(No Model.)

W. M. FOWLER.

BOTTLE STOPPER.

No. 563,469. Patented July 7, 1896.

Fig. 3.

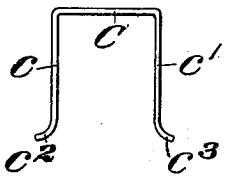


Fig. 1.

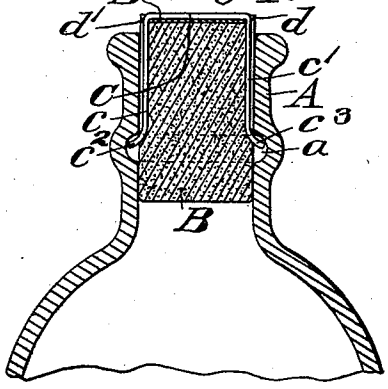


Fig. 4.

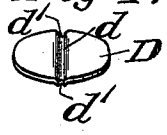


Fig. 2.

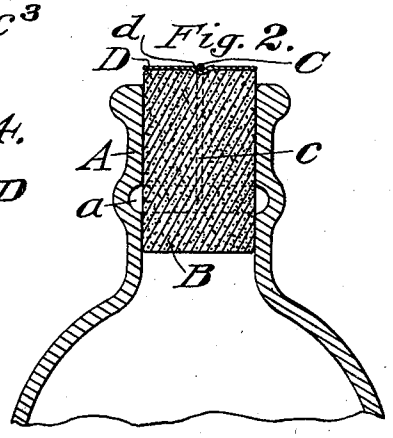


Fig. 6.

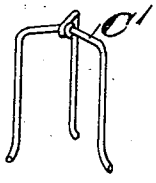


Fig. 5.

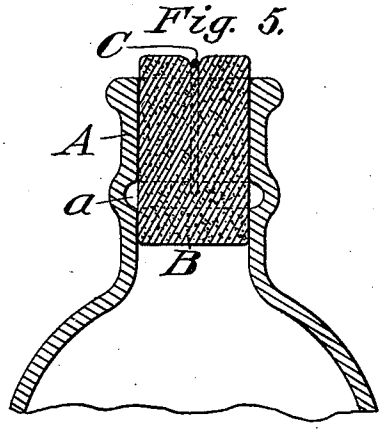
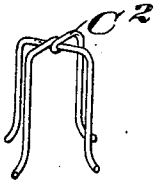


Fig. 7.



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by attorneys:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM MILES FOWLER, OF STAMFORD, CONNECTICUT.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 563,469, dated July 7, 1896.

Application filed November 20, 1895. Serial No. 569,485. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MILES FOWLER, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Bottle-Stoppers, of which the following is a specification.

My invention relates to an improvement in bottle-stoppers in which a stopper of some suitable elastic material, such as cork, is provided with means for holding it in position within the mouth of the bottle.

My invention more particularly consists of a binding or holding wire having an engagement with the top of the stopper and having its ends or portions which extend along down the sides of the stopper between the stopper and the interior wall of the bottle provided with outwardly-extending projections adapted to enter a recess or recesses in the wall of the bottle, so that pressure exerted upon the inner end of the stopper will tend to crowd the projections on the binding-wire more closely within their recesses and hence hold the stopper more securely in position, while a pull on the binding-wire at the outer end of the stopper will readily remove the binding-wire and leave the stopper free to be drawn.

In the accompanying drawings, Figure 1 is a vertical section through the neck of a bottle, showing the stopper and its binding-wire and plate in position therein. Fig. 2 is a similar view taken in a plane at right angles to the plane in which Fig. 1 is taken. Fig. 3 is a view of one form of the binding-wire in detail. Fig. 4 is a view in detail of the cap-plate, which may be employed on the outer end of the stopper beneath the binding-wire. Fig. 5 is a section similar to that of Fig. 3, showing the use of the binding-wire without the cap-plate. Fig. 6 represents a modified form of binding-wire, and Fig. 7 represents still another form of binding-wire.

The neck of the bottle is denoted by A, and is provided in the present instance with an internal recess *a*, extending completely around its interior wall. The particular shape of the neck is not material, and the recess may or may not extend the entire distance around the interior of the neck, as may be found most expedient, it being sufficient for the purposes of my present invention that the recess be formed opposite the stopper at the points where the outwardly-extending projections on the binding-wire are formed.

The stopper is represented by B and is made to tightly fit the interior of the neck of the bottle.

The binding-wire, in the form shown in detail in Fig. 3, is bent intermediate of its ends to extend across the top of the stopper and down the opposite sides of the stopper, its extreme ends being turned outwardly to enter the recess *a*. That part of the binding-wire which engages the top of the stopper is denoted by C, the portions which extend along down the sides of the stopper by *c c'*, and the outwardly-turned ends which enter the recess by c^2 c^3.

To form a bearing for the binding-wire and at the same time protect the top of the stopper and furnish a convenient means for labeling the bottle, a cap-plate D, having a groove *d* to receive the wire, may be inserted between the wire and the stopper. The edges of the cap-plate D at the ends of the groove *d* are recessed, as shown at *d'*, to receive the branches *c c'* of the binding-wire.

In the form shown in Fig. 5 the cap-plate is omitted and the part C of the binding-wire bears directly against the top of the stopper.

The binding-wire may have three or more depending branches, instead of two. In Fig. 6 the wire C' is shown with three depending branches, and in Fig. 7 the wire C^2 is shown provided with four depending branches.

In use the binding-wire is inserted in the neck of the bottle, together with the stopper, until its projections c^2 c^3 enter the recess *a*. When in position any pressure on the inner end of the stopper will tend to compress the stopper lengthwise, thereby forcing the projections c^2 c^3 more tightly against the wall of the recess *a* and preventing the escape of the stopper.

When it is desired to remove the stopper, a pull on the part C of the binding-wire will readily withdraw it from the stopper and the latter may then be removed.

What I claim is—

1. The combination with a stopper, of a fastener engaged with the top of the stopper and

provided with branches extending along down the sides of the stopper, the said branches being provided with outwardly-extending projections at the sides of the stopper for engaging a recess in the inner wall of the receptacle in which the stopper is employed, substantially as set forth.

2. The combination with a stopper, of a cap-plate on the outer end of the stopper, a fastener extending across the cap-plate and provided with branches extending down the sides of the stopper, the said branches being provided with outwardly-turned projections at the side of the stopper for engaging the inner wall of the receptacle in which the stopper is employed, substantially as set forth.

WILLIAM MILES FOWLER.

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