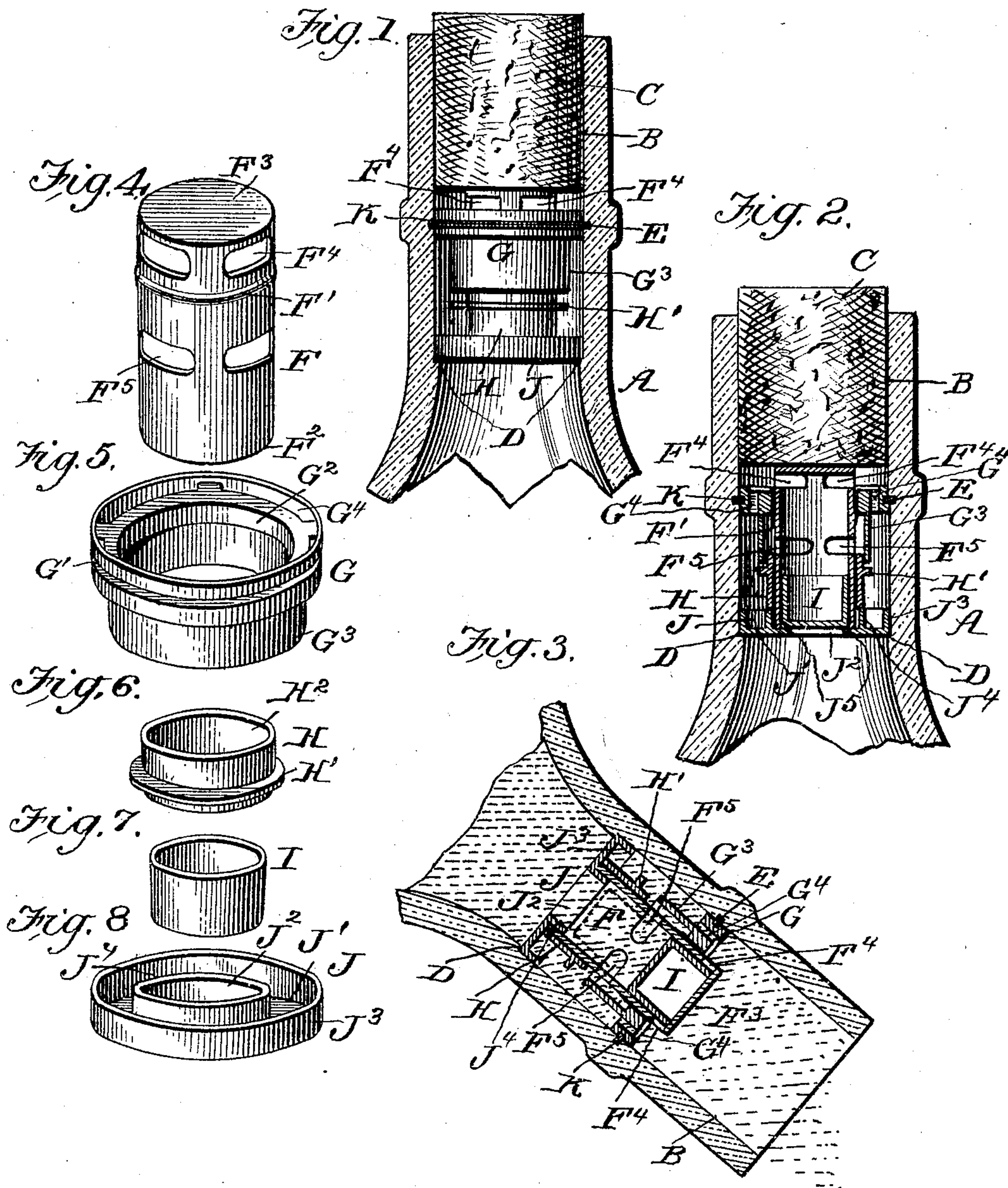


No. 819,490.

PATENTED MAY 1, 1906.

E. K. WOOD.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JUNE 27, 1905.



WITNESSES:
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EUGENIO KINCAID WOOD, OF SAN FRANCISCO, CALIFORNIA.

NON-REFILLABLE BOTTLE.

No. 819,490.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed June 27, 1905. Serial No. 267,208.

To all whom it may concern:

Be it known that I, EUGENIO KINCAID WOOD, a citizen of the United States, and a resident of San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention is an improvement in non-refillable bottles, having for an object to provide a novel construction from which the liquid may be poured and which will prevent the refilling of the bottle; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a sectional view of a neck of a bottle provided with my improvements, the latter being shown in elevation and the bottle being shown upright with the parts in position to prevent the refilling of the bottle. Fig. 2 is a sectional view of the bottle-neck and the improved devices with the parts in the same position they occupy in Fig. 1. Fig. 3 is a sectional view of the bottle-neck provided with the improved devices, the latter being shown in section and in position to permit the contents of the bottle to be poured out. Fig. 4 is a detail perspective view of the main tube. Fig. 5 is a detail perspective view of the upper cross-plate. Fig. 6 is a detail perspective view of the cover-slide. Fig. 7 is a detail view of the valve, and Fig. 8 is a detail view of the lower cross-plate.

The bottle-neck A is provided at its mouth at B with a seat for a cork C and is also provided below said seat B with an outwardly-facing shoulder D and between the same and the seat B with a groove E, the shoulder D and groove E being within the bottle-neck and arranged as shown in Figs. 1, 2, and 3.

The main tube F, upper cross-plate G, cover-slide H, valve I, and lower cross-plate J are preferably made separate and readily detachable, as will be understood from Figs. 4 to 8, and may be made of glass, aluminium, or other suitable material. In practice they are so formed as to fit together, as shown in Figs. 1, 2, and 3, so they can be readily assembled, as will be understood from the drawings. The parts when assembled are placed in the bottle-neck with the cross-plate J resting against the shoulder D and the gasket K seated in the groove G' of the top plate sprung into the groove E of the bottle-neck,

the said top plate G bearing downwardly against the shoulder F' on the outer side of the main tube F and operating to secure the said main tube in position bearing against the lower cross-plate J, as shown in Figs. 2 and 3.

The lower cross-plate J, as shown in Figs. 1, 2, and 8, is provided with the bottom plate J', a central opening J², an upwardly-projecting rim-flange J³, and an inner upwardly-projecting flange J⁴, the latter surrounding the open center of the lower cross-plate, as shown. This lower cross-plate forms a seat for the valve I, which is preferably a cup or bucket shaped valve opening outwardly toward the mouth of the bottle-neck and seating at its closed lower end upon the lower cross-plate J. In the construction shown in Fig. 2 the cross-plate J is provided within the flange J⁴ with an inwardly-projecting lip portion J⁵, upon which the valve I seats, while in the construction shown in Fig. 3 such lip or flange J⁵ is omitted and the bucket-valve I seats upon the upper edge of the inner surrounding flange J⁴.

The main tube F rests at its lower edge F² upon the lower cross-plate. In the construction shown in Fig. 2 this bearing is effected upon the lip J⁵, the main tube fitting within the flange J⁴, while in the construction shown in Fig. 3 the main tube F fits at its lower end around the outer side of the flange J⁴. Either of these constructions may be employed, as desired. As best shown in Figs. 2 and 3, the main tube F is open at its lower end, is closed at its upper or outlet end by a top plate F³, and is provided with side openings F⁴ and F⁵, the openings F⁴ being arranged near the outer end of the main tube and above the shoulder F', while the openings F⁵ are spaced below the shoulder F', as shown in Figs. 2, 3, and 4.

The upper cross-plate G is provided with a central opening G², which fits snugly over the main tube F and permits the said cross-plate G to rest down against the shoulder F' of the main tube and below the lateral openings F⁴ in said main tube, as shown in Figs. 1, 2, and 3. This plate G is provided with a depending tube G³, which extends downwardly around the main tube, preferably to a point about in line with the lower walls of the opening F⁵ or slightly below the said walls, as will be understood from Figs. 2 and 3, and the tube G³ is spaced apart from the main tube a sufficient distance to permit the cover-slide to operate between the said tubes F and G³,

as will be understood from Figs. 2 and 3. The upper cross-plate G is also provided with openings G⁴ outside of the tube G³ to permit the passage of liquid, as will be understood from Figs. 2 and 3.

The cover-slide H is tubular and encircles the main tube and slides thereon between the lower cross-plate and the upper cross-plate. This cover-slide H has a lateral wing H', which forms a stop to engage the inner end of the tube G³ of the plate G and is also provided with an outwardly-projecting tubular portion H², which is of such length as to terminate short of the outer edges of the openings F⁵ when the cover-slide drops down along the main tube to a position where its valve-flange H' will bear against the lower edge of the tubular portion G³ of the outer cross-plate G. The purpose of this cover-slide is to provide a valve which will adjust to a position where its plate H' will bear against the tube G³ and prevent the refilling of the bottle when the latter is inverted to cause its bucket-valve I to travel to a point beyond the openings F⁵. If the bottle be inverted to bring the bucket-valve to said position, the cover-slide will adjust down from the position shown in full lines, Fig. 3, to that indicated in dotted lines in said figure, in which the flange H' will bear against the inner end of the tube G³, and so prevent any liquid from passing through the openings G⁴ and thence through the opening F⁵ into the bottle. If it be attempted to fill the bottle when the latter is in an upright position, such operation will be prevented by the bucket-valve resting in the position shown in Fig. 2.

In pouring liquid from the bottle the latter may be inverted, and the bucket-valve will pass to the outer end of the main tube, as shown in Fig. 3, the opening F⁴ at the outer end of the main tube venting the latter so the bucket-valve may move to its extreme outer position and the liquid in the bottle pass out of the opening F⁵ and bear against the valve-plate H' of the cover-slide, thus forcing said slide back off of its seat at the inner end of the tube G³, as shown in Fig. 3, the liquid then passing out through the openings G⁴ as desired.

It will be noticed that the devices for preventing refilling of the bottle are secured in the neck of the bottle by means of the packing-ring K, seated in the groove E in the neck of the bottle and securing the said devices with the lower cross-plate bearing against the shoulder D, as before described. Sufficient room is left within the said devices to receive an ordinary cork in order to securely close the neck of the bottle.

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

1. The herein-described device for prevent-

ing the refilling of bottles consisting of a lower cross-plate having an open center, an upwardly-projecting flange surrounding the center, and a lip projecting inwardly beyond the said flange, a main tube fitting at its lower end within the flange of the cross-plate and bearing against the lip thereof, said main tube being closed at its outer end, provided adjacent thereto with vent-openings, below the said vent-openings with a shoulder on its outer side, and below said shoulder with openings for the passage of liquid from the bottle, an upper cross-plate having a central opening to fit over the main tube and bearing against the shoulder thereon, and provided with a depending tube surrounding the main tube and spaced apart therefrom, the said cross-plate provided outside the said depending tube with openings for the passage of liquid, a cover-slide fitting over the main tube and having a tubular portion operating between the same and the depending tube of the cross-plate and also provided with a valve-plate to seat against the said depending plate of the cross-plate, and a valve operating within the main tube and movable therein in both directions to points beyond the openings in said tube for the passage of liquid, substantially as set forth.

2. The herein-described device for preventing the refilling of bottles consisting of an upper cross-plate, a lower cross-plate, a main tube extending between the said plates and vented at its outer end and provided between the said cross-plates with an opening for the passage of liquid, a valve operating in the main tube to points on opposite sides of the opening for the passage of liquid, and a slide fitting over the main tube and movable thereon, substantially as set forth.

3. The combination in a non-refillable bottle of a main tube, the lower cross-plate, the upper cross-plate having a depending tubular apron, outlet-openings being provided in the main tube within the said apron, a cover-slide operating on the main tube and having a valve seating against the inner end of the depending tube of the cross-plate, and a valve operating in the main tube, substantially as set forth.

4. The combination in a non-refillable bottle with the main tube having an opening for the passage of liquid, a lower cross-plate and an outer cross-plate having openings for the passage of liquid, of a cover-slide operating along the main tube and adapted to permit the passage of liquid from the main tube to the openings in the outer cross-plate and to prevent a reverse flow of liquid, and a valve operating in the main tube and a seat for said valve, substantially as described.

5. The combination in a non-refillable bottle of a lower cross-plate, an outer cross-plate having an opening for a main tube, a main tube fitting in said opening and seating against

the inner cross-plate, a valve in the main tube, and a cover-slide movable along the main tube, substantially as set forth.

5 6. The combination in a non-refillable bottle with a main tube having an opening for passage of liquid, a lower cross-plate and an upper cross-plate having openings for the passage of liquid and a depending tube overlying the outlet-opening in the main tube and spaced

from said tube, and a cover-slide movable along the main tube and having a valve portion seating against the depending tube of the cross-plate, substantially as described.

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