

(No Model.)

F. J. PRIBYL.
BOTTLE STOPPER.

No. 551,999.

Patented Dec. 24, 1895.

Fig. 1.

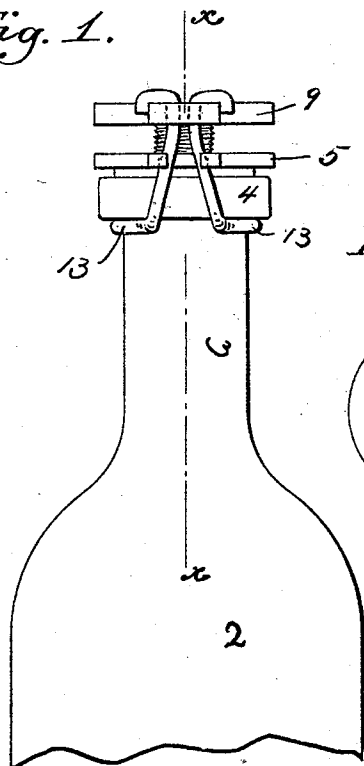


Fig. 2.

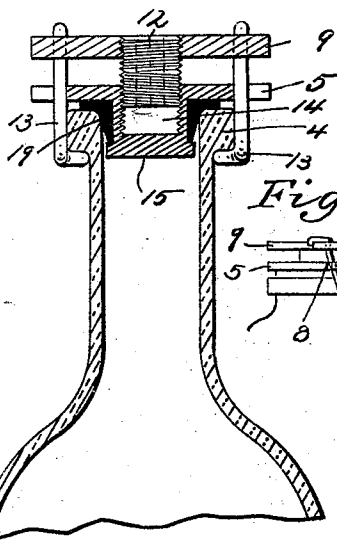


Fig. 3.

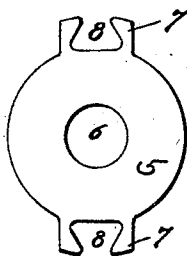


Fig. 8.

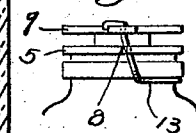


Fig. 4.

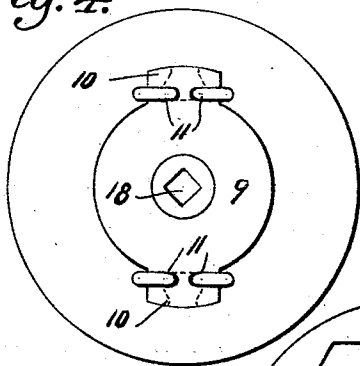


Fig. 5.

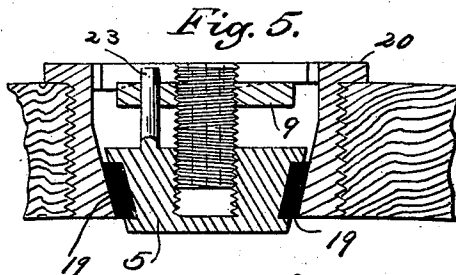


Fig. 6.

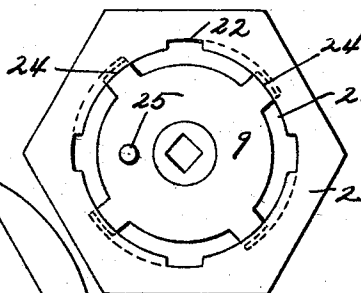
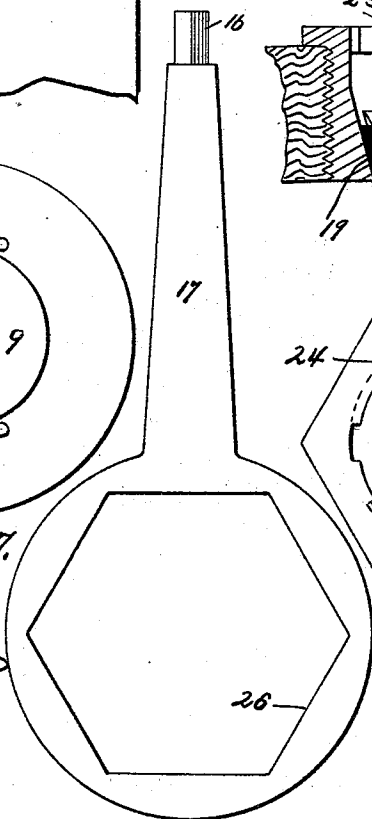


Fig. 7.



WITNESSES:

John H. Deumer
John F. Pribyl

INVENTOR

Francis J. Pribyl
BY Edgar Slater
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANCIS J. PRIBYL, OF HAZLETON, PENNSYLVANIA.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 551,999, dated December 24, 1895.

Application filed March 9, 1895. Serial No. 541,141. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS J. PRIBYL, a citizen of the United States, and a resident of Hazleton, county of Luzerne, and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts in all the figures.

My invention relates to bottle-stoppers, and the object is to provide a stopper, or means for sealing or closing a bottle, which shall be perfectly secure and cannot become displaced or be removed except intentionally, and then only with the assistance of a key or device prepared for the purpose. This object I accomplish by means of the construction disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 represents in elevation a section of a bottle provided with my improvement; Fig. 2, a central vertical section thereof on the line *x x*; Fig. 3, a top plan view of a part of the construction shown in Fig. 1; Fig. 4, a top plan view of the construction shown in Fig. 1; Fig. 5, a central section of my improvement applied to a barrel; Fig. 6, a top plan view thereof; Fig. 7, a key for operating or removing my improved stopper; and Fig. 8, a modification on a small scale, showing my improvement applied to a jar or can.

Referring to the drawings, the numeral 2 designates a bottle provided with the usual neck 3, having an annular enlargement 4, preferably rectangular in cross-section, as shown in Fig. 2.

In carrying out my invention I employ an annular plate 5, having a central opening 6, and two pairs of projecting arms 7, between each pair of which is a cavity or recess substantially triangular in form, as shown at 8; also, a second annular plate 9, preferably of the form shown in Fig. 4, or oblong, provided with side arms or projections 10, preferably provided with perforations 11, formed in said arms, and a central opening; also a bolt 12, having reverse screw-threads on its opposite ends, and spring-clamps 13, which are combined and operate as follows: The

plate 5 is provided with a downward tubular projection 14, provided with a screw-thread on its inner surface and closed by a plug 15. (See Fig. 2.) The central or body portions of the spring-clamps 13 are formed into a semi-circular form and adapted to fit around the neck of the bottle and rest under the annular projection formed thereon, and the ends thereof are carried upward on both sides and passed through the triangular recess 8 in the plate 5, and then through the perforations 11 in the side arms or projections on the plate 9, and then bent or curved outward, as clearly shown in Figs. 1 and 4. The central openings in each of the plates 5 and 9 are screw-threaded, the threads running in opposite directions. When the power-plate 5 is in position the screw-bolt 12 is placed over the opening therein, and the plate 9 is then arranged with its opening over the upper end of the bolt, being held in position by the spring-clamp 13. The bolt 12 is then operated by means of the end 16 of the key 17 operating in a hole 18 in the end of said bolt to bring the plates together or separate them simultaneously, as described.

The under part of the plate 5, and the tubular projection formed thereon, is provided with a suitable packing 19, (shown in heavy dark lines in Fig. 2,) and the stopper is then applied to the bottle by placing the spring-clamp around the neck of the bottle under the rim 4, as shown in Figs. 1 and 2, and then applying the key 17 to the bolt 12, and by turning it in the required direction the plates 5 and 9 will be forced apart, to the utmost limit possible without breaking the bottle, in which position the plate 5, with its inner tube provided with the packing 19, is held firmly in contact with the top and inner surface of the nozzle, and a perfectly safe and secure closure is secured, which can only be removed and the bottle opened by the application of the key to the bolt 12, and turning it in the reverse direction to that required to secure and close the bottle. By doing this, the plates are caused to approach each other, the pressure on the rim 4 ceases and the stopper may be easily removed.

In Fig. 5 I have shown my improved stopper applied to a barrel, keg, or other similar vessel. The numeral 20 designates the usual

casing for a bung employed in such vessels, modified to suit the purposes of my invention. This modification consists of an inner annular flange 21 formed on the surfaces of said casing and provided with recesses or cavities 22 formed at regular intervals therein, and the inner extremity of this casing is preferably conical in form, so as to form a valve-seat, and the plate 5 employed in this connection is much thicker than in the construction hereinbefore described, and also conical in form, so as to form a valve adapted to operate with the valve-seat in the casing referred to. An annular chamber or groove is formed in this valve or plate 5, in which is placed, as in the construction hereinbefore described, a suitable packing 19. This valve is provided centrally in its upper surface with a screw-threaded bore and with an upwardly-extending plug or arm 23, which is designed to enter or pass through the corresponding perforation formed in the top plate 9. This top plate 9 is provided with projections or arms 24, (shown in dotted lines in Fig. 6,) adapted to pass through the corresponding recesses 22 formed in the annular flange 21 of the casing 20 in the operation of inserting the plate 9.

The parts are assembled in the following manner: The plate or valve 5 with its annular ring of packing is first inserted and the screw-bolt 12 is arranged in the opening therein. The plate 9 is then arranged over the other end of the bolt and the bolt is turned until the arms 24 assume the position under the flange 21 shown in Fig. 6. The key 17 is again applied to the screw-threaded bolt 12 by means of the central aperture 18 formed therein, and said bolt is operated in a direction to cause the separation of the plate 9 and the plate or valve 5, in the same manner as that hereinbefore described with reference to Figs. 1 and 2, and in which the same result will be produced, the operation of the screw-bolt being such as to press the plate 9 firmly against the rim or flange 21 on the casing 20 and the plate or valve 5 with its surrounding packing firmly in contact with the valve-seat in the lower part of said casing. In removing this stopper it is only necessary to apply the key 17 and turn the bolt 12 in the reverse direction, when the plate 9 will be turned until the arms 24 thereon will pass through the recesses 22 and the whole device may be removed from the casing 20. The casing 20 may itself be placed in position or removed therefrom by the use of the end 26 of the key 17.

It will thus be seen that while my improved stopper is capable of application to either bottles or barrels and similar vessels, it is at the same time simple in construction, effective in operation, and perfectly adapted to the purposes for which it is intended.

Referring again to the construction shown in Figs. 1, 2, and 3, it will be seen that by reason of the form of the spring-clamps 13 (particularly shown in Fig. 1) the operation of the arm 7 of the plate 5 on said clamp will be

to force the said clamps together when the said plate is forced downward by the screw-bolt 12, and thereby securely hold the same to the neck of the bottle, this operation of the plate 5 in fact constituting not only the chief but the sole means for producing this result. It will also be observed that the upper ends of the spring-clamps 13, instead of passing up through the perforations formed in the arms 10 of the plate 9, may be passed up outside of said arms and curved inwardly, their ends passing down through said perforations, whereby a result would be produced similar to that of the construction shown.

In Fig. 8 I have shown a modification in which my improvement is applied to a jar or can in which but one wire-clamp is employed, and the plates 5 and 9 modified accordingly, the plate 5 being provided with a notch or groove 8 to receive the clamp, and the arm of the top plate 9 with a single perforation through which the upper end of the spring-clamp passes.

Many other modifications of and changes in the construction described may be made without departing from the scope of my invention, and I do not, therefore, limit myself to the exact forms shown; but,

Having described the invention, its construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In a stopper for bottles or other vessels the combination of separable plates, and means for securing them in adjustable connection with the nozzle or discharge orifice of the vessel to be closed, each of said plates being provided centrally with screw threaded openings or bores, in which the screw threads run in opposite directions, and means for forcibly separating said plates and pressing one into or against the discharge orifice of the vessel and closing it, consisting of a plug or bolt having reversed screw threads on its opposite ends adapted to engage with the threads in the central bores of the plates, substantially as shown and described.

2. In a stopper for bottles, the combination of two plates connected by clamps adapted to grasp the neck of a bottle, each of said plates being provided centrally with screw threaded openings or bores in which the screw threads run in opposite directions, and means for forcibly separating said plates and pressing one of them firmly in contact with the nozzle of the bottle and closing the same, consisting of a plug or bolt having reversed screw threads on its opposite ends adapted to engage with the threads in the central bores of the plates substantially as shown and described.

3. A stopper for bottles, consisting of two plates connected and adapted to be attached to the nozzle of a bottle by spring clamps and a reverse screw plug or bolt operating to force the plates apart, and hold one of them in contact with and close the nozzle of the bottle, substantially as shown and described.

4. A stopper for bottles, consisting of two

plates adapted to be connected and attached to the neck of a bottle by spring clamps, in such manner that while the upper one is stationary, the lower one may be moved up and down on the spring clamp, and a reverse screw threaded bolt operating through screw threaded openings in said plates to force the lower plate into contact with the open nozzle and close the same, substantially as shown and described.

5. A stopper for bottles or other vessels, consisting of two plates adapted to be secured to the nozzle or discharge orifice of the bottle or other vessel in such manner that while one of said plates is held stationary, the other may be forced into or against such nozzle or discharge orifice and close the same and a reversed screw bolt passing through each of said plates by which the pressure force is produced, substantially as shown and described.

6. A stopper for bottles, consisting of two plates adapted to be connected and attached to the neck of the bottle by spring clamps in such manner that while the upper one is stationary the lower one may be moved up and down on the spring clamps, and a reverse screw threaded bolt operating through screw threaded openings in said plates to force the lower plate into contact with the open nozzle and close the same, said lower plate being also provided with a tubular extension through or into which the screw threaded bolt passes, said extension being closed by a nut or head 15, substantially as shown and described.

7. The combination, in a bottle stopper, of two plates adapted to be connected and attached to the neck of the bottle by spring clamps in such manner that while the upper one is stationary the lower one may be moved up and down on the spring clamps, each of said plates being provided with central screw-threaded openings, and the lower plate being provided with a tubular extension adapted to enter the neck or nozzle of the bottle, and a reverse screw-threaded bolt operating through the openings in said plates and extending into the said tubular extension on the lower plate to force the lower plate into contact with and close the nozzle of the bottle, substantially as shown and described.

8. In a bottle stopper, the combination of a

plate, as 5, provided with arms, as 7, on the opposite sides thereof, a plate, as 9, provided with side arms or extensions, as 10, and spring clamps, as 13, adapted to grasp the neck of the bottle, and connecting said plates by means of the arms 7 and 10 formed thereon, said plates being also provided centrally thereof with screw threaded openings or apertures, and a reverse screw bolt, as 12, adapted to operate in said opening, substantially as shown and described.

9. The combination, with a bottle, the nozzle of which is provided with an annular rim or enlargement, as 4, of a stopper consisting of a plate, as 5, provided with side arms, as 7, a second plate, as 9, provided with side arms, as 10, spring clamps adapted to grasp the neck of the bottle below the flange or rim 4, and a reverse screw bolt operated through central openings in said plates so as to force one of said plates in contact with the nozzle of the bottle and close the same, at the same time operating to increase the pressure of the clamp upon the neck of the bottle, substantially as shown and described.

10. The combination, with a bottle, the nozzle of which is provided with an annular extension or rim, as 4, of a stopper consisting of a plate, as 5, having side arms, as 7, a second plate, as 9, provided with side arms or extensions as 10, each of said plates being provided with central screw threaded openings and the plate 5 being provided with a tubular extension adapted to enter the neck of the bottle, spring clamps by which said plates are connected and secured to the neck of the bottle, and a reverse screw threaded bolt operating through the central openings in said plates to increase the pressure of the clamps upon the neck of the bottle and force the plate 5 and the tubular extension thereof in contact with the nozzle of the bottle, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 1st day of March, 1895.

FRANCIS J. PRIBYL.

Witnesses:

JOHN F. PRIBYL,
HIRAM E. SUTHERLAND.