

No. 717,033.

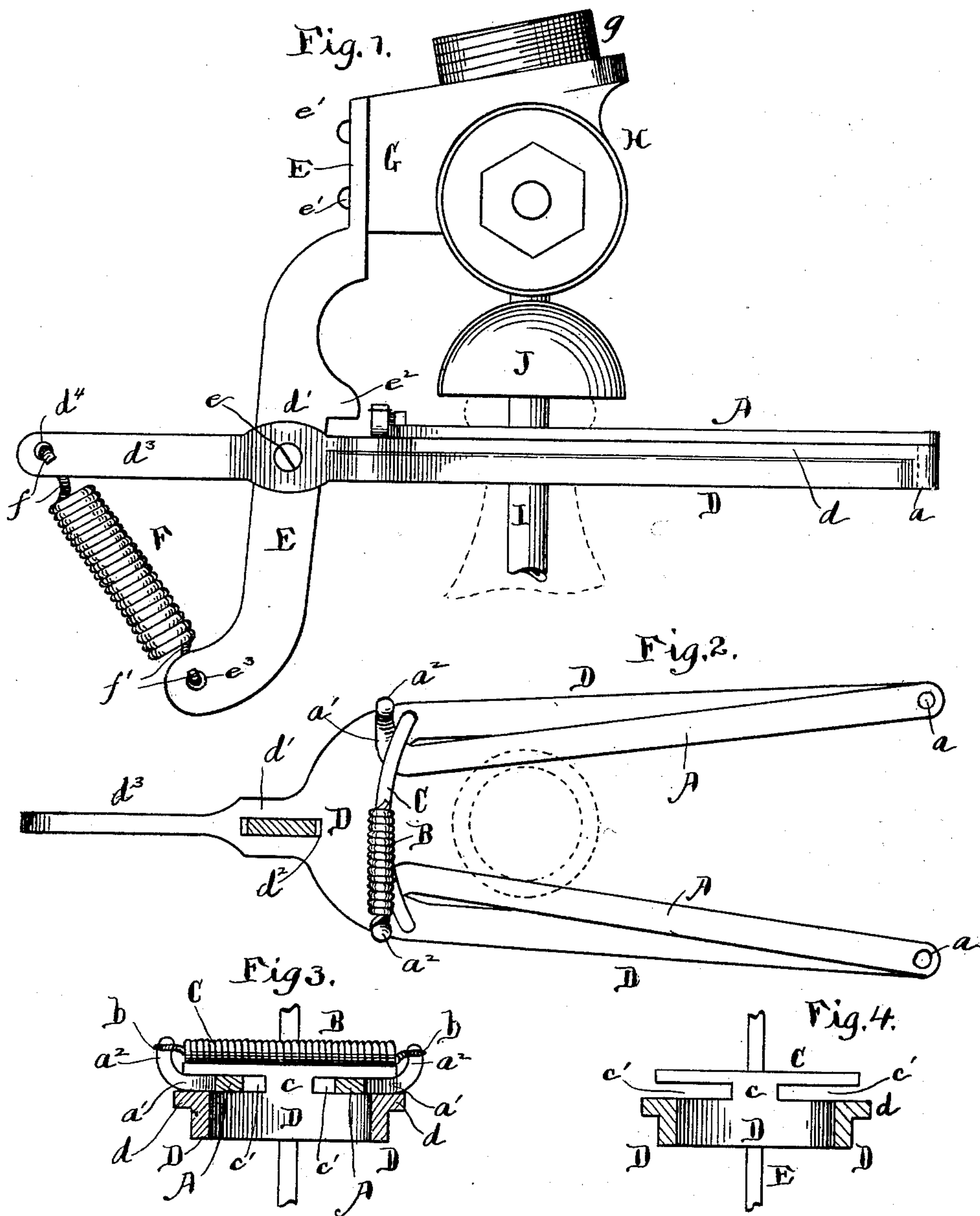
Patented Dec. 30, 1902.

A. SCHNEIDER & C. A. CARLSON.

BOTTLE HOLDER.

(Application filed Feb. 12, 1902.)

(No Model.)



Witnesses
Samuel W. Banning.
Oscar W. Bond

Inventors:
Adolph Schneider.
Charles A. Carlson.
By Banning & Bond
Attys.

UNITED STATES PATENT OFFICE.

ADOLPH SCHNEIDER AND CHARLES A. CARLSON, OF CHICAGO, ILLINOIS.

BOTTLE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 717,033, dated December 30, 1902.

Application filed February 12, 1902. Serial No. 93,695. (No model.)

To all whom it may concern:

Be it known that we, ADOLPH SCHNEIDER and CHARLES A. CARLSON, citizens 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 especially to bottle-holders designed for use with bottle-filling machines in which the bottle is held suspended and in communication with the filling-tube of the machine. The usual practice is to suspend a bottle from the holder by the neck, the fork of the holder engaging the bead or flange at the end of the bottle-neck and sustaining the bottle therefrom. It is desirable in the construction of such holders to have the fork provided with a retainer which is self-adjustable as to space, so as to adapt the holder for use with bottles having a variation in the diameter of their necks.

The objects of the present invention are to construct a bottle-holder having a fork for the admission of the bottle-neck and an adjustable retainer mounted on the fork of the bottle-holder and self-adjustable as to width of space for adapting the bottle-holder to bottles having necks of different sizes, to enable the necks of the bottles to be readily and quickly inserted in the fork of the holder to be grasped by the retainer or clamp below the bead or flange and held suspended, and to improve generally the construction and operation of the bottle-holder in its arrangement and adaptation for use with a filling-tube.

In the drawings, Figure 1 is a side elevation of the bottle-holder of the invention applied to a construction of filling head and tube; Fig. 2, a top or plan view of the bottle-holder and the self-adjustable clamp or retainer mounted on the bottle-holder for engaging the bead or flange of the bottle-neck, with the sustaining-bar for the holder in section; Fig. 3, a cross-section through the fork of the bottle-holder and the self-adjustable clamp or retainer, showing the spring of the clamp or retainer in elevation and showing the sustaining-bar of the fork broken away at each end; and Fig. 4, a similar view to Fig. 3 with

the self-adjustable clamp or retainer removed.

The self-adjustable clamp or retainer is formed of two side bars A, made of metal or other suitable material, each side bar at its outer end connected with the side bars or arms of the fork by a suitable pin or pivot a , so that the inner or free end of each bar is free to turn or swing from its pivotal outer end. Each side bar at its inner or free end has a neck or side extension a' , projecting up from which is a pin or stud a^2 , furnishing a connection and support for the operating-spring connecting the free ends of the two bars of the clamp. The spring in the construction shown is a coil-spring B, having at each end a loop or eye b for attachment of the spring to the posts a^2 for the draw of the spring to hold the inner ends of the side bars of the clamp or retainer normally in the closest or narrowest position as to width of space between the two bars. The inner or free end of each side bar of the clamp or retainer is held by a cross end bar C, connected by a neck c with the base end of the fork D, the cross-bar extending each side of the neck, so as to leave a slot or opening c' between the cross-bar and the face of the base of the fork, into which is entered the inner or free end of each side bar of the clamp or retainer, at the neck thereof, so that the stud or pin of each neck will be clear of the plane of the cross-bar, as shown in Figs. 2 and 3, leaving the inner or free ends of the side bars unobstructed to move in and out. The fork D in the construction shown has its side arm d outwardly diverging, and the side arms are joined at the inner end by a base or head which terminates in a neck d' , in which is a slot d^2 , and extending out from which is an arm d^3 , forming a lever for the fork. The side bars of the clamp or retainer overlie the side arms of the fork, and each side bar is pivoted at its outer end to the outer end of its underlying side arm of the fork, as shown in Figs. 1 and 2. The fork is pivotally supported on a sustaining or suspending bar E, the body of which passes through the slot d^2 of the neck or ears d' , and the fork is attached to the bar or arm E by a pin or pivot e , passing through the neck or ears d' and the bar, so that the outer end

of the fork is free to rise and fall as required for entering the neck of the bottle into the clamp or retainer and the fork, with the filling-tube in the neck, and bringing the bottle into position for filling and after filling withdrawing the filled bottle. The arm or bar E at its upper end has a plate or flat portion E', by means of which and suitable screws e' or otherwise the arm or bar is fixedly attached in position. The fork should be under a tension and force to insure the closing of the end of the bottle when in the closing-cap J against escape of pressure in filling bottles, and for this purpose, in the construction shown, a coil-spring F is located between the lower end of the fixed arm or bar and the outer end of the arm or lever of the fork, one end f of the spring being entered into a hole d^4 in the arm or lever d^3 and the other end f' of the spring being entered into a hole e^3 in the end of the arm or bar, and, as shown, the arm or bar E on its inner edge has a projection or stop e^2 for limiting the upward throw or movement of the outer end of the fork.

The plate E' of the arm of the bar E, as shown, is attached to the face of the head G, which has a screw-threaded plug g for connecting the head with a filling-tank or other receptacle, as usual. The head has a shell or casing H, in which is a filling-valve of any suitable construction, carrying a filling-tube I, which can be entered into the neck of the bottle, as shown by the dotted lines in Fig. 1, and when entered with the bottle in a vertical position, as in Fig. 1, the liquid will flow into the bottle. The filling-tube has thereon a closing-cap J, into which is entered the end of the bottle-neck, so as to tightly close the mouth of the bottle against escape of pressure in filling the bottle.

The clamp or retainer mounted on the side arms of the fork and converging in the direction of the inner ends of the side bars composing the clamp or retainer and held at its inner end normally in the position of smallest width of space furnishes a means for holding bottles of varying sizes of necks in the fork, so that the same fork can be used in filling different-sized bottles. The clamp or retainer is self-adjustable by reason of the spring which holds its inner or free end, enabling the neck of a bottle to be inserted in the holder with the assurance that it will be held suspended from the bead or flange of its neck irrespective of the diameter of the neck, as the bead or flange is too large to pass through the narrowest width of space between the side bars of the clamp or retainer. The outer end of the fork is at all times under a resistance from the spring, which exerts an upward pressure, and the neck of the bottle is entered into position at the open end of the fork for the admission thereinto of the filling-tube, with the filling-tube swung in the direction of the open end of the fork, and when so swung the controlling-valve of the filling-head is turned to shut off the supply.

The upward pressure of the fork, with the filling-tube in the neck of the bottle, derived from the spring will force the end of the bottle-neck tightly against the packing in the closing-cap, insuring a tight joint around the end of the bottle. The bottle, with the filling-tube entered into its neck, can be swung or turned to occupy a vertical position and will be suspended in that position by the engagement of the side bars of the clamp or retainer beneath the bead or flange of the neck. The swinging or turning of the bottle into a vertical position carries with it the filling-tube, and with the bottle in a vertical position the controlling-valve of the filling-head is turned to open the supply for the liquid to pass into the bottle. The bottle when filled is turned or swung in the direction of the open end of the fork, carrying with it the filling-tube and turning the controlling-valve of the filling-head, shutting off the supply, and when the limit of outward turn or swing is reached a pull on the bottle carries the neck from the outer end of the fork, permitting the filled bottle to be withdrawn. A new bottle can then be inserted in the same manner by depressing the lower end of the fork, and this bottle can be filled by turning or swinging it into a vertical suspended position, and when filled removed by swinging or turning it outward. These operations can be repeated until the required number of bottles have been filled. It will be seen that in each instance the bottle is held, in effect, in a suspended position from the fork and is retained when suspended by the engagement of the adjustable clamp or retainer with the bead or flange of the neck, and this engagement will be positively certain and always assured, irrespective of the size of the bottle-neck, by the adjustability of the clamp or retainer, the side bars of which move as required to suit the bottle-neck and engage the bead or flange thereon, making it possible with the same bottle-holder to fill bottles of different sizes.

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

1. In a bottle-holder, the combination of an adjustable holder-fork held under pressure in operative relation, a fixed support to which the holder-fork is yieldingly attached, a self-acting clamp or retainer having side bars mounted on the side arms of the frame, and a spring acting on the side arms to hold the same in contracted relation, substantially as described.

2. In a bottle-holder, the combination of an adjustable holder-fork held under pressure in operative relation, a self-acting clamp or retainer having side bars pivotally mounted on the side arms of the fork, and a spring at the free ends of the side bars holding the same in contracted relation, substantially as described.

3. In a bottle-holder, the combination of a self-acting clamp or retainer having side

bars, each side bar at its inner end provided with a neck, and a pin or stud, a holder-fork having side arms, the said side bars of the clamp or retainer pivotally mounted on the side arms of the fork at their outer ends, and a spring connected with the pins or studs of the side bars of the clamp or retainer, substantially as described.

4. In a bottle-holder, the combination of a self-acting clamp or retainer having side bars, each side bar having at its inner end a neck and a pin or stud, a holder-fork having side arms, the said side bars of the clamp or retainer pivotally connected to the side arms of the fork at their outer ends, a cross-bar on the holder-fork under which the side bars of the clamp or retainer are movable, and a spring connected with the pins or studs of the side bars of the clamp or retainer, substantially as described.

5. In a bottle-holder, the combination of a self-acting clamp or retainer having side bars, each side bar at its inner end provided with a neck and a pin or stud, a holder-fork having side arms, the said side bars of the clamp or retainer mounted on the side arms of the fork and pivotally connected thereto at their outer ends, a cross-bar on the holder-fork under which the side bars of the clamp or retainer are movable, a spring connecting the free ends of the side bars of the clamp or retainer, a bar or arm on which the holder-fork is pivotally mounted, and a pressure-spring between the holder-fork and the supporting arm or bar, substantially as described.

6. In a bottle-holder, the combination of a self-acting clamp or retainer having side bars, each side bar at its inner end provided with a neck and a pin or stud, a holder-fork hav-

ing side arms, the said side bars of the clamp or retainer mounted on the side arms of the fork and pivotally connected thereto at their outer ends, a cross-bar on the holder-fork under which the side bars of the clamp or retainer are movable, a spring connecting the free ends of the side bars of the clamp or retainer, a bar or arm on which the holder-fork is pivotally mounted, a pressure-spring between the holder-fork and the supporting arm or bar, a filling-tube, and a closing cap on the filling-tube in correlation with which the tube and the fork with its clamp or retainer is arranged, substantially as described.

7. In a bottle-holder, the combination of a self-acting clamp or retainer having side bars, each side bar at its inner end provided with a neck and a pin or stud, a holder-fork having side arms, the said side bars of the clamp or retainer mounted on the side arms of the fork and pivotally connected thereto at their outer ends, a cross-bar on the holder-fork under which the side bars of the clamp or retainer are movable, a spring connecting the free ends of the side bars of the clamp or retainer, a bar or arm on which the holder-fork is pivotally mounted, a pressure-spring between the holder-fork and the supporting arm or bar, a filling-tube arranged in coacting relation to the fork and its clamp or retainer, and a filling-head having a valve carrying the filling-tube, substantially as described.

ADOLPH SCHNEIDER.
CHARLES A. CARLSON.

Witnesses:

OSCAR W. BOND,
WALKER BANNING.