the barrel showing the completed barrel on a reduced scale. Figure 7 is a fragmentary cross section of the joint between the longitudinal edges of the barrel body and the locking bar, on an enlarged scale. Figure 8 is a fragmentary vertical longitudinal section of the barrel embodying my improvements showing the upper and lower heads applied to the double folds on the corresponding ends of the body and the extremities being in the position which they occupy preparatory to locking the heads in place. Figure 9 is a similar view but showing the extremities of the body in a position in which the heads are secured against outward movement on the body. Figure 10 is a similar view of the upper end of the barrel showing the upper extremity of the body turned fully inwardly against the top of the upper head into the position which it occupies in the finished condition of the barrel and also showing the cover of the barrel in position to be engaged with the upper head which has an inlet opening adapted to be closed by this cover. Figure 11 is a fragmentary sectional perspective

view of the body and upper head of the barrel showing more particularly the manner of coupling the longitudinal edges of the body and connecting the upper head with the corresponding end of the body. Figure 12 is a longitudinal diagrammatic view of the completed barrel containing my invention. Figure 13 is a fragmentary section showing the manner of interlocking the cover of the barrel with the filling head thereof.

Similar characters of reference refer to like parts throughout the several views.

In its general organization this barrel comprises a sheet metal body, a lower head which closes the lower end of the body, an upper head for the upper end of the body and provided with a central opening which is normally closed by a cover, and a locking bar which connects the longitudinal edges of the body.

The body of the barrel is constructed of a single sheet of metal 12 which may be of any suitable dimensions to suit the size of the barrel which is to be manufactured. This sheet is provided in its longitudinal edges 13 adjacent to opposite transverse ends thereof with notches 14 while this plate is still in a flat condition, as shown in Figure 1. After the sheet metal blank has been thus notched each of its longitudinal edges 13 is bent or doubled upon itself between the corresponding notches 14 so as to form a hook-shape flange 15 on the outer side of this blank, as shown in Figure 2. The transverse end edges of the blank are then bent so that a double fold of the metal of the blank is produced at each end of the same on the inner side thereof, each of these double folds consisting of a longitudinal intermediate web 16 which is arranged on the inner side of the body portion of the blank 12 and is connected at its outer edge with the latter, and an inner hook-shape flange 17 which is spaced apart from the inner side of the corresponding web so as to form a channel therebetween and is connected at its inner edge with the corresponding edge of the web. The web 16 is comparatively wide while the flange 17 is comparatively narrow, the preferred dimensions of these parts being thus shown in the drawings in which case the web is about twice the width of the flange, whereby the outer edge portion of the web and the correspond-

ing edge portion of the barrel body project beyond the outer edge of the hook flange 17, as shown for instance in Figure 8.

After the body blank has been thus provided with single folds at its opposite longitudinal edges and with double folds at its opposite transverse or end edges this sheet metal blank is rolled or bent by any suitable means into the form of a cylinder so that the double folds are arranged on the inner side of the cylindrical body and the single hook flanges at the opposing longitudinal edges thereof are on the outer side of the body. After the body is thus bent the two longitudinal hook flanges are opposed to each other but turned away from each other, as shown in Figure 4. The longitudinal edges of the body are now connected or coupled with each other by means of a locking bar which in its preferred form consists of a substantially flat web 18 which engages with the outer sides of the two hook flanges 15 and is provided at its opposite longitudinal edges with hook flanges 19 which are turned toward each other on the inner side of the web 18 and engage underneath the longitudinal hook flanges of the body, as best shown in Figure 7. The locking bar is of a length equal to the length of the barrel body after the end edges of the same have been folded inwardly to produce the double folds thereon, and after this locking bar has been applied to the longitudinal hook flanges of the body in the manner described the respective flanges are pressed firmly together, as shown in Figure 7, by any suitable means, so as to produce a tight joint between the same.

The lower and upper heads are made of sheet metal in the form of disks 20 and 21, the disk of the lower head being provided with an upwardly turned sealing flange 22 at its peripheral edge which is seated in the downwardly opening channel formed by the lower double fold of the body, while the disk 21 of the upper head is provided with a similar downwardly projecting locking flange 23 at its margin or peripheral edge which is seated in the upwardly opening channel of the upper double fold of the body. The upper and lower heads are thus engaged with their flanges into the upper and lower double folds of the body while the extremities of the body and the adjacent parts of the webs 16 of the double folds are still in a straight position or parallel with the axis of the barrel, as shown in Figures 8 and 11. After the heads have been thus applied to the double folds of the body those parts of the webs of the double folds and the extreme portions of the cylindrical body adjacent thereto may be either bent inward partly at an oblique angle to the heads and body, as shown in Figure 9, or the same may be bent inwardly against the outer sides of

the disks of the heads so that each extremity of the body and that part of the web of the respective double fold arranged beyond the corresponding hook flange 16, is arranged at right angles to the body of the barrel, as shown for example in Figures 10 and 12.

Inasmuch as the longitudinal single folds or locking hooks 15 when bent backwardly upon the body of the sheet 12 cause the circumferential measurement of the barrel blank to be reduced as compared with the opposite end portions which form the double folds, each of the double folds projects at its opposite ends beyond the corresponding longitudinal edge of the body so as to form a tab 24 thereon, which tabs are bent into the form of a double fold corresponding to the remaining portion of the double fold on the same end of the barrel body. The opposing tabs 24 at opposite ends of each double fold however, overlap each other in their double folded condition as clearly shown in Figure 11, thereby increasing the strength of the connection between the longitudinal edges of the body blank at opposite ends thereof and enabling the barrel to resist the maximum strains to which the same is likely to be subjected while in use. Ordinarily the pressure to which the locking bar, barrel body and the heads are subjected while locking them together in the manner described is sufficient to render the barrel tight enough for various granular materials as well as materials that are of a highly viscous character, such as tar. In order, however, to render the barrel also suitable for packing or shipping materials which require a very tight joint between its several members in order to avoid leakage, for instance when packing gasoline or the like, a cement or packing material of any suitable character may be introduced into the several joints of the barrel so as to perfectly seal the same and prevent the passage of any liquid therethrough.

If the barrel is likely to be subjected to rough usage its body may be strengthened by providing the same adjacent to its opposite ends with one or more annular beads or corrugations 25, as shown in Figure 12, which beads may be rolled into the body at any suitable stage of its manufacture in a manner and by means well known in this art.

For the purpose of enabling the barrel to be filled and closed afterwards, the disk of the upper head is provided with a central filling opening which is normally covered by a closure which is detachably connected with the upper head. In the preferred construction the disk of the upper head is provided around its central opening with an inwardly projecting annular flange 26 of cylindrical form and the cover for this opening preferably consists of a sheet of

metal which is dished inwardly so as to provide a cylindrical wall 27 adapted to engage with the inner side of the head wall 26, a flat crown 28 connecting the inner edge portions of the head wall 27 and an annular rim 29 projecting laterally from the outer edge of the cover wall 27. Various means may be provided for detachably connecting this cover with the inlet head of the barrel, those for example which are shown in the drawings consisting of a plurality of L-shaped or bayonet grooves 30 formed in the bore of the head wall 26 and a plurality of outwardly projecting lugs or embossments 31 formed on the periphery of the cover wall 27 and adapted to engage with the bayonet slots or grooves of the upper barrel head, as shown in Figure 13. For applying this cover to the barrel the same is so turned that its locking lugs or embossments 31 are vertically in line with the longitudinal portions of the L-shaped or bayonet slots or grooves 30, as shown in Figure 10, which permits the cover to be lowered upon the upper head and the lugs 31 to enter the bayonet slots. Thereafter a rotary motion of the cover in the proper direction will bring the locking lugs 31 into engagement with the horizontal or circumferential portions of the bayonet slots, whereby the cover will be locked upon the respective head. If desired any suitable packing 32 may be placed between the rim 29 of the cover and the outer side of the disk of the upper head, as shown in Figure 13, if a leak tight joint between the cover and this head is necessary.

A barrel of this construction can be manufactured in knock-down condition in the

barrel making plant which permits the bodies of a plurality of barrels to be closely nested compactly and the head, locking bars and covers to be likewise bundled in such manner that they occupy relatively small space, so that shipment to their destination can be effective at a minimum cost. At the place where the barrels are to be filled with material the several members of each barrel can be readily assembled in the manner heretofore described by ordinary tools or facilities and this can be done readily and easily without requiring any special equipment for this purpose.

In the manufacture of this barrel relatively few operations are required and when the barrel is completed the same is very strong and durable and is capable of being used for shipping various kinds of loose or granular material as well as liquids which require leak tight joints between the several parts of the barrel.

For convenience in turning the cover the same may be provided centrally on its upper side with a cleat 33 adapted to receive a tool of any suitable kind.

I claim as my invention:

A barrel comprising a body of sheet metal which is bent into cylindrical form and provided on its end with an inward double fold forming a web and also forming a hook flange which forms with said web an outwardly opening channel, the longitudinal edges of the body being connected and those portions of the double folded end of the body adjacent to said longitudinal edges being lapped one over another.

ADOLPH F. LINDGREN.