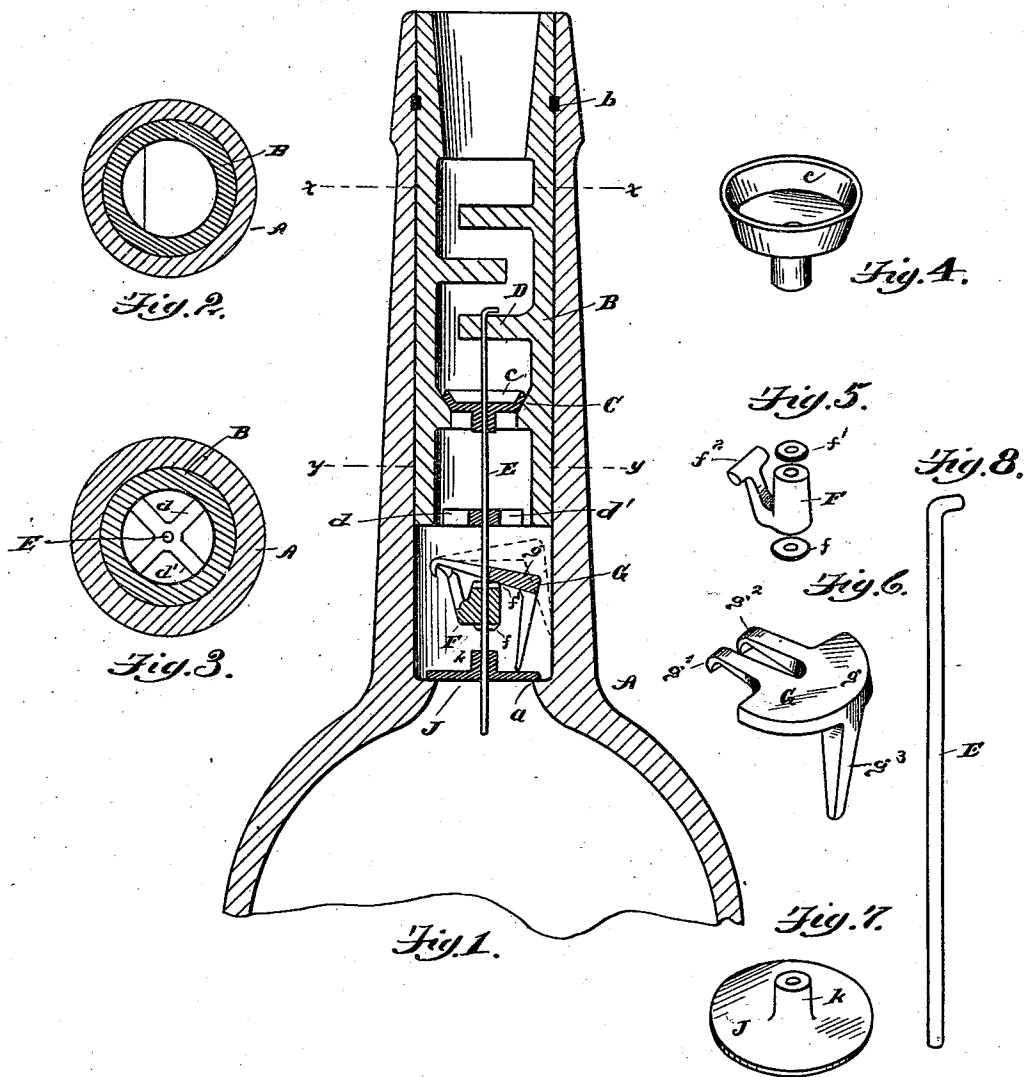


(No Model.)

M. J. BEACH.
BOTTLE STOPPER.

No. 550,013.

Patented Nov. 19, 1895.



WITNESSES

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MORGAN J. BEACH, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-EIGHTH TO
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BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 550,013, dated November 19, 1895.

Application filed March 18, 1895. Serial No. 542,113. (No model.)

To all whom it may concern:

Be it known that I, MORGAN J. BEACH, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Bottle-Stoppers; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to bottle-stoppers; and it has for its object an improved form of stopper intended to prevent the fraudulent refilling of bottles from which the contents have once been emptied.

In the drawings, Figure 1 shows in sectional elevation the neck of a bottle with the stopper contained therein. Fig. 2 is a horizontal cross-section at the line *xx*. Fig. 3 is a horizontal cross-section at the line *yy*, showing the part of the framework below *yy*, through which the central guide is supported. Fig. 4 shows in perspective the upper check-valve. Fig. 5 shows a support upon which a swinging weight is held. Fig. 6 shows the swinging weight. Fig. 7 shows the lower disk-valve. Fig. 8 shows the central support on which the several valves and weights are carried and guided.

A indicates the walls of the bottle, which are provided at the point where the neck enlarges into the body part of the bottle with a valve-seat *a*.

B indicates a valve-casing adapted to be inserted within the walls of the bottle-neck and to be held therein by a packing-ring or ring of cement *b*, which fills the space formed between two annular grooves, one of the grooves being in the neck of the bottle and the other in the outer walls of the valve-casing arranged to be opposed to each other or to register with each other, so as to form an annular opening between them. The upper part of the casing B is provided with diaphragms which extend partially across and are arranged in staggered order, so as to present a winding passage-way through which liquid can rapidly run, but through which no in-

strument can be introduced to tamper with the valves below. Within the case B is a valve-seat C, preferably conical, and adapted to coact with a conical valve *c*. At the lower end of the valve-casing B is a guide, consisting, essentially, of a cross-piece or two cross-pieces *d d'*, provided with a central perforation, and through one of the diaphragms D is also a perforation central with respect to the valve-casing.

Through the two perforations, the one in the diaphragm D and the other in the cross-bar *d*, is passed a guide-rod E, made of any suitable material, preferably a small rod of glass, and upon this rod, which projects downward below the casing B, is swung a hanger-support F, from which swings a weighted hanger G. The weighted hanger G normally lies across the long axis of the neck of the bottle and is capable of swinging through a slight angle with reference to the axis as the bottle is turned from one position to another. It is also capable of turning with the support F completely around the axis, so that the weighted part *g* always drops to that side of the neck of the bottle which is lowest when the bottle is held with the axis of the neck horizontal or inclined sufficient to permit the hanger and its support to turn on the rod E.

The support F, while permitted to turn on the rod E, is prevented from moving longitudinally along that rod by means of the two washers *f* and *f'*, one of which is located at either side of the hanger-support F. The hanger-support F consists, essentially, of a barrel part, from which an arm extends, terminating with a knife-edge *f*², and the weighted hanger consists, essentially, of a heavy or weighted part *g*, of about the shape of a half-circle, from which extend two arms *g'* *g*², terminating at their ends in hooks which are adapted to engage over the knife-edge *f*².

From the weighted side of the hanger G extends a prong *g*³, which engages with the valve J when the bottle is in an upright position. The valve J is a disk-valve, centrally perforated and thin at its edges, but provided at its middle part with a hub *k* sufficient in length to prevent its twisting on the rod E. The valve J and the check-valve *c* are free to move

along the guide-rod E toward and away from their respective seats. The rod E may be either slightly movable or it may be held against movement.

5 When the bottle provided with these valves is tipped with its mouth downward in the way usual in pouring from a bottle, the weighted hanger G drops away from the valve J and permits liquid contained in the bottle to ex-
10 ert its normal pressure and force the valve J away from its seat. The liquid also easily presses the check-valve c away from the seat and escapes; but if the attempt be made to fill the bottle that has once been emptied the
15 liquid is stopped first by the check-valve c. If, by shaking or other manipulation, the liquid is forced beyond the check-valve c, it meets with the further obstruction of the valve J, and the valve J being light and re-
20 strained from free motion by its frictional contact with the guide-rod E will not readily be displaced by any shaking or manipulating that can be exerted. The weighted hanger G, which is more free to move than the valve
25 J, will, in case any attempt is made to shake the valve J from its seat, swing to and fro, and because of its greater freedom of move-
ment, and because of its engagement at each

oscillation with the valve J, aid in holding the valve J in place.

What I claim is—

1. In an anti-filling device for bottles, the combination of a guide rod centrally supported with reference to the bottle neck, a disk valve and its seat closing and opening at
35 the bottom of the bottle neck, and a swinging hanger adapted to rotate around said central guiding stem and swinging longitudinally with respect thereto to engage the disk valve, substantially as described.

2. In an anti-filling device for bottles, the combination of a guide rod centrally supported with reference to the bottle neck, a valve seat and valve, a swinging hanger adapted to rotate around said guide rod and
45 to swing longitudinally with reference to said guide rod, a prong extending from the hanger and adapted to engage the valve at each oscillation of the swinging hanger, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

MORGAN J. BEACH.

Witnesses:

F. CLOUGH,

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