(Model.)

E. HAAS.

STOPPER FASTENING.

No. 284,200. Patented Sept. 4, 1883.

Fig. 1.

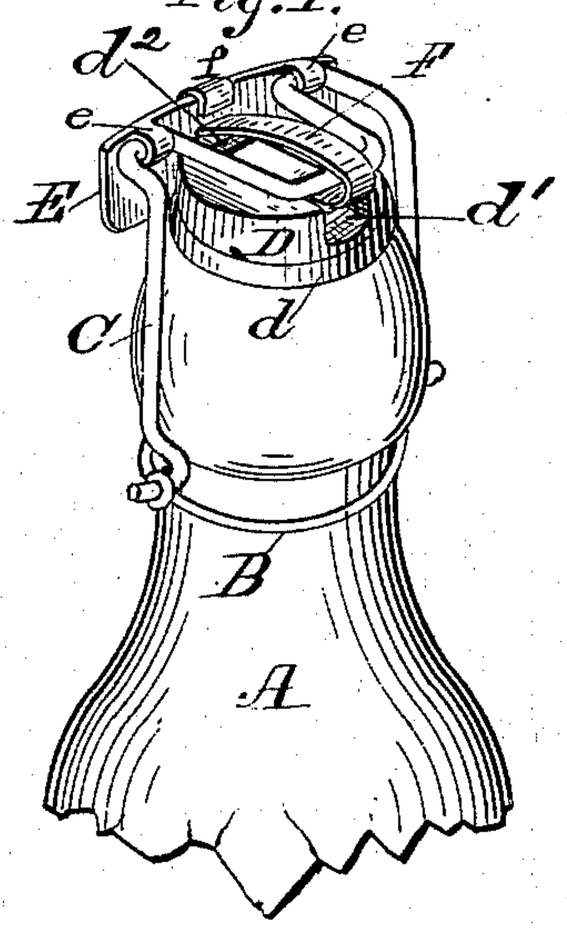


Fig. 2.

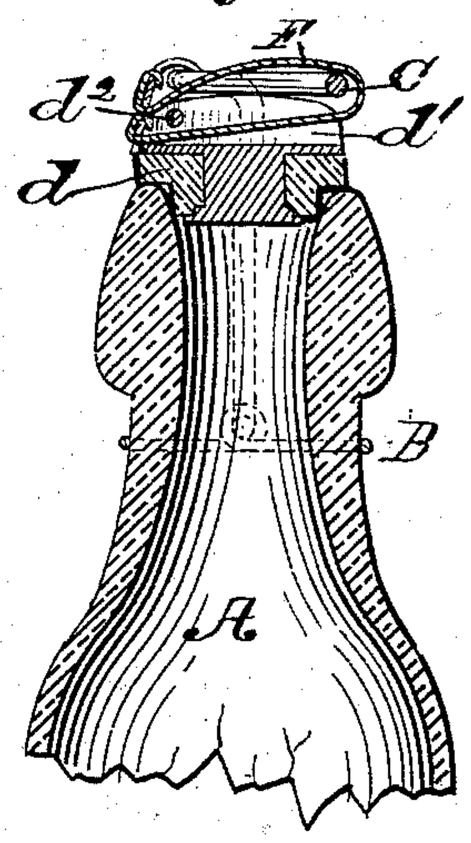


Fig. 4.

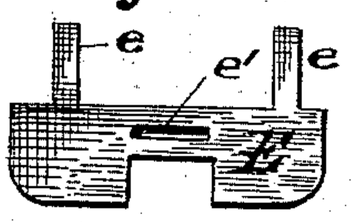


Fig. 3.

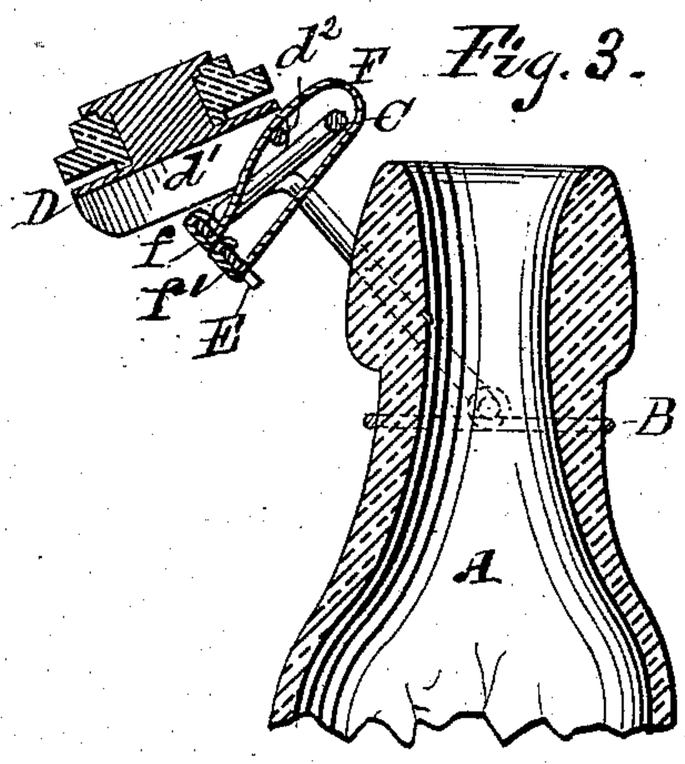


Fig. 5.

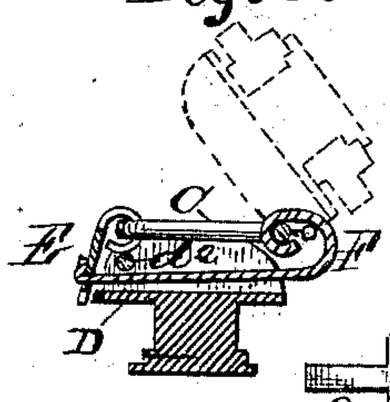


Fig. 6.

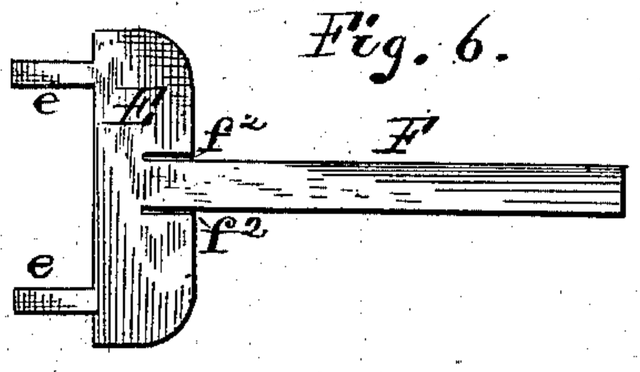
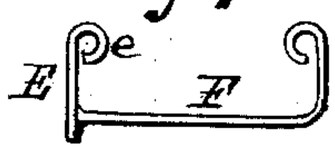


Fig. 7.



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UNITED STATES PATENT OFFICE.

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STOPPER-FASTENING.

SPECIFICATION forming part of Letters Patent No. 284,200, dated September 4, 1883.

Application filed August 1, 1883. (Model.)

To all whom it may concern:

Be it known that I, EDWIN HAAS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Stopper-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a perspective of the neck portion of a bottle provided with my improved stopper-fastener, the bottle being closed. Fig. 2 is a central vertical section, the bottle being closed, and Fig. 3 a like section, the bottle being open. Fig. 4 is a plan of a blank of the push-bar, hereinafter described; Fig. 5, a modified construction and arrangement of the principal elements of my fastener; and Figs. 6 and 7 are further modifications, hereinafter described.

Like letters indicate like parts in all the figures.

My invention relates to that class of stopper-fasteners in which the stopper is connected to or with the bail, and the objects in view are to simplify and reduce the number of the parts employed, and to provide means for retaining the stopper positively in position when the bottle is opened.

Referring to the drawings, A represents the neck portion of the bottle; B, the neck-band, and C the bail which I employ, the latter being known as the "Putnam" bail.

D represents the stopper, which is adapted to receive the rubber packing *d* in a well-known manner. The stopper being of metal, that portion which is exposed to the contents of the bottle may be tinned or galvanized, as usual. The head of the stopper is grooved, as shown at *d'*, the groove being located centrally and extending completely across the head. At one end of the groove is a transverse pin, d^2, which, in connection with the walls of the groove, constitutes an eye or staple, and serves in part as means for connecting the stopper with the bail. The pin d^2 may be a wire passed through the walls of and across the groove; or the pin may be cast as a part of the stopper-head, and it may be located entirely within the groove, or be projected beyond the end of the groove in the form of a staple, so as to act more as a hinge. The upper portion or face of the stopper-head is convex, so that when the bail is forced over and upon the same a wedging action is produced to force the stopper upon and within the mouth of the bottle.

E represents what I have herein designated as the "push-bar," from the fact that in closing the bottle the said bar is conveniently arranged for pushing the bail over and upon the stopper-head by placing a thumb or thumbs against said bar. The bar also has other functions—such as that of a stop to prevent the passage of the bail completely or too far over the stopper-head. The remaining function of the bar E is to provide for the proper arrangement and connection of means for securing or coupling the stopper with the bail. Such means consists, broadly, of any loop, as F, arranged, it may be, to embrace the bail and the pin d^2, and adapted to be secured to the bar E, and to be arranged in line with the movement of the bail.

By the construction and arrangement of the parts thus far described it will be seen that the bail may be moved over and upon the stopper-head and removed therefrom to close and to open the bottle without disconnecting the stopper from the bail, and without any undue pressure or strain upon any part of the stopper-head, which would act to partially open one side and allow or cause a preliminary leakage before the stopper is entirely removed from the bottle. In other words, the pressure of the bail upon the stopper-head is substantially uniform until the instant of the separation of the stopper from the bottle, and this result is accomplished in a great measure by the means employed for connecting the stopper with the bail.

As shown in Fig. 4, the bar E is provided with two integral lugs, *e*, and with a central slot, *e'*. As shown in Figs. 1, 2, and 3, the loop F consists of a separate piece of metal, the ends of which are passed through the slot *e'* of the bar E, the one end, *f*, being bent over the top of the bar E, and the other end, *f'*, being passed below the lower edge of the bar and then through the slot *e'*. In this manner of connecting the loop to the bar the sides of the loop are separated, so as to form a space in

which the pin d^2 and the bail C may pass each other. The lugs *e* serve to attach the bar to the bail, as clearly shown in Fig. 1.

If desired, the loop F may be formed in one piece with the bar E, as shown in Fig. 6, the slits f^2 permitting the lower edge of the bar to act as a stop against the head D, as shown in Fig. 5. Whether made separately or integrally, the upper side of the loop F may be dispensed with and a connection made with the front end of the bail, as clearly shown in Fig. 5, where the loop is extended beyond the bail; or it may be there connected without such an extension, as clearly indicated in Fig. 7, which is a side elevation of the blank, shown in plan in Fig. 6 and in central vertical section in Fig. 5; but I prefer to employ a complete loop, as shown in Figs. 1, 2, and 3, where it will be seen that when the bottle is closed the pin is below the bail, and that the loop lies loosely in the groove d', permitting free movement of the stopper in vertical directions, as in forcing it home and in releasing it from the pressure of the bail.

By reference to Fig. 3 the principal advantage of the upper side of the loop will be clearly understood. In pushing the bail off from the stopper-head the loop F is drawn with it, while the stopper yet remains in the bottle-mouth, and as the bail leaves the head the end of the loop farthest from the push-bar strikes the pin d^2, suddenly turning the stopper on the edge of the bottle-mouth, as on a pivot. The pin passing around the end of the bail, the stopper is turned completely over, and the momentum carries it, bottom side up, over and along the bail until the pin is wedged between the bail and the under surface of the upper side of the loop. This operation secures the stopper positively in a substantially firm position, whereby it is less liable to come in contact with the contents of the bottle when they are poured out. As is shown in Fig. 5, this operation is in a measure obtained by reason of the extension of the loop beyond the bail.

As shown, the bar E and the loop F are made of sheet metal; but, if desired, they may be made of wire or cast metal. With a straight pin, d^2, and a sheet-metal loop lateral movement of the stopper upon the loop is limited. Furthermore, although I have shown the Putnam bail, it is evident that my loop and grooved cam-faced stopper-head may be used in connection with any other bail adapted to operate therewith. The bar E may serve only as a means for connecting the loop with the bail in line with its movement, in which case the bail may be pushed over the stopper by pressure applied against one or both of its legs, and a projection upon the stopper-head may act as a stop.

In cases where my stopper-fastener is to be applied to bottles having necks of varied length, I may use shorter or longer bails, or bails of a uniform length and stoppers of varied lengths.

When locating the pin, eye, or staple in line with the groove and outside of the stopper-head, it is preferable that said eye or staple shall be curved downwardly, as a continuation of the convex or cam face of the stopper-head, in order that it shall act to guide the bail upon the stopper-head.

By locating the loop in line with the movement of the bail the stopper is held, when the bottle is open, in the most advantageous position for closing the bottle, which would not be the case if the loop were otherwise arranged. One manner of closing the bottle is, after the stopper is in position, to place a thumb upon it, and with the forefinger draw the bail over the stopper-head.

Having described my invention and its opetion, what I claim is—

1. A stopper-fastener comprising a bail, a bar, and means for connecting the stopper with the bar, substantially as specified.

2. A stopper-fastener comprising a bail, a bar, a stopper-head having a pin or eye, and a loop secured to the bar and embracing said pin or eye, substantially as specified.

3. A stopper-fastener comprising a bail, a bar secured to the bail, and a loop secured to the bar and embracing the bail, and a pin or eye formed in or on the stopper-head, substantially as specified.

4. A bail provided with a bar for the attachment thereto of a loop, substantially as specified.

5. A bar provided with means for securing it to a bail, and means for attaching it to a loop, and with a stop portion, substantially as shown and described.

6. The bar E, slotted, as at e', and provided with lugs *e e*, substantially as shown and described.

7. The bar E, slotted at e', in combination with the loop F, having its ends $f f'$ passed over the edges of the bar and through the slot, substantially as and for the purpose set forth.

8. The combination of the bottle A, bail C, bar E, loop F, stopper D, having a pin or eye, d^2, and means for securing the bail to the bottle, substantially as shown and described.

9. The combination of the bottle A, neck-band B, bail C, bar E, grooved stopper-head D, having pin or eye d^2, and loop F, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN HAAS.

Witnesses:
J. R. MASSEY,
CHAS. W. FISHER.