H. ELLIS.

BARREL HEAD.

APPLICATION FILED JUNE 13, 1913.

1,161,203.

Patented Nov. 23, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

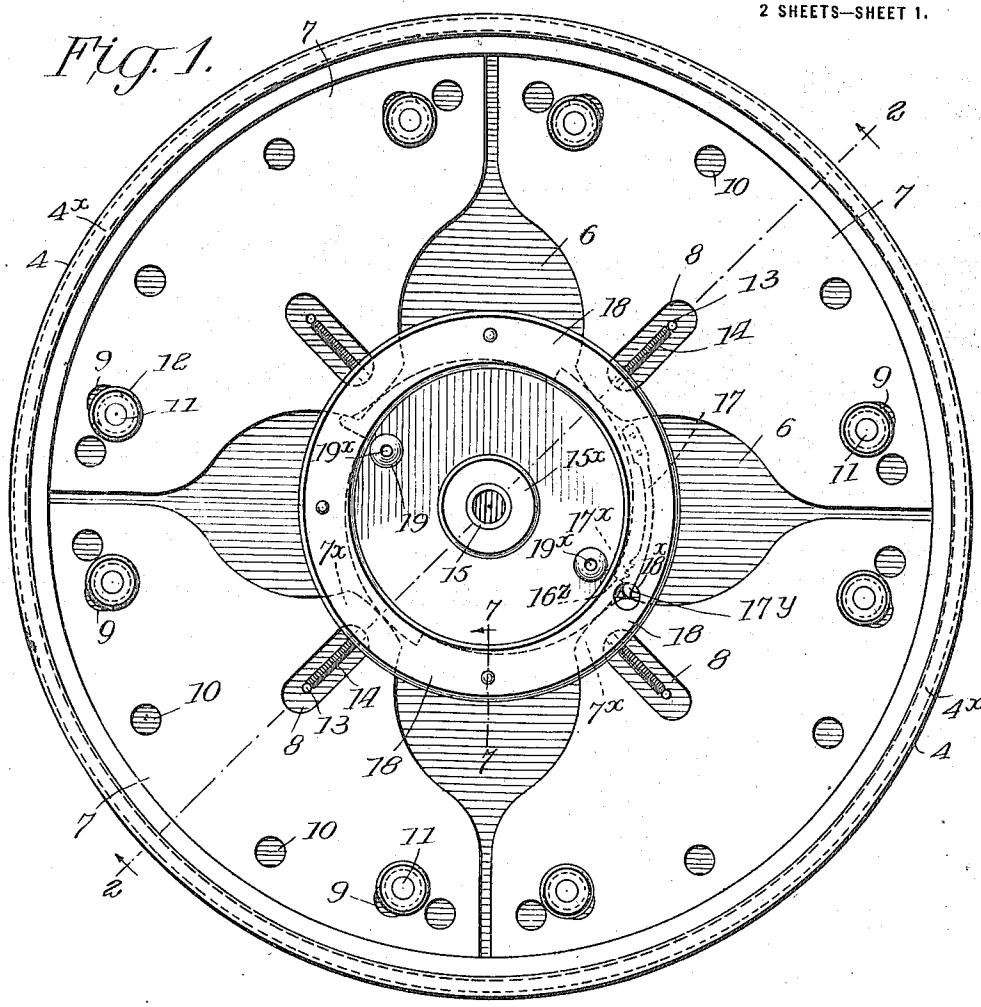
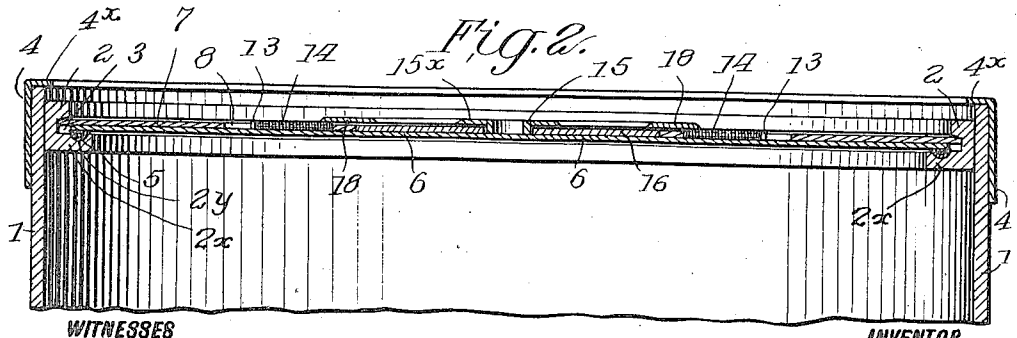


Fig. 2.



WITNESSES

Samuel E. Dade

L. A. Stanley

INVENTOR

Hartley Ellis

BY Munn & Co.

ATTORNEYS

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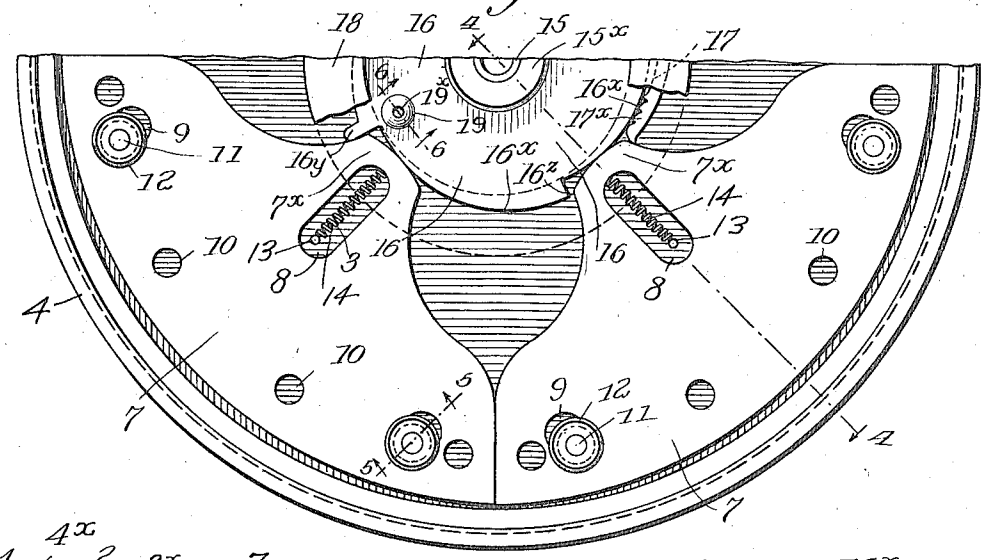
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2 SHEETS—SHEET 2.

Fig. 3.



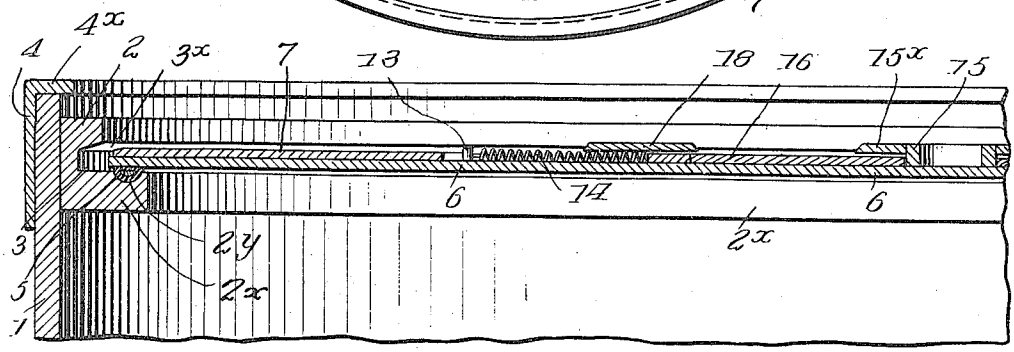


Fig. 4.

Fig. 5.

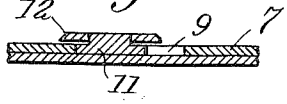


Fig. 6.

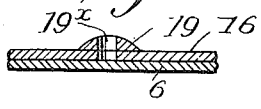
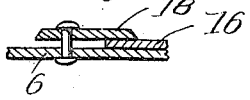


Fig. 7.



WITNESSES

Samuel E. Wade.

L. A. Stanley

INVENTOR

Hartley Ellis

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

HARTLEY ELLIS, OF CLEVELAND, OHIO.

BARREL-HEAD.

1,161,203. Specification of Letters Patent. Patented Nov. 23, 1915.

Application filed June 13, 1913. Serial No. 773,428.

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 made 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 its 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 having means for locking the head to the barrel and for unlocking it when it is desired to have easy 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 part of this application in which—

Figure 1 is a plan view of the barrel head, Fig. 2 is a section along the line 2—2 of Fig. 1, Fig. 3 is a plan view of a portion of the device certain parts being broken away for the sake of clearness, Fig. 4 is a section along the line 4—4 of Fig. 3, Fig. 5 is a section through the line 5—5 of Fig. 3, Fig. 6 is a section through the line 6—6 of Fig. 3, and Fig. 7 is a section along the line 7—7 of Fig. 1.

In carrying out my invention I make use preferably of a steel barrel having sides 1. Secured to the sides 1 in any suitable manner is an annular flange 2. This flange is provided with an extended bottom portion 2^x having on its upper side a groove 2^y. The body portion 2 is provided with a slot 3 having an upper beveled wall 3^x. A steel band or hoop 4 is provided which has an inwardly extending flange 4^x.

Disposed within the circular groove 2^y is a gasket 5 which is made preferably of a piece of rubber tubing having a core of some flexible material such as lead. Arranged to engage the gasket is a cylindrical plate 6 of steel or other suitable material. Slidably carried by the plate 6 is a series of locking members such as those shown at 7 in Figs. 1 and 3. Each of these locking members is provided with a central portion 7^x arranged to extend inwardly. Each member 7 is provided with a central slot 8 and with side slots 9 which are parallel to the slot 8. Openings 10 are also provided in each locking member 7 for a purpose hereinafter set forth. Arranged to extend through the slots 9 are lugs 11 which are secured to the plate 6 and which are provided with heads 12 (see Fig. 5). The plates 7 are designed to slide inwardly and outwardly toward and away from the center of the barrel. The plate 6 carries a series of pins 13. One of these pins extends through each slot 8 and to it is attached a spring 14 which bears on the wall of the slot as shown in Fig. 3. The plate 6 bears a central pivot piece 15 having a laterally extending flange or head 15^x. Arranged to cooperate with the slidable plate 7 is a cam plate 16 which is mounted for rotation on the central piece 15.

The cam plate 16 has a series of curved cam surfaces 16^x which are arranged to engage the extensions 7^x of the member 7 so as to cause a radial movement of the member 7. A projection 16^y on one side of the cam plate 16 is for the purpose of limiting the movement of the plate in one direction, while a spring 17 is secured to the plate 6 and is provided with teeth 17^x arranged to engage one of the shoulders 16^z on the cam plate 16 to limit the movement of the cam plate in the other direction. A protecting ring 18 is provided for covering the ends of the slidable plate 7 and for keeping the springs 14 in their slots 8. This annular plate or ring 18 is riveted or otherwise secured to the plate 6 in the manner shown in Fig. 7, being spaced from the plate 6 in order to provide play for the plate 7. The ring 18 is provided with an opening 18^x just above the end 17^y of the spring 17. The purpose of this will be explained later. Upon the cam plate 16 are arranged lugs 19 having openings 19^x.

From the foregoing description of the va-

rious parts of the device the operation thereof may be readily understood.

When it is desired to fasten the head to the barrel the plate 6 is laid upon the gasket 5 and pressure is applied to force the plate against the gasket.

The plates 6 being held firmly against the gasket 5 a spanner wrench is applied to the lugs 19^x in the openings 19 and the cam plate 16 is rotated into the position shown in Fig. 1. The cam surfaces 16^x force the locking plates 7 outwardly. These engage the beveled upper wall 3^x of the groove 3, thus firmly wedging the plates in position. In order to prevent the retraction of the cam plate I provide the spring 17 whose teeth 17^x engage the shoulder 16^z as before explained. This will lock the head firmly in the barrel and since the head is pressing against the gasket will prevent absolutely any leakage around the gasket. The plate 6 being of steel will permit great pressure on the inside of the barrel without yielding.

Now when it is desired to remove the head the wrench is applied, a tool such as a screw driver is inserted through the opening 18^x in the plate 18 and the end 17^y of the spring 17 is pried away from the shoulder 16^z, thereby permitting the reversal of rotation of the cam plate 16.

The springs 14 are compression springs and as soon as the cam surfaces are withdrawn these springs tend to slide the locking members 7 inwardly, thereby withdrawing them from the slot 3 and permitting the head to be lifted out. In order to prevent the forcing of the locking plate 7 outwardly by rotating the cam plate 16 too far I provide the extension 16^y (see Fig. 3) which engages the extension 7^x of the slidable plate 7 thereby preventing further rotation of the cam plate.

It will be seen that a barrel having a head constructed according to this invention may be easily cleaned or emptied. It is but the work of a moment to turn the cam plate so as to lock or unlock the head. The provision of the beveled groove in the member 2 insures the plate 6 being held down tightly on the gasket thereby obviating any danger of leakage.

I claim:

1. The combination with the sides of a barrel, of an inwardly extending flange secured to the sides, said flange having an extended portion and being provided with a groove having upper inclined wall, said extended portion being provided with an annular groove on its upper surface concentric with said first named groove and within the latter, an annular gasket disposed in said inner groove, the upper part of said gasket being arranged to extend above the surface of said extension, a circular closure plate arranged to rest on said gasket, and laterally slidable locking plates carried by said closure plate and arranged to engage the beveled upper wall of said groove for holding said closure plate securely against said gasket.

2. The combination with the sides of a barrel, of an inwardly extending flange secured to the sides, said flange having an extended portion and being provided with a groove having an upper inclined wall, said extended portion being provided with an annular groove on its upper surface concentric with said first named groove and within the latter, an annular gasket disposed in said inner groove, the upper part of said gasket being arranged to extend above the surface of said extension, a circular closure plate arranged to rest on said gasket, laterally slidable locking plates carried by said closure plate and arranged to engage the beveled upper wall of said groove for holding said closure plate securely against said gasket, and common means carried by said closure plate for simultaneously operating all of said locking plates.

3. The combination with the sides of a barrel, of an inwardly extending flange secured to the sides, said flange having an extended portion and being provided with a groove having an upper inclined wall, an annular gasket carried by the extended portion of said flange, a circular closure plate arranged to rest on said gasket, laterally slidable locking plates carried by said closure plate and arranged to engage the beveled upper wall of said groove for holding said closure plate securely against said gasket, means carried by said closure plate for simultaneously operating said locking plates said last named means comprising a central cam plate rotatably carried by said closure plate and having cam surfaces on its periphery arranged to engage each of said movable locking plates, and means for guiding said locking plates.

4. The combination with the sides of a barrel, of an inwardly extending flange secured to the sides, said flange having an extended portion and being provided with a groove having an upper inclined wall, an annular gasket carried by the extended portion of said flange, a circular closure plate arranged to rest on said gasket, laterally slidable locking plates carried by said closure plate and arranged to engage the beveled upper wall of said groove for holding said closure plate securely against said gasket, means carried by said closure plate for simultaneously operating said locking plates, said last named means comprising a central cam plate rotatably carried by said closure plate and having cam surfaces on its periphery arranged to engage each of said movable locking plates, means for guiding said locking plates, and means for pre-

venting the retraction of said cam plate when the locking plates are in their locking position.

5. The combination with the sides of a barrel, of an inwardly extending flange secured to the sides, said flange having an extended portion and being provided with a groove having an upper inclined wall, an annular gasket carried by the extended portion of said flange, a circular closure plate arranged to rest on said gasket, laterally slidable locking plates carried by said closure plate and arranged to engage the beveled upper wall of said groove for holding said closure plate securely against said gasket, means carried by said closure plate for simultaneously operating said locking plates, said last named means comprising a central cam plate rotatably carried by said closure plate and having cam surfaces on its periphery arranged to engage each of said movable locking plates, means for guiding said locking plates, and a spring pawl arranged to engage a portion of said cam plate for preventing a retraction of the latter when the locking plates are in their locking position.

6. The combination with the sides of a barrel, of an inwardly extending flange secured to the sides, said flange having an extended portion and being provided with a groove having an upper inclined wall, an annular gasket carried by the extended portion of said flange, a circular closure plate arranged to rest on said gasket, laterally slidable locking plates carried by said closure plate and arranged to engage the beveled upper wall of said groove for holding said closure plate securely against said gasket, means carried by said closure plate for simultaneously operating said locking plates, said last named means comprising a central cam plate rotatably carried by said closure plate and having cam surfaces on its periphery arranged to engage each of said movable locking plates, means for guiding said locking plates, and means for maintaining each of said locking plates in engagement with the cam surfaces of said cam plate.

HARTLEY ELLIS.

Witnesses:
F. H. Houghton,
M. J. Godina.