

(No Model.)

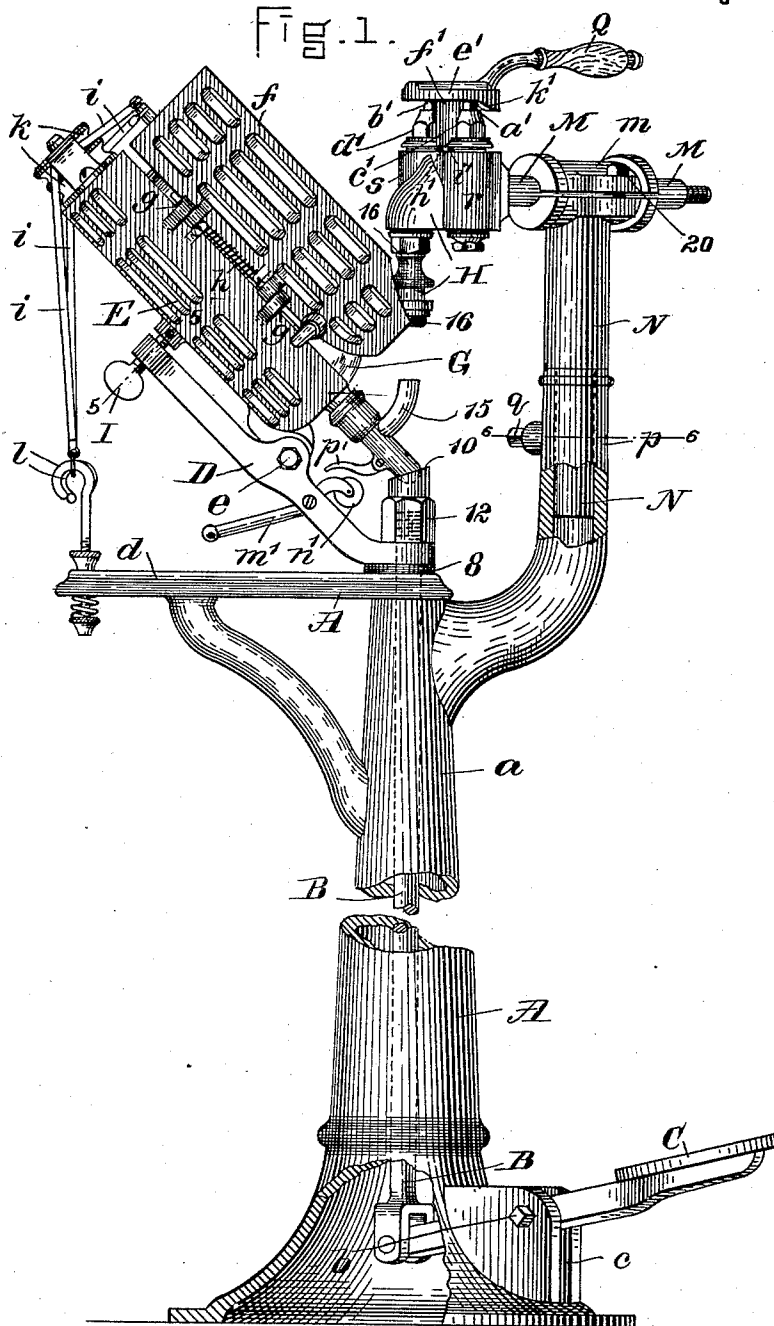
2 Sheets—Sheet 1.

F. J. JOHNSTON & G. E. BARTON.

SIPHON BOTTLE FILLING MACHINE.

No. 474,326.

Patented May 3, 1892.



WITNESSES.

Henry Marsh.
Harry H. Arken.

INVENTORS.

Frederick J. Johnston
George E. Barton
by P. E. Schumacher

(No Model.)

2 Sheets—Sheet 2.

F. J. JOHNSTON & G. E. BARTON.
SIPHON BOTTLE FILLING MACHINE.

No. 474,326.

Patented May 3, 1892.

Fig. 2.

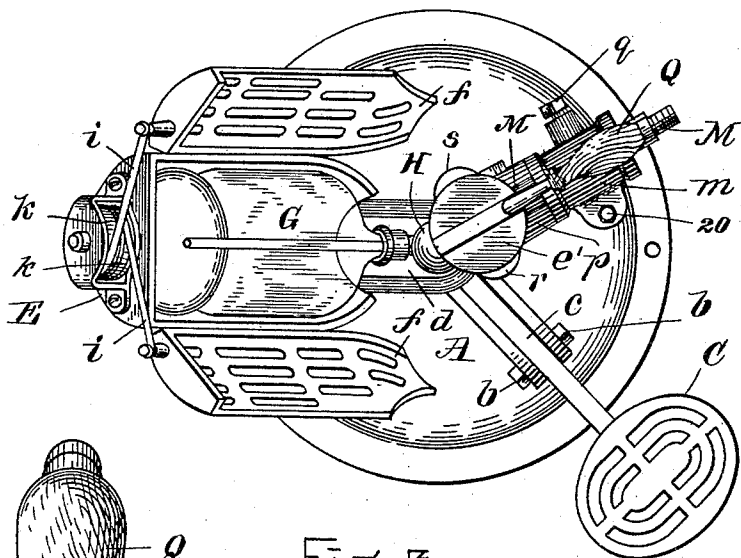


Fig. 3.

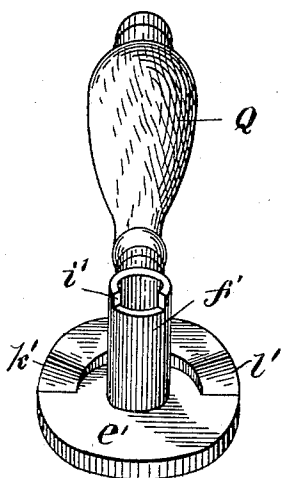


Fig. 4.

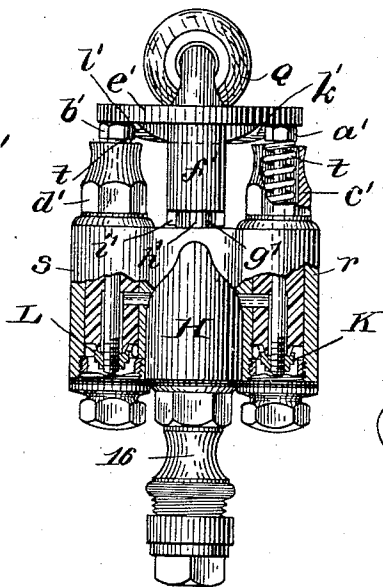


Fig. 6.

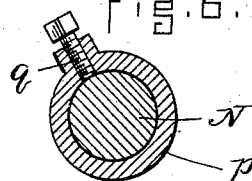
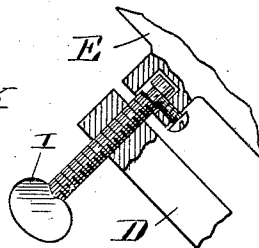


Fig. 5.



WITNESSES.

R. Henry Marsh.
Harry H. Allen.

INVENTORS.

Frederic J. Johnston
George E. Barton
by *J. C. Schenck* *Att'y*

UNITED STATES PATENT OFFICE.

FREDERIC J. JOHNSTON, OF CAMBRIDGE, AND GEORGE E. BARTON, OF SOMERVILLE, ASSIGNORS TO THE AMERICAN SODA FOUNTAIN COMPANY, OF BOSTON, MASSACHUSETTS.

SIPHON-BOTTLE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,326, dated May 3, 1892.

Application filed January 6, 1892. Serial No. 417 230. (No model.)

To all whom it may concern:

Be it known that we, FREDERIC J. JOHNSTON, of Cambridge, in the county of Middlesex and State of Massachusetts, and GEORGE E. BARTON, of Somerville, in the county and State aforesaid, citizens of the United States, have invented certain Improvements in Siphon-Bottle-Filling Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a sectional elevation of a siphon-bottle-filling machine constructed in accordance with our invention. Fig. 2 is a plan of the same. Fig. 3 is a front view of the filling-head and parts connected therewith, a portion being broken away to show the supply and vent valves therein. Fig. 4 is a perspective view of the filling-head hand-lever inverted, showing the cams which actuate the supply and vent valves. Fig. 5 is a sectional detail on the line 5 5 of Fig. 1. Fig. 6 is a sectional detail on the line 6 6 of Fig. 1.

Our invention has for its object to improve the construction of machines for filling siphon-bottles, whereby they may be readily adjusted for bottles of various kinds or sizes or for those having nozzles projecting at different angles, thus avoiding the strain upon the neck of the bottle and the consequent liability of its being broken or cracked from this cause which occurs when the nozzle is not brought up to the filling head or tube with its mouth centrally in line therewith.

To this end our invention consists in pivoting the screen or holder which contains the bottle to its vertically-movable support and making it adjustable by means of a regulating-screw, whereby its angle of inclination may be varied for different kinds or sizes of bottles to bring the mouth of the nozzle of the bottle into line with the filling head or tube in such manner as to avoid any undue or unequal strain upon the neck of the bottle.

Our invention also consists in mounting the filling-head and its valve mechanism upon a vertical post adapted to swivel horizontally upon its supporting arm or standard, whereby the mouth of the discharge-tube of the filling-head can be traversed horizontally in the arc of a circle to adjust it centrally over the nozzle

of the siphon-bottle after the position of the latter has been determined by the adjustment of the pivoted bottle-holder above referred to.

In the said drawings, A represents the frame or standard of the machine, the vertical portion *a* of which is made hollow for the reception of the vertical rod B, the lower end of which is connected with the treadle C, pivoted at *b* within a slot *c* at the base of the standard. To the upper end of the rod B, above the horizontal portion or arm *d* of the frame A, is secured an outwardly-inclined supporting arm or bracket D, to which is pivoted at *e* the lower end of the inclined bottle-holding screen or shield E, within which is placed the siphon-bottle G to be filled, the bottle being placed head down, and said head resting in an elastic socket or bolster 10, formed in a nut 12, secured to the top of the rod B, as seen in Fig. 1. On depressing the treadle C the holder E, with the bottle therein, is raised vertically to bring the nozzle 15 of the siphon-bottle up to the mouth of the discharge-tube 16 of the filling-head H, to be hereinafter described, the weight of the parts being sufficient to return them to their normal positions on the release of the treadle. Beneath the lower end of the bracket D and encircling the rod B is a rubber cushion or buffer 8, by which the parts are relieved from concussion on the descent of the bracket and bottle-holder. The front of the shield E is made in two parts *ff*, forming doors, which are hinged at *gg* to the main portion of the shield and are held open by springs *h h*, said parts *ff* being closed together around the bottle when the treadle is depressed by means of cords *ii*, passing around pulleys *k* and connected at their lower ends to adjustable hooks *l*, the operator being thus protected in the event of the bursting of the siphon-bottle while being filled. This method of automatically operating the doors *ff* as the treadle is depressed is, however, well known and forms no part of our present invention.

At the upper end of the inclined support or bracket D is a thumb-screw I, the inner end of which is connected with the back of the bottle-holding shield E in such manner that it will swivel therein, but cannot be withdrawn therefrom, whereby as the screw I is turned in or out the bottle-holder E is rocked

on its pivot *e* to vary its angle of inclination, as may be found necessary, to bring the end of the nozzle 15 of the bottle G therein into a position to insure its being properly raised by the treadle in line with the discharge-tube of the filling-head, the mouth of which is cushioned to receive it, the adjusting-screw I holding the bottle-screen firmly and immovably at the angle to which it has been set, this adjustment thus enabling siphon-bottles of any size or pattern to be brought up to the filling-tube without straining or cracking their necks, which has been very liable to occur in machines of this description as heretofore constructed.

The filling-head H, which comprises, as usual, a discharge-tube 16 and suitable valves K L for regulating the supply of liquid and for affording a vent for the surplus gas, is provided with a horizontal supporting inlet-tube M, which is adapted to be connected by a suitable pipe with the supply-vessel containing the liquid with which the siphon-bottle is to be filled. The tube M is supported in a box or bearing *m*, formed at the upper end of a vertical post N and provided with a clamping-screw 20, whereby said tube M can be adjusted in the direction of its length to vary the position of the mouth of the discharge-tube 16 with relation to the nozzle of the siphon-bottle in the holder E. This adjustment is, however, not always sufficient to bring the parts into their proper relative positions, owing to the angle at which the bottle-holder E is placed with respect to the tube M. We therefore provide an additional adjustment whereby the filling-head and its discharge-tube 16 may be traversed horizontally in the arc of a circle after the bottle-holder has been adjusted to the proper angle by means of the screw I, as previously described. To effect this, the post N is adapted to swivel on the supporting-arm *p* of the standard A, the lower end of the post N fitting within a vertical bearing therein and being clamped in position, when adjusted, by a set-screw *q*. The swiveling of the post N in connection with the angular adjustment of the bottle-holding screen E thus enables the mouth of the filling-tube 16 to be adjusted with the greatest nicety to bring it centrally over the mouth of the nozzle of a siphon-bottle of any size or description, whereby more perfect results are attained than have been found possible with mechanism of this description as heretofore constructed.

The supply-valve K and the vent-valve L, which are placed within the short cylinders *r s* of the filling-head H, are of the usual construction, being kept normally closed upon their seats by springs *t t*, which cause the upper ends of their valve-stems *a' b'* to project above the stuffing-boxes *c' d'*, as seen in Figs. 1 and 3, into a position to be acted upon to open said valves by a hand-lever Q, at the inner end of which is a horizontal disk *e'*, provided on its under side with a central

tubular socket *f'*, fitting over a vertical fulcrum pin or post *g'*, Fig. 3, projecting up from the filling-head, the horizontal swinging movement of the hand-lever in either direction being limited by a lateral stop *h'* on the pin *g'* and a notch *i'* at the bottom of the tubular socket *f'*.

On the under side of the disk *e'* are formed two cams or inclines *k' l'*, the former adapted to depress the valve-stem *a'* and the latter the valve-stem *b'*, according to the direction in which the hand-lever Q is swung around horizontally on its fulcrum, the shape of each cam being such that the lever when swung around as far as permitted by its stop will hold the valve open against the stress of its spring positively independently of the pressure of the hand until it is swung back in the opposite direction, the valves being in this manner operated with great ease and with much less fatigue to the wrist than with the upright T-shaped lever heretofore used for this purpose, which requires a constant pressure of the hand in order to keep the valve open against the stress of its spring.

The supporting arm or bracket D of the bottle-holder E is provided, as usual, with a lever *m'*, having an anti-friction roll *n'*, which fits under the handle *p'* of the siphon-bottle, and is adapted to move the same when said bottle is to be opened to receive the liquid from the filling-head.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a siphon-bottle-filling machine, the combination, with the frame or standard A and the vertically-movable supporting arm or bracket D, adapted to be operated by a treadle, of the inclined siphon-bottle holder E, pivoted to the arm or bracket D, and the regulating-screw I, passing through the arm D and swiveling in the under side of said bottle-holder, whereby the latter can be adjusted to vary its angle of inclination, substantially as described.

2. In a siphon-bottle-filling machine, the combination of the frame A, the vertically-inclined supporting arm or bracket D, adapted to be operated by a treadle, the inclined siphon-bottle holder E, pivoted at *e* to the arm or bracket D and provided with the regulating-screw I, passing through said arm and connected with said bottle-holder, and the filling-head H, mounted upon a vertical post N, adapted to swivel upon its supporting-arm *p*, whereby said filling-head is adapted to be traversed horizontally in the arc of a circle, all constructed to operate substantially as set forth.

Witness our hands this 15th day of December, A. D. 1891.

FREDERIC J. JOHNSTON.
GEORGE E. BARTON.

In presence of—
P. E. TESCHEMACHER,
JOHN MACKSEY.