H. ELLIS.

BARREL HEAD.

APPLICATION FILED JUNE 18, 1915.

1,216,972.

Patented Feb. 20, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

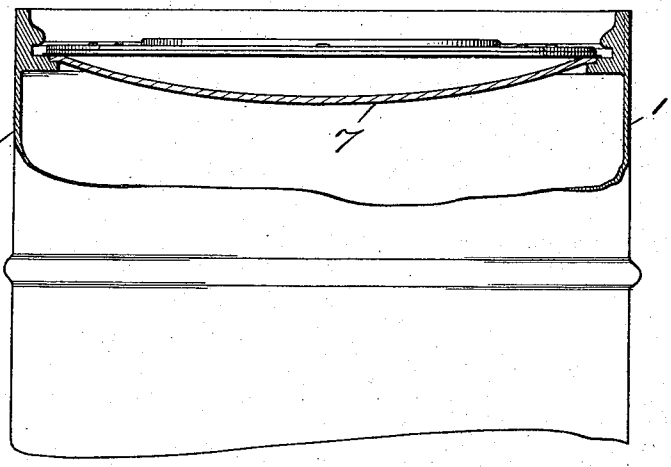


Fig. 3.

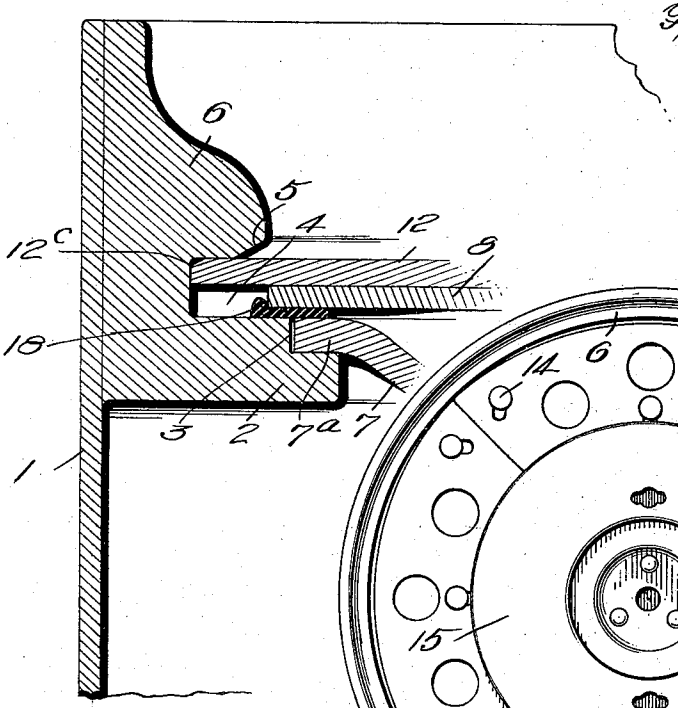
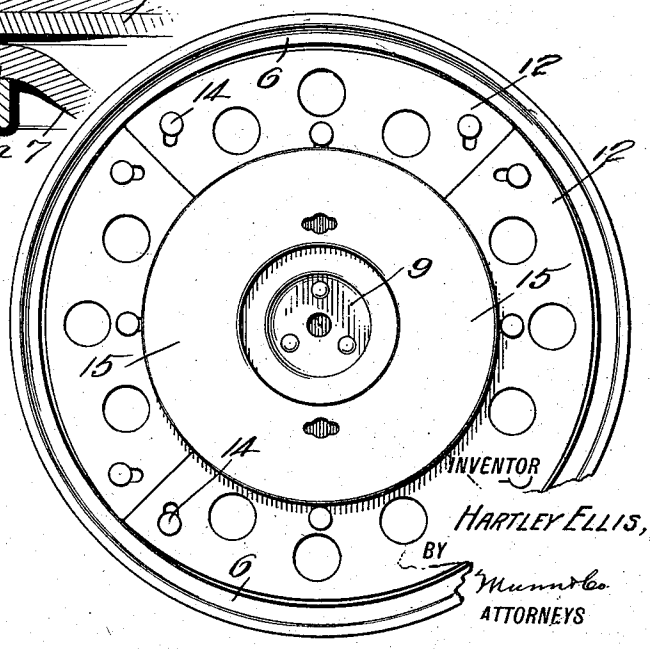


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 4.

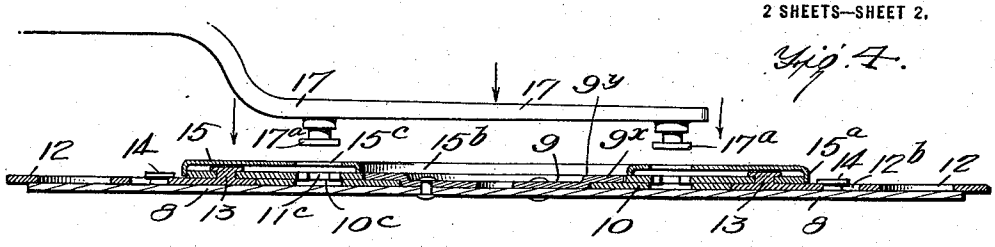


Fig. 5.

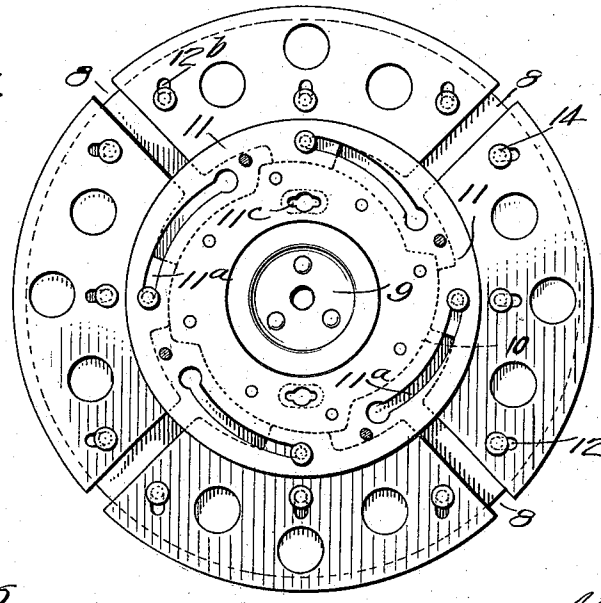


Fig. 6.

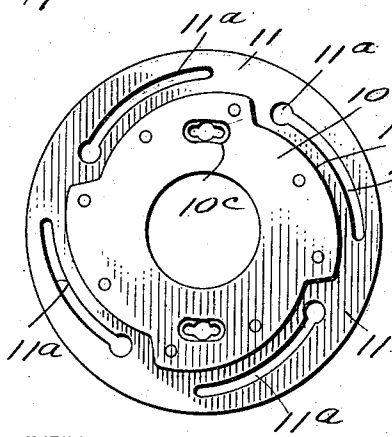
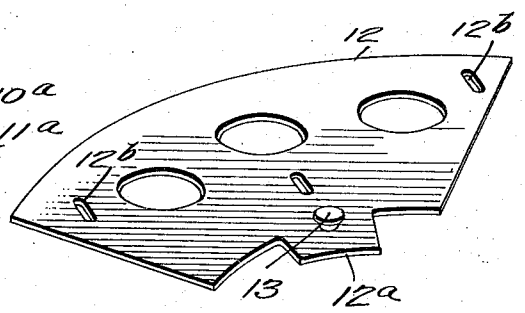


Fig. 7.



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BARREL-HEAD.

1,216,972. Specification of Letters Patent. Patented Feb. 20, 1917.

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To all whom it may concern:

Be it known that I, HARTLEY ELLIS, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Barrel-Heads, of which the following is a specification.

My invention relates to improvements in barrel heads, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of my invention is to provide a barrel head which may be removed from the barrel, thereby permitting ready access to the interior.

A further object of my invention is to provide a barrel head which is especially adapted for steel barrels or other receptacles containing liquids, such as paint or varnish, and having means for locking the head to the barrel and for unlocking it when it is desired to have access to the contents of the barrel.

A further object of my invention is to provide a head for steel barrels which will stand great pressure and yet which may be readily removed and replaced.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming a part of this application in which—

Figure 1 is a sectional view through the head.

Fig. 2 is a plan view.

Fig. 3 is an enlarged section of a portion of the head.

Fig. 4 is a section through the locking mechanism of the head.

Fig. 5 is a plan view of the part shown in Fig. 4.

Fig. 6 is a plan view of one of the cam plates.

Fig. 7 is a perspective view of one of the locking plates.

In carrying out my invention I make use of any suitable body portion. In Fig. 1 I have shown a body portion 1 which is of steel and to which is secured on the upper interior edge, a ring. This ring is preferably welded to the steel body portion 1. The ring consists of a base portion 2 having an annular shoulder 3 and being provided with an annular groove or recess 4, the upper wall of the groove being tapered or beveled as shown at 5. As will be seen from Fig. 3, the beveled wall 5 is carried by a portion 6 which extends inwardly, this portion being preferably welded to the member 1 as stated, and forming with the portion 2 an integral inwardly extending flange provided with a shoulder and a groove. The closure is shown at 7. It will be observed that it is concave on the outer side. The edge of the closure is bent laterally as shown at 7^a and is arranged to engage the upper portion of the inner part of the member 2 and to abut the shoulder 3.

The locking device for the closure 7 is best shown in Figs. 4 to 7 inclusive. It comprises a lower base plate 8, of circular shape, to which is riveted a central disk or plate 9 having a peripheral flange 9^x which is raised from the surface of the plate 8 and which is provided with a shoulder 9^y, this shoulder forming a bearing for a cam plate 10. The latter has four inclined cam surfaces 10^a, and as stated is rotatable about the plate 9. This cam plate 10 is riveted or otherwise secured to a larger cam plate 11 which is provided with four cam slots 11^a which follow the contour of the cam surfaces 10^a as shown in Fig. 6.

In Fig. 7 I have shown one of the locking members. This consists of a plate which is really the segment of a ring and which has on its inner edge a cam flange. The body of the plate I have shown at 12 and the cam flange at 12^a. A pin 13 is arranged to extend through the slots 11^a in the member 11. Each of these locking plates 7 is provided with a series of parallel slots 12^b. The central one of these slots lies on a radial line through the center of the locking device as a whole, while the other two are parallel with the central slot. These slots are arranged to receive pins 14 carried by the base 8. A cover plate 15 is provided which has a downwardly extended peripheral flange 15^a and an inner downwardly extending flange 15^b. The cover 15, the cam plates 11 and 10, are provided with registering openings 15^c, 11^c, and 10^c, respectively, for the reception of the fingers 17^a of a spanner wrench 17.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. The barrel is filled with paint, oil, gasolene, or other material desired to be shipped, and

the closure 7 is placed in position; a gasket 18 is now placed over the abutting edges 7^a and 3 of the closure and the shoulder respectively, this gasket being of any suitable type but being preferably wicking which has been treated with some material such as pitch to render the same leak-proof. The base plate 8 of the locking mechanism is now laid on the gasket. The locking mechanism being in its retracted position, the spanner wrench 17 is inserted in the alined openings 15^c, 11^c, and 10^c and the wrench is turned, thus rotating the cam members 10 and 11 about the plate 9 as a center. The plate 10 will force the locking member 12 outwardly owing to the engagement of the cam surfaces 10^a of the plate 10 with the cam surfaces 12^a of the plate 12. The beveled surface 12^c of the locking member 12, see Fig. 3, engages the inclined surface 5 and forces the locking member down against the gasket 18. Further movement of the locking member will cause the latter to enter underneath the flange 6 so as to permanently lock the head in position.

Now if the barrel should be left out in the sun and be heated up, any pressure of the gases which develop from the inside of the barrel, will tend to force the closure 7 outwardly, but being of concave shape it resists this pressure. Moreover, the edge of the closure is forced tightly against the shoulder 3 and this effectively prevents any further movement of the closure. It will be noted that the locking plate is positively held by means of the flange 6.

Now when it is desired to open the barrel, all that is needed is to insert the spanner wrench and reverse the movement, whereupon the plate 11 in its rotation will draw on the pin 13, thereby causing the retraction of the locking member 12 and permitting the closure 7 to be removed. It will be observed that the retraction of the locking members is simultaneous, so that the one movement effects the unlocking of the device.

Since the locking mechanism is composed of members which are held together, there are in fact only two separate parts which constitute the barrel head, that is to say, the closure 7 and the locking mechanism as a whole, so that when the barrel is open these two parts may be placed aside and after the contents of the barrel is used, they may be replaced and the empty barrel returned to the point from which it was originally shipped.

It will be seen at once that this device is especially desirable for those liquids such as gasolene, and oils which tend to give off vapors that exert considerable pressure when heated. The head is made in such a way that it will withstand enormous pressure and yet it may be readily removed or replaced.

I claim:—

1. The combination with a barrel body, of a ring secured to the inner side of the body near one end, said ring having a flange provided with a shoulder, a closure, the face of the closure engaging the flange and the edge of the closure engaging the shoulder on the flange, an annular gasket disposed for bridging the joint between the shoulder and the edge of the closure, and a locking member arranged to engage a portion of the ring for clamping the gasket.

2. The combination with a barrel body, of a ring secured to the inner side of said body at one end thereof, said ring being provided with an inwardly extending flange having a shoulder and a groove adjacent to said shoulder, a closure arranged to engage the flange, the edge of the closure abutting the shoulder, an annular gasket covering the joint between the shoulder and the edge of the closure, and a locking plate having a portion arranged to enter said groove, a portion of said locking plate being arranged to bear on said gasket.

3. The combination with a barrel body, of a ring secured to the inner side of said body at one end thereof, said ring being provided with an inwardly extending flange having a shoulder and a groove adjacent to said shoulder, one wall of the groove being beveled, a closure engaging the flange, the edge of the closure abutting the shoulder, an annular gasket overlapping the abutting portion of the closure of the shoulder, and a locking device having a movable portion adapted to enter the groove and to engage the beveled wall thereof for clamping the gasket in position.

4. The combination with a barrel body, of a ring secured to the inner side of the body at one end thereof, said ring being provided with an inwardly extending flange having an upper bearing surface, a concave closure having a laterally bent peripheral portion arranged to engage said bearing surface, said flange being provided with a shoulder in engagement with the edge of said closure and having a groove adjacent to said shoulder, the opposite wall of the groove having a beveled portion at the outer edge of the groove, an annular gasket overlapping the abutting portions of the closure of the shoulder, and a locking device arranged to bear against said annular gasket and having movable locking members provided with beveled end portions arranged to engage the beveled walls of said groove in the initial movement of the locking members, thereby forcing the locking device toward said gasket.

5. The combination with a barrel body, of a ring secured to the inner side of the body

at one end thereof, said ring being provided with an inwardly extending flange having an upper bearing surface, a concave closure having a laterally bent peripheral portion arranged to engage said bearing surface, said flange being provided with a shoulder in engagement with the edge of said closure and having a groove adjacent to said shoulder, a portion of said groove having parallel walls, one of the walls of the groove having a beveled portion at the outer edge of the groove, an annular gasket overlapping the abutting portions of the closure at the shoulder, a locking device arranged to bear against said annular gasket and having movable locking members provided with beveled end portions arranged to engage the beveled walls of said groove in the initial movement of the locking members, thereby forcing the locking device toward said gasket, the further movement of said locking members beyond the beveled wall of the groove causing the engagement of the locking members with the parallel walls of the groove, thereby positively locking the parts in position.

HARTLEY ELLIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."