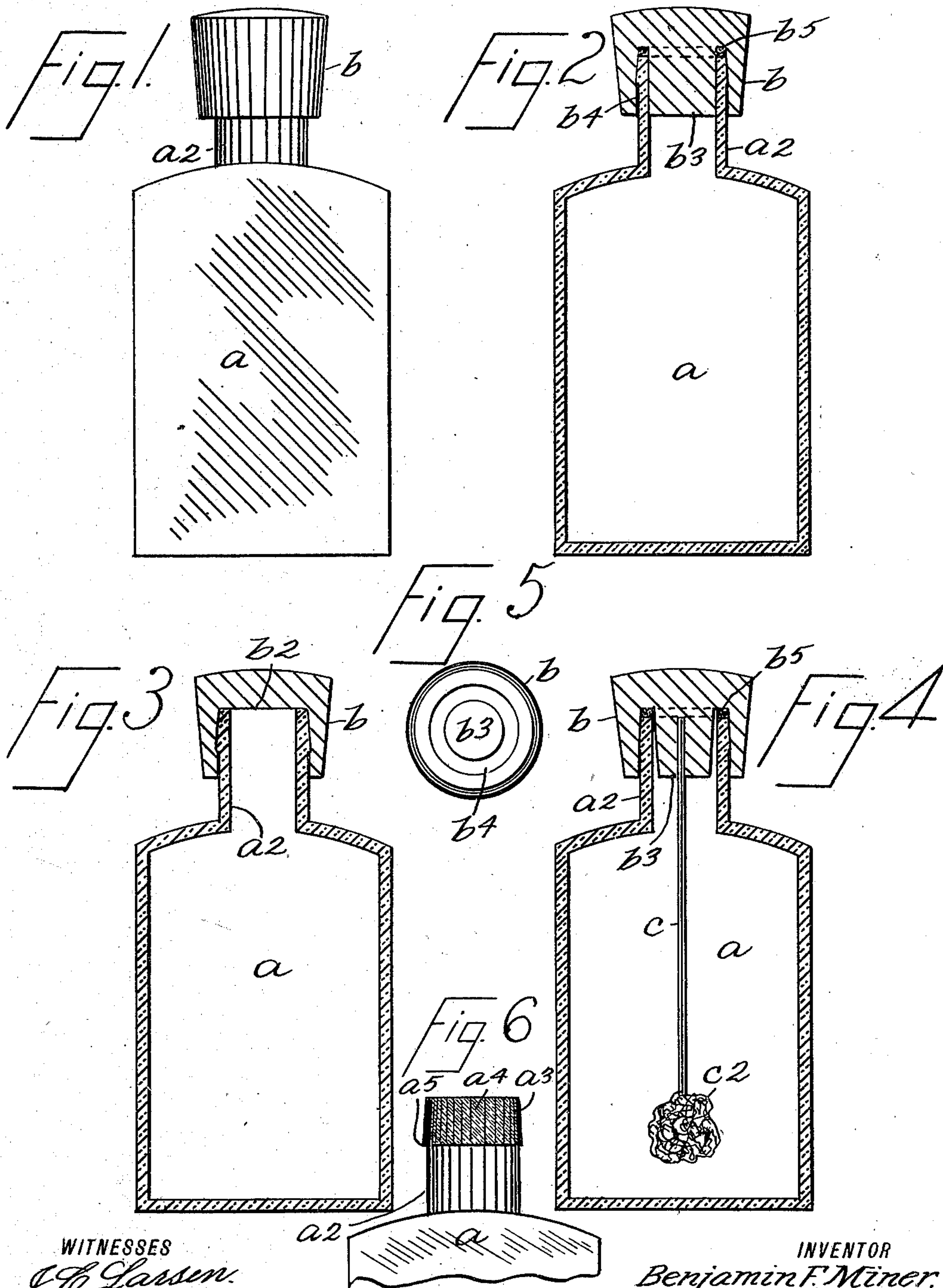


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B. F. MINER.  
CLOSURE DEVICE FOR BOTTLES OR SIMILAR VESSELS.  
APPLICATION FILED AUG. 5, 1902.

NO MODEL.



WITNESSES

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## UNITED STATES PATENT OFFICE.

BENJAMIN F. MINER, OF MONTAGUE, MASSACHUSETTS.

## CLOSURE DEVICE FOR BOTTLES OR SIMILAR VESSELS.

SPECIFICATION forming part of Letters Patent No. 732,877, dated July 7, 1903.

Application filed August 5, 1902. Serial No. 118,423. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN F. MINER, a citizen of the United States, residing at Montague, in the county of Franklin and State of Massachusetts, have invented certain new and useful Improvements in Closure Devices for Bottles or Similar Vessels, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved closure device for bottles and similar vessels by means of which a bottle or similar vessel may be securely closed by hand and opened by hand whenever desired without the use of a tool or instrument of any class.

With this and other objects in view the invention consists of a device of the class specified constructed as hereinafter described and claimed.

In the drawings forming part of this specification, Figure 1 is a side view of a bottle provided with my improved closure device; Fig. 2, a central vertical section thereof; Fig. 3, a view similar to Fig. 2, but showing a modification thereof; Fig. 4, a view similar to Fig. 2, showing another modification; Fig. 5, a bottom plan view of the closure device shown in Fig. 2, and Fig. 6 a side view of the upper part of the bottle shown in Fig. 1 with the closure device removed.

In the drawings forming part of this specification I have shown at *a* a bottle which may be used for any desired purpose, and this bottle is provided with a neck *a*<sup>2</sup>, the outer walls of which at the top thereof are slightly beveled or inclined inwardly, as shown at *a*<sup>3</sup>, and also preferably grounded or sanded, so as to produce a slightly-roughened surface, as shown at *a*<sup>4</sup> in Fig. 6, and at the bottom of this inclined or slightly-roughened surface the said neck is enlarged, as shown at *a*<sup>5</sup>, the inclined and roughened surface extending from the bottom of the enlarged portion at *a*<sup>5</sup> to the top of the neck. The enlargement at *a*<sup>5</sup> is not absolutely necessary, and the desired result may be accomplished by simply tapering the outer walls of the neck of the bottle, as shown in Fig. 4; but I prefer for the purpose of my invention to provide an annular enlargement at *a*<sup>5</sup>, above which the outer

walls of the neck of the bottle are slightly tapered. I also provide a closure device *b*, which may be of the form of construction shown either in Figs. 2, 3, or 4, and this closure device is composed of wood, rubber, paper-pulp pressed into the form, or other suitable material, and if composed of wood it is preferably boiled in oil or otherwise treated, so as to render it impervious to liquid.

The closure device *b* in the form of construction shown in Fig. 3 consists simply of a cap which is cylindrical in cross-section and adapted to receive the neck of the bottle, and the inner diameter of which is substantially of the same diameter throughout as the neck of the bottle below the enlargement at *a*<sup>5</sup> when said enlargement is employed, and in closing a bottle or other vessel with this device all that is necessary is to force the same onto the neck of the bottle by applying sufficient pressure thereto and giving the closure device a twist or turn as it is forced onto the neck. In this operation the inner walls of the closure device will yield slightly as said device is forced onto the neck of the bottle and will adhere to the neck of the bottle and form a complete closure and will remain in position until forcibly removed by clasping the bottle in one hand and the closure device in the other and applying sufficient force to the closure device to remove it from the neck, this operation being accomplished by giving the closure device a turning or twisting movement.

The closure device may be repeatedly used on the same bottle in the manner described or may be placed on another bottle of the same construction, as will be readily understood.

In the form of construction shown in Figs. 2 and 5 the closure device is provided with a central plug member *b*<sup>3</sup> and an annular space *b*<sup>4</sup>, designed to receive the neck of the bottle, and with this closure device the operation of closing and unclosing a bottle is exactly the same as with the form of construction shown in Fig. 3, the only difference being that the plug member *b*<sup>3</sup> fits tightly in the neck of the bottle and aids in closing the same. In this form of construction I also preferably employ a packing-ring *b*<sup>5</sup>, which is put in the top of the annular space *b*<sup>4</sup> and on which the top of the bottle presses, and this packing-



ring is composed of cork or other suitable material and aids in securely packing and closing a bottle, and the plug member  $b^3$  also aids in accomplishing this result. A packing may also be used with the device shown in Fig. 2, if desired.

In the form of construction shown in Fig. 5 the plug member  $b^3$  is employed and is preferably slightly tapered, and the annular packing-ring  $b^5$  is also employed, and the plug member  $b^3$  is provided with a rod or similar device  $c$ , with which is connected a sponge or brush  $c^2$ , and this form of closure device is particularly designed for use in connection with mucilage-bottles or other bottles of this class designed for use as receptacles for shoe-polish, varnish, or similar materials or substances.

It is necessary in my invention to make the closure device of material having a slightly-yielding quality and also a slightly-expandible quality when compressed in order that the neck of the bottle may be forced thereinto or the closure device forced onto the neck in such a manner that the adhesion of the closure device to the walls of the neck will securely close the bottle or other vessel and also retain the closure device in place.

My improved closure device for bottles is comparatively inexpensive and perfectly adapted to accomplish the result for which it is intended, and by means thereof a bottle or similar vessel may be securely closed by hand and opened when desired without the use of any tool or instrument.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A bottle or similar vessel provided with a neck the top outer walls of which are slightly tapered and ground or roughened, and a closure device comprising a cap which is cylindrical in form and closed at one end and composed of slightly-compressible material, and of less diameter than the greatest diameter of the neck and adapted to be forced onto the neck of the bottle or other vessel and to adhere thereto, substantially as shown and described.

2. A bottle or similar vessel provided with a neck the top outer walls of which are slightly tapered and ground or roughened, and a closure device comprising a cap which is cylindrical in form and closed at one end and composed of slightly-compressible material and of less diameter than the greatest diameter of the neck and adapted to be forced onto the neck of the bottle or other vessel and to adhere thereto, said cap being also provided with a central plug portion adapted to enter the neck of the bottle or other vessel, substantially as shown and described.

3. A bottle or similar vessel provided with a neck, the top outer walls of which are slightly enlarged at a predetermined distance below the top, and tapered and ground or roughened, and a closure device comprising a cap open at one end and closed at the other, and the opening in which is cylindrical in form and slightly less in diameter than the enlarged and roughened portion of the neck, said cap being adapted to be forced onto the neck of the bottle or other vessel and to adhere thereto, and being composed of slightly-compressible material, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 1st day of August, 1902.

BENJAMIN F. MINER.

Witnesses:

F. A. STEWART,

R. POLAK.