C. T. DRAPER.

MEANS FOR REMOVABLY SECURING THE HEADS OF METALLIC BARRELS.

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1,150,843. Patented Aug. 17, 1915.

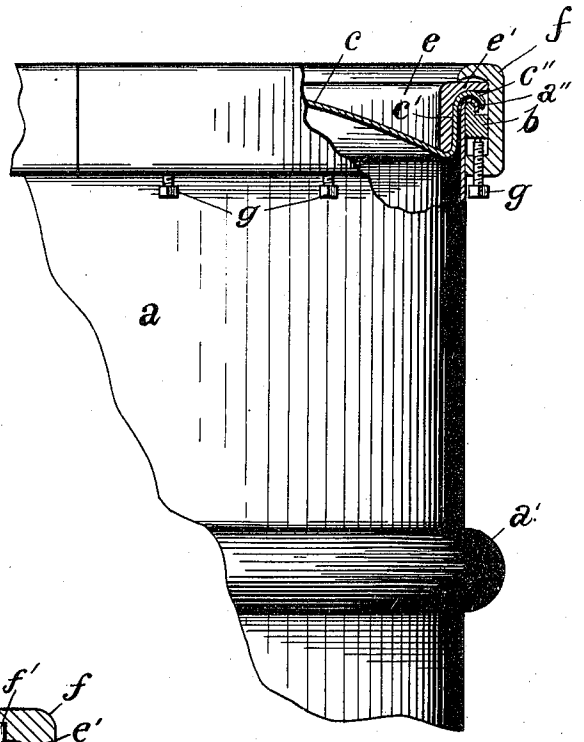


Fig. 1.

Fig. 2.

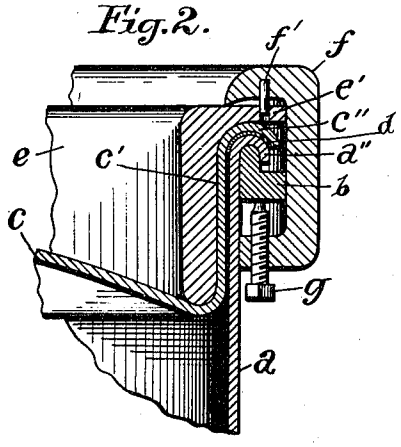


Fig. 3.

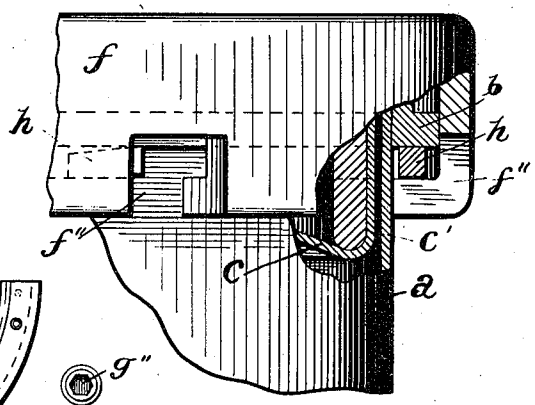
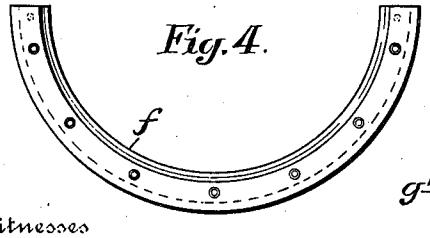


Fig. 4.



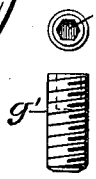


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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MEANS FOR REMOVABLY SECURING THE HEADS OF METALLIC BARRELS.

1,150,843. Specification of Letters Patent. Patented Aug. 17, 1915.

Application filed February 6, 1914. Serial No. 817,028.

To all whom it may concern:

Be it known that I, CHARLES T. DRAPER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Means for Removably Securing the Heads of Metallic Barrels, of which the following is a specification.

My invention relates to improvements in means for removably securing the heads of metallic barrels, and has for its object the construction of a barrel adapting it to be completely opened at one end for the purpose of packing and cleansing the same.

It is highly desirable to provide a construction which will permit the ready cleansing of the interiors of metallic barrels and adapt the same as well for the shipment of solid commodities.

To this end, the mouth of the barrel should be left unobstructed, while the sheet-metal body thereof preferably is left uncut and integral to avoid the placing of unequal strain upon the same. In providing a removable head for metallic barrels, it is necessary to insure substantially a hermetic seal under conditions of severe usage during handling and shipment thereof.

Accordingly, it is my primary purpose to reinforce the joint between the removable head and body of the barrel, while avoiding any obstructing parts or flanges positioned interiorly of said barrel, which would restrict the opening or interfere with cleaning the barrel in any way.

Briefly described, my improvement consists in providing the cylindrical barrel body with an over-lapping metallic head, reinforcing the head by an inner ring, and the adjacent body by an outer ring, and over all of these members, I have applied a sectional annular channeled member equipped with suitable screw-acting or wedging means, whereby the parts are secured firmly together.

Details of my improvements may be more readily understood by making reference to the accompanying drawings, wherein:—

Figure 1 is a fragmentary view of the upper portion of a barrel shown broken away and in partial section as equipped with my improvements. Fig. 2 is an enlarged sectional view through the rim. Fig. 3 is a fragmentary view illustrating modified wedging means for securing the channeled member. Fig. 4 is a plan view showing one-half section of the securing channel upon a small scale, and Fig. 5 shows enlarged views of counter-sunk screws insertible therein.

Throughout the several figures of the drawings, I have employed the same character of reference to indicate similar parts.

The body a of the barrel is formed of cylindrically shaped sheet steel having a lower head or bottom (not shown) of any approved type, and bilges a' whereon the barrel is adapted to roll.

My improvements relating solely to the removable head-securing means for the barrel, the features thereof alone are shown in detail.

A reinforcing exterior ring b is provided adjacent to the upper end of the cylindrical body a, over which the edge a'' is rolled. The metallic head c has an entering rim c' with its edge c'' annularly rolled to engage the edge a'', over which it is adapted closely to fit.

A suitable elastic packing d is interposed between the curved abutting edges a'', c''. Interiorly of the rim c' there is positioned an inner ring e, which is angular in cross-section and conforms closely to the curvature of the pressed metal head c. In practice, the parts fit relatively more closely together than they are shown in the drawing, merely for the sake of clearness in illustrating the same.

In order to secure these parts in hermetic sealing relation, two semi-circular or sectional channeled members f are adapted to be positioned upon the upper flange e' of the inner ring.

Retaining pins f', which engage corresponding holes drilled in said flange, serve initially to secure the clamping channels upon the head. Along the lower edge of the channels, at frequent intervals, there are provided a plurality of set-screws g, which are adapted to engage the exterior ring b from beneath, and thereby clamp the several members of the removable head tightly together to effect a hermetic seal between the over-lying edges a'', c'', respectively of the body and cover.

Although I prefer the set-screws for securing the parts together, I have provided in substitution therefor, short wedges h, which are adapted to be inserted through

cut-away portions f'' of the channels f, and may be driven between ring b and the adjacent lower flange of said channel. This construction obviously avoids the use of protruding set-screw heads, but otherwise conforms to the details already described.

From a consideration of the construction shown, it will be seen that the actual joint between the head or cover and body of the barrel is adequately protected from shocks or blows; first, by the two sectional securing channels; second, by the exterior ring b fitting beneath the over-lapping lip of the body, and third, by the inner flanged ring e. These rings, it will be observed, are so constructed as to bear directly against the inner face of the channel, and being of great rigidity, the several parts are capable of withstanding all ordinary commercial usage to which metallic barrels are subjected.

Merely by releasing the set-screws, and removing the two sectional securing channels, the removable head is freed from the barrel body and in consequence, said barrel may be readily opened. No interiorly protruding parts are employed for closing or locking the removable head in position, and in consequence, the barrel may be more easily packed with solid commodities and may be more readily cleansed, than are structures containing such disadvantageous features. Although the removable head and locking means are of great strength and protective value, the contours of the parts are such as to lend themselves to simple rolling, welding and tapping methods, which insures a relatively low cost of manufacture.

Sheet metal receptacles present peculiar problems with respect to removable closures, for the reason that it is desirable to avoid any mechanism which tends to place a buckling strain upon the body or head itself.

My improved construction, places all of the sealing strain upon a split clamping member or members, which reacts against solid annular rings to secure a vertical pressure between the rims of the head and barrel body, through an intermediate gasket. While the clamping mechanism is exterior of the head, it is capable of such compact construction; conforming closely to the rings and rims as it does, that the chime is increased but little in diameter.

While I have shown the channeled clamping member in two sections, for convenience in adjustment, my improvement is not necessarily restricted thereto.

The details herein described are not necessarily adhered to in practising my invention, and as one departure therefrom, I may refer to the counter-sunk set-screw g', of Fig. 5, which is provided with a hexagonal opening g'', and is adapted to be inserted substantially flush with the lower face of the channeled securing member.

The alternative means herein set forth and embodied in the wedging and screw mechanism I have designated as "pressure devices" in several of the claims.

Other modifications may be made from the precise structure set forth, as pointed out in the following claims:—

1. The herein described closure-apparatus for sheet-metal receptacles, comprising upper and lower rings adapted respectively to engage the rim of the cover and the flange of the receptacle, two semi-circular channeled members exteriorly embracing said rings, and a plurality of screw-appliances associated with the lower flanges of said channeled members and adapted to exert pressure upon the inclosed ring members, substantially as set forth.

2. The combination with a sheet metal receptacle having an overturned edge or rim, of a metallic closure or head having a rim fitting thereon, an overlying support substantially L-shaped in cross-section, positioned above the rim of said head, an underlying continuous support conforming to and positioned beneath the rim of said receptacle, a split, channeled, clamping-member disposed exteriorly about said parts, and a plurality of pressure-devices acting interiorly of said channeled-member upon the overlying and underlying supports of the closure device, substantially as set forth.

3. The combination with a cylindrical sheet metal body having an overturned upper rim, an exterior ring disposed beneath and conforming to said rim, a recessed metallic head having a rim conforming to the rim of the body, an inner ring conforming to the recessed head and extending over its rim, a plurality of curved sections forming an annular, channeled-member exteriorly fitting about said parts, means for retaining said sections in position thereon, and a plurality of peripherally-disposed pressure-devices acting interiorly of the channeled-member to force the rings and rims into sealing relation, substantially as set forth.

4. The combination with a sheet metal barrel-body, of a reinforcing ring positioned beneath the rim thereof and over which said rim is rolled, a recessed sheet metal head fitting interiorly of said body and having a rim conforming to the rim of the body, a reinforcing ring substantially L-shaped in cross-section conforming to the recessed head and extending over its rim, sectional channeled-members fitting exteriorly of the reinforcing rings and bearing interiorly thereon, and screw-acting means associated therewith and adapted to force the rings and rims into sealing relation, substantially as set forth.

5. Securing means for removable sheet-metal barrel-heads, comprising an annular engaging member, a plurality of abutting

curved sectional channel-members together forming an annular inclosing rim for the head, and a plurality of pressure devices reacting against a flange of the channel-members and the annular member removably to clamp the head securely upon the barrel body, substantially as set forth.

6. Securing means for removable sheet-metal barrel-heads, comprising an annular engaging member, a plurality of abutting curved sectional channel-members together forming an annular inclosing rim for the head, means for securing said sections in position, and a plurality of pressure devices reacting against a flange of the channel-members and the annular member removably to clamp the head securely upon the barrel body, substantially as set forth.

7. A metal container, comprising a body provided at its open top with an outwardly-extending flange, a ring exteriorly positioned on the upper end of the said body directly under the said body flange, a cover for closing the said open top of the body and having a flange resting on the said body flange, an annular clamp made in sections and having inwardly-extending right-angular top and bottom flanges, of which the top flanges overlie and bear on the said cover flange and the said bottom flanges extend under the bottom of the said ring, and fastening devices for fastening the said clamp in place and drawing the same downward to cause the top flanges of the clamp to bear firmly down onto the cover flange, substantially as set forth.

8. A metal container, comprising a body provided at its open top with an outwardly-extending flange, a ring exteriorly positioned on the upper end of the said body directly under the said body flange, a cover for closing the said open top of the body and having a flange resting on the said body flange, an annular clamp made in sections and having inwardly-extending top and bottom flanges, of which the top flanges overlie and bear on the said cover flange and the said bottom flanges extend under the bottom of the said ring, screws screwing in the said bottom flanges and engaging the bottom of the said ring to draw the clamp downward to cause the top flanges of the clamp to clamp the cover flange in place on the top of the ring, substantially as set forth.

9. A metal container, comprising a sheet-metal body portion exteriorly flanged at its top, an annular reinforcing member engaging said flange, a cover member adapted to close the top of the container and extend over the flanged portion, a plurality of channeled members positioned about the flange, its reinforcing annulus and overlying cover and individual pressure devices associated with said channeled members, re-acting directly against the reinforcing annulus and the inwardly positioned limbs of said channeled members, substantially as set forth.

In testimony whereof I do now affix my signature in the presence of two witnesses.

CHARLES T. DRAPER.

Witnesses:
C. H. DRAPER,
ALBERT LYNN LAWRENCE.