

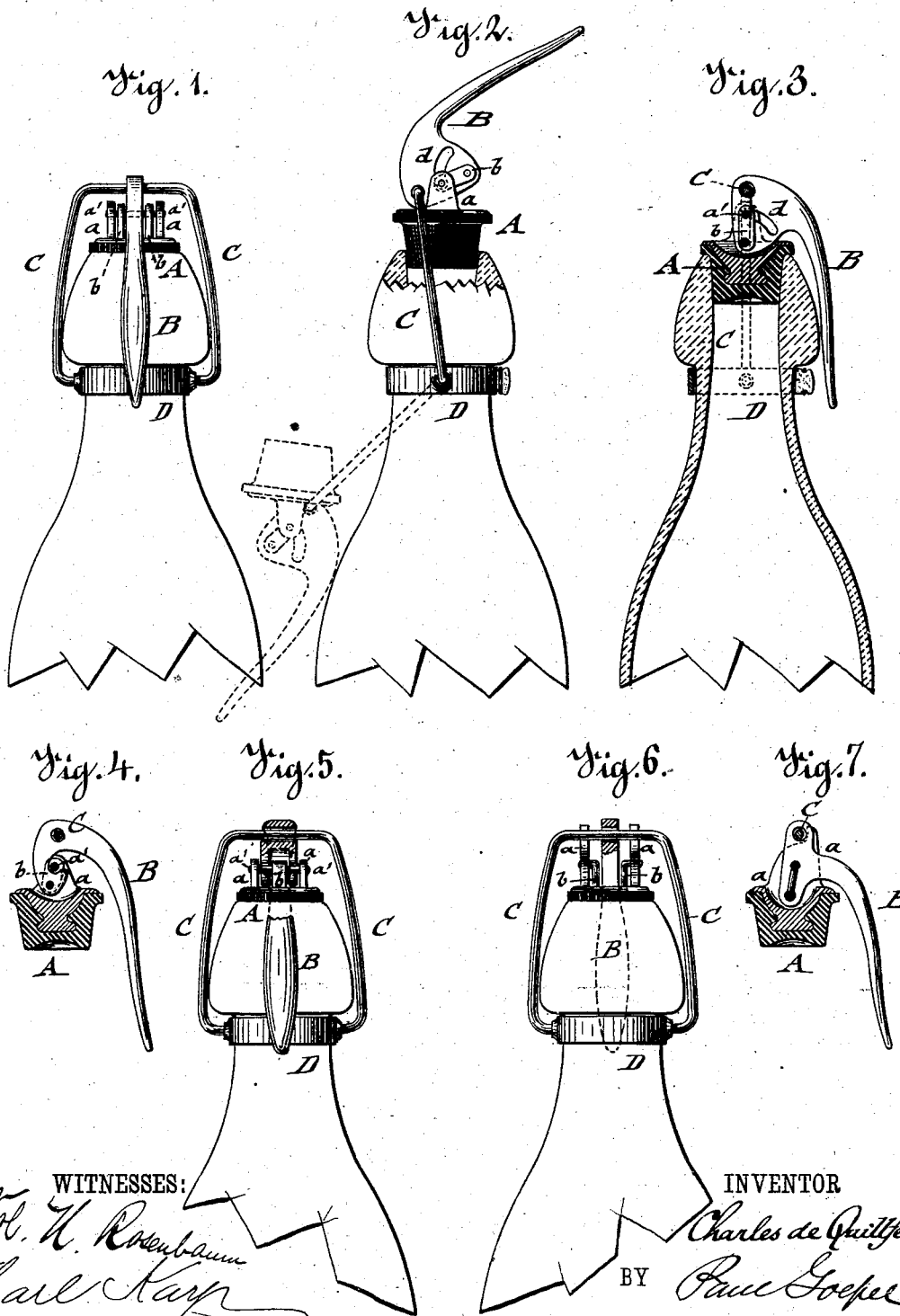
(Model.)

C. DE QUILLFELDT.

BOTTLE STOPPER.

No. 260,850.

Patented July 11, 1882.



UNITED STATES PATENT OFFICE.

CHARLES DE QUILLFELDT, OF NEW YORK, N. Y., ASSIGNOR TO HENRY W. PUTNAM, OF SAME PLACE.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 260,850, dated July 11, 1882.

Application filed May 22, 1882. (Model.)

To all whom it may concern:

Be it known that I, CHARLES DE QUILLFELDT, of the city, county, and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

This invention has reference to an improved bottle-stopper of that class in which a compound stopper consisting of an elastic bottom portion and a rigid cap-piece or head is forced by the joint action of a bail or yoke, an operating and locking lever, and an intermediate mechanism into the mouth of the bottle, all the operating devices being so connected with each other and with the bottle that they are not disconnected from the bottle in opening or closing the same; and the invention consists of a stopper having a cap-piece with raised lugs, said stopper being connected to an operating and locking lever by means of links which are pivoted to the lugs and lever. The lever is further pivoted to a bail or yoke that is applied to supporting devices of the bottle-neck at a point opposite to the pivot-connection of the lugs and links.

In the accompanying drawings, Figure 1 represents an end elevation of my improved bottle-stopper. Fig. 2 is a side elevation of the same, showing the stopper partly withdrawn from the mouth of the bottle. Fig. 3 is a vertical central section of the same; and Figs. 4, 5, 6, and 7 are side and end views of modified constructions of the actuating mechanism of the stopper.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents a compound stopper, which is made, in the usual manner, of an elastic bottom portion and of a rigid cap-piece or head, the latter provided with two raised parallel lugs, *a a*, that are cast in one piece with the cap-piece. An operating and locking lever, B, is pivoted to the upper transverse part of a bail or yoke, C, of inverted-U shape, which is applied at its lower ends to a band or other supporting device, D, on the neck of the bottle. The lever B is further pivoted by means of connecting-links *b b* to the lugs *a a* of the stopper A, the pivot-connection of the lever B with the links *b b* and

bail C being at opposite sides to the pivot-connection between lugs *a a* and links *b b*.

The links *b b* serve to establish the connection between the lever B and the stopper-head and facilitate the lifting out of the stopper from the mouth of the bottle, so that free play is given to the stopper in swinging with the bail and lever above the bottle-mouth, to one side or the other of the bottle-neck. In inserting the stopper into the mouth of the bottle the links facilitate the closing of the bottle, as they are first carried downward by the operating and locking lever, and form then a movable pivot for the same, whereby the swinging of the bail over the center is facilitated.

The cap-piece of the stopper A may be made dishing or concave between the raised lugs *a a* to provide space for the motion of the operating lever and links during the operation of opening or closing the bottle.

The lever B is provided with a segmental slot or recess, *d*, which is concentric to the pivot connecting the lever B and links *b b*. This slot or recess serves for the purpose of allowing the lever to move over the transverse pivot-pin *a'*, that connects the lugs *a a* and the oscillating links *b b*, without being obstructed thereby, and also for withdrawing the stopper from or forcing it into the bottle-mouth.

The stopper A is forced into the mouth of the bottle and retained securely therein by the action of the operating and locking lever B upon the bail or yoke, and of the intermediate link-connection upon the stopper, in connection with the bottle-neck, against which the lever strikes, so as to be stopped thereby. By the stopping of the lever the lower ends of the links *b b* are prevented from passing far enough under and to the other side of the lug-pivot to unlock the stopper.

The operation of opening and closing takes place as follows: In opening the lever is moved away from the neck of the bottle, whereby the end of its slot which is farthest from the handle of the lever is moved away from the pivot that forms the connection between the links and the lugs. At the same time the bail is thrown into a slightly sidewise inclined position, and the lower ends of the links pass from a position below and slightly

to the left of the lug-pivots to a position below and slightly to the right of the lug-pivots, thereby unlocking the stopper. The lever is then raised farther, lifting up the lower ends of the links while the upper ends of the links are turning on the lug-pivot and while the slot of the lever is passing along the lug-pivot until its end farthest from the handle of the lever is under the lug-pivot. The lever is then in the position shown in Fig. 2. By further throwing the lever up and over, the stopper is lifted vertically from the bottle-mouth, the end of the slot pulling directly upward against the lug-pivot, while the links continue to turn on the same pivot. Thus it is seen that the links lock and unlock the stopper by the passing of their lower ends beneath and to the left and right of their upper ends, and that in opening the bottle the first portion of the movement of the lever moves the links to unlock them, the next portion of the movement lifts the lever till its slot has a bearing under the lug-pivot, and the last portion of the movement lifts the stopper apart from the bottle. The stopper, bail, and lever are then swung to either side of the bottle-neck.

In closing the device the stopper is placed in position above the bottle-mouth. The lever B is then swung over and carried down toward the neck of the bottle, whereby the connecting-links *b b* are returned into pendent position. The slotted or recessed part of the lever moves along the pivot of the lugs and links until by the final pressing down of the operating and locking lever the pivot *a'* assumes a position at that end of the slot or recess closer to the pivot-connection of the lever with the bail. The pivot connecting the lever B and links *b b* is then at its lowermost point, below the pivot *a'* and at one side of a vertical line passing through the same, while the bail is thrown slightly to the other side of the vertical line, as shown clearly in Fig. 3. In this position the stopper is forced with considerable power into the mouth of the bottle and retained securely therein by the double-locking action taking place between the lever, links, lugs, and bail.

It is obvious that in place of two oscillating links, by which the connection between the stopper and lever is established, one link may be used, which may be arranged either in a recess at the upper heavier part of the lever B, as shown clearly in Figs. 4 and 5; or the

link *b* may be made of a U-shaped wire having outwardly-bent ends, which wire is passed transversely through the lever and pivoted at the ends to the lugs of the stopper, as shown in Figs. 6 and 7. The lever is in the last modification not provided with a slot or recess, *d*; but in place thereof the lugs are curved and provided with a stop for the bail, or slotted, as desired, though I prefer the slotted lever, as thereby the lugs of the stopper are kept small and the whole appearance of the stopper is made lighter and more compact. In all cases, however, a very effective locking action is obtained by the joint operation of the lever and its intermediate mechanism upon the bail and the stopper, as the pivot between the lever and links is thrown slightly to one side and the pivot between the lever and bail somewhat to the other side of the pivot-connection between the lugs and links, which forms the essential feature of this bottle-stopping device.

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

1. The combination, with a bail or yoke that is applied to a supporting device on the bottle-neck, of an operating and locking lever that is pivoted to the yoke, of a stopper having a cap-piece with raised lugs, and of a connecting link or links pivoted to the lugs of the cap-piece and to the lever, the pivot-connection of the lugs and links being intermediately between the pivot-connections of the lever with the bail and with the links, respectively, substantially as set forth.

2. The combination, with a bail or yoke applied to the neck-band of the bottle, of an operating and locking lever that is pivoted to the yoke, of a stopper having a cap-piece with raised lugs, and of connecting-links which are pivoted to the lugs of the cap-piece and to the lever, the pivot connecting the lugs and links being intermediately between the pivot-connections of the lever with the bail and with the links, respectively, and being extended transversely through a slot or recess of the lever, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES DE QUILLFELDT.

Witnesses:

PAUL GOEPEL,
CARL KARP.