

May 10, 1932.

C. T. DRAPER

1,857,443

REMOVABLE HEAD BARREL

Filed Feb. 20, 1930

3 Sheets-Sheet 1

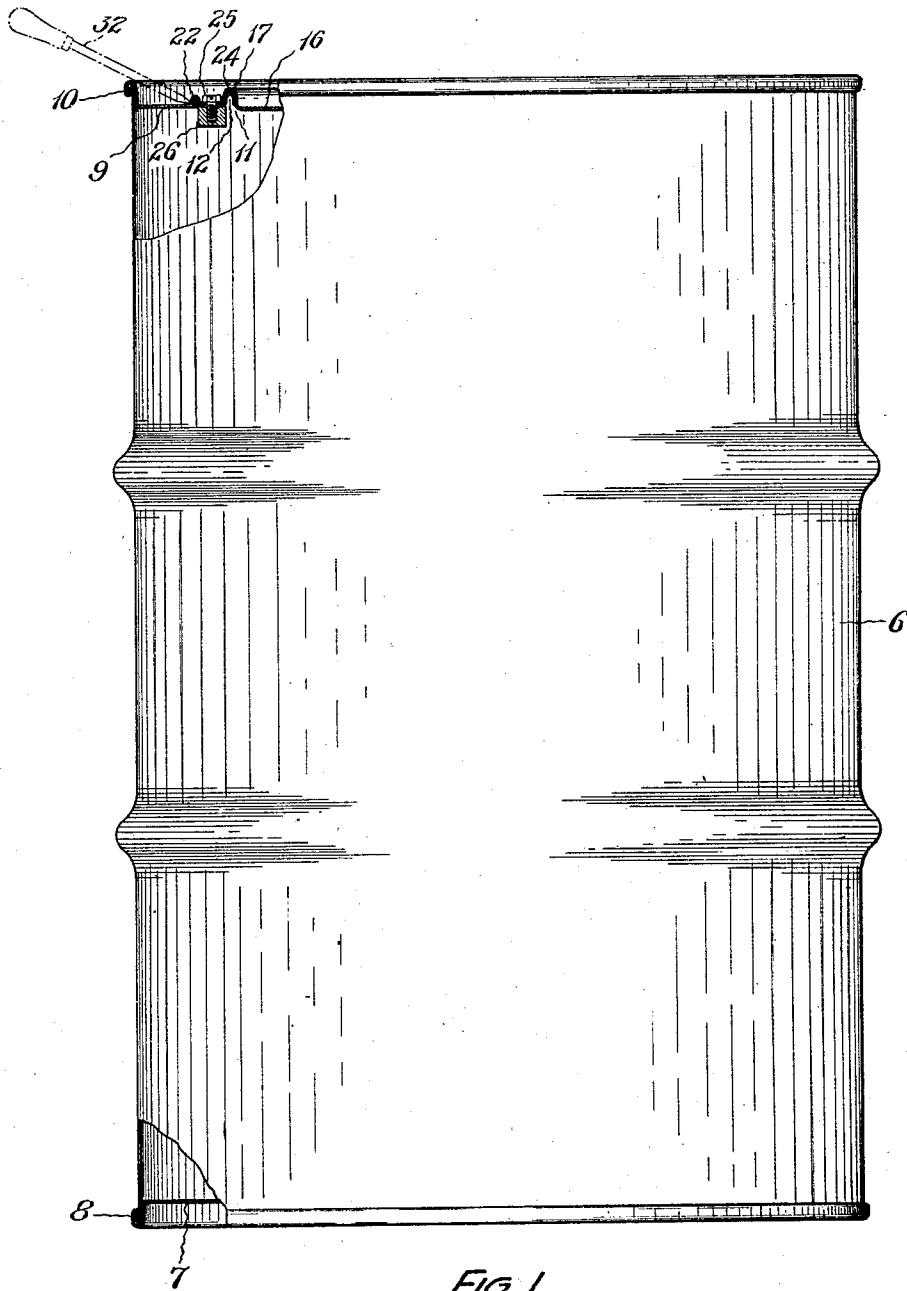


FIG. 1

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3 Sheets-Sheet 2

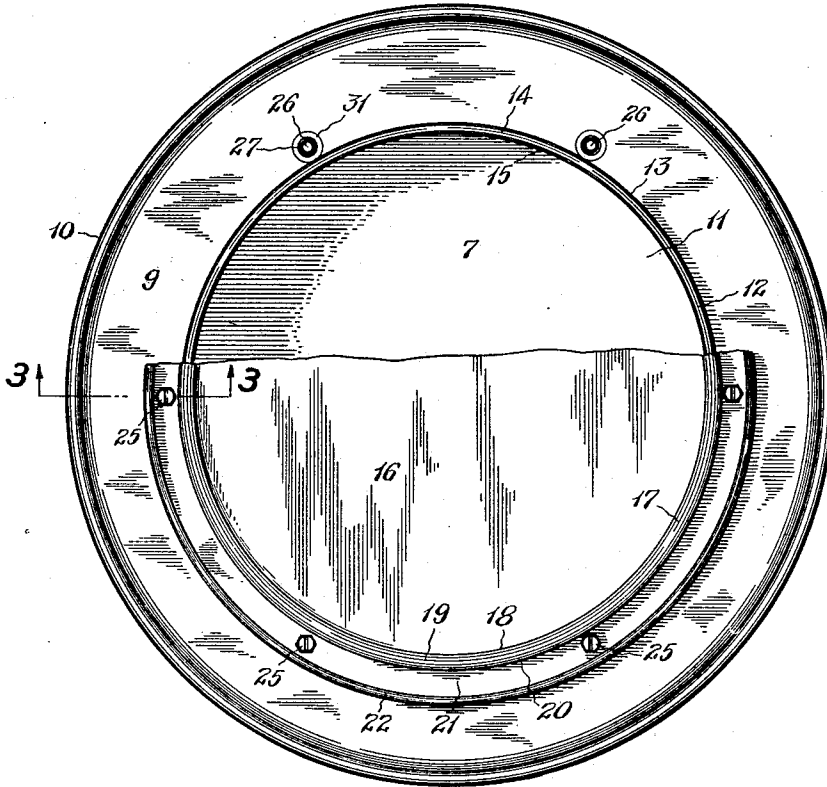


FIG. 2

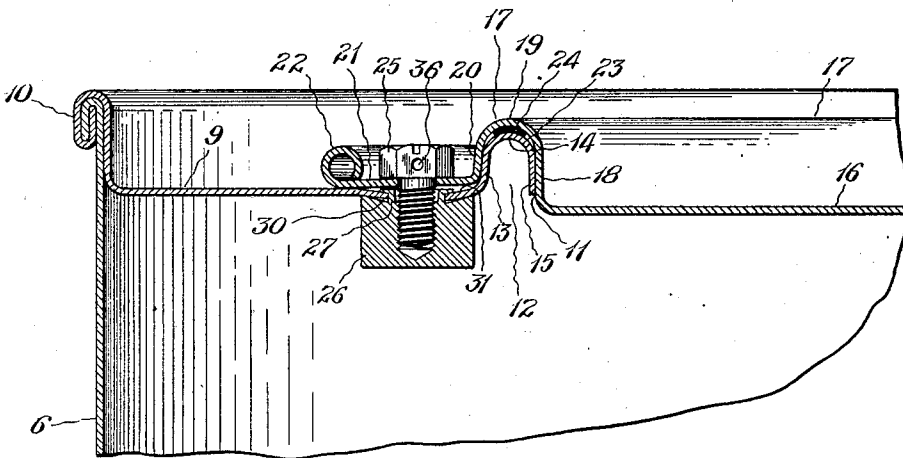


FIG. 3.

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3 Sheets-Sheet 3

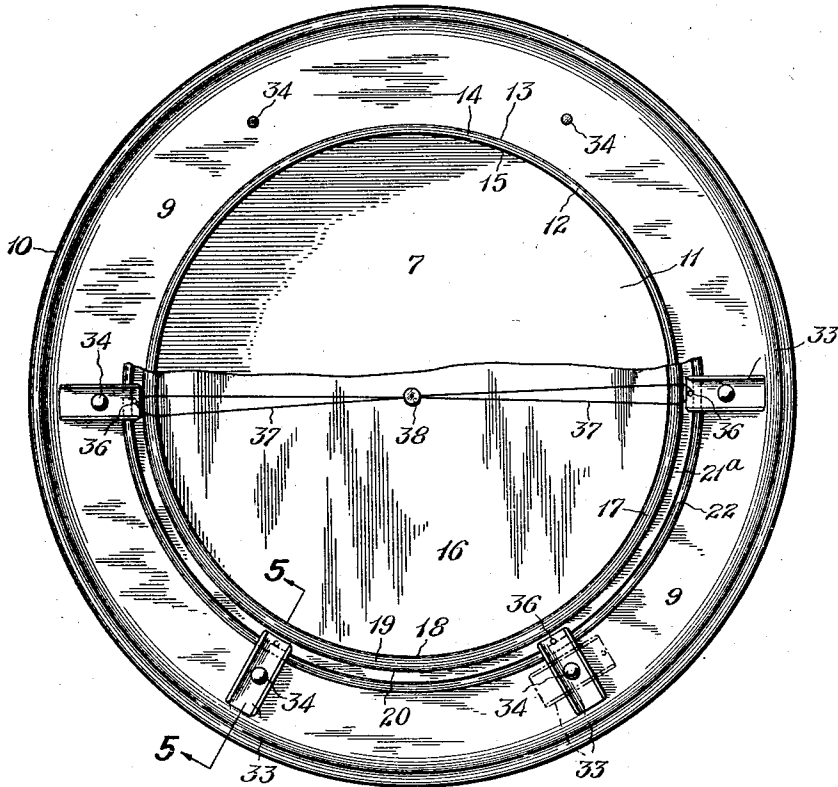


FIG. 4

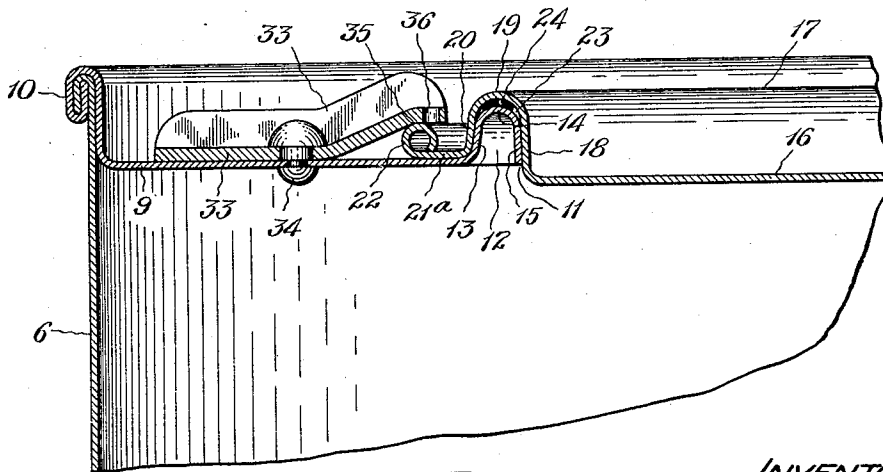


FIG. 5

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# UNITED STATES PATENT OFFICE

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## REMOVABLE HEAD BARREL

Application filed February 20, 1930. Serial No. 430,062.

The invention relates to metallic barrels or drums, and more particularly to a barrel or drum having a cover forming a closure member for an opening of substantial size formed in one head thereof.

Such barrels or drums are used as shipping containers for heavy greases, paints, and the like, which require openings of substantial size in their heads in order that the entire semi-solid contents of the barrels or drums may be dipped or removed therefrom as required for use. These barrels or drums are usually filled when the grease, paint and the like, is in a liquid state.

These barrels or drums must be subjected to the usual factory tests and must be able to withstand the required pressure tests. Moreover, the joint between the cover member and the head opening must be effectively sealed so as to positively prevent leakage of the contained material at the joint.

Accordingly it is an object of the present invention to provide a sheet metal barrel or drum with a removable cover for one head having a sealed and leak-proof joint, capable of withstanding required pressure tests.

These and other objects may be obtained by providing a construction, preferred embodiments of which are hereinafter set forth in detail, which may be stated in general terms as including a barrel having a head provided with an opening, an inverted U-shaped annular lip formed in the head at the opening, a cover for the head opening, an inverted U-shaped annular rib in the cover adjacent the periphery thereof, a flange extending from the U-shaped rib to the periphery of the cover, and a bead at the peripheral edge of the cover, the U-shaped rib in the cover being seated on the U-shaped head lip with a gasket therebetween, and means for holding the beaded cover flange in sealed contact with the head.

Preferred embodiments of the invention are shown in the drawings, forming part of the specification in which

Figure 1 is a side elevation of a barrel equipped with the improved removable head, corner portions of the barrel being broken away to show the same in section;

Fig. 2 is a plan view of the barrel shown in Fig. 1, the removable cover being partly broken away;

Fig. 3 is an enlarged vertical section showing the joint between the cover and barrel head taken on the line 3—3, Fig. 2;

Fig. 4 is a plan view of a barrel showing a modified form of barrel cover engaging means, with the removable cover partly broken away; and

Fig. 5 is an enlarged vertical section of the construction shown in Fig. 4 taken on the line 5—5, thereof.

Similar numerals of reference indicate corresponding parts throughout the several figures of the drawings.

In Fig. 1, a sheet metal barrel or drum is shown comprised of the body portion 6, having a lower head 7 which may be joined to and united with the body portion by the usual chime seam 8. The upper end of the body portion 6 may be provided with a head generally indicated at 9 which may also be joined to and united with the body portion by a chime seam 10.

The head 9 may be provided with an enlarged opening 11 which may be of a size sufficient to permit the removal of semi-solid heavy greases and paints which may be contained within the drum.

The barrel head 9 is provided at the opening 11 therein with an inverted annular U-shaped lip generally indicated at 12 formed at the opening by bending the metal upwardly at 13, then inwardly and downwardly at 14, and then downwardly at 15.

The head opening 11 is provided with a cover 16 which has an inverted U-shaped annular rib 17 formed upwardly therein adjacent its peripheral edge by bending the cover metal upwardly at 18, then outwardly and downwardly curving the same at 19, and downwardly at 20.

The cover sheet metal then extends outwardly forming an annular flange 21 in a plane parallel with the body portion of the cover 16 and the annular edge thereof is formed with an upturned rolled bead or false wire 22.

The U-shaped cover rib 17 is of sufficient

depth to form a space 23, for receiving a gasket 24, between the same and the U-shaped lip 12, of the head 9, for forming a seal therebetween, as well shown in Fig. 3.

5 In the form of the invention shown in Fig. 3, the cover 16 is drawn down to and in sealed relation with the barrel head 9 by a plurality of unyielding bolts 25 which are movably mounted on the head by being  
10 screwed into blind nuts 26, riveted at 27 to the head 9. A gum preparation 30 is applied to the top of the blind nut before the same is riveted to the barrel head 9, and the barrel head 9 is slightly depressed at 31 adjacent  
15 the blind nut riveted joint for permitting the cover flange 21 to be pulled tightly downward by the bolt 25 for securing a tight joint at the gasket 24.

The U-shaped lip 12 stiffens the head at the opening 11 against distortion, and strengthens the entire head of the barrel, while the U-shaped cover rib 17 materially stiffens the edge of the cover; and the process of forming the U-shaped lip 12 and rib 17 hardens and thus stiffens the metal at these places in addition to the stiffness resulting from the shape thereof.

In addition to the seal provided by the rubber gasket 24, the friction fits between the portions 15 and 18, and between the portions 13 and 20, form seals between the cover 16 and head 9. Moreover, the leg portions 13 and 15, and 18 and 20, all have a lateral resiliency which further insures an engagement and tight contact between the U-shaped lip 12 and rib 17 when the U-shaped lip 12 and the U-shaped rib 17 are maintained in coacting  
35 seated sealed arrangement by the bolts 25.

However, the frictional engagement between the U-shaped lip 12 and rib 17 is not sufficient to hold the cover 16 in place on the head 9 and means is required for positively holding the flange 21 of the cover 16 in contact at all places with the head 9. The bolts  
40 25 which partially accomplished this purpose, in themselves will only provide a tightly sealed joint between the cover flange 21 and head 9 at and adjacent the place of bolt engagement, because the flange 21 has been  
45 found to spring upwardly between the various bolt engagements, six of which are shown in Fig. 2 of the drawings.

This upward spring or deflection of the flange 21 is obviated in the present construction by providing the upturned rolled bead or false wire 22 at the peripheral edge of the cover 16, which stiffens the flange 21 and provides a sealed engagement between the beaded flange and the barrel head 9 around the entire  
55 periphery of the beaded flange when the cover is drawn in place by the bolts 25 which engage the beaded flange adjacent the bead 22; and the bead 22 likewise prevents deflection and distortion of the cover during handling or removal.

Moreover, the under edge of the upturned rolled bead or false wire 22 forms, with the barrel head 9, a wedge shaped recess where a screw driver or other pointed tool such as shown in dotted lines at 32 in Fig. 1 may be  
60 inserted preparatory to removal of the cover after the bolts 25 have been removed.

Moreover, the U-shaped lip 12 on the head prevents water or other foreign substance from running into the barrel and mixing with  
65 the contents thereof whenever the cover is not in sealed relation with the head.

The modified form of the invention shown in Figs. 4 and 5 includes the same U-shaped lip 12 and coacting rib 17 on the cover 16,  
70 formed in a manner previously described, and the cover 16 has an annular flange 21a formed at its periphery with an upturned rolled bead or false wire 22.

The cover 16, however, is held in place in sealed relation with the barrel head 9 by a plurality of U-shaped clamping bars 33 pivotally secured to the head 9 by shouldered rivets 34 which provide a tight seal at the place where the head is punctured for receiving the rivets. The clamping bars 33  
75 may be rotated from the position shown in dotted lines in Fig. 4 to the position shown in full lines therein for engagement at 35 with the cover head 22 for producing a sealed  
80 joint between the cover 16 and head 9 around the entire periphery of the flange 21a because of the stiffening action of the upturned rolled bead or false wire 22.

The bolts 25 or the clamping bars 33 may be provided with openings 36 for receiving wiring 37, sealed at 38, to disclose unauthorized tampering with the barrel and its contents in a usual manner.

I claim:

1. In a sheet metal barrel, a head provided with an opening, an annular U-shaped lip formed in the head at the opening, a cover for the head opening, an annular U-shaped rib in the cover adjacent the periphery thereof, an annular flange extending outwardly from the U-shaped rib, an upturned rolled bead formed at the outer periphery of the annular flange, and unyielding means clamping the beaded flange against the head maintaining the beaded flange in sealed relation around its entire periphery with the head, and maintaining the U-shaped lip and U-shaped rib in coacting seated sealed arrangement.

2. In a sheet metal barrel, a head provided with an opening, an annular U-shaped lip formed in the head at the opening, a cover for the head opening, an annular U-shaped rib in the cover adjacent the periphery thereof, an annular flange extending outwardly from the U-shaped rib, an upturned rolled bead formed at the outer periphery of the annular flange, and unyielding means engaging the flange clamping the beaded flange against the head maintaining the beaded  
90 95 100 105 110 115 120 125

flange in sealed relation around its entire periphery with the head, and maintaining the U-shaped lip and U-shaped rib in coating seated sealed arrangement.

5 3. In a sheet metal barrel, a head provided with an opening, an annular U-shaped lip formed in the head at the opening, a cover for the head opening, an annular U-shaped rib in the cover adjacent the periphery thereof, an annular flange extending outwardly from 10 the U-shaped rib, an upturned rolled bead formed at the outer periphery of the annular flange, and unyielding means engaging the bead clamping the beaded flange against the head maintaining the beaded flange in sealed 15 relation around its entire periphery with the head, and maintaining the U-shaped lip and U-shaped rib in coating seated sealed arrangement.

20 In testimony that I claim the above, I have hereunto subscribed my name.

CHARLES T. DRAPER.

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