

D.L. & R. Bollerman, Bottle Lock.

No. 92,782.

Patented July 20, 1869.

Fig. 1.

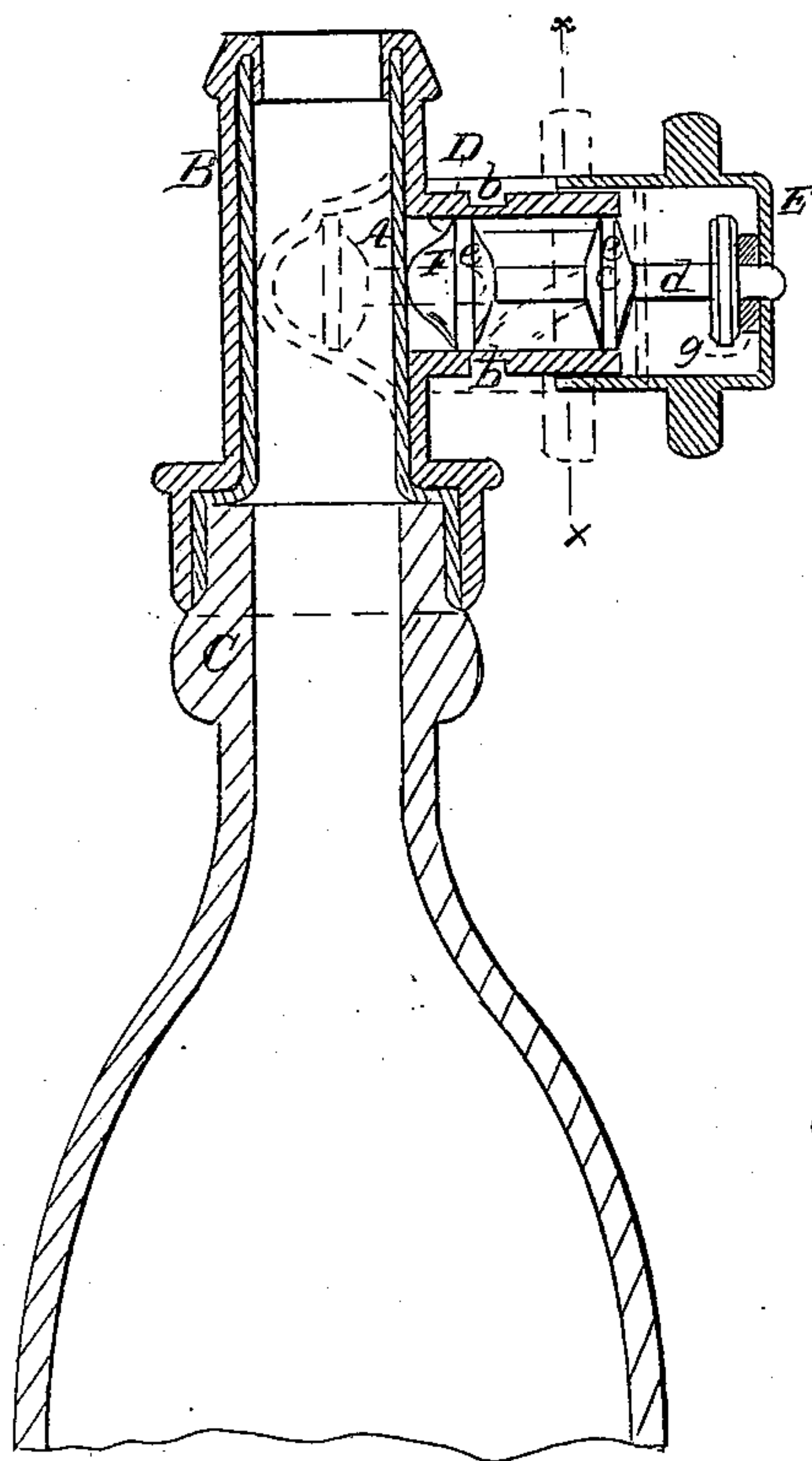


Fig. 4.

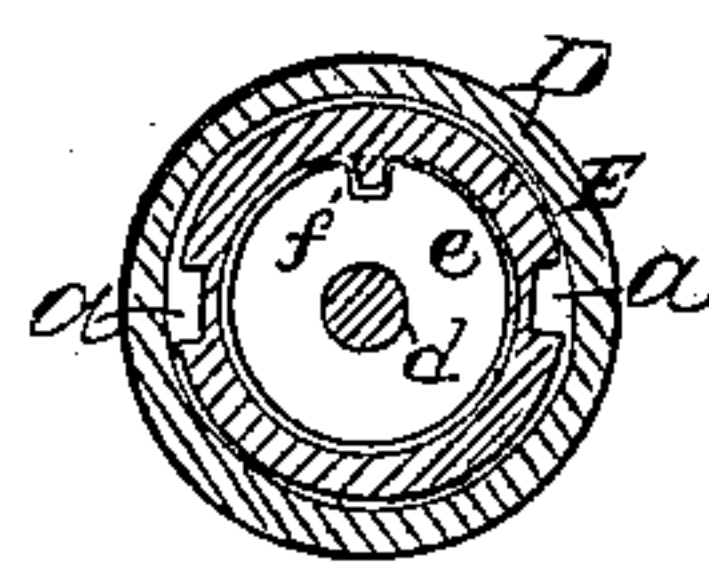


Fig. 2.

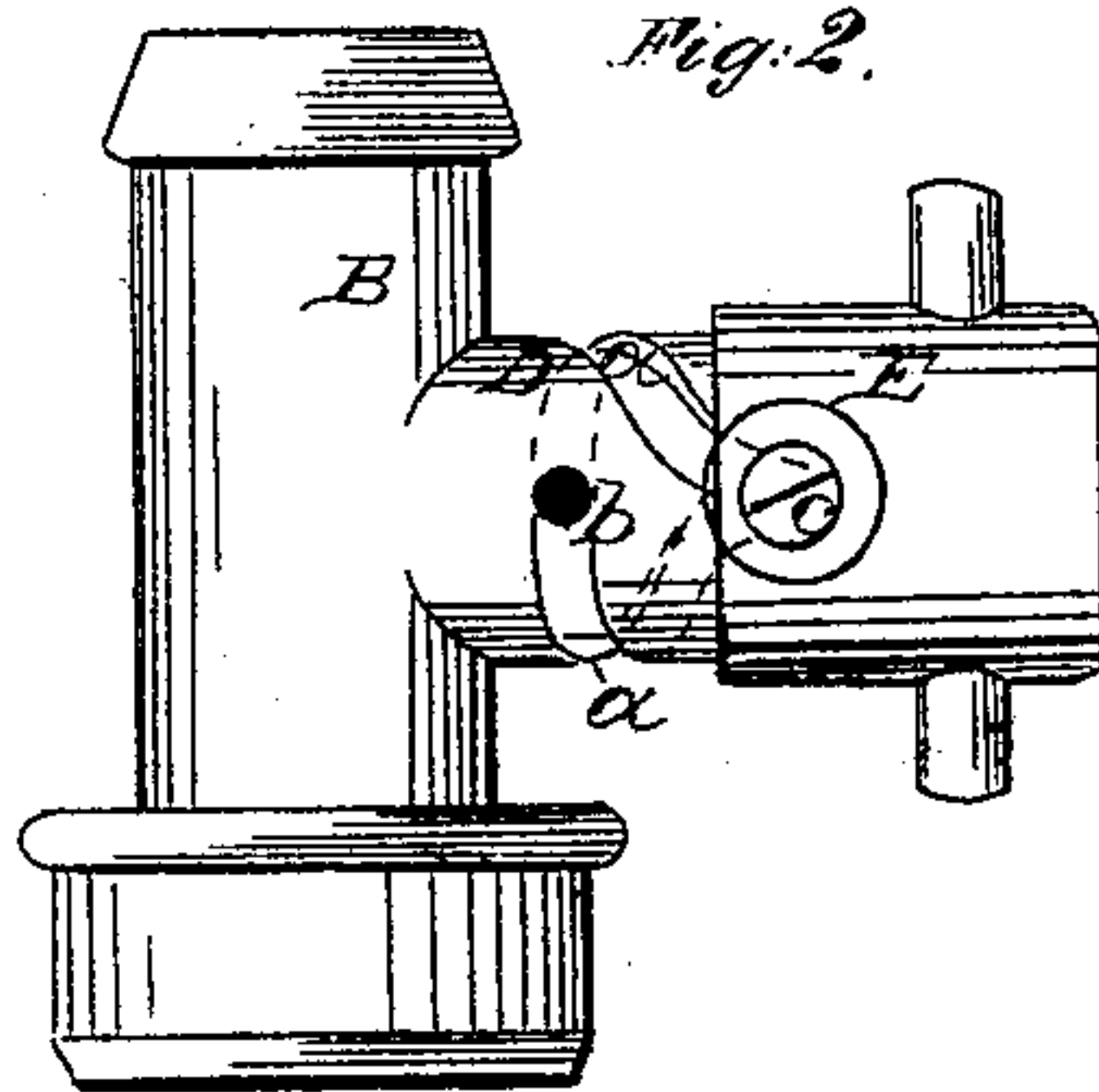
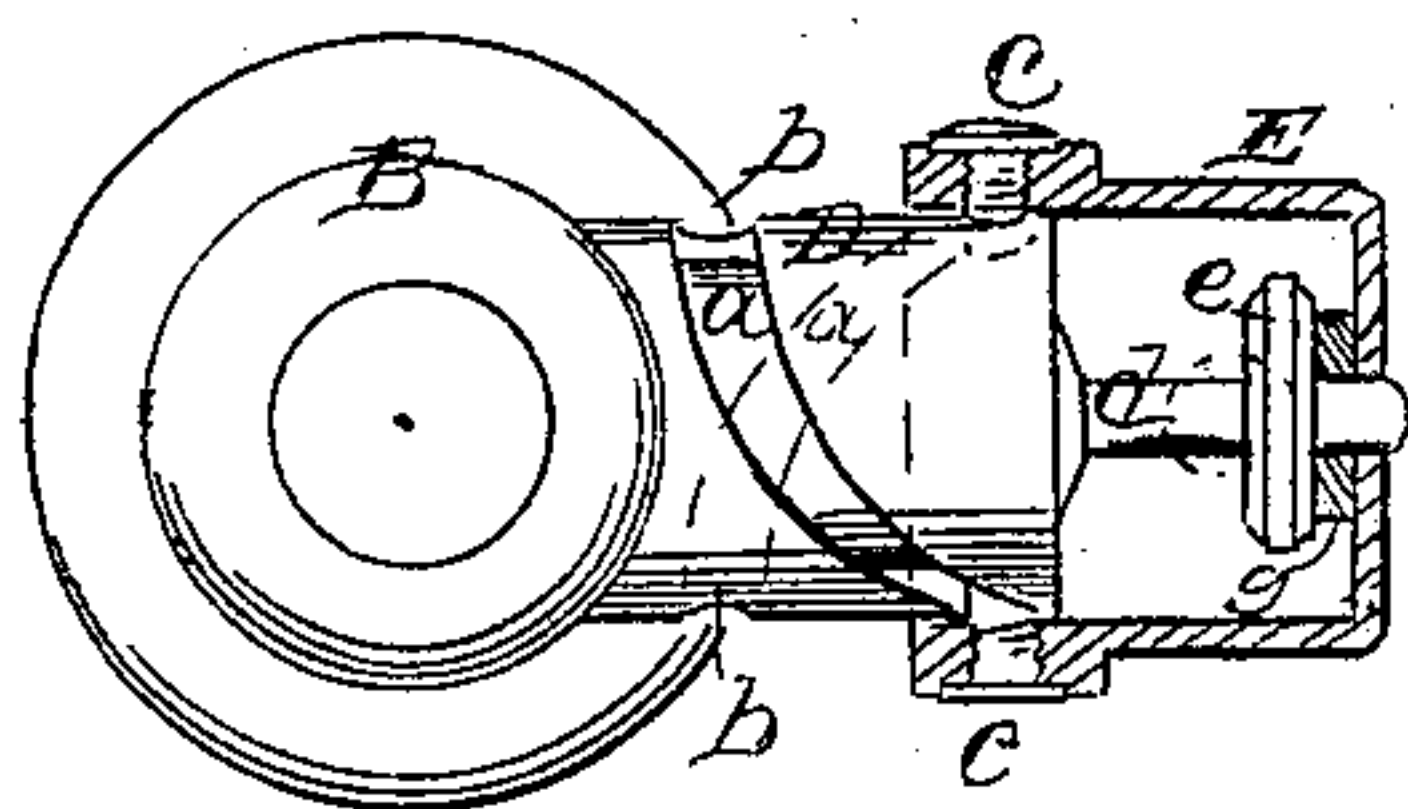


Fig. 3.



Witnesses:

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DOMINICUS L. BOLLERMAN AND RICHARD BOLLERMAN, OF NEW YORK, N. Y.

Letters Patent No. 92,782, dated July 20, 1869.

IMPROVEMENT IN DEVICE FOR CLOSING BOTTLES AND PIPES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, DOMINICUS L. BOLLERMAN and RICHARD BOLLERMAN, both of the city, county, and State of New York, have invented a new and useful Improvement on Devices for Closing Bottles, Pipes, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figure 1 represents a longitudinal section of our improved device, as constructed to form a bottle-stopper, and as applied to the neck or mouth of a bottle;

Figure 2, a longitudinal exterior view of the same;

Figure 3, a partly sectional view, at right angles to figs. 1 and 2; and

Figure 4, a transverse section, through the line *x x* in fig. 1.

Similar letters of reference indicate corresponding parts.

Our improvement has reference to devices for closing bottles and pipes, or other vessels and conduits, in which the closing-action is effected by pressure applied to a flexible and elastic tube, in such manner as to compress or indent the same, so that its interior surfaces are brought in contact.

The invention, by a suitable construction or disposition of its parts, is applicable either as a bottle-stopper, an intermediate stop to a pipe or conduit, or as a faucet, and may be used as a means for stopping the flow of various fluids, including atmospheric air.

It will suffice here, however, to describe the same as constructed to form a bottle-stopper.

Said invention consists, in combination with a rubber, or other like flexible and elastic tube, encased by a socket, of certain mechanical devices, having a screw-like character or action, and serving to operate a squeezer or plunger, arranged to play transversely to said tube, through a hole in the socket, for the purpose of closing the tube, in the manner hereinbefore referred to, said parts being so constructed as to establish a lock of the plunger when the tube is closed by it, and so that when released from such lock, the elasticity of the tube serves to throw back the plunger, and to rotate its operating-screw or device gearing therewith, and return the same to the position it occupied prior to being turned, to give the closing-action to the plunger.

Referring to the accompanying drawing—

A represents a piece of rubber, or other suitable flexible and elastic tube, which is encased by a metallic or other hard socket, B, and, thus encased, applied at its one end to the mouth or neck of a bottle, C.

Branching at right angles from this socket B, intermediately of its length, and in open communication with the same through its side, is a tubular projection, D, around the exterior of which inclined

grooves or female-screw threads *a a* are cut, each terminating at its forward end in straight formations *b*.

E is an outside cap, arranged to freely fit the tube D, and carrying projections or screws *c c*, which gear with the female threads *a a*, and thus give to the cap the character of a nut.

Arranged to freely fit the interior of the tube D, is a plunger or squeezer, F, suitably rounded on its forward end, and which may be loosely connected with the cap E, and be guided in a straight course within the tube D, by a central freely-fitting stem or rod, *d*, and disks *e e*, which latter, as well as the squeezer F, may be slotted to fit a feather, *f*, in the tube.

A washer, *g*, may be arranged between the rear disk and back or closed end of the cap, to provide for the adjustment of the forward end of the plunger relatively to the rubber tube A.

From this description it will be seen, that on suitably turning the cap E, it is made, by its gear with the inclined grooves *a a*, to give a forward or advance movement to the plunger F, which forces inward the side of the rubber tube, against which it bears, so as to close said tube, as represented by red lines in fig. 1, and to keep it closed or locked, by reason of the pins *c c* of the cap having entered the straight or locking-formations *b*, at the forward ends of the grooves *a a*.

When it is required to open the device, it is only necessary to slightly turn, in a contrary or back direction, the cap E, so as to release the pins *c c* from the locking-formations *b*, when the elasticity of the rubber tube, and quick character of the grooves *a a*, will cause the plunger, and cap which operates it, to be thrown or worked back, or the same may be assisted by hand, if desired.

By guiding the plunger in a straight course, as described, so that while working with the cap, as regards the longitudinal travel of the latter, it is restrained from turning with it, the wear of the plunger upon the rubber is reduced.

It will be obvious that instead of the plunger or squeezer being operated by a cap, in gear with female threads on a fixed projection from the socket, which contains the rubber tube, an equivalent arrangement or combination of devices may be used, in which the inclined grooves or screw-threads may be upon the longitudinally-travelling portion of the stopper, and the pins or portions fitting said threads be connected with the fixed part of the device.

What is here claimed, and desired to be secured by Letters Patent, is—

The combination of the side tube D, cap E, and sliding plunger F, with the fixed socket B and its flexible lining A, all constructed and arranged as shown and described.

Witnesses:

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