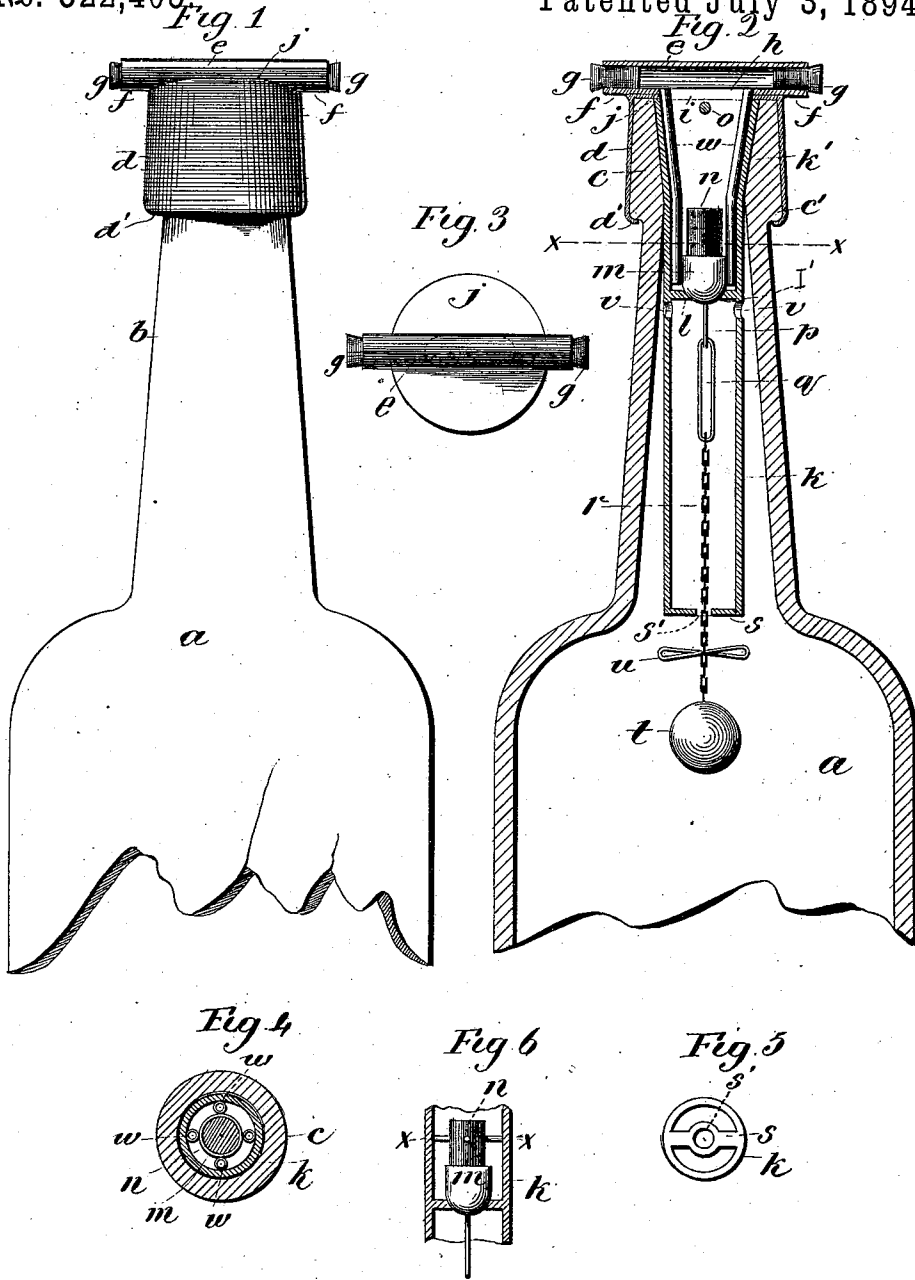


(No Model.)

N. W. CRANDALL & E. A. RUSSELL.  
DEVICE TO PREVENT FRAUDULENT FILLING OF BOTTLES.

No. 522,405.

Patented July 3, 1894.



Witnesses,  
J. H. Thompson  
Lillian D. Keckey

Nathan W. Crandall  
and Edgar A. Russell,  
Inventors  
By Atty  
Earle Seymour

# UNITED STATES PATENT OFFICE.

NATHAN W. CRANDALL, OF MERIDEN, AND EDGAR A. RUSSELL, OF WALLINGFORD, ASSIGNORS TO THE HOUSATONIC BRASS COMPANY, OF WALLINGFORD, CONNECTICUT.

## DEVICE TO PREVENT FRAUDULENT FILLING OF BOTTLES.

SPECIFICATION forming part of Letters Patent No. 522,405, dated July 3, 1894.

Application filed September 11, 1893. Serial No. 485,266. (No model.)

*To all whom it may concern:*

Be it known that we, NATHAN W. CRANDALL, of Meriden, and EDGAR A. RUSSELL, of Wallingford, in the county of New Haven and State of Connecticut, have invented a new Device to Prevent Fraudulent Filling of Bottles; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an elevation of the upper portion of a bottle provided with our attachment; Fig. 2, a vertical longitudinal section thereof; Fig. 3, an end view of the attachment; Fig. 4, a cross-section on the line  $x-x$ , Fig. 2, showing the valve in plan; Fig. 5, an under side view of the lower end of the tubular casing; Fig. 6, a sectional view of part of the tubular casing, showing in elevation a modified form of valve.

Our invention relates to a device for preventing the fraudulent filling of bottles, and the object is to provide bottles, demijohns and like liquid containers with efficient means for preventing the fraudulent filling thereof with spurious or adulterated liquids.

With this end in view, our invention consists in certain features of construction and combinations of parts to be hereinafter described and then claimed.

The letter  $a$  indicates the body of the bottle,  $b$  the neck, and  $c$  the head of the latter.

The bottle or other container, having been filled with the designed liquid, is supplied with our improved attachment, which from the outside of an opaque bottle presents no unusual appearance, except that of a cap  $d$  fitted tightly around the head  $c$ , and a transverse tube  $e$ , forming a double nozzle, the oppositely projecting mouths  $f$  of which are closed by stoppers  $g$ . The cap  $d$  is secured to the head  $c$  by spinning its lower edge into an inturned flange  $d'$  which engages under the shoulder  $c'$  of the head. The bottom of the tube or double-nozzle  $e$  is formed with a longitudinally extending elongated orifice  $h$  which registers with a similar orifice  $i$  extending transversely of the top  $j$  of the cap,

the said tube or double-nozzle being brazed or otherwise secured to the said top.

Extending down into the neck  $b$  is an open-end tubular casing  $k$ , the upper end whereof is flared, as shown at  $k'$  and is received within the correspondingly flared opening of the neck, and whose lower end terminates approximately with the base of the latter. The flaring upper end of this casing corresponds in its external diameter to the internal diameter of the flaring upper end of the neck of the bottle. The lower end of the casing is, however, smaller in diameter than the internal diameter of the bottle, so that an annular space is formed between it and the same.

Located within and at a point above the midlength of the tubular casing  $k$  is a transverse annulus  $l$  which forms a seat for a valve consisting of a cup-shaped socket  $m$  and a plug  $n$  set thereinto, the opening  $l'$  of the valve-seat conforming to the convex base of said socket. The plug  $n$  is preferably made of cork, and the socket  $m$  of thin metal. At the top of the casing  $k$  is a transverse pin  $o$  which constitutes a guard that prevents the removal or displacement of the valve  $m, n$ , through the pouring orifice  $h, i$ . At the base of the socket  $m$  of the valve is an eye or hook  $p$  for the attachment of an elongated coupling-link  $q$ , from whose lower end hangs a chain  $r$  or its substantial equivalent, such as a cord, which extends through a perforation  $s'$  of a bridge or guide  $s$ , spanning the lower end of the casing  $k$ . The chain  $r$  depends below the neck of the bottle and carries at its lower end a weight  $t$ , which is prevented from entering the neck and interfering with the pouring of the liquid, by reason of the said casing being co-extensive with said neck. A transverse fender  $u$ , of a greater length than the diameter of the casing  $k$  is secured to the chain at a point between the guide  $s$  and the weight  $t$ , whereby the latter is prevented from falling directly onto the lower end of the casing when the bottle is inverted and the outward movement of the valve limited. Below the valve-seat or annulus  $l$  are located vents or passages  $v$  extending through the casing.

Extending along the inner wall of the tubular casing *k* from its upper end nearly down to the valve-seat *l* are tubular conduits *w* between which the valve is guided to its seat, and whereby its perfect seating is assured. If preferred, however, these conduits may be dispensed with, and, as shown in Fig. 6, the valve may be provided with radially projecting guide-pins *x*, the outer ends of which lightly engage the inner wall of the casing *k*.

From the foregoing description, it will be clear that when the bottle is sufficiently tilted, one or the other of the stoppers *g* being removed, preferably both, the valve is unseated and the liquor permitted to flow out through the opening in the valve-seat, and hence through the pouring orifice *h, i*. The liquid will at the same time enter the casing at its lower end, and also through the lowermost of the vents or passages *v* therein, whereas air will be permitted to flow into the bottle through the uppermost conduit *w* and vent *v* and displace the liquor. When the bottle is set upright, the weight *t* will draw the valve down upon its seat.

It will be noted from the foregoing that air enters the bottle through the interior of the upper end of the casing and through the valve therein, and then flows out into the neck of the bottle through the vents formed in the casing immediately below the valve-seat.

We do not limit ourselves to the precise construction shown, but may adopt other and obvious modifications without departing from the spirit and scope of the invention.

We are aware that a bottle-stopper having a double horizontal discharge is old. We are also aware that a device for preventing a fraudulent filling of bottles is old, and that such a device has been provided with a weighted valve arranged upon a seat located in the neck of the bottle. We do not, therefore, claim any of the constructions referred to broadly.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device for preventing the fraudulent filling of bottles and other liquid containers, the combination with the headed neck of a bottle, of a cap having a flange spun within its lower end around the head, to prevent the removal of the cap, and a tube at the top forming a double-nozzle, a casing located within the neck of the bottle, extended at its upper end to the lower face of the said cap, and having a valve-seat located within it, a valve normally resting upon the said seat, and a weight for holding the valve in place upon the valve-seat substantially as set forth.

2. In a device for preventing the fraudulent filling of bottles and other liquid containers, the combination with a cap constructed to be permanently applied to the neck of the bottle and adapted to discharge the contents thereof laterally, of a long tubular casing located

within the neck of the bottle, made open at its upper end through which the contents of the bottle are discharged, and adapted at its said end to fit tightly within the neck of the bottle, a valve-seat fixed within the said casing and consisting of an annulus through which the contents of the bottle are discharged into the open upper end of the casing, a valve located upon the upper face of the said valve-seat and introduced into the casing through the open outer end thereof, a weight located on the opposite side of the seat, and connection between the weight and valve which is thus normally held upon its seat, substantially as described.

3. In a device for preventing the fraudulent filling of bottles and other liquid containers, the combination with a cap constructed to be permanently applied to the neck of the bottle and adapted to discharge the contents thereof laterally, of a long tubular casing located in the neck of the bottle, made open at its upper end which is adapted to fit snugly within the neck of the bottle than which its lower end is smaller, a valve-seat located within the casing and consisting of an annulus, a valve located upon the said valve-seat and introduced into the casing through the open outer end thereof, a weight located below the valve-seat, and connection between the weight and valve, whereby the same is normally held upon its seat by the weight, the said casing being provided below the valve-seat with passages for admitting the liquid contents of the bottle into it for their discharge through the valve-seat into its open outer end, substantially as described.

4. In a device for preventing the fraudulent filling of bottles or other liquid containers, the combination with a cap constructed to be permanently applied to the neck of the bottle and adapted to discharge the contents thereof laterally, of a long tubular casing located within the neck of the bottle and held in place therein by the cap, flared at its upper end to completely fill the upper end of the neck of the bottle, than which its lower end is smaller so as to form an annular space between it and the same, a fixed valve-seat located within the casing and consisting of an annulus, a valve located upon the said seat and introduced into the casing through the open outer end thereof, a weight located below the said seat, and connection between the valve and the weight, the lower end of the said casing being provided with passages for admitting the contents of the bottle into it for their passage through the valve-seat into the open outer end of the casing, substantially as set forth.

5. In a device for preventing the fraudulent filling of bottles, or other liquid containers, the combination with a casing adapted to be inserted in the neck of a bottle, to which its upper end corresponds in diameter, while its lower end is of lesser diameter than the same, of a valve-seat fixed within the casing, a valve, conduits secured to the inner wall of the cas-

ing, and ending short of the valve-seat and consisting of small tubes and forming a guide for the valve, and means for holding the valve normally on its seat, substantially as set forth.

5 6. In a device for preventing the fraudulent filling of bottles or other liquid containers, the combination with a casing adapted to be inserted in the neck of a bottle and having a perforated bridge at its lower end, of a valve-seat in the casing, a valve, a weight below the casing, a connection passing through the perforated bridge and attaching the weight

to the valve, and a fender secured to the connection between the bridge and weight, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

NATHAN W. CRANDALL.  
EDGAR A. RUSSELL.

Witnesses:

CARRIE B. FOWLER,  
OSWIN H. D. FOWLER.