No. 706,884. Patented Aug. 12, 1902.

D. BEEBE.

VALVED BUNG AND CONNECTION FOR BEER BARRELS.

(Application filed Jan. 17, 1902.)

(No Model.)

2 Sheets—Sheet 1.

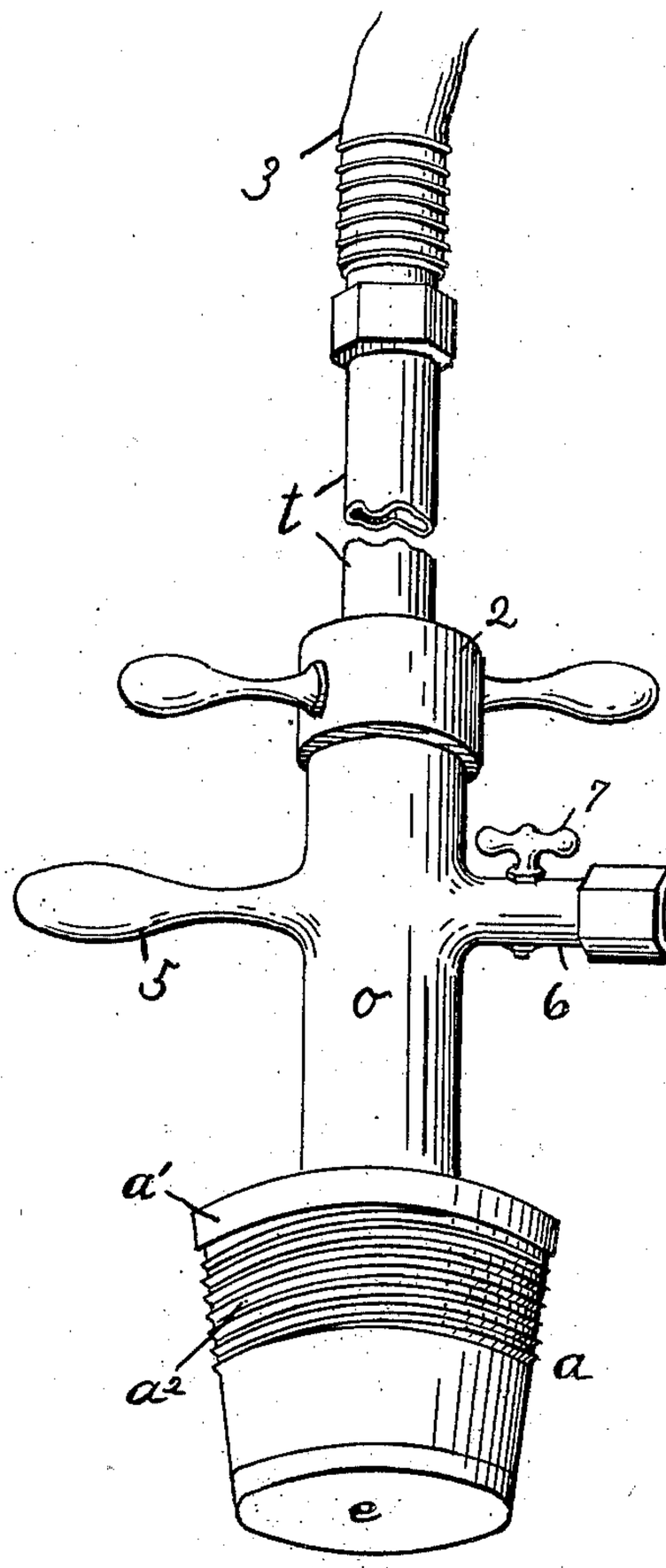

Fig. 1.

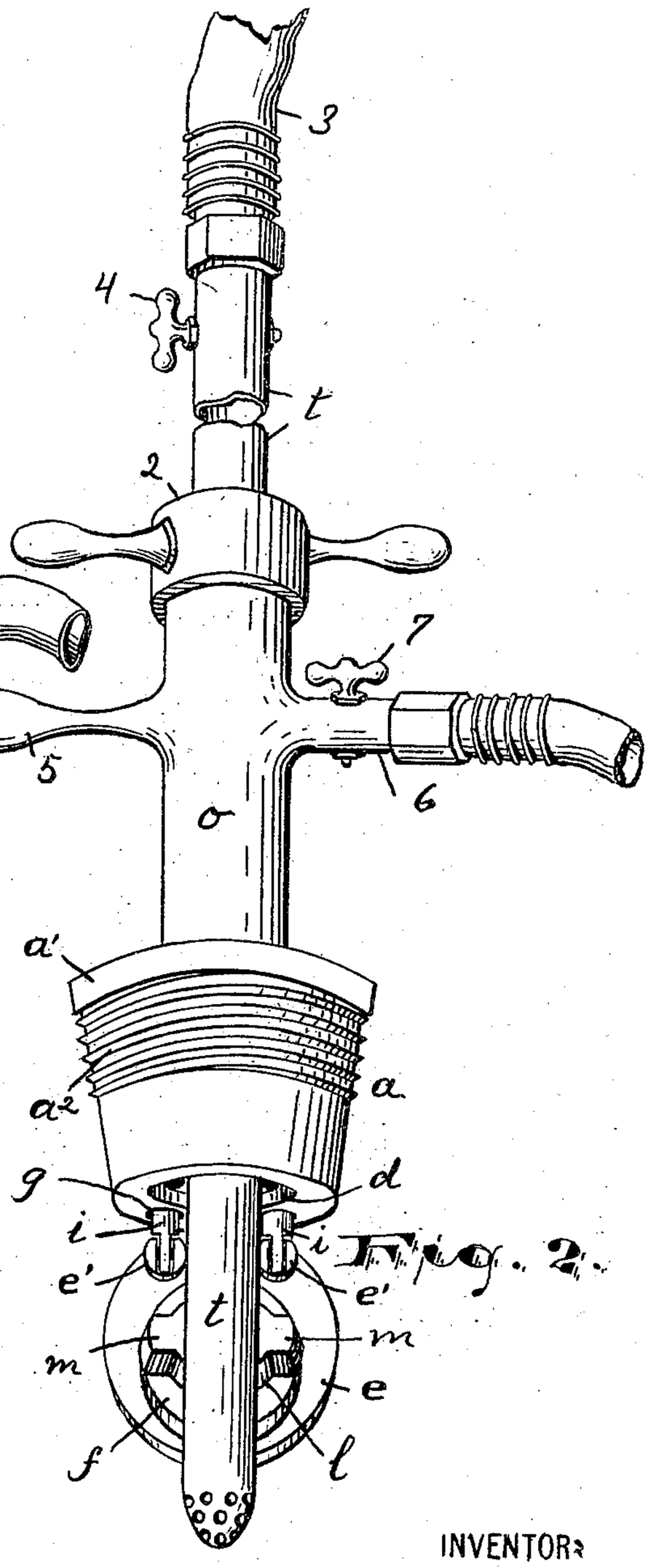

Fig. 2.

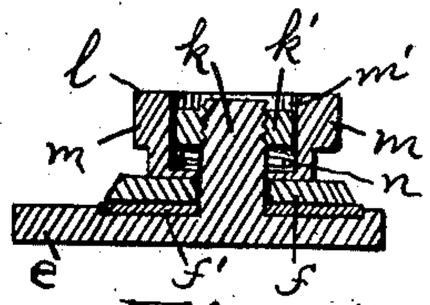

Fig. 7.

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2 Sheets—Sheet 2.

Fig. 6.

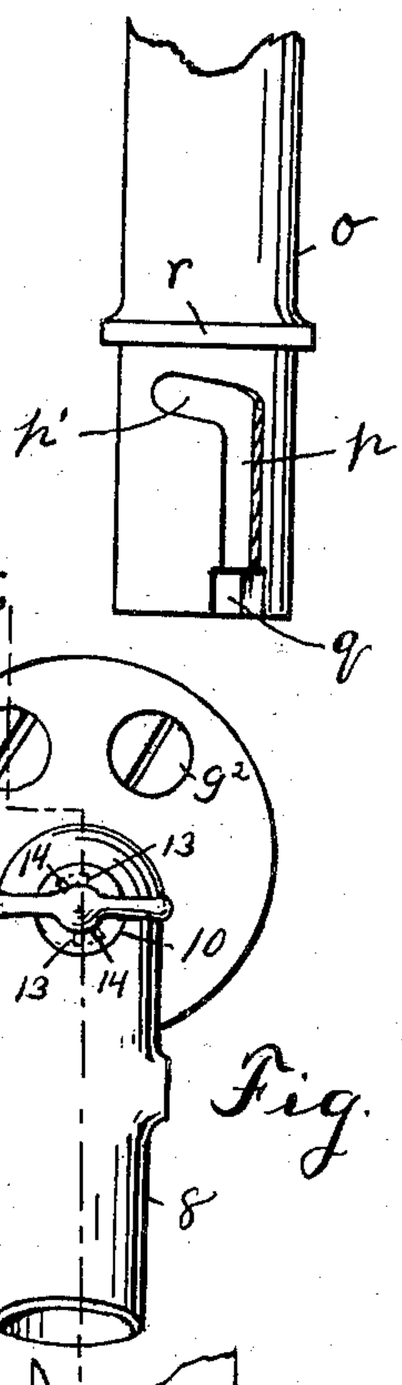

Fig. 4.

Fig. 3.

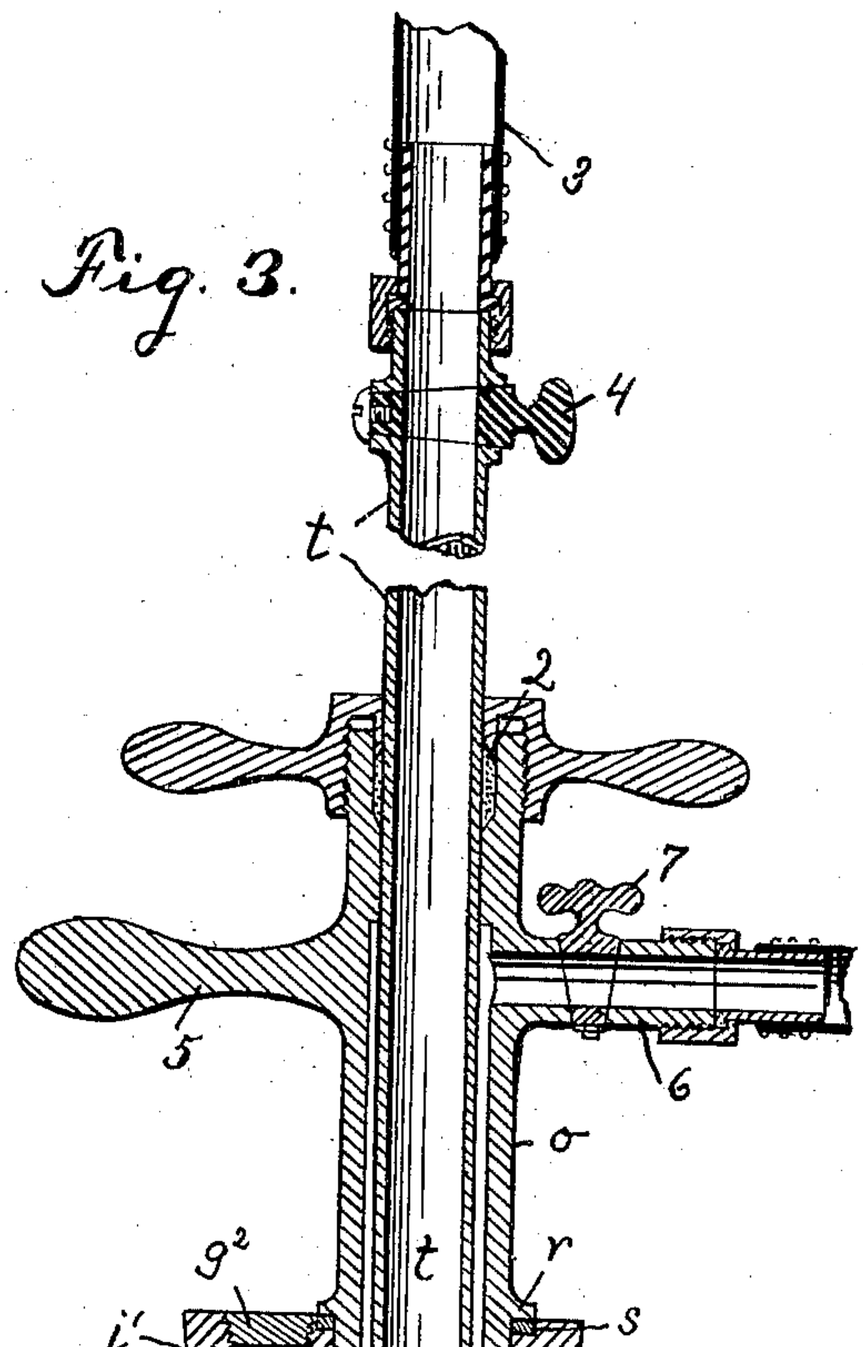

Fig. 5.

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VALVED BUNG AND CONNECTION FOR BEER-BARRELS.

SPECIFICATION forming part of Letters Patent No. 706,884, dated August 12, 1902.

Application filed January 17, 1902. Serial No. 90,146. (No model.)

To all whom it may concern:

Be it known that I, DILLON BEEBE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Valved Bungs and Connections for Beer-Barrels, &c.; 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, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The objects of this invention are to provide a valved bung for service more particularly in connection with packages of beer, ale, or carbonated beverages; to provide locking means for the valve and coöperating key means for operating said locking means; to enable what is termed a "slip-rod," such as commonly used by saloon-keepers, to open the valve after the same has been unlocked by the forcing of said slip-rod through the said bung; to secure impervious closure; to protect the working parts, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved bung for barrels or other packages adapted to contain beer, ale, or other carbonated beverages or liquids under pressure and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like characters of reference indicate corresponding parts in each of the several figures, Figure 1 is a perspective view of my improved bung in connection with certain appliances adapted to coöperate therewith, the said bung being shown closed. Fig. 2 is a similar view showing the bung open with the slip-rod extending therethrough. Fig. 3 is a sectional view taken through the longitudinal axis of the bung and the said appliances. Figs. 4 and 5 are respectively a plan and section on line x, Fig. 4, of a drawing-off faucet in connection with my improved bung. Fig. 6 is a side view showing in detail the end of a key for opening the bung, and Fig. 7 is a detail sectional view showing more clearly the construction of the valve and adjacent parts of the bung.

In said drawings, a indicates the body of the bung, which is provided with a suitable flange a' at its outer end, adapted to limit the insertion of said bung in the package, and has screw-threads a^2 on its exterior, by means of which the body is firmly and securely though removably fastened within the bung-hole of a package, as b. The said body is hollowed or bored out to form a passage therethrough, the said passage being somewhat eccentric to the center axis of the body to permit or provide space at one side for certain spring-chambers in which are arranged hinge-rods and springs for the cap or valve-carrier, hereinafter referred to. Near the outer end of the said passage the walls of the bung-body are provided with lugs a^4 at opposite sides thereof, and at the inner end of said bung-body the same is provided with an outwardly-facing valve-seat d, and a little in from said valve-seat the sides of the passage are provided with flanges c, which extend partly around said passage in line with one another, but have their ends separated or lying apart to form gaps or openings between said ends and through which the arms of the locking-head of the cap or valve-carrier are adapted to pass in closing the bung. Said flanges are preferably oppositely wedge-shaped in edge view, so that their inner surfaces are inclined and serve to draw the valve on the cap or carrier close against the end seat d of the bung-body when the bung is closed. This secures a tight impervious joint between the said valve and the bung-body, so as to prevent leakage from the package.

The valve-carrier or cap e is a disk or plate adapted to lie flat upon the inner end of the bung-body and be flush with the outer sides thereof at its peripheral edges, and at the center of the inner side of the said cap e is cast or otherwise formed a stud k. The valve proper is disposed flatwise upon the inner face of the carrier or cap e and preferably comprises a disk f of smaller diameter, beveled inwardly toward the bung-body a at its periphery and placed so as to enter the seat d, which is correspondingly beveled to form

therewith a ground joint impervious to water, gas, or the carbonated fluid contents of the package. The valve proper, *f*, may be integral with the carrier *e*, but preferably is an independent piece apertured to receive the stud *k*. Near the extremity of the said stud is arranged a locking-head *l*, having at its periphery opposite arms *m*, adapted to pass through the gaps or openings above referred to between the flanges *c* on the inner walls of the bung-body passage. Between the said locking-head *l* and the nut *k'* above on the stud *k* is arranged upon said stud a spiral spring *n*, said spiral spring and nut both being preferably in a recess *m'*, sunken in the end of the locking-head. The said spring *n* is normally compressed or under tension and acts to take up any wear upon the valve *f*, carrier-plate *e*, or head *l*.

I may under some conditions prefer to countersink the carrier-plate *e* or form an annular recess therein adjacent to the valve-plate proper, into which I may insert a packing-washer *f'*, such as rubber or fiber gasket or the like.

Two hinge-rod chambers *g* are bored through the bung-body parallel to the main passage and at one side thereof, and said chambers are enlarged for a considerable portion of their ends next the outer end of the bung to receive the hinge-rod springs *h*. Through said springs extend the hinge-rods *i*, adapted to slide longitudinally in the chambers *g*, the movement being made positive by means of a head *i'* on each rod above the spring *h*, which head bears on said spring and fits neatly within the chamber, so as to slide positively therein. At their inner extremities the said hinge-rods *i* each provide bearings for a hinge-pin *j*, which serves to join the said hinge-rod to the cap or carrier-plate *e*, the said plate being provided with lugs *e'* to receive the said hinge-pins. The chambers *g* are closed at the outer end of the bung by screw-caps g^2.

It will be understood that when the valve-carrier plate *e* lies flat upon the inner end of the bung-body the lugs *e'* project into the hinge-rod chambers *g*, and the hinge-rods are forcibly retracted in said chambers by the spiral springs *h* to throw the plate *e* against its seat in position to be locked. When the valve-carrier or cap is pushed open, as hereinafter described, the hinge-rods *i* are partially withdrawn and the springs *h* compressed, as in Fig. 5. It will be noted that normally the inner ends of the chambers *g* are closed by the valve-carrier plate *e*, and, furthermore, that the said plate or cap covers the entire inner end of the bung, effectually covering the same when in closed position and protecting the valve and operating parts of the bung. This is of especial importance because of the practice of "pitching" barrels and casks, in which operation the valve and also the locking device and hinge-rods, &c., would all become covered and gummed over with pitch if not protected, so that their working would be impaired or wholly prevented.

The locking-head *l* is adapted to turn upon the stud *k* when the bung is closed and is operated by means of a key *o*, the said key being provided at opposite sides with bayonet-slots *p*, (shown in Fig. 6,) adapted to receive the lugs a^4 on the walls of the bung-passage, and at their inner ends with notches or recesses *q*, adapted to receive the arms formed at the opposite sides of the locking-head.

Just outside the bung-body the key has an exterior annular flange or shoulder *r*, adapted to overlie a washer or packing *s* around the passage of the bung-body at its outer end, and the bayonet-slots *p* are inclined at their inner ends, as at *p'*, so that upon the insertion of the key *o* and the turning of the same the said key is adapted to make an impervious joint with the outside end of the bung-body and at the same time unlock the valve-carrier *e* at the inner end or bring the arms of its locking-head *l* into coincidence with the gaps between the flanges *c*.

The key *o* is preferably tubular or hollow and adapted to receive the usual tubular slip-rod *t*, which when pushed in after the bung has been unlocked abuts against the inner side of the hinged cap or valve-carrier *e* and forces the same open, as shown in Fig. 2. Said slip-rod slides through a stuffing or packing 2 at the outer end of the key and is, as usual, smaller than the bore of the key to provide a vent-space around itself. Its inner end has strainer-perforations as may be convenient, and its outer extremity may be coupled to an ordinary flexible hose 3 or the like and is provided with a stop-cock 4, which when open allows the outflow or inflow of liquid or fluid, as may be desired.

The key may be provided with hand projections 5 6 to facilitate turning, one of which, as 6, may be and preferably is tubular and communicating with the passage or bore of the key to serve as a vent or to supply the package with an additional gas or air pressure, having also a stop-cock 7, as shown in Figs. 1 and 2.

The exact devices carried by the key *o* for securing the flow of liquor are not material to my invention, and instead of the filling or drawing means just described the outer portion of the key may take the form of a drawing-off faucet, as in Figs. 4 and 5. Here the outer end of the tubular key *o'* is bent to form a nozzle 8, provided with a stop-cock 9. The slip-rod *t'*, which is here solid, extends longitudinally through the main straight portion of the key *o'*, entering through a stuffing-box 10 at the bend of the same. Near the inner end of the key an interior cross-piece 11 provides a slideway or bearing for the rod, and the extreme inner end of said rod is rounded, as at 12, to impinge against the hinged cap or valve-carrier in opening it. Lugs 13 13 on the rod outside the key may be provided to

enter slots 14 in the outer end of the stuffing-box to hold the slip-rod in innermost position.

I am aware that various modifications and detail changes of construction may be employed without departing from the spirit and scope of this invention, and I do not wish to be understood as limiting myself to the several positive terms used in describing the invention as shown in the drawings except as the state of the art may require.

Having thus described the invention, what I claim as new is—

1. The combination with a bung having a valve and means for positively locking said valve against opening, of a key adapted to engage said locking means to unlock the same, and a slip-rod adapted to enter through the said key and open the valve.

2. The combination of a hollow bung-body, an automatically-closing valve at the inner end thereof, means at the inner side of said valve, for positively locking the valve in closed position, a rotary key adapted to operate said locking means and a reciprocating slip-rod adapted to push the valve open, said key and slip-rod being independently operable.

3. The combination with a bung-body, an automatic-closing valve thereon, and means for positively locking said valve when closed, of a tubular key adapted to unlock said valve, and a slip-rod adapted to be thrust through said key and bung-body to open the valve.

4. In a bung, a bung-body having at its inner end a swinging cap or valve-carrier, a valve and a locking device both arranged upon the side of said cap next the bung-body, said valve being adapted to make an impervious joint with the bung-body when the cap is closed and the locking device to project into said body, and means for operating said locking means from within the bung-body to lock the cap or carrier-plate to the bung-body.

5. A bung comprising a hollow body portion adapted to be permanently seated in a barrel and temporarily receive a flow device, a hinged cap or gate at the inner end of said body, a valve carried by said cap adapted to imperviously close the inner end of the bung, and locking means to engage the body carried on the inner face of said gate and adapted to be operated by the flow device.

6. The herein-described tubular key for operating a valved bung and entering into communication with the package, said key having back from its end an exterior annular flange adapted to engage the top of the bung, and having in its end edges notches or recesses to serve as a wrench, and in its sides having slots or grooves extending from its end longitudinally toward the said flanges and then turning and extending circumferentially and obliquely toward said flange.

7. The herein-described key for a valved bung having an interior locking-head with radial arms, said key comprising a tubular body portion adapted to enter the bung and having in its end edges notches or recesses adapted to receive the arms of the locking-head, an exterior shoulder on the key back from its said notched end, and the outer walls of the key having between said shoulder and notched end bayonet-joint slots or grooves therein whose inner end portions are circumferentially inclined.

8. A bung comprising a body portion having a passage therethrough and providing at inner end a valve-seat lying in from the end of the body, and opposite integral flanges projecting from the interior wall of said passage back of said valve-seat, a cap or valve-carrier adapted to automatically close against the inner end of the bung-body, a valve upon said cap or carrier to fit the valve-seat, and locking means carried by the cap or valve-carrier above said valve and adapted to engage the said flanges on the bung-body.

9. A bung comprising a body portion having a passage therethrough and providing at its inner end a valve-seat, a cap or valve-carrier adapted to automatically close against the inner end of the bung-body, a valve carried on said cap or carrier to fit the valve-seat on the body, and locking means carried by said cap or carrier above the valve and adapted to engage the bung-body.

10. A bung comprising a body portion having a passage therethrough providing at the inner end of the bung-body a valve-seat, flanges projecting from the interior walls of said passage in from said valve-seat and presenting at their inner sides opposite inclines, a cap or valve-carrier adapted to automatically close against the inner end of the bung-body, a valve on said carrier adapted to fit the said valve-seat in the bung-body, and a locking-head carried by the cap or valve-carrier above the said valve and having arms adapted to be brought by the closing of said cap into position to be turned into engagement with the said flanges on the bung-body.

11. The combination with a bung-body having a longitudinal passage, of a cap adapted to automatically close against the inner end of said body, locking means carried by said cap, coöperating locking means within the bung-passage and adapted to be engaged by the locking means on the cap when said cap is closed, and a key for effecting such engagement.

12. A bung comprising a body portion having a longitudinal passage and a smaller chamber substantially parallel thereto and having a reduced opening at the inner end of the bung, a cap adapted to lie against the inner end of the bung-body and close the said flow-passage, a rod or plunger lying in the smaller chamber of the bung-body and having one end hinged to said cap and the other provided with a stop, and a spiral spring upon said rod or plunger between its stop and the reduced opening of the chamber at the inner end of the bung.

13. A bung comprising a body portion having a longitudinal passage and two smaller

chambers adjacent thereto, a cap adapted to lie over the inner end of the bung-body and close the said passage, a rod or plunger in each of said chambers and pivotally hinged at one end to said cap, and a retracting-spring arranged on each rod within its chamber between a stop on the walls thereof at the inner end of the bung-body and a stop on the opposite end of the rod, whereby the cap is hinged to the bung-body at two points and held against edgewise twisting out of alinement therewith.

14. In a valved bung, the combination with a body having a longitudinal passage and adjacent recesses or chambers, of a cap adapted to lie against the inner end of the bung and close said passage, and hinge means pivoted to the inner face of said cap and adapted to lie in said recesses or chambers in the bung-body, whereby the said cap when closed covers not only the longitudinal passage but also the means of hinging itself to the bung-body.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of January, 1902.

DILLON BEEBE.

Witnesses:
CHARLES H. PELL,
C. B. PITNEY.