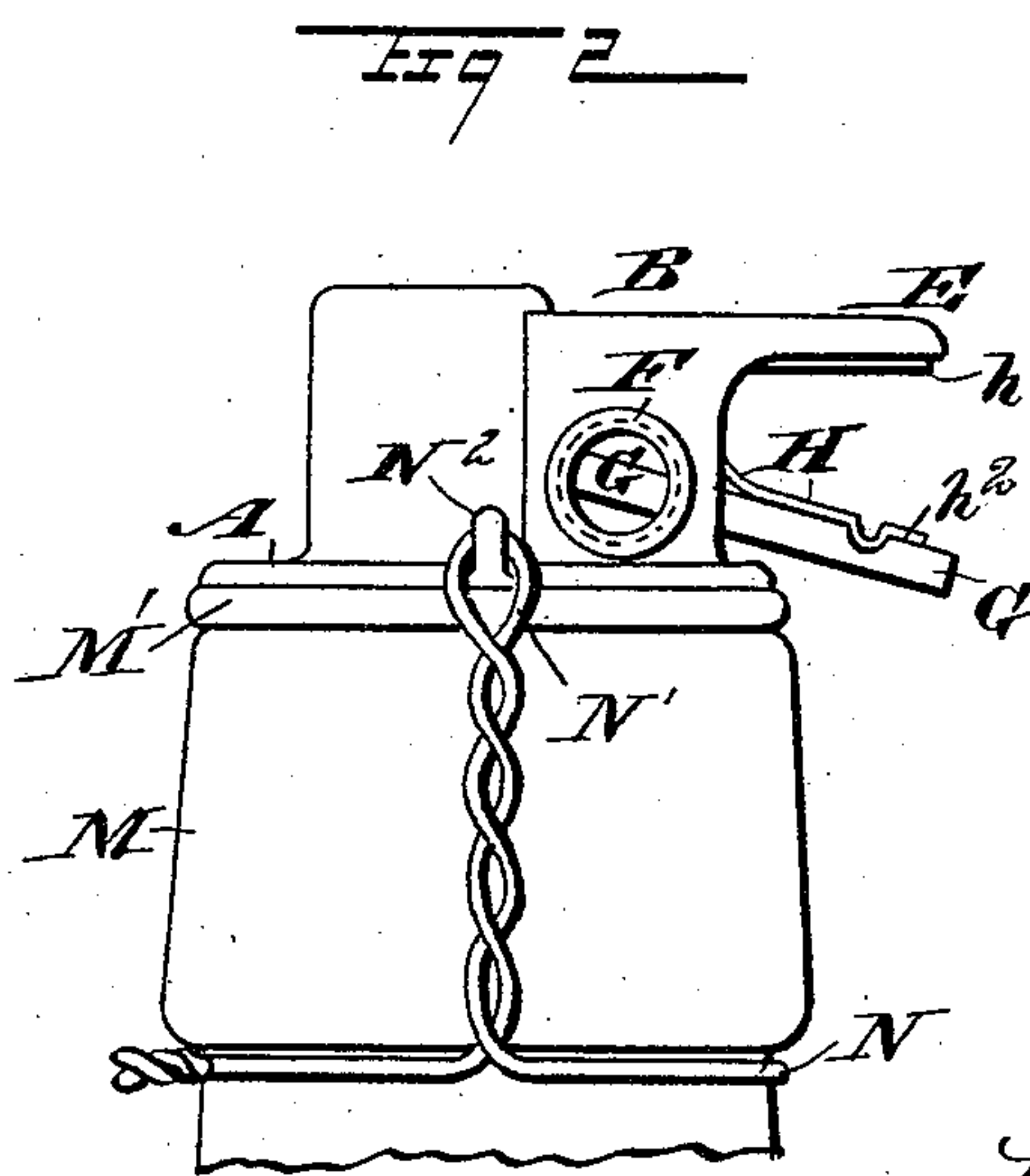
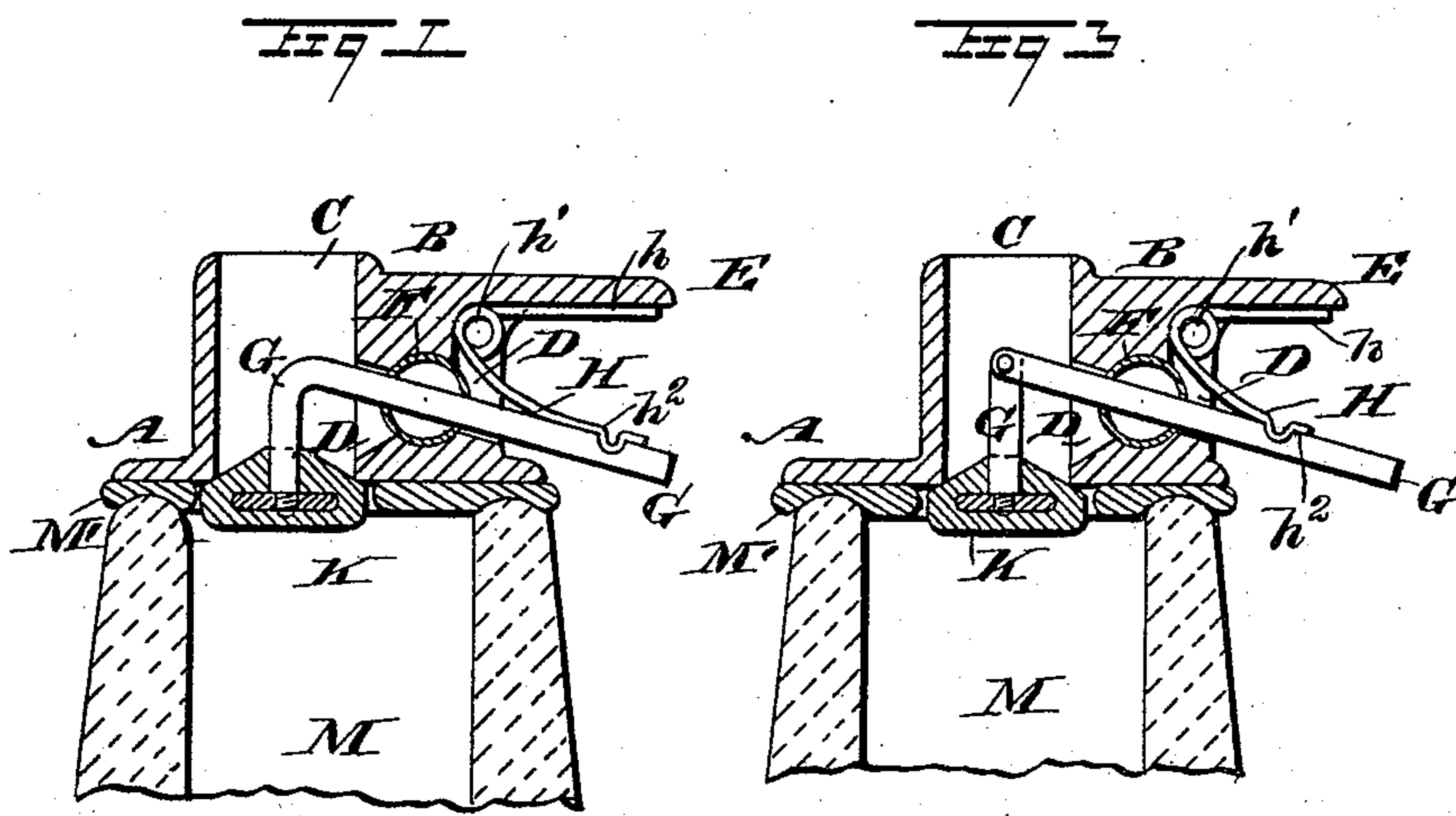


(No Model.)

W. H. RICKER.  
VALVED CAP OR STOPPER FOR BOTTLES.

No. 486,298.

Patented Nov. 15, 1892.



WITNESSES:  
*H. Walker*  
*C. Sedgwick*

INVENTOR  
*W. H. Ricker*  
BY *Munn & Co*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM H. RICKER, OF CAMBRIDGE, MASSACHUSETTS.

## VALVED CAP OR STOPPER FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 486,298, dated November 15, 1892.

Application filed March 28, 1892. Serial No. 426,640. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. RICKER, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Valved Caps or Stoppers for Bottles, of which the following is a full, clear, and exact description.

My invention relates to an improved valved cap or stopper for bottles, and has for its object to provide an article of that description of simple and economic construction and capable of expeditious and efficient application to the mouth of any bottle or like receptacle, and, further, to so construct the valve that it may be expeditiously and conveniently manipulated from the outside of the bottle in such a manner as to open it, and whereby, also, the moment that the valve is released from pressure it will automatically return to its seat.

Another object of the invention is to construct the valve in such a manner that when the bottle or receptacle is to be filled the cap or stopper need not be removed, as a filling-tube may be pressed down through the outlet-opening in the valve or stopper, and when the tube engages with the valve it will force it from its seat without injuring the valve in the slightest degree, and the moment that the filling-tube is withdrawn from the mouth of the bottle and passes into the cap or stopper the valve will automatically seat itself and automatically close the mouth of the bottle.

The invention consists in the novel construction and combination of these several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the cap or stopper applied to the mouth of a bottle, the mouth of the bottle being also in section. Fig. 2 is a side elevation of the mouth of a bottle and the cap or stopper, illustrating one means of securing the two together; and Fig. 3 is a central vertical section through a cap or stopper, illustrating a slight modification in the construction of the valve.

The body of the device consists of a base-section A and a body-section B, projected there-

from. The body and the base may constitute integral portions, or they may be attached in any manner known to the trade. The body-section, and likewise the base, is provided with an opening C, the openings being continuous, so that the joint-openings extend through from the upper end of the body and the lower portion of the base. This opening is the outlet-opening of the cap or stopper, and it may be centrally located, as shown in Fig. 3, or it may be located at one side of the device, as illustrated in Fig. 1. When located in the center, the cap or stopper is preferably used in connection with bottles having small mouths.

Adjacent to the outlet-opening C a recess D is produced in the body in such a manner as to form an overhanging member E at the top of the body, and the recess extends vertically through the major portion of one outer end of the body and communicates with the outlet-opening C. Between the main portion of the recess D—that is, its outer portion—and the opening C a pivot F is located. This pivot may be either solid or tubular, but the latter construction is preferred and is illustrated. This pivot is free to turn or rock in the body, and to it is secured a lever G, the lever being passed through the recess D and into the outlet C and preferably through the rocking pivot F. The outer end of this lever is pressed by a spring H, of any approved construction. Ordinarily the spring consists of a wire bent upon itself to form an upper horizontal member  $h$ , comprising two strands, a coil  $h'$  at one end of the upper member, and a lower member  $h^2$ , which at its lower end is bent downward to embrace the outer end of the lever, as illustrated in the drawings, and in the construction of the spring all of its members are made of double strands of wire, though, as heretofore stated, any form of spring may be substituted for that shown.

The preferred form of lever is angular and is in one piece. One member, which is the body member, passes through the pivot into the outlet-opening C, and the shorter member extends from the inner end of the longer one at a right angle downward, and to the lower end of this inner or shorter member of the lever the valve K is attached in any suitable or approved manner. This valve may be



made of metal or of rubber or of any suitable material, and is of a size and shape to fit snugly against the lower wall of the outlet-opening C in such a manner when the lever is in its normal position as to completely close said opening, and to open the opening the valve must pass within the neck of the bottle to which the stopper or cap is applied. When the lever is made in one piece, as shown in Fig. 1, and its outer end is pressed upward in direction of the grip member E of the body, the inner end carrying the valve will take a downward and diagonal curve within the mouth of the bottle, thus clearing the opening almost entirely and permitting free exit of the liquid contained in the bottle. The moment that the outer end of the lever is released from pressure the spring H compels the valve to automatically resume its seat. In the construction of the lever shown in Fig. 3 the said lever is made in two sections, the sections having a hinged connection, one section (the body-section) extending through the pivot into the outlet C and the other section extending downward through the outlet, and to this inner section the valve is secured. In the operation of this lever when the valve is opened it drops vertically downward, and, as heretofore stated, this form of lever is employed only when the mouth of the bottle to which the cap or stopper is to be applied is exceedingly small. When the cap or stopper is placed upon the mouth M of a bottle, a gasket or washer M' is placed between the upper edge of the mouth and the base A. Any approved form of clamp or fastening device may be utilized to secure the cap or cover upon the mouth of the bottle. One manner of effecting this result is shown in Fig. 2, in which it will be observed that a wire bail N is twisted around the neck of the bottle and formed with slight loops N', which loops pass over lugs N<sup>2</sup>, formed upon the base of the device. It is evident that when a bottle is to be filled the valve may be operated automatically, as by passing the filling-tube down through the outlet C the valve will be pressed from its seat and will make way for the tube to enter the mouth of the bottle, and the moment that the filling-tube is removed from the mouth of the bottle the valve will follow the tube and close the outlet C. It is also evident that liquids of any character may be

expeditiously drawn from a bottle capped or stoppered by my improved device and that when the valve is closed no gases or odors that the liquid in the bottle may possess can escape therefrom.

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

1. A bottle-stopper having a filling and outlet bore, a lateral opening extending from the bore outward through the stopper, a lever extending through said opening into the bore and pivoted between its ends to rock vertically in the opening, and a valve carried by the inner end of the said lever and closing the bore, substantially as described.

2. A bottle-stopper having a filling and outlet bore, a lateral intersecting opening through one side and a pivot-aperture intersecting said lateral opening, a transversely-apertured pivot turning in said aperture, and a lever extending through said opening and pivot into the bore and there provided with a valve closing said bore, substantially as described.

3. A bottle-stopper having a bore intersected by a lateral opening and an integral thumb-piece, a valve-carrying lever extending through the said lateral opening into the bore and pivoted in the said opening, and a spring pressing the outer end of the lever away from its thumb-piece, substantially as described.

4. A bottle-stopper having a bore intersected by a lateral lever-opening, a transversely-apertured tubular pivot crossing the said opening, an integral thumb-piece above the lever-opening, a lever extending through the opening and tubular pivot into the bore and provided with a valve, and a spring interposed between the thumb-piece and lever pressing them apart, substantially as described.

5. The combination, with the bottle-stopper comprising a body-section B, having a base-flange A, provided with integral lugs N<sup>2</sup>, and the valve having an operating-lever, of the wire N, adapted to embrace a bottle-neck and having upward-projecting twisted arms between its ends, provided at their upper ends with loops N', engaging the lugs N<sup>2</sup>, substantially as set forth.

WILLIAM H. RICKER.

Witnesses:

GEO. W. BUTLER,  
J. HOLMES.