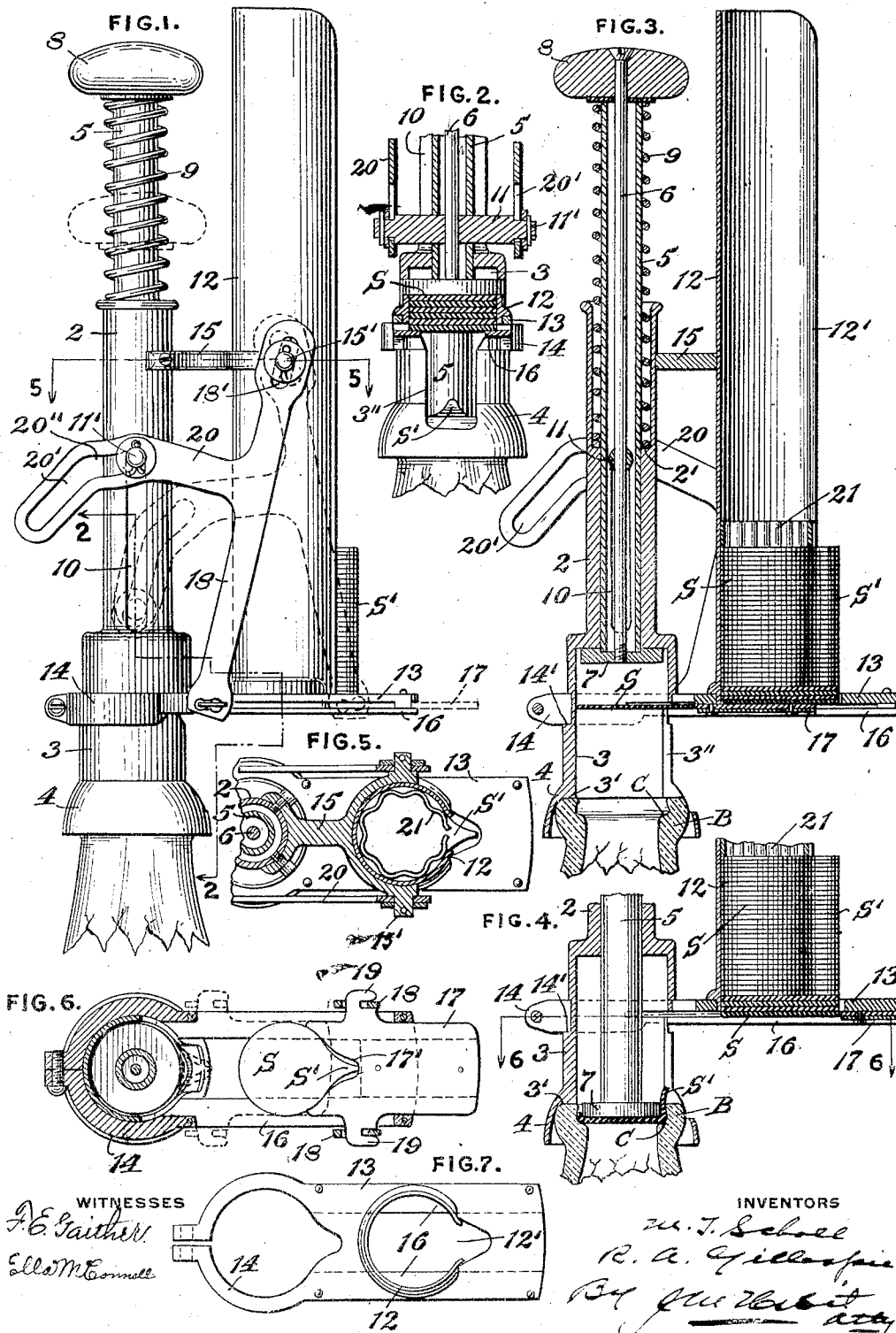


M. T. SCHOLL & R. A. GILLESPIE.
 DEVICE FOR APPLYING BOTTLE STOPPERS.
 APPLICATION FILED APR. 12, 1912.

1,111,973.

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UNITED STATES PATENT OFFICE.

MILO T. SCHOLL AND ROBERT A. GILLESPIE, OF PITTSBURGH, PENNSYLVANIA.

DEVICE FOR APPLYING BOTTLE-STOPPERS.

1,111,973.

Specification of Letters Patent.

Patented Sept. 29, 1914.

Application filed April 12, 1912. Serial No. 690,422.

To all whom it may concern:

Be it known that we, MILO T. SCHOLL and ROBERT A. GILLESPIE, residents of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Applying Bottle-Stoppers, of which the following is a specification.

The primary object of the invention is to provide a simple and efficient means for applying stoppers to bottles, and particularly paper or disk stoppers now largely used for milk bottles.

The device is adapted to rest on a filled bottle and apply a stopper thereto upon depressing a spring-raised stem, the device being conveniently moved from one bottle to another by the handle-forming stem so that the work may proceed rapidly, being accomplished by one hand much like operating a hand stamp.

The invention also includes a stopper magazine with means for passing the stoppers one by one into position to be set, a stopper being placed automatically in such position to be applied each time the device is operated.

The invention is so constructed as to operate with stoppers provided with tabs for readily removing them when opening the bottles.

In the accompanying drawings, Figure 1 is an elevation of the improved device in position on the neck of a bottle, the normal position of the parts being shown in full lines, and their positions when a stopper is being seated in dotted lines. Fig. 2 is a view partly in elevation and partly in section, taken on line 2-2 of Fig. 1. Fig. 3 is a vertical longitudinal section with the parts in full line position in Fig. 1, and Fig. 4 is a sectional elevation of the lower portion of the mechanism shown in Fig. 3 with the parts depressed as when seating a stopper. Fig. 5 is a sectional plan on line 5-5 of Fig. 1, and Fig. 6 is a sectional plan on line 6-6 of Fig. 4. Fig. 7 is a top plan of the magazine support and the slideway.

Referring to the drawings, 2 designates an upright body-forming tube and extending downwardly therefrom is the open-bottom chamber 3 from which depends the skirt-like flange 4 for embracing the upper end of a bottle, abutment-forming extremity 3' of the chamber resting on the neck of the

bottle as shown in Figs. 3 and 4. Movable vertically in body 2 is the tubular stem 5 through which extends bolt 6, the latter forming a tie between the head or plunger 7, movable in chamber 3, and knob or handle 8 at the upper end of the stem. The stem, plunger and knob thus assembled are held normally raised by spring 9 coiled on the stem between the knob and internal shoulder 2' of the body. Tube 2 is slotted vertically at 10, and secured to stem 5 and adapted to travel in the slot is bolt 11 which forms a cross-head. The upright open-top stopper magazine 12 rises from the laterally projecting shelf 13, the shelf being formed with split clamp 14 which embraces chamber 3, the latter being grooved at 14' to receive the clamp. The magazine is further supported and secured by the yoke-like brace 15 connecting it with the upper portion of tubular body 2. Shelf 13 is open beneath magazine 12, and secured to the under side thereof are strips 16, the narrow space between the shelf and strips forming a slideway for slide 17. Strips 16 extend beneath the magazine so that when the slide is in outward position or retracted, as in Fig. 6, the bottommost of a stack of stoppers S rests thereon. In the present adaptation the invention is designed primarily for applying paper disk stoppers to milk bottles so that the depth of the slideway and the thickness of slide 17 correspond approximately to the thickness of the stopper, and as the slide moves inward it projects the lowermost stopper into chamber 3 through its slotted side wall with which the slideway communicates. The chamber and stopper are of such relative size that the projected stopper is frictionally held within the chamber until seated by the downward movement of the head 7.

For operating with stoppers having familiar tab-like projections S', magazine 12 is open vertically at one side at 12' through which the tabs project, and the stopper-engaging edge of slide 17 is recessed at 17' to embrace the tab, as shown in Fig. 5. And for the same reason chamber 3 is slotted vertically at one side at 3'' to provide a passageway for the tab as it moves downward toward the bottle neck.

In operation, the device is seated on a bottle and stem 5 depressed for forcing a stopper into the seat-formed bottle neck, as

shown in Fig. 4. The stopper feeding means is preferably so arranged that a stopper is passed into chamber 3 on each upward stroke of head 7 and in position to be moved to seating position on the next downward stroke. The requisite movement of the slide may be accomplished by two levers 18 slotted at their upper ends at 18' for slight vertical play on trunnions 15' of the yoke-like brace 15, whereby levers 18 may be directly connected to the horizontally movable slide 17, the movement of the levers on trunnions 15' afforded by slots 18' permitting of this direct connection and making it unnecessary to interpose pivoted links or other motion-converting connections between the levers and slide 17. The lower ends of the levers are slotted to embrace the hook-like projections 19 on opposite edges of slide 17, this construction affording the requisite play or compensating movement without employing screws or other parts that might loosen and be lost. Projecting from each of levers 18 is an arm 20 formed with cam slot 20' through which extend extremities 11' of bolt or cross-head 11. The irregular slots 20' are of such form that with the parts normally raised the slide is projected toward chamber 3, with a stopper positioned in the chamber, as shown in Fig. 3. Upon depressing the spring-raised stem for seating the stopper the levers are oscillated outwardly and the slide retracted, as in Figs. 4 and 6 and in dotted lines in Fig. 1, so that the pile of stoppers may lower in the magazine and place the lowermost stopper in the path of the slide. The inner portion 20'' of each slot is curved as shown to facilitate the movement of the arms over trunnions 11' without binding. The slide is of sufficient length to project beneath the stoppers when in inward position, as shown in Fig. 3, and thus supports the stack and prevents it from lowering until the slide is fully retracted. The stoppers may be confined in the magazine by the friction clip or spring ring 21. The necks B of milk bottles are commonly formed with the internal stopper-receiving seat C of substantially the diameter of chamber 3, and the centering of the device on the bottle by skirt-flange 4 places the

chamber and stopper seat in alinement for the stopper-inserting operation.

We claim:—

1. The combination of a support, a reciprocating slide for projecting stoppers into position to be seated, levers of the third order movably fulcrumed at their upper ends to the support and at their lower ends pivotally connected directly to the slide, vertically movable stopper-seating means, and operative connections between the seating means and the levers for applying pressure to said levers in directions corresponding to the axis of said means for oscillating the levers and thereby reciprocating the slide.

2. The combination of a support, a reciprocating slide for projecting stoppers into position to be seated, levers of the third order movably fulcrumed at their upper ends to the support and at their lower ends pivotally connected directly to the slide, vertically movable stopper-seating means, slotted arms projecting from the levers, and a cross-head carried by the stopper-seating means and entered in the arm slots for applying pressure to said arms in a direction corresponding to the axis of said means for oscillating the levers and thereby reciprocating the slide when the seating means is actuated.

3. The combination of an open-bottom chamber, stopper-seating means movable vertically therein, a stopper-inserting slide movable at right angles to the direction of movement of the stopper-seating means, a lever support, levers of the third order fulcrumed at their upper ends to the support and slotted to move vertically thereon with the lower ends of the levers pivotally connected to the slide, and means operatively connecting the stopper-seating means and said levers, said means applying pressure to the levers in a direction corresponding to the axis of said stopper seating means.

In testimony whereof we affix our signatures in presence of two witnesses.

MILO T. SCHOLL.

ROBERT A. GILLESPIE.

Witnesses:

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