

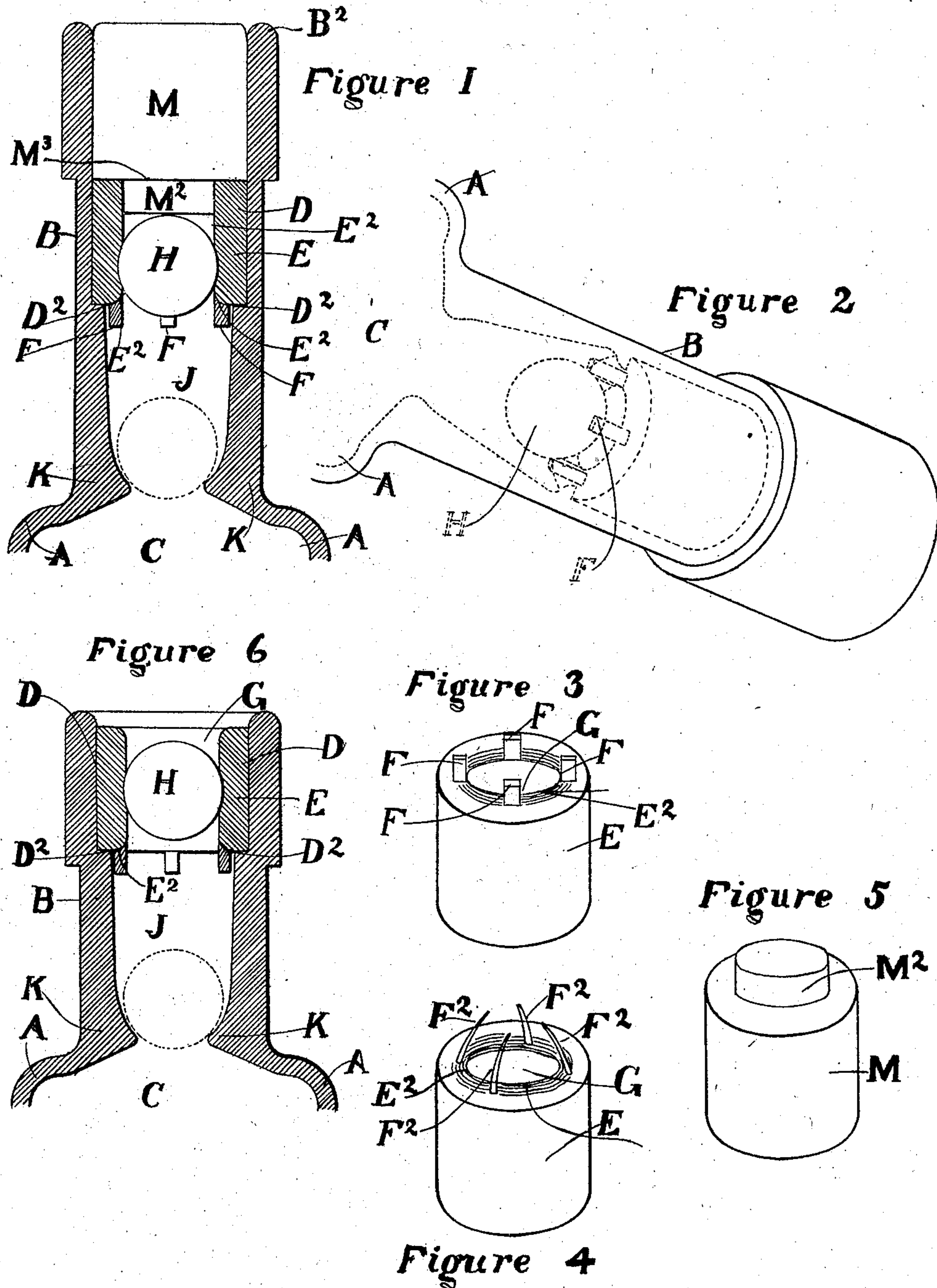
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A. H. COX.

AUTOMATIC STOPPLE AND NON-REFILLABLE BOTTLE.

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No. 815,147.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALFRED H. COX, a citizen of the United States, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Automatic Stopples and Non-Refillable Bottles, of which the following is a specification.

The several features of my invention and the various advantages derived from their use conjointly or otherwise will be apparent from the following description and claims.

In the accompanying drawings, making a part of this application, Figure 1 is a view, partly in elevation and partly in section, of the upper portion of a bottle and its accompaniments, illustrating my invention. The section is a vertical central one. Fig. 2 is a view in perspective of the upper portion of the same bottle referred to in Fig. 1. The parts within the bottle are indicated by dotted lines. Fig. 3 is a perspective view of the main cork, but inverted. Fig. 4 shows in perspective the cork shown in Fig. 3 inverted, but presents a modified kind of the detents for keeping the ball-stopple from coming into contact with this cork. Fig. 5 is a perspective view of the upper cork inverted. In Fig. 6 the ball-stopple is left in elevation; but the remainder of the figure is a vertical central section of the upper part of the bottle, where the main cork is present and the top cork is dispensed with.

The body A of the bottle is of any suitable conformation. The neck B has a passage which connects the free—that is, the delivery—end B² of the neck with the chamber C of the body of the bottle. That portion D of the passage of the neck which is nearest the delivery end thereof has at its lower or inner end an annular shoulder or projection D². Within this passage portion D and with its lower edge resting upon this annular shoulder D² is the main or primary cork E. This cork fits tightly into the neck, so that when it is once pressed into the neck and moved down to place it will remain there. It can be cemented also, if desired; but when elastic, as preferred, it will remain without cement. The lower edge of this cork E is provided with projections F. These may be integral with the cork, as shown in Fig. 3, or they may be connected thereto by being inserted therein or otherwise thereto. One description of the last-named kind of projections is shown in

Fig. 4, wherein the projections are indicated by the character F². The inner edge portion E² of the cork E is rounded or beveled, so that when the bottle is inverted the liquid in the bottle shall readily run past this edge and nothing remain thereon. This primary cork E has a passage G through it. In this passage G, I locate the ball-stopple H. The latter is of a diameter somewhat greater than the diameter of the passage G. Consequently when this ball-stopple H is pushed therein it will stay there, being held fast by the elasticity of the cork E until moved by human agency.

Below the passage D and the annular shoulder D² is a connecting-passage J. At the lower part or end of this passage J in an annular flange K. The upper part of this flange is concaved, so as to closely fit the surface of the ball H, with which it comes into contact when the ball descends.

In practice the cork E is first located in the neck of the bottle. The bottle is then filled by pouring the liquid it is to hold through the passage G of this cork. When the bottle has been duly filled, I introduce the ball-stopple H within the cork E, as indicated by solid lines in Figs. 1 and 6. When some or all of the contents of the bottle are to be removed therefrom, the bottle-stopple is pushed down through the passage G until it comes into the passage J. It being preferably of stone or glass and heavy will immediately fall and rest upon the annular flange K. As soon as the bottle is inverted this ball-stopple will move toward the exit end of the bottle and will rest against the projections F or F², as the case may be. These projections hold it back; otherwise it would close the passage G of the cork E. Being held back, the liquid freely runs at the sides of it and past it and through passage G, and so on and out of the delivery end of the neck of the bottle. As soon as the desired amount of liquid is drawn the bottle is of course stood neck end up. The ball H descends and rests on the annular flange K and closes the passage-way through the flange. It thus practically seals or corks the bottle. The gases, &c., are thereby prevented from leaving the bottle, and the outer air is prevented from reaching the contents of the bottle. So, also, insects are prevented from reaching the liquid. The advantages of thus preventing ingress to the contents of the bottle and of preventing their egress therefrom are ob-

vious, especially in all those kinds of liquids and gases known chemically as "unstable." Whenever the bottle is inverted, the contents can be drawn therefrom, because the ball leaves its seat K.

I have described the primary feature of my invention. I have adapted my bottle so that it may have not only the primary cork or stopple, but also another cork. Such additional cork M is shown in Fig. 1 located upon the cork E. The central portion of the bottom of the cork M is preferably extended, as shown, in the projection M², and this is of a diameter sufficient to closely and under a slight compression enter into and fill the upper end of the passage G of the cork E. If the part M² be omitted, the cork M will be, as shown, above the line M³ of Fig. 1. This ball-stopple prevents the bottle from being readily refilled, because whenever the bottle is placed in a position so upright as to enable it to be readily filled the ball will move down onto the seat K and close the passage-way from the neck into the body of the bottle. Should it be attempted to fill the bottle when the neck is horizontal or when the bottle is inverted, the filling of the bottle will be a very slow operation and one not economical. Should an attempt be made to fill the bottle rapidly, the rapid ingoing stream of liquid would force the ball against the shoulder K and close the orifice. Hence the bottle is practically not refillable.

The bottle may have a suitable seal or cap over the cork E when the construction is limited, as shown in Fig. 6. So, also, the cork M may have a seal or cap over it when the fuller construction shown in Fig. 1 is used. The opening of the bottle breaks the seal. This breakage of the seal, as well as the presence of the ball-stopple below the cork, puts the user on his guard that the liquid put into this bottle by the merchant, dealer, or other person, firm, or corporation whose seal was on this bottle has no doubt been tampered with.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a bottle, the neck B having a passage D, the annular shoulder D² at the end of said passage, an annular cork or sleeve E having the central passage G and provided with the lower projections, and a removable cork having a central lower stopple extension M² located in the passage G of the cork E, the neck having the lower passage J, a ball-stopple H adapted to be received within the cork E, the annular flange K at the lower part of the passage J, adapted to receive the ball-

stopples H, substantially as and for the purposes specified.

2. In a bottle, the neck B having a passage D, and a passage J, an annular shoulder D², between said passages, an annular cork or sleeve E within the neck and having the central passage G, and seated on the shoulder D², a ball-stopple H adapted to be received into the passage G, an annular flange K at the bottom of passage J, adapted to seat the ball-stopple H, and means for preventing the ball-stopple, when in passage J, the bottle being inverted, from closing the passage-way of the cork E, and a removable cork having a central lower stopple extension M², located in the passage G, substantially as and for the purposes specified.

3. In a bottle, the neck B having a passage D, and a passage J, an annular shoulder D² between said passages, an annular cork or sleeve E within the neck and having the central passage G, and seated on the shoulder D², a ball-stopple H adapted to be received into the passage G, an annular flange K at the bottom of passage J adapted to seat the ball-stopple H, and means for preventing the ball-stopple, when in passage J, the bottle being inverted, from closing the passage-way of the cork E, and a removable cork, whose outer lower edge rests on the upper edge of the cork E, substantially as and for the purposes specified.

4. In a bottle, the neck B, having a passage D and a passage J, an annular shoulder D² between said passages, an annular flange K at the bottom of passage J, an annular cork or sleeve E, having a central passage-way through it, this sleeve seated on the shoulder D², a ball-stopple H adapted to be received into the passage G, and when in passage J receivable on the seat K, and means for preventing the stopple, when the bottle is inverted, from seating itself in the passage G, substantially as and for the purposes specified.

5. In a bottle, the neck B, having a passage D and a passage J, an annular shoulder D² between said passages, an annular flange K at the bottom of passage J, an annular cork or sleeve E, having a central passage-way through it, this sleeve seated on the shoulder D², the sleeve E being provided with the projections at its under side, substantially as and for the purposes specified.

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Attest:

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