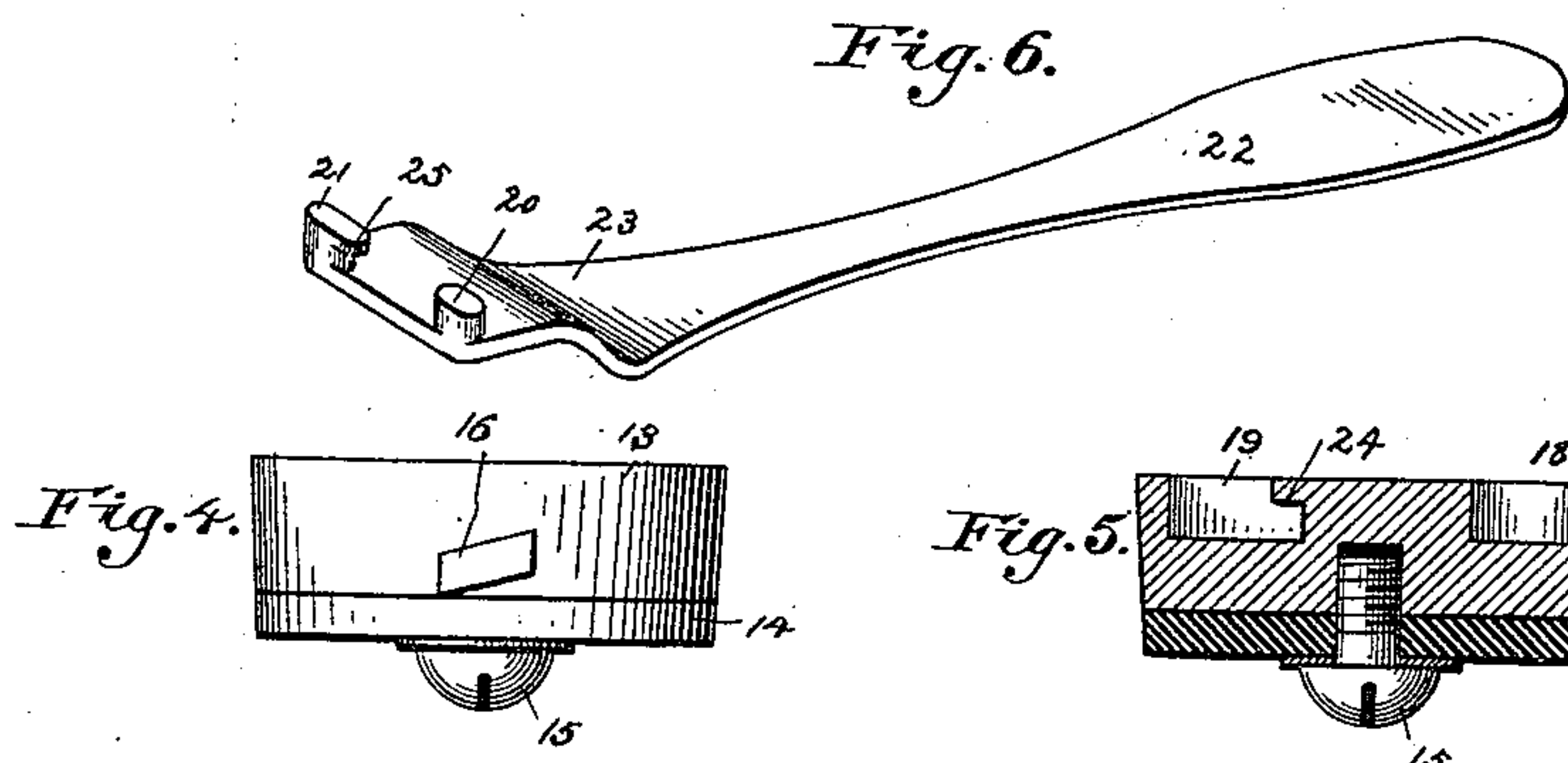
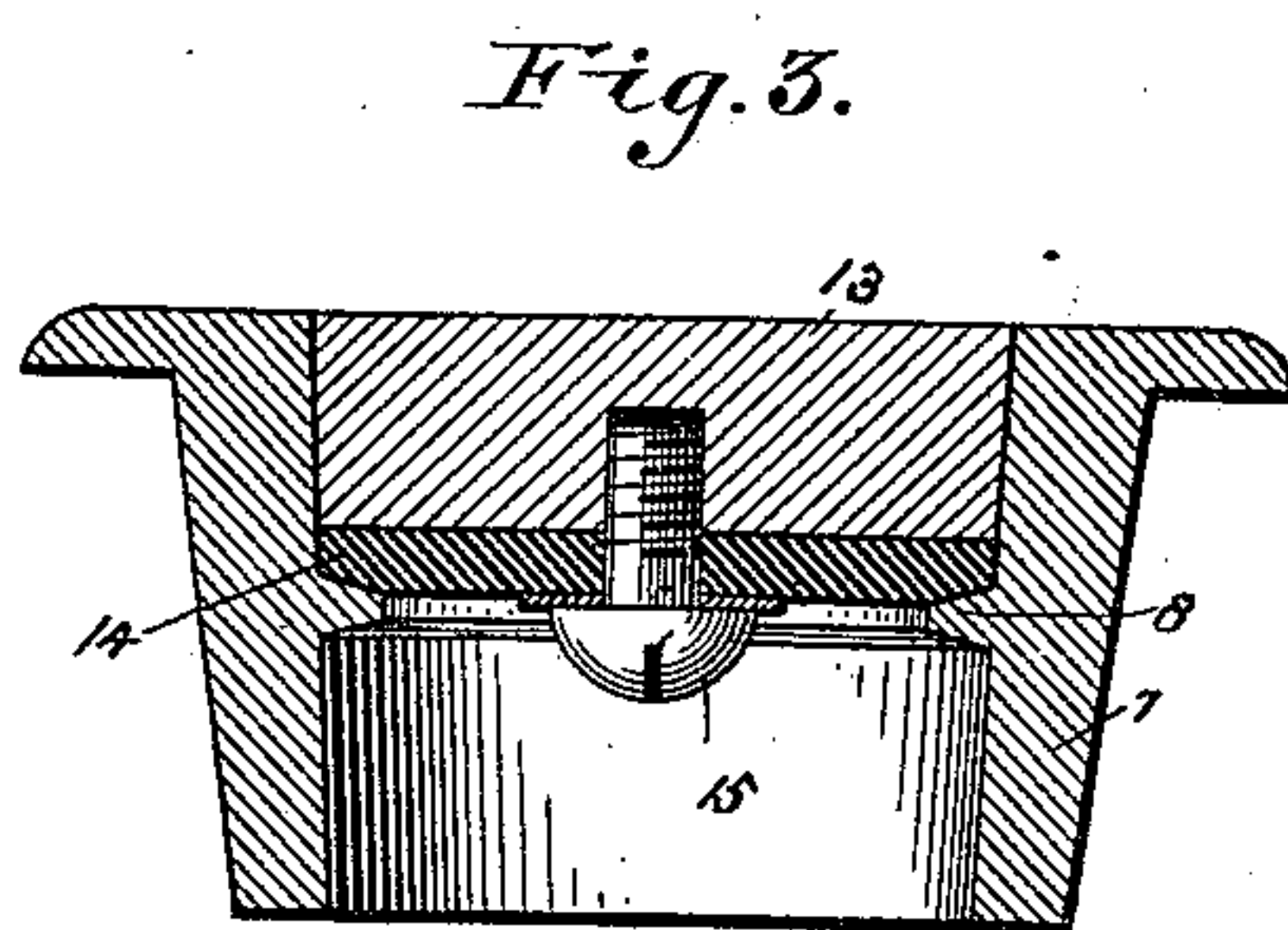
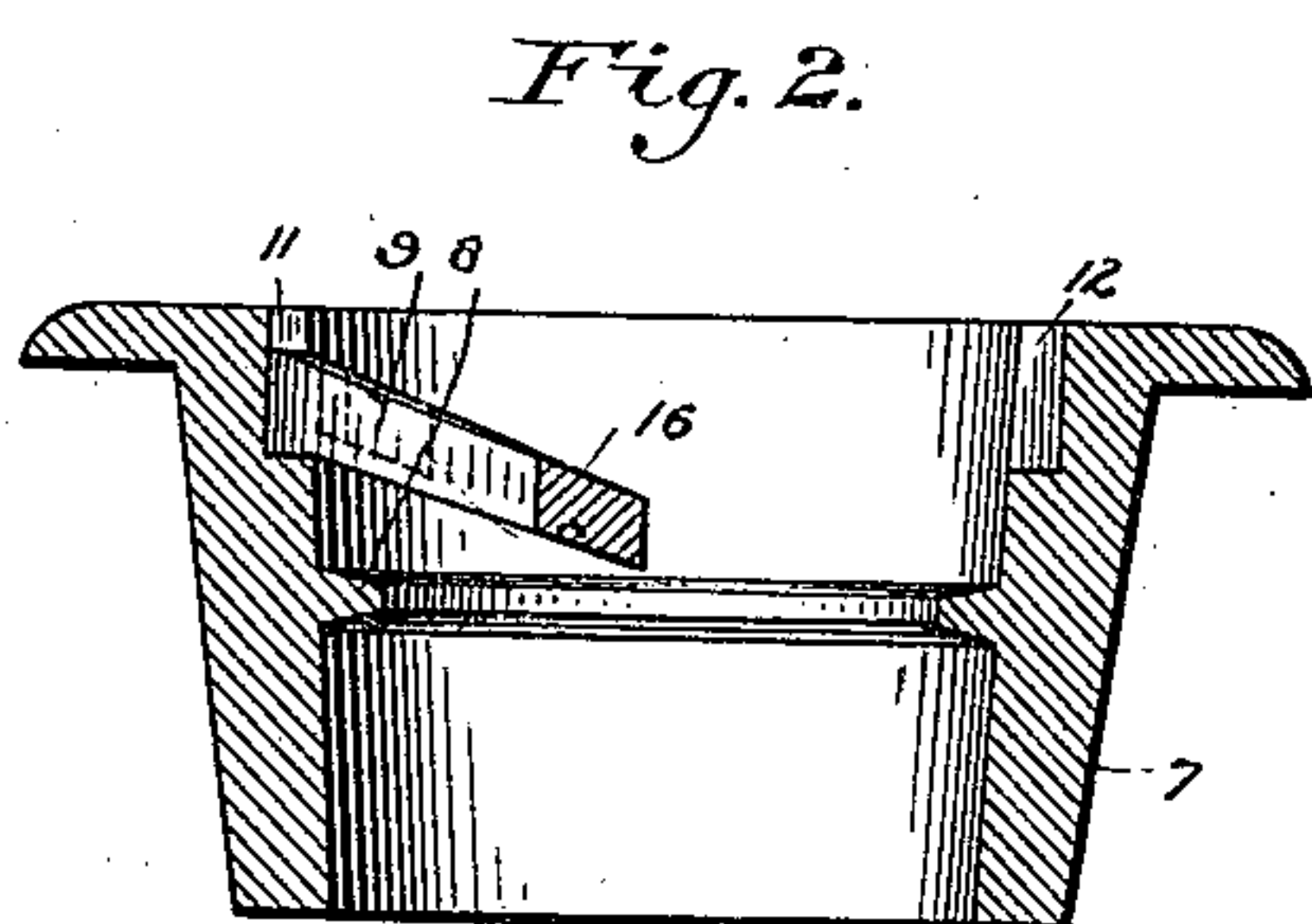
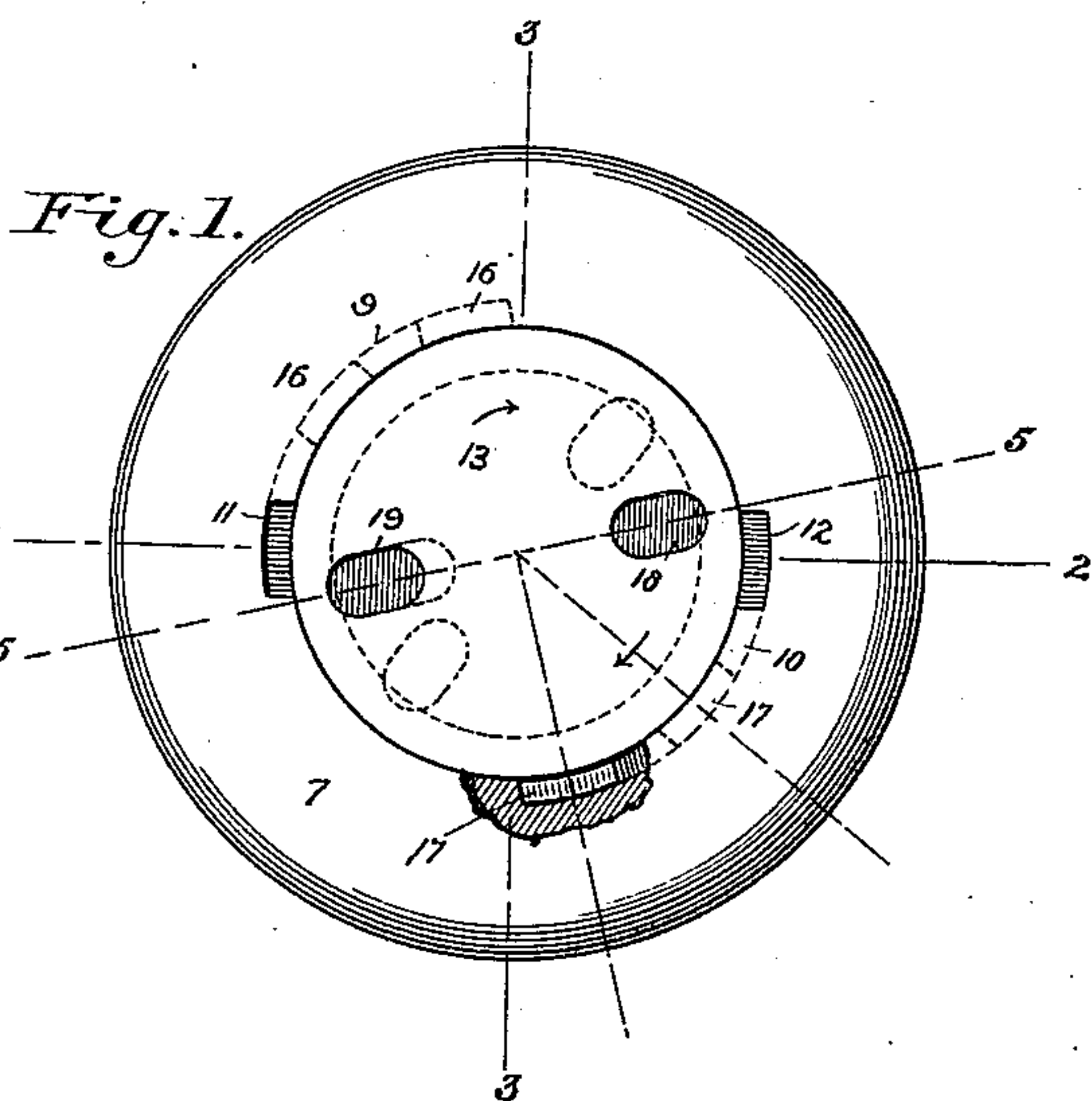


(No Model.)

W. E. DELEHANTY.
BUNG AND BUSHING.

No. 438,801.

Patented Oct. 21, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

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BUNG AND BUSHING.

SPECIFICATION forming part of Letters Patent No. 438,801, dated October 21, 1890.

Application filed February 6, 1890. Serial No. 339,431. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. DELEHANTY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Bungs and Bushings; and I do hereby 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.

My invention relates to certain new and useful improvements in bungs and bushings for beer-casks and other similar receptacles for the storage and preservation of liquids; and it consists in the construction and arrangement of parts hereinafter described, and particularly pointed out in the claims, whereby the bung may be securely interlocked and held within the bushing so as to hermetically seal the cask against leakage, and whereby said bung may be partially unlocked at such time as it is desired to vent the cask and without liability of being driven from the bushing during the venting operation.

My invention also provides means for having the bung flush with the rim of the bushing and without projecting parts above said rim, so that no space is left above the bung and within the bushing for the accumulation of dirt or the like, and no opportunity is afforded for the bung to be accidentally started from the locked position by coming in contact with objects that would be liable to turn or loosen it, while at the same time one of the wrench-engaging openings is so formed as to permit the bung being readily withdrawn from the bushing when unlocked, and by means of the operating-wrench itself.

My invention also comprises the attachment of the compressible washer or gasket to the under surface of the bung and over the entire extent of said surface, so that it may be connected to the bung by a single central screw, and will be withdrawn at the same time with the bung so as not to adhere to its seat when the bung is withdrawn or when the bung is partially unlocked for venting purposes.

In the accompanying drawings, illustrative of my invention, Figure 1 represents a plan view of a bung and bushing embodying my

improvements and indicates the adjustment of the bung when in the locked position, or when in the venting position, a portion of the bushing being shown as broken away so as to more fully illustrate the locking means. Fig. 2 represents a section of the bushing, taken on a plane indicated by the line 2 2 of Fig. 1, and also shows the position of the locking projection of the bung when in the locked and when in the venting adjustment. Fig. 3 represents a section of the bushing and bung, taken on a plane indicated by the line 3 3 of Fig. 1. Fig. 4 represents a side elevation of the bung. Fig. 5 represents a section of the bung, taken on a plane indicated by the line 5 5 of Fig. 1; and Fig. 6 represents in perspective a bottom view of the operating wrench.

Similar numerals of reference indicate similar parts throughout the several views.

Referring to the drawings, 7 indicates a metallic bushing, preferably of malleable iron and adapted to be driven in the usual manner into the bung-hole of a cask or similar liquid-receptacle. On its inner surface the bushing 7 is provided with an annular projection 8, serving as a seat for the bung washer or gasket.

Within the interior of the bushing 7 are formed the oppositely-disposed grooves 9 10, said grooves tapering gradually from their lowest points upward and gradually increasing in height from said lowest points. At their highest points the inclined grooves 9 10 connect with the vertical grooves 11 12, respectively, as shown. Within the bore of the bushing 7 fits the metallic bung 13, the surfaces of contact of both bushing and bung having, preferably, a slight taper, as indicated. Upon the lower surface of the metallic bung is fitted a compressible gasket, consisting of a disk 14 of rubber, leather, or the like, having a central perforation, through which passes a screw 15, engaging with a screw-threaded recess in the bung, thereby connecting said washer or gasket to the bung in a simple and effective manner, and so that it will move with the bung when the latter is withdrawn or partially withdrawn from the bushing. Immediately above the washer and at the lower part of the bung are located the inclined lugs or projections 16 17 of width

corresponding to the width of the vertical grooves 11 12, and of such dimensions as to fill substantially the lower part of the tapering grooves 9 10 when the bung is in the locked position, but so as to leave a venting-space between the lower edges of said lugs and the lower surface of the inclined grooves when the bung is in the venting position, as will more fully appear on reference to Fig. 2.

In the upper surface of the bung are made recesses 18 19 for the reception of the projections 20 21 of an operating-wrench, whose handle 22 has a bend 23 therein so as to raise the said handle above the level of the barrel-head when inserting or removing the bung, thereby enabling the operation to be performed with facility. The recess 19 is provided with a prolongation or continuation 24, corresponding to a similar projection 25 upon the lug 21 of the wrench.

The operation of my invention will be clearly apparent from the construction and arrangement of parts shown and described. The bushing 7 being driven into the bung-hole of the cask in the usual manner, the bung is inserted within said bushing by bringing the lugs 16 17 directly over the vertical grooves 11 12 and dropping the bung within the bushing so that said lugs will enter the inclined grooves 9 10. The wrench 22 is then used for locking the bung within the bushing, and this is effected by first engaging the lug 21 within the recess 19, thereby permitting the projection 25 to slip beneath the prolongation 24 of said recess, whereupon the lug 20 can enter the recess 18. The wrench being thus engaged with the bung, the latter is turned in the direction indicated by the arrows in Fig. 1 and until the projections 16 17 reach the lowest portions of the inclined grooves 9 10. This operation draws the bung down within the bushing until its upper surface is flush with said bushing, and forces the disk washer or gasket 14 firmly down upon its seat 8, so as to make a water-tight and gas tight joint. The bung in this locked position being flush with the rim of the bushing, there is no opportunity afforded for the accumulation of dirt within the bushing, which would be objectionable. There being, moreover, no projecting parts of the bung beyond the bushing, there is no liability of the bung being accidentally started or loosened by striking against outside objects. It will be noted, as hereinbefore set forth, that when in the locked position the lugs 16 17 occupy substantially the whole capacity of the lower portion of the grooves 9 10; but that as soon as the said lugs recede from the locked position a space is left between them and the lower portion or surface of said grooves. By means of this construction I am enabled to vent the cask without removing the bung entirely from the bushing, and without danger of having the bung blown out by the confined gases within the cask during the venting operation. To effect this venting, I

reverse the movement of the bung by means of the wrench so as to bring the locking-lugs 16 17 into the position indicated by dotted lines in Figs. 1 and 2. The bung consequently rises within the bushing, carrying upward with it the attached disk 14 (thereby preventing said disk from sticking to its seat 8) until the disk rises sufficiently to put the lower parts of the grooves 9 10 in communication with the gas-space of the cask, whereupon the gas may escape through said grooves and past the lugs 16 17, and finally out through vertical grooves 11 12. During this venting operation, however, the bung cannot be taken out of the bushing by the pressure of the gases, as it is still held against such outward movement by reason of the engagement of its lugs with the inclined grooves. When it is desired to remove the bung entirely from the bushing, the bung is returned by means of the wrench to its original position when being inserted, and the bung may thereupon be lifted out of the bushing by means of the wrench itself, this being accomplished by means of the projection 25 engaging with the prolongation 24 of the recess 19.

It will be understood that I do not restrict myself to any particular means of inserting the bushing within the cask. I have merely shown a bushing adapted to be driven into the cask as an illustration of a convenient form of bushing to which my invention may be applied.

Having thus described my invention, what I claim is—

1. The combination, with a bushing having inclined grooves upon its inner surface, said grooves being enlarged or tapered from their lowest portion upward, of a bung having projections interlocking with said inclined grooves and corresponding in size to those portions of the grooves occupied by them when in the locked position, whereby the bung may be partially unlocked so as to vent the cask through said inclined grooves, substantially as described.

2. The combination, with a bushing, of a bung interlocking therewith, said bushing being provided with inclined grooves and an internal annular shoulder, and said bung being provided with projections for engaging the grooves, and a disk gasket or washer permanently secured to its under side, said bung being flush with the bushing when in its locked position, and having recesses in its face for the reception of corresponding projections of a wrench, substantially as described.

3. The combination, with a bushing provided with an interior annular seat and with inclined tapering grooves, of a bung having projections of a size fitting the lowest portions of said grooves, and having a gasket or washer secured to its under surface, said bung being flush with the bushing when in the locked position, substantially as described.

4. The combination, with a bushing provided with an interior annular seat and with

inclined tapering grooves, of a bung having
projections of a size fitting the lowest por-
tions of said grooves, and having a gasket or
washer secured to its under surface, said bung
5 being flush with the bushing when in the
locked position, and having in its upper sur-
faces wrench-engaging recesses, one of said
recesses having a prolongation, whereby it

may be made to engage with a similar projec-
tion on the wrench, substantially as described. 10

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

WILLIAM E. DELEHANTY.

Witnesses:

FRANCIS B. DELEHANTY,
WM. J. PHILLIPS.