

July 28, 1936.

R. S. FETTER

2,049,363

BARREL CLOSURE

Filed May 26, 1934

Fig. 1.

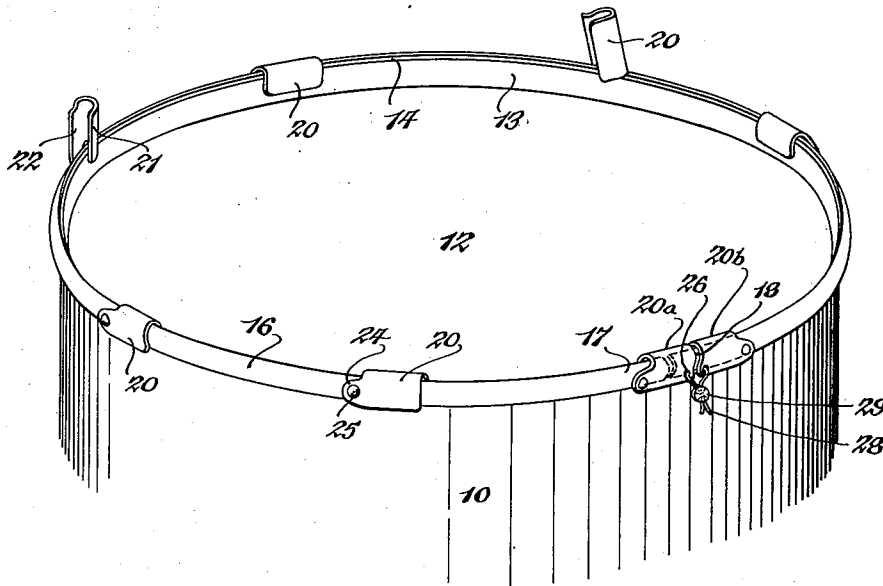


Fig. 2.

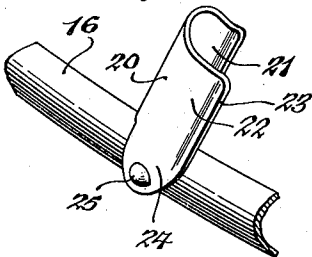


Fig. 3.

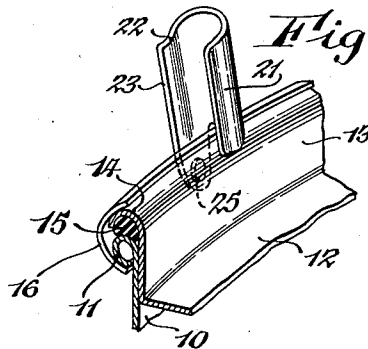


Fig. 4.

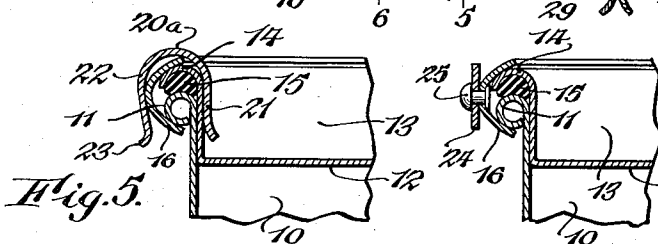
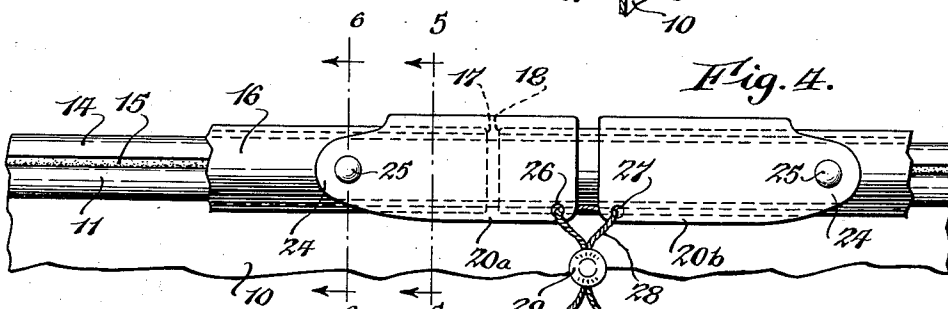


Fig. 6.

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BARREL CLOSURE

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Application May 26, 1934, Serial No. 727,692

8 Claims. (Cl. 220—61)

This invention relates to a closure for barrels and more particularly to closure means associated with the removable heads, such as are used in shipping various materials.

5 The present invention relates to the general type of barrel closure in which the barrel is provided at its open end with a head and a removable head is applied, this head also having a bead and the closure is effected by a split ring which embraces the beads of the barrel and the head. This
10 type of closure provides a reliable lock between the head and the barrel but difficulty is encountered in providing means which will hold the ring to the barrel and head with uniform effect around
15 the periphery of the barrel.

It is therefore the principal object of this invention to provide a barrel closure of this general type which includes means for locking the ring to the beads of the barrel and head at various points
20 around the periphery of the ring and also holds the ring tightly in place so as to hold the barrel head tightly sealed on the barrel. With a barrel closed in accordance with the present invention there is no danger of the ring loosening and a reliable and effective seal is provided which insures
25 both against leakage of material from the barrel and also against the entrance of moisture or other contaminating agents.

Another object of the present invention is to
30 provide such a barrel closure which is extremely inexpensive in construction, which can be quickly applied to the barrel without the use of any tools other than a hammer and which can be as quickly released from the barrel by using a tool such as a claw hammer or the like. This not only provides
35 an inexpensive closure but also greatly facilitates the application and removal of the head from the barrel.

Another object of the present invention is to
40 provide such a barrel closure which comprises a relatively large number of clamping pieces spaced around the periphery of the split ring so that the split ring is held with uniform pressure against the beads of the barrel head and barrel through-
45 out its extent and looseness at one side of the barrel closure is avoided.

A further object of the present invention is to provide such a closure which, while easily applied and removed from the barrel, will not be acci-
50 dentally opened during transit and which is strong and durable and will withstand the rough handling to which barreled goods are subjected.

Another object of the present invention is to
55 provide a split ring closure in which the clamping means are carried exclusively by the ring, thereby

avoiding the necessity of attaching parts to the barrel head and barrel and further in which the clamping means are permanently secured to the ring so that the barrel is composed of but three
5 units, namely, the barrel, its head and the split ring with its attached clamping means.

Another object of the present invention is to provide such a closure which permits of the ready application of the usual sealing wire with its lead seal so that the barrel cannot be opened
10 without breaking the seal, thereby notifying the consignee when the barrel has been tampered with by unauthorized persons.

Another object of the present invention is to provide clamping means which can all be made
15 from the same die thereby avoiding the necessity of making special parts.

In the accompanying drawing:

Fig. 1 is a perspective view of the top of a barrel having its head sealed by a closure made in
20 accordance with my invention and showing some of the clamping members in their inoperative positions to illustrate the manner in which the closure is applied.

Fig. 2 is a fragmentary perspective view of a
25 portion of the clamping ring showing one of the clamping members elevated.

Fig. 3 is a fragmentary sectional view, in perspective, through the rim of the barrel, the flange of the barrel head and showing the clamping
30 ring applied thereto with one of the clamping members in its elevated position.

Fig. 4 is a fragmentary side elevation of the barrel at the ends of the split ring.

Figs. 5 and 6 are fragmentary vertical radial
35 sections taken on the correspondingly numbered lines on Fig. 4.

The barrel 10 to which the closure is applied can be of any suitable construction but is shown as comprising the usual steel shell having an out-
40 wardly projecting bead 11 at its rim. The head 12 is shown as being of the usual construction having an upstanding flange 13 at its periphery, the rim of this flange being turned outwardly
45 so as to form a bead 14 which is formed to fit over the bead 11. In order to provide a tight seal and prevent the entrance of moisture or other con-
50 taminating agents a gasket 15 of rubber or the like is shown as being interposed between the beads 14 and 11 of the head and the barrel.

The split closure ring 16 is shown as being C-shaped in section, its channel facing inwardly and is adapted to be applied, as illustrated in Fig. 3,
55 so that it embraces the beads 11 and 14 of the

barrel and barrel head and, when tightened around the barrel, draws these beads together so as to compress the rubber gasket and form a reliable seal. For this purpose the ring 16 is split, its ends being indicated at 17 and 18.

Spaced at suitable intervals around the periphery of the clamping ring 16 are pivoted clips 20. These clips are identical and each is of U-shaped form, one leg 21 being substantially straight to slide down along the inner face of the flange 13 of the barrel head and the other leg 22 curving inwardly and its edge 23 being beaded outwardly so that the leg 22 of the clip is S-shaped. One end of the S-shaped leg 22 is extended to form an ear 24 and this ear is pivotally attached to the ring by a radially extending rivet 25.

The clip 20a at the end 17 of the split ring is identical with the other clips 20 except that a hole 26 is provided at the outer end of the leg 22 and the clip 20b at the end 18 of the split ring is identical with the clips 20 except that it is left handed compared with the clips 20, i. e. has its attaching ear arranged at the other end as compared with the clips 20, and is also provided with a hole 27 at the outer end of its S-shaped leg. It will be understood, however, that the clip 20b can be made from the same die as the other clips the only difference being that it is channeled from the opposite side. The holes 26 and 27 are arranged adjacent one another and are adapted to receive a sealing wire 28, the ends of which are connected by the usual lead seal 29.

Closing a barrel with a closure as described, is an extremely simple operation. All the operator has to do is to set the head on the barrel, place the split ring 16 around the flanges of the barrel head and hammer down the clips 20, 20a and 20b. In hammering down the clips the operator starts with the clip 20 in the center of the split ring so as to draw the center of the split ring tightly into engagement with the beads of the barrel and head and then hammers down the clips 20 successively toward the ends of the ring, finishing with the clips 20a and 20b. In this manner the ring is drawn uniformly into tight engagement with the beads of the barrel and head and the ring draws these beads together and holds them with uniform pressure throughout their extent. After the clips are hammered down the operator passes the sealing wire 28 through the holes 26 and 27 and applies the lead seal 29 and the barrel is ready for shipment and cannot be opened without breaking the lead seal. Opening the closure is an equally simple matter. All the consignee has to do is to pry up the clips with a claw hammer or any other suitable instrument whereupon he can remove the clamping ring and head of the barrel. The opening operation does not in any way destroy any part of the closure, except, of course, the sealing wire and the entire barrel closure is ready for re-use.

From the foregoing it is apparent that the present invention provides an extremely simple, inexpensive and reliable closure which provides a tight, strong, dust and moisture-proof seal between a barrel and its head and at the same time is very easily applied and equally as easily removed.

I claim as my invention:

1. Fastening means for securing a head on a barrel or the like, comprising a split ring adapted to be fitted over the rims of said barrel and head, and a plurality of U-shaped clips pivotally connected to said ring and adapted to be driven

over said ring and rims and drawing the same into firm engagement with one another.

2. Fastening means for securing a head on a barrel or the like, said barrel having an outwardly beaded mouth and said head having an upstanding rim with an outwardly beaded edge overlaying the bead of said barrel, comprising a split channel ring having its channel facing inwardly and adapted to embrace said beads and a plurality of U-shaped clips pivotally connected to said ring and adapted to be driven downwardly over said ring and the rims of said barrel and head to draw the same into firm engagement with one another.

3. Fastening means for securing a head on a barrel or the like, said barrel having an outwardly beaded mouth and said head having an upstanding rim with an outwardly beaded edge overlaying the bead of said barrel, comprising a split C-shaped channel ring having its channel facing inwardly and adapted to embrace said beads and a plurality of U-shaped clips pivotally connected to said ring and adapted to be driven downwardly over said ring and the rims of said barrel and head to draw the same into firm engagement with one another the inner leg of each of said clips being adapted to slide along the inner face of the rim of said head and the other leg of each clip being S-shaped in section to slide around and embrace the convex side of said ring.

4. Fastening means for securing a head on a barrel or the like, comprising a split ring adapted to be fitted over the rims of said barrel and head, a clip U-shaped in cross section and pivoted to said ring a short distance from one end to embrace the end of said ring, a similar clip provided at the other end of said ring, said clips being adapted to be driven over the ends of said ring and said rims to draw the same into firm engagement with one another and means for sealing the ends of said clips when in their operative positions.

5. Fastening means for securing a head on a barrel or the like, said barrel having a radially outwardly extending bead at its rim and said head having an upstanding rim and a radially outwardly extending bead at the edge of said rim overlaying the bead of said barrel, comprising a split ring which is C-shaped in cross section having its channel facing inwardly and being adapted to embrace the beads of said barrel and head, a plurality of clips each pivoted at one of its ends to said ring and being U-shaped in cross section, one leg of each of said clips being adapted to engage the inner face of the rim of said head and the other leg being curved to embrace the convex side of said ring and said clips being adapted to be driven downwardly to draw said ring into firm engagement with said beads, the clips at the ends of said ring opposing one another in their swinging movement and having holes at their outer ends adapted to jointly receive a sealing wire whereby said end clips cannot be opened without breaking said sealing wire.

6. Fastening means for securing a head on a barrel or the like, said head having an upstanding rim and the barrel being provided with an external bead at its mouth, comprising an annular channel adapted to be fitted from the outside of said bead with its upper edge fitting over the rim of said head and its lower edge fitting under the bead of said barrel and said edges of said channel being flared whereby upon forcing said channel radially inward the rim of said head is drawn axially into firm engagement with

said bead, and means for so forcing said channel radially inward comprising a plurality of U-shaped clips adapted to be driven downward over the rims of said barrel and head parallel with the axis of the barrel, the space between the legs of said clip being less than the distance from the outside of said channel to the inside face of said flange whereby the forcing of said legs downwardly in engagement with the outside of said channel and the inside face of said flange draws said channel radially inward.

7. Fastening means for securing a head on a barrel or the like, said barrel having a radially outward projecting bead at its mouth and said head having an upstanding rim and a radially outwardly projecting bead at the edge of said rim and overlaying the bead of said barrel, comprising an annular channel adapted to be fitted against the outsides of said beads with its upper edge fitting over the bead of said head and its lower edge fitting under the bead of said barrel and the said edges of said channel being flared so that upon forcing said channel radially inward said beads are drawn axially toward one another, and means for so forcing said channel radially inward, comprising a plurality of U-shaped clips adapted to be driven downward over the rims of said barrel and head parallel with the axis of said barrel, the space between the legs of said

clip being less than the distance from the outside of said channel to the inside of the flange of said head whereby the forcing of said legs downwardly in engagement with said outside face of said channel and the inside face of said flange draws said channel radially inward.

8. Fastening means for securing a head on a barrel or the like, said head having an upstanding rim and the barrel being provided with an external bead at its mouth, comprising a split annular channel adapted to be fitted from the outside of said bead with its upper edge fitting over the rim of said head and its lower edge fitting under the bead of said barrel and said edges of said channel being flared whereby upon forcing said channel radially inward the rim of said head is drawn axially into firm engagement with said bead, and means for so forcing said channel radially inward, comprising a plurality of U-shaped clips adapted to be driven downward over the rims of said barrel and head parallel with the axis of the barrel, the space between the legs of said clip being less than the distance from the outside of said channel to the inside face of said flange whereby the forcing of said legs downwardly in engagement with the outside of said channel and the inside face of said flange draws said channel radially inward.

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