No. 622,615. Patented Apr. 4, 1899.

J. FLEMING.

ROTARY CLAMP BARREL CLOSURE.

(Application filed Feb. 1, 1899.)

(No Model.)

Fig. 1.

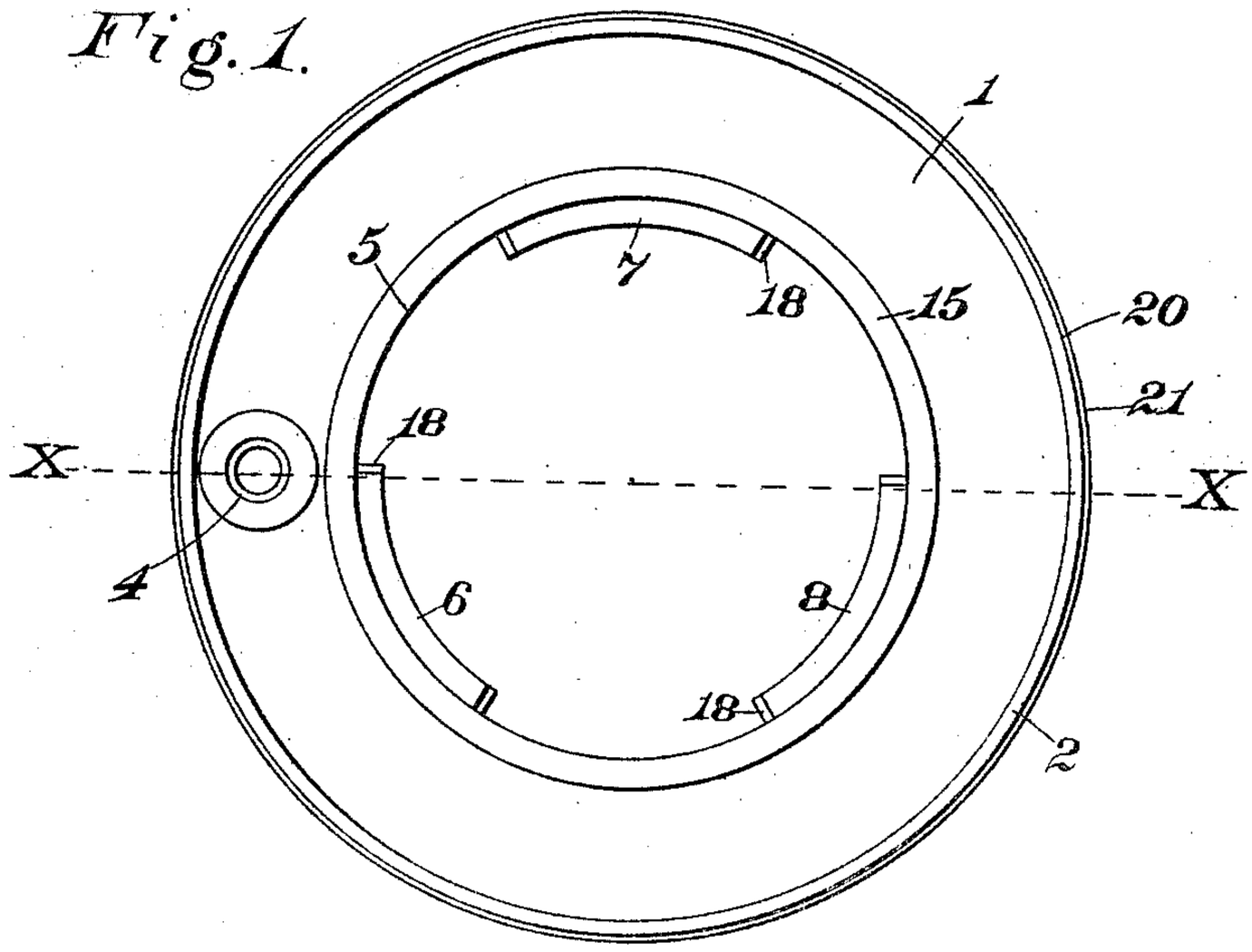


Fig. 2.

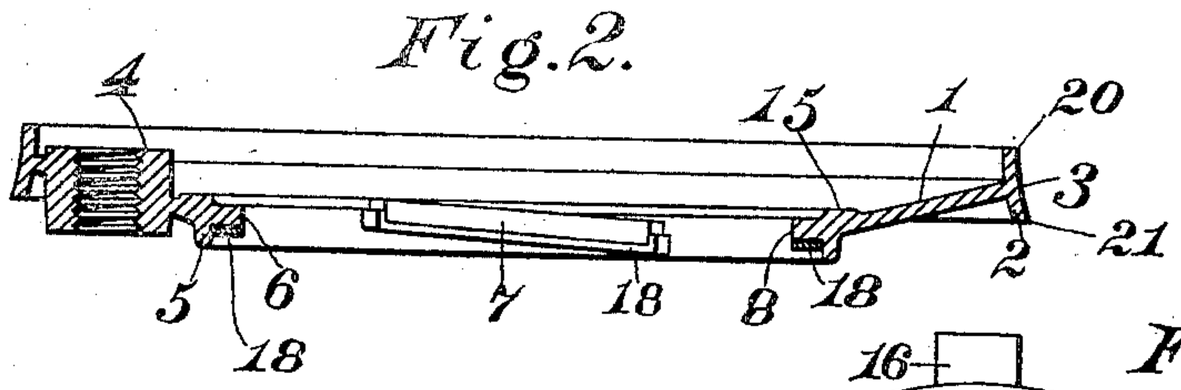


Fig. 3.

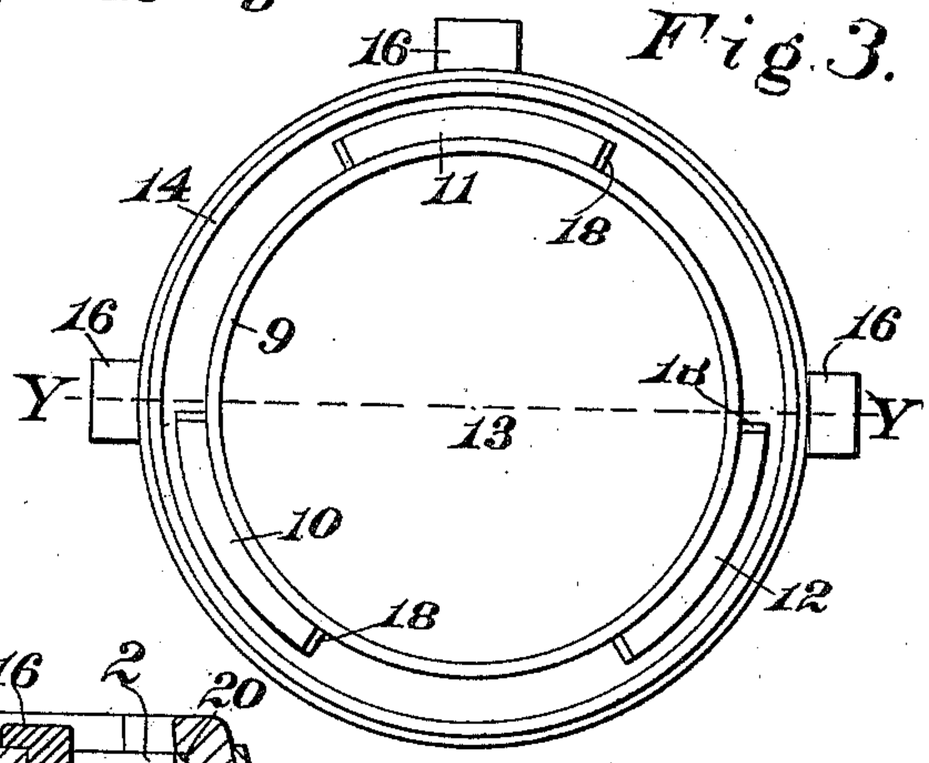


Fig. 4.

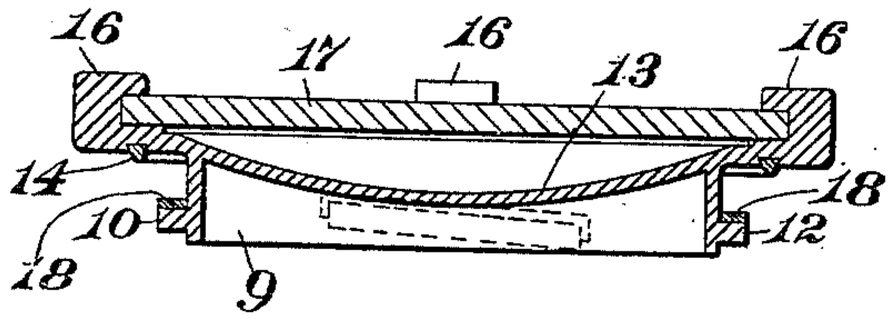
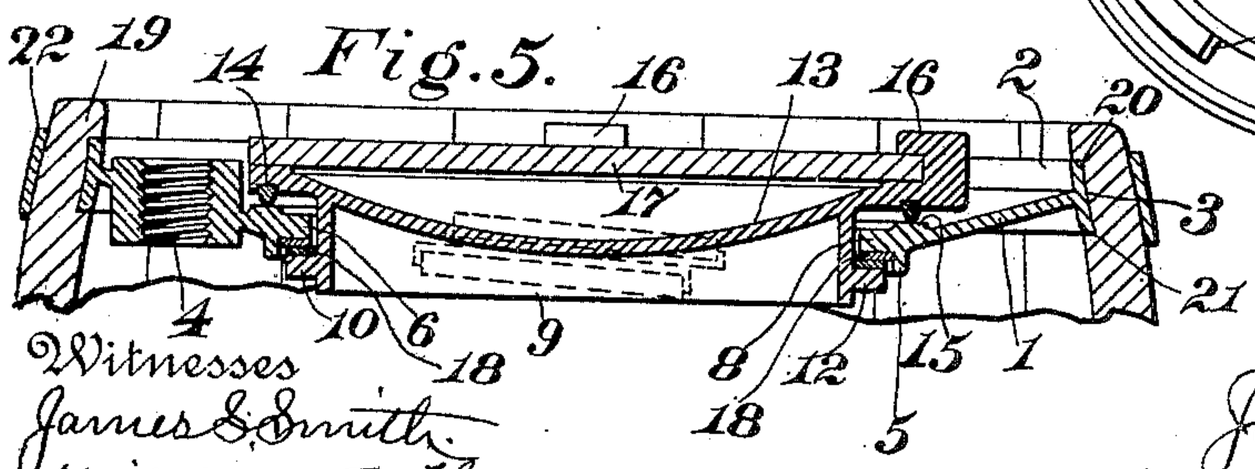


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES FLEMING, OF TROY, NEW YORK.

ROTARY-CLAMP BARREL-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 622,615, dated April 4, 1899.

Application filed February 1, 1899. Serial No. 704,111. (No model.)

To all whom it may concern:

Be it known that I, JAMES FLEMING, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Rotary-Clamp Barrel-Closures; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to rotary-clamp barrel-closures, and has for its object the construction of a cheap, durable, and easily-applied metal head for barrels, particularly beer-barrels, belonging to the class of devices stated and possessing simplified and improved means for effecting and maintaining a fluid and gas tight joint with the staves.

To accomplish the object desired, I employ in addition to the removable central portion and inclined clamping-surfaces common to such closures a supporting portion or head proper, consisting of a depressed flange-like part bounded by an upwardly-converging annular periphery provided with a concaved outer face.

Each constituent element of my invention is described in detail and its individual office, together with the mode of operation of the whole, fully explained hereinbelow.

In the accompanying drawings like numerals designate like parts throughout.

Figure 1 represents a top plan view of the head proper; Fig. 2, a vertical cross-section upon line X X of the first figure; Fig. 3, a bottom plan view of the central removable portion; Fig. 4, a vertical cross-section upon line Y Y of the third figure, and Fig. 5 a sectional view showing the two parts together forming the completed head. A portion of the barrel-staves also appears in this figure.

Considering Figs. 1 and 2, numeral 1 marks the flange-like web portion of the head proper; 2, the annular boundary or periphery, which will be seen to converge slightly toward the top and to present a concave exterior surface 3.

Numeral 4 designates the bung-hole, usually threaded and adapted to be closed by any convenient form of screw-plug. The bung-hole is formed through the flange-like portion 1, which portion, it will be observed, is depressed toward the center, where it is merged into the circular rim 5 about an open area. Usually three equidistant inclined-plane clamping-blocks 6, 7, and 8 are provided within the rim 5.

An important feature of my invention is the depressed form given the flange 1. This construction (see also Fig. 5) offers a convex surface to pressure from the inside of keg or barrel and enables a considerably less thickness and consequent weight of material, customarily malleable iron, to successfully withstand all pressures liable to be encountered in practice than would be required were the surface of the head perfectly flat. Further, all the projections of the removable center are by means of the depressed head brought below the level of the edges of the staves and amply protected from chance loosening-blows from without during the necessary handling.

Considering Fig. 4, the central removable portion consists of a hollow cylindrical part 9, bearing upon its exterior and near its lower edge the three clamping-blocks 10 11 12, similar and corresponding in positions to blocks 6 7 8 of the head proper. It will be noticed (see Figs. 1 and 3) that the clamping-blocks in the head have intervals between them sufficient to permit the blocks of the central portion to pass between them when the two portions are properly assembled, and that the cylindrical part 9 extends downwardly far enough to enable the lower ends of blocks 10 11 12 to pass beneath the higher ends of blocks 6 7 8, whereby a clamping engagement between the two sets of blocks is brought about in the ordinary manner by rotation.

Referring again to Fig. 4, numeral 13 marks a concave plate or top cast with cylinder 9 and projecting over its upper edge. Within a groove formed in the lower surface of the edge of plate 13 so projecting a ring or gasket of packing 14 is fixed, and when the clamping-blocks are brought into engagement the packing is pressed downwardly against a perfectly flat and trued bearing-circle 15, forming the upper surface of rim 5 of the head

proper, (see Figs. 1, 2, and 5,) making a tight joint.

At intervals about the outermost edge of the plate 14 are cast blocks 16 16 16 all alike and each possessing an inner groove or recess constructed to receive and retain the wooden head 17, which is exposed to the atmosphere. A light tap with a mallet upon blocks 16 will start the central portion, which sometimes sticks slightly. To prevent excessive adhesion between the clamping-blocks, it is my practice to shoe them with plates of non-corrodible metal 18 18. (See Figs. 2, 4, and 5.)

Numeral 19 designates the staves, which may or may not be recessed to hold the periphery 2 of the head. It is preferred to slightly recess the staves, as shown. By fashioning the periphery 2 of less diameter at the top than at the bottom, corresponding to the taper of the barrel, and then by concaving the outer surface 3, as shown, two practically cutting edges 20 and 21 (see Fig. 2) result. If, therefore, internal pressure against the depressed head expands the periphery and the driving downward of hoop 22 contracts the staves, which would certainly happen, the edges 20 and 21 are pressed into the bottoms of the recesses, and the greater the pressure the tighter the joint, which may or may not be reinforced by calking.

The operation is briefly as set out above. The central removable portion is applied by passing its cylindrical part through the open area in the head proper in such manner that the clamping-blocks 10, 11, and 12 pass between the blocks 6, 7, and 8. A partial rotation of the central portion brings the blocks into engagement and subjects the packing 14 to more or less pressure in the ordinary way.

I am aware that rotary-clamp barrel-closures consisting of what might be termed "fixed" head portions proper and "removable" central portions have been constructed, and I do not claim those features broadly.

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. In a rotary-clamp barrel-closure, the combination of a removable central portion having a depending cylindrical part provided with inclined clamping-blocks, and a head portion proper having corresponding clamping-blocks and a depressed flange-like part terminating inwardly in a circular rim about an open area, the said flange-like part being bounded outwardly by a tapering periphery, substantially as described.

2. In a rotary-clamp barrel-closure, the combination of a removable central portion having a depending cylindrical part provided with inclined clamping-blocks, and a head portion proper having corresponding clamping-blocks and a depressed flange-like part terminating inwardly in a circular rim about an open area, the said flange-like part being bounded outwardly by a tapering periphery, said periphery having a concave exterior surface, substantially as described.

3. In a rotary-clamp barrel-closure, the combination of a removable central portion having a depending cylindrical part provided with inclined clamping-blocks and suitable packing, and a head portion proper having corresponding clamping-blocks and a depressed flange-like part terminating inwardly in a rim 5 possessing the flat bearing-circle 15 for packing, the said flange-like part being bounded outwardly by a tapering periphery, said periphery having a concave exterior surface, substantially as described.

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

JAMES FLEMING.

Witnesses:
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