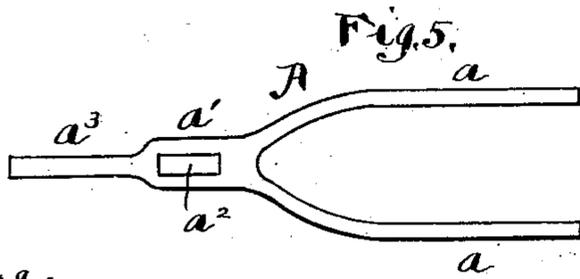
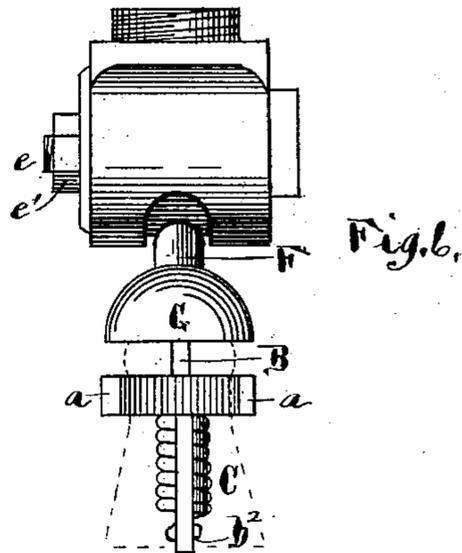
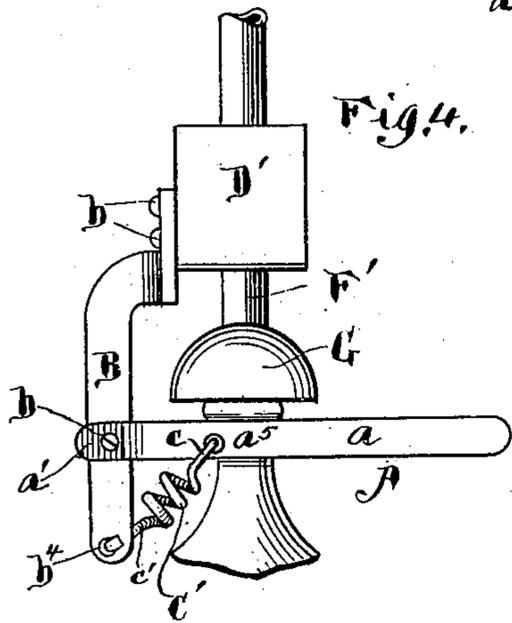
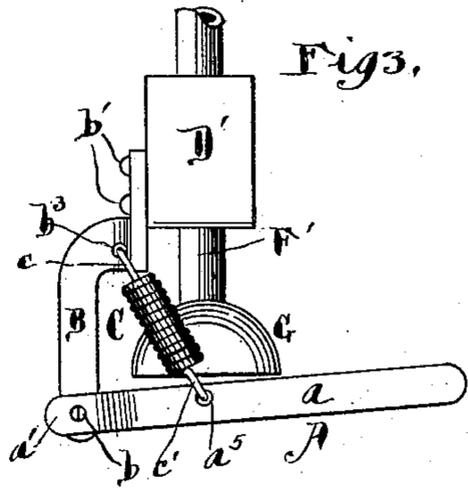
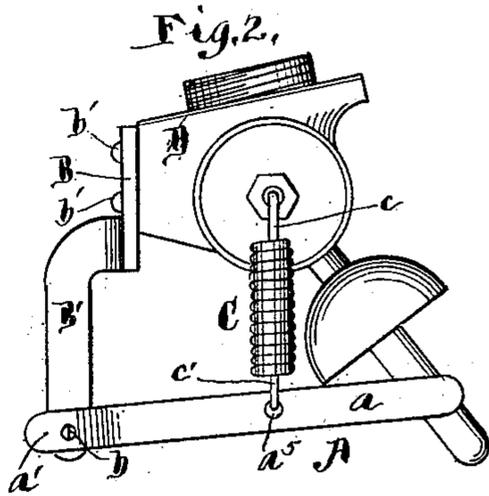
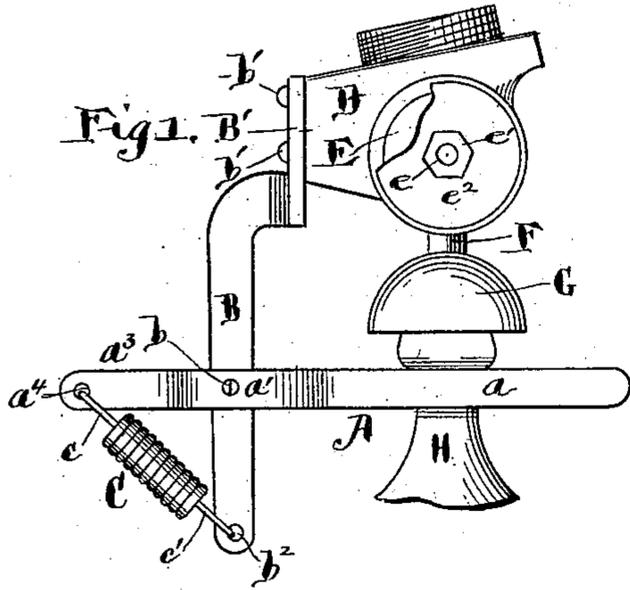


A. SCHNEIDER.
BOTTLE HOLDER.

(Application filed Jan. 9, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ADOLPH SCHNEIDER, OF CHICAGO, ILLINOIS.

BOTTLE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 713,160, dated November 11, 1902.

Application filed January 9, 1902. Serial No. 88,980. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH SCHNEIDER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Bottle-Holders, of which the following is a specification.

This invention relates more particularly to bottle-holders designed for use in connection with a filling-tube or other means for filling a bottle with liquid, but which could be used in other places and for other purposes.

The primary object of the invention is to simplify the construction and improve the operation of bottle-holders, so as to enable bottles having different depths of flange or taper to be caught and suspended by the bottle-holder, so as to have the mouth of the bottle properly entered into the filling cap or head, so as to prevent leakage and escape of pressure in filling the bottle, to give the holder for the bottle a yield under pressure which will positively insure the retention of the end of the bottle within the filling-cap irrespective of the point of engagement of the holder with the neck end of the bottle, to locate and arrange the holder and its pressure or yielding support in proper relation with the discharge end of a filling-tube as to enable the neck end of the bottle to be inserted in the holder and swung into position with the end of the filling-tube entered into neck of the bottle and have the bottle vertically supported for the filling operation, and to improve generally the construction and operation of the bottle-holder as a whole.

The invention consists in the features of construction and combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation showing the bottle-holder of the invention applied and used with a plug-valve carrying a filling-tube and a closing-cap at the end of the filling-tube over the end of the bottle; Fig. 2, a similar view to Fig. 1, showing a modification in the arrangement of the controlling-spring and the form of the holder; Fig. 3, a side elevation showing an arrangement of the holder of the invention in connection with a fixed filling-tube having a closing-cap at its filling end and showing a

modified arrangement of the spring for the holder-fork; Fig. 4, a similar view to Fig. 3, showing a push-spring instead of a pull-spring for the holder-fork; Fig. 5, a top or plan view of the holder-fork shown in Fig. 1, and Fig. 6 a front view of the holder of Fig. 1.

The holder-fork A of the construction shown in Figs. 1 and 5 is preferably made of metal and has a receiving end open at the front, with side arms or bars a coming together at a neck a' , in which is a slot a^2 and from which an arm a^3 extends. The size of the opening between the side bars or arms of the fork as to the width and length can be varied to suit the requirements of bottles of different sizes, the opening having a length and width sufficient for the admission of the neck of the bottle between the arms or bars and have the flange or taper of the bottle end rest on the upper face of the arms or bars, as shown in Figs. 1 and 4. The holder-fork of Figs. 1 and 5 is entered onto a bar or arm B, passing through the slot a^2 of the fork, and the fork is pivotally connected with the carrying bar or arm by a suitable pin or pivot b , passing through the side walls of the neck and through the carrying arm or bar, and, as shown, the arm or bar has a plate B' for attachment to the wall of the shell or casing for the plug-valve by means of screws b' or in any other suitable manner.

The arrangement shown in Fig. 1 has a pull-spring C, with an end c entering into a hole a^4 in the end of the extended arm a^3 of the holder-fork and with its other end c' entered into a hole b^2 in the end of the fixed carrying bar or arm B, so that with the downward movement of the open end of the holder-fork the rear end or extension-arm a^3 will be raised, opening the pull-spring, which with the release of the force the pressing downward on the open end of the fork will return the holder to normal position, and if the neck of the bottle has been inserted in the holder-fork the end of the bottle will be forced by the action of the spring into and tightly against the packing of the closing-cap. The bottle-holder of the arrangement shown in Fig. 1 is suspended from the shell or casing D of the plug-valve E by means of the depending arm or bar B, to which the holder-

fork is pivoted. The plug-valve is entered into the casing in the usual manner, and at its smaller end has a stem e , screw-threaded for the reception of a nut e' , between which 5 nut and the end face of the plug-valve is a washer e^2 , as usual, for making a tight joint between the valve and its shell or casing. The plug-valve carries a filling-tube F , the discharge end of which extends below a closing-cap G , located on the body of the tube at 10 the proper point in relation to the holder-fork for the insertion of the end of a bottle and have the fork engage the flange or taper of the bottle end and force and hold the end 15 of the bottle tightly against the packing of the closing-cap, as shown in Fig. 1.

The operation is as follows: The neck of a bottle is entered into the space between the side arms or bars of the holder-fork for its 20 flange or taper end to rest on the edge faces of the arms or bars, so that by depressing or forcing down the open end of the holder-fork with the neck of the bottle therein the bottle-neck can be adjusted in the holder-fork, so that 25 on the return of the fork to normal position the end of the bottle will be carried into the closing-cap and held against the inner face or packing of such cap, with the discharge end of the filling-tube entered into the neck of 30 the bottle. The release of the force on the open end of the holder-fork allows the spring, which has been expanded by the depression of the fork, to act and return the fork to normal position, carrying the end of the bot- 35 tle within the closing-cap for the fork to hold the bottle suspended in a vertical position, with the discharge end of the filling-tube in its neck and in proper position for filling, and with the completion of the filling the 40 bottle can be withdrawn from the fork, and the outward movement in withdrawing will carry with it the filling-tube into the position shown in Fig. 2, closing the plug-valve and shutting off the supply of liquid to the bot- 45 tle, and with the parts in the position shown in Fig. 2 the holder-fork is free to be drawn down, permitting the complete removal of the bottle from the filling-tube. A new bottle to be filled can then be placed in position, 50 with the discharge end of the filling-tube entered into its neck and the flange or taper end of the bottle resting on the fork, and the bottle can then be swung into the vertical position (shown in Fig. 1) for filling. The 55 swinging of the bottle into a filling position opens the plug-valve for the passage of liquid into the bottle. These movements of inserting and removing a bottle are permitted by reason of the yield allowed for the holder- 60 fork through the spring, and in addition the spring performs the office of returning the fork to normal position, holding the end of the bottle within the closing-cap. It will thus be seen that by reason of the yield allowed 65 for the holder-fork through its spring the fork is adapted for use with flanges or tapers

of different lengths on the ends of the bottles, as the spring will carry the holder-fork into operative position for retaining the end of the bottle in the closing-cap no matter 70 whether the flange or taper of the bottle end is long or short, the spring allowing of sufficient leeway to adapt the holder-fork to bottle ends having different lengths of flanges or tapers without destroying or interfering 75 with the efficiency of the holder-fork in supporting the bottle and holding its neck end in the closing-cap in position for filling.

The holder-fork and the pivotal attachment thereof and the arrangement of the spring to 80 cooperate therewith can be varied without departing from the spirit of the invention, which, broadly stated, consists in the use of a yielding holder-fork adapted for the support and 85 retention of a bottle to be filled. The fork shown in Fig. 2 terminates at the neck a' with the slot a^2 , locking the extension-arm a^3 , and in this arrangement the pull-spring C is attached at one end c by entering the end into a hole therefor in the stem of the plug-valve 90 and by entering the opposite end c' thereof into a hole a^5 in the arm of the fork, and, if desired, a draw or pull spring could be used for each arm or bar of the fork, which would 95 prevent any side twist or pull on the fork that would interfere with the proper set of the bottle end in the closing-cap. The operation is in all material respects the same as the operation described for the construction of Fig. 1, except that the draw or pull spring has a 100 direct action on the holder-fork instead of an indirect action through an extended arm, as in Fig. 1. The bottle to be filled is entered into position and withdrawn from position in the manner described for these operations in 105 the construction of Fig. 1. The yielding holder-fork for suspending a bottle in position to be filled can be applied to and used with various forms of apparatus or devices employing filling-tubes. The arrangement 110 shown in Fig. 3 employs a fixed filling-tube F' , carried by a head or support D' , to which the depending or carrying bar B is attached by screws b' or otherwise. The holder-fork is of the same general construction as the 115 fork of Fig. 2, having a neck a , with a slot a^2 , for attachment to the depending or carrying bar B by a pin or pivot b , as described for the construction of Fig. 1. The pull or draw spring C has one end c entered into a hole b^3 120 in the depending arm or bar B and its other end c' entered into a hole a^5 in an arm or bar of the holder-fork, as in the arrangement of Fig. 2. A pull or draw spring C can be used 125 for each side arm or bar of the fork, if so desired, giving a more uniform action in a direct line for the holder-fork and avoiding side strain or pull on one side only of the fork. The general operation and the manner of inserting and withdrawing a bottle and holding the 130 bottle in position to be filled are in every essential particular the same as described for

the construction and arrangement of Fig. 1. A pull-spring is preferred for general use; but a push-spring can be used, and an arrangement employing a push-spring is shown in Fig. 4, in which the head or support, the filling-tube, and the closing-cap are of the construction and arrangement shown in Fig. 3. The depending or carrying bar B is attached to the head by screws b' or otherwise and has pivoted thereto by a suitable pin or pivot b the inner end a' of the holder-fork, the same as in the construction of Fig. 3. The push-spring has one of its ends c entered into a hole a^5 in a side bar or arm of the fork, and its other end c' is entered into a hole b^4 in the end of the depending or carrying arm or bar. The forcing or pushing down of the open end of the fork contracts the push-spring, so that the end of the bottle, the neck of which has been entered onto the filling-tube and into the fork, can be carried into position for its end to enter the closing-cap with the release of the open end of the fork, as with such release the push-spring will expand, moving the end of the bottle-neck into the closing-cap. The operation, with the exception of the action of the spring C' , is essentially the same as the operation already described for entering the neck of a bottle onto the holder-fork with the filling-tube in the neck and locating the bottle in position for filling. The holder-fork, pivotally supported and under the control of pressure operating to carry the fork toward the filling-head and force the end of the bottle into the closing-cap, makes an efficient and reliable bottle-holder for the filling of bottles, from which the bottle is suspended vertically in position for filling and by which the end of the bottle is held in close relation to the closing-cap for filling purposes. The yield of the holder-fork of the invention enables a bottle to be readily inserted and withdrawn for filling purposes with the assurance that when inserted and in position for filling the fork will act of its own accord to retain the bottle in proper filling position. The yield of the fork provides for the use thereof with bottles having flanges or tapers at the end of varying lengths without any change in the connection of the fork and its relation to the filling tube and head. This device is very simple and can be applied and used with filling-tubes generally, it only being necessary to support the fork in such relation to the end of the filling-tube as to permit of the insertion of the end of the tube into the neck of the bottle, with the neck of the bottle in the fork, and to connect the pressure-spring for the spring to act and carry the fork toward the filling-head and forcing the end of the bottle into the closing-cap. The nature of the spring and its arrangement and location in reference to the holder-fork is to be such as to carry the fork toward the filling valve or head, and while a coil-spring is shown

other forms of springs could be used, it being understood that the spring is to have a sufficient force to carry the end of the bottle into the closing-cap and hold the bottle in position when filled against falling and carrying with it the holder-fork, releasing the contact of the end of the bottle with the closing-cap, and at the same time the strength of the spring should not be so great as to interfere with the easy and ready manipulation of the fork in inserting and withdrawing the bottles.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a bottle-holder, the combination of a holder-fork, a fixedly-attached support on which the holder-fork is pivotally mounted, a pressure-spring fixedly attached at one end and connected at the other end with the holder-fork and acting directly on the fork, for retaining and holding in filling position bottles having different lengths of flanges or tapers on their ends, substantially as described.

2. In a bottle-holder, the combination of a holder-fork, a depending bar or arm on which the holder-fork is pivotally mounted, a pressure-spring fixedly attached at one end and connected at the other end with the holder-fork, and acting directly thereon for retaining and holding in filling position bottles having different lengths of flanges or tapers on their ends, substantially as described.

3. In a bottle-holder, the combination of a holder-fork, a support on which the fork is pivotally mounted, a pressure-spring fixedly attached at one end and connected at the other end with the holder-fork, and a filling-tube in correlation with which the holder-fork is arranged, for retaining and holding in filling position bottles having different lengths of flanges or tapers on their ends, substantially as described.

4. In a bottle-holder, the combination of a holder-fork, a support on which the fork is pivotally mounted, a pressure-spring fixedly attached at one end and connected at the other end with the holder-fork, a filling-tube and a closing-cap on the filling-tube in correlation with which and the tube the fork is arranged, for retaining and holding in filling position bottles having different lengths of flanges or tapers on their ends, substantially as described.

5. In a bottle-holder, the combination of a holder-fork, a depending bar or arm on which the fork is pivotally mounted, a pressure-spring fixedly attached at one of its ends and connected at the other end with the holder-fork, a filling-valve provided with a casing to which the depending arm is fixedly attached, and a filling-tube carried by the filling-valve in coacting relation to the fork whereby bottles having different lengths of flanges or tapers on their ends are retained in filling position, substantially as described.

6. In a bottle-holder, the combination of a

vertically-movable holder-fork receiving the
bottle-neck and engaging the end flange or
taper of the neck the spring exerting an up-
ward pressure directly on the fork to force
5 the bottle upward into filling position in re-
lation to the filling-tube, and a fixed support
to which the fork is attached to move up-

wardly in relation thereto under pressure,
substantially as described.

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