

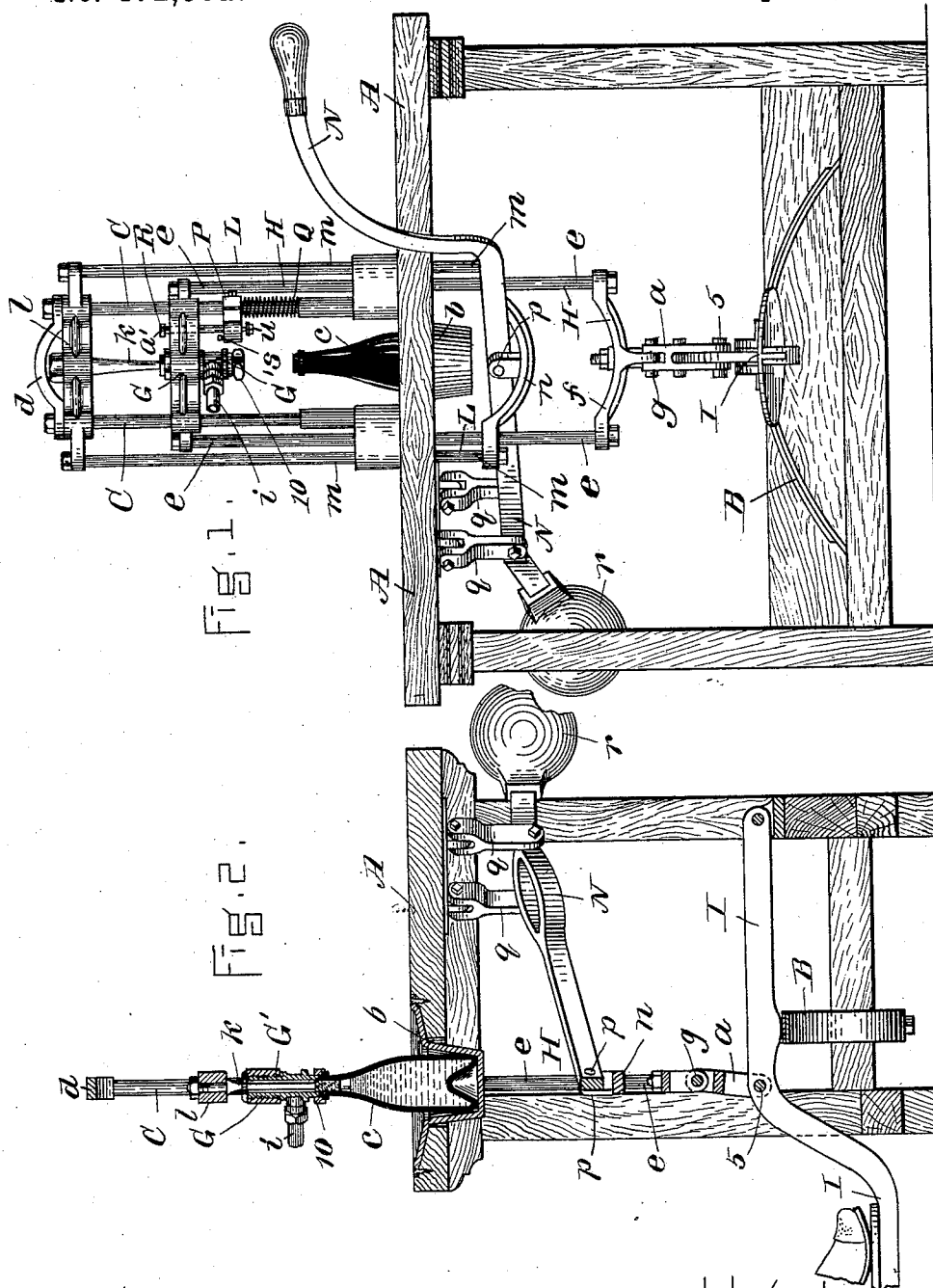
(No Model.)

2 Sheets—Sheet 1.

F. J. JOHNSTON & N. F. HALLETT.
MACHINE FOR BOTTLING AERATED LIQUIDS.

No. 472,362.

Patented Apr. 5, 1892.



WITNESSES.

Henry Marsh.
Harry H. Huber

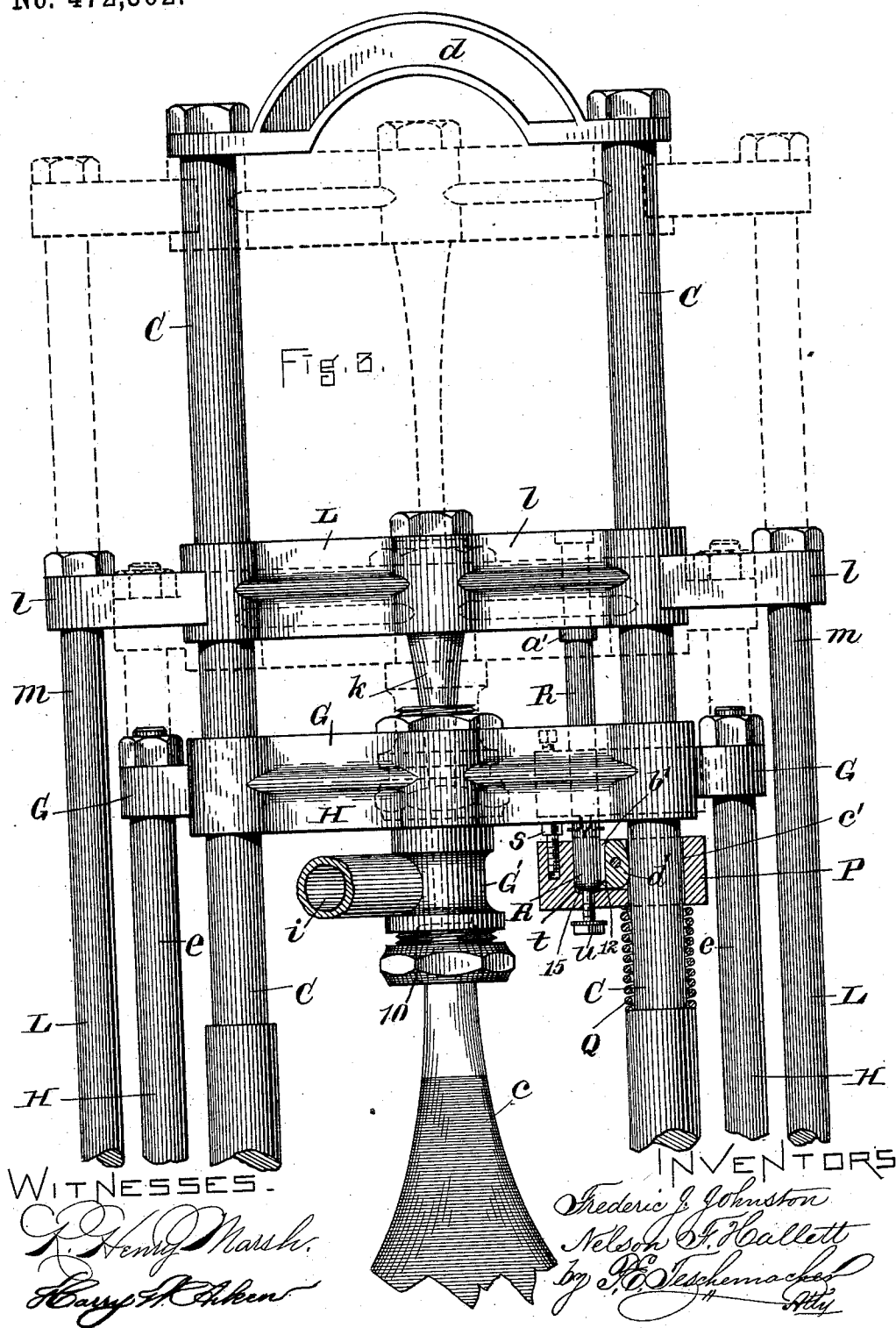
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UNITED STATES PATENT OFFICE.

FREDERIC J. JOHNSTON, OF CAMBRIDGE, AND NELSON F. HALLETT, OF BOSTON, ASSIGNORS TO THE AMERICAN SODA FOUNTAIN COMPANY, OF BOSTON, MASSACHUSETTS.

MACHINE FOR BOTTLING AERATED LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 472,362, dated April 5, 1892.

Application filed January 6, 1892. Serial No. 417,229. (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 NELSON F. HALLETT, of Boston, in the county of Suffolk and State aforesaid, citizens of the United States, have invented certain Improvements in Machines for Bottling Aerated Liquids, 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 front elevation of a machine for bottling aerated liquids having our improved automatic stop applied thereto. Fig. 2 is a vertical section through the center of the same, showing the filling-head down upon the neck of the bottle. Fig. 3 is an enlarged front elevation of the upper portion of the machine with the parts in the same position as in Fig. 2.

Our invention relates to certain improvements in machines for bottling aerated liquids; and it consists in an automatic stop of novel construction which is interposed between the cross-bars of the corking-plunger and the filling-head for the purpose of automatically regulating the descent of the corking-plunger with relation to the filling-head, and thus causing the corks to be so driven that they will all project an equal distance above the mouths of the bottles without regard to slight variations in height which are always found among bottles of nominally the same size and pattern.

In a machine of this character, for which Letters Patent of the United States, dated May 24, 1887, No. 363,504, were granted to John Brown and myself, a stop for the above-mentioned purpose was employed which was operated by the foot simultaneously with the treadle to which it was connected, rendering it necessary for the operator to put his foot in a certain position upon the treadle in order to move the stop as desired. Our present invention has for its object to dispense with this treadle connection and render the stop entirely automatic in its action, so that it will always perform its office at the required time

without any care or attention on the part of the operator.

In the said drawings, A represents the bed or table of the machine, which is supported on suitable legs and is provided on its upper surface at or near the center of its length with the usual cavity or depression *b* for the reception of the bottle *c* to be filled and corked.

C C are vertical rods or standards rising from the table A and connected at the top by a bar *d*. Upon the standards C C slides the filling-head cross-bar G, having secured to its opposite ends the rods *e e*, which pass down through the table A and are connected at their lower ends by a cross-bar *f*, forming a sliding frame H, to which is pivoted at *g* a link *a*, connected with the treadle I by a pivot 5.

The filling-head G' is of the usual construction and is connected by means of a pipe *i* with a sirup-pump (not shown) or other source of supply from which the bottle is filled after the cap 10 of the filling-head has been brought down onto the neck of the same, as seen in Figs. 2 and 3, by depressing the treadle I against the resistance of the spring B, by which the parts are returned to their normal positions after the pressure of the foot has been removed from the treadle.

k is the corking-plunger, which passes down through the filling-head in the ordinary manner and is secured to the upper cross-bar *l*, which slides on the standards C C and has secured to its opposite ends the vertical rods *m m*, which pass down through the table A and are connected at their lower ends to a cross-bar *n*, which slides on the rods *e e* of the filling-head frame H, the rods *m m* and cross-bars *l n* forming the sliding frame L of the corking-plunger, to which is pivoted at *p* the hand-lever N, pivoted to hangers *q q*, secured to the under side of the table A, the lever N being provided with the usual counterpoise-weight *r*.

The construction of the parts thus far described is substantially the same as in machines of this character as heretofore constructed and forms no part of our present invention.

Upon one of the rods C beneath the filling-head cross-bar G is placed a block P, which slides freely upon said rod and is supported by a spiral spring Q, placed thereunder and encircling the rod, as seen in Figs. 1 and 3. At one end of the block P is a screw s, which can be adjusted to project more or less above its upper surface, for a purpose to be hereinafter explained. Within a vertical aperture t in the block P is fitted or seated the lower portion of a headed pin or bolt R, which is prevented from being withdrawn from the block by a nut u at its lower end. The bolt R extends up through the filling-head cross-bar G and forms a stop for the cross-bar l of the corking-plunger, the aperture in the cross-bar G through which the bolt R passes being of such diameter as to permit the said cross-bar as it is moved up and down to slide freely over the bolt until it is brought into contact either with its head a' on the upstroke or the screw s on the block P on the downward stroke. In the latter case the block P is carried downward on the rod C against the stress of the spring Q as the filling-head cross-bar G continues to descend, the spring Q being of such length as to always support the block P at a height which will insure the contact of the cross-bar G with the screw s before the cap 10 of the filling-head is brought down onto the neck of the bottle.

Within the block P is formed a recess b', Fig. 3, which extends from the aperture t to the aperture c', through which the rod C passes, and in this recess is pivoted a locking-cam d', one side of which rests against the rod C, while the opposite side is provided at its lower end with a beveled or inclined projection 12, which lies in contact with a rounded or tapering shoulder 15, formed on that portion of the bolt R opposite thereto, the construction being such that the slightest downward pressure on the head of the bolt R will drive the locking-cam d' forcibly against the rod C, and thus lock the block P immovably in place thereon at whatever height it may happen to be when the cross-bar l of the corking-plunger is brought into contact with and exerts a pressure upon the head of the bolt R, the further descent of the corking-plunger being thus prevented, as the bolt R cannot be depressed so long as its supporting-block P remains locked to the rod C, any increase in the pressure upon the head of the bolt R serving to tighten the hold of the locking-cam d' upon the rod C. The distance which the head of the bolt R projects above the cross-bar G of the filling-head thus determines the point with relation to the filling-cap 10 to which the corking-plunger will descend, its downward progress being instantly arrested the moment the cross-bar l strikes the head of the stop-bolt R.

The operation is as follows: The foot is first placed upon the treadle I to bring the cap 10 of the filling-head G' down upon the neck of the bottle, said filling-head in its descent slid-

ing over the stop-bolt R and being brought into contact with the screw s of the block P, after which the block stop-bolt, and cross-bar G, with the filling-head, will all descend together against the influence of the spring Q until the cap 10 rests upon the neck of the bottle. As soon as the bottle is filled, the frame L is brought down by means of the hand-lever N to cause the corking-plunger to drive the cork into the mouth of the bottle, and as soon as the cross-bar l strikes the head a' of the stop-bolt R the latter by reason of its tapering shoulder 15 will actuate the locking-cam d', and thus clamp the block P rigidly in place upon the rod C. The head of the bolt R thus acts as a stop to prevent the further descent of the corking-plunger, which is in this manner always automatically arrested without any care or attention on the part of the operator at the same point with relation to the cap 10 of the filling-head, and consequently as the latter rests on the neck of each bottle, whether it be of greater or less height, the corks will always be driven to the proper depth to secure a uniform and definite projection above the mouth of the bottle without regard to any slight variations in height of the latter, as is necessary to produce perfect work. After the cork has been driven into the bottle the corking-plunger is still held down thereon by the hand-lever N, while the foot is removed from the treadle, which is then lifted by its spring B, causing the filling-head cap 10 to rise above the neck of the bottle to allow of the application of the fastening to the cork while the latter is still held down by the corking-plunger l, the cross-bar G as it rises sliding over the bolt R, which is held stationary by the pressure thereon of the cross-bar l of the corking-plunger. As the cross-bar G rises its upper side contacts with the head a' of the bolt R, and the latter, together with the block P, is carried upward with the said cross-bar during the remaining portion of its upward movement.

It is obvious that by turning the regulating-screw s to cause its head to project more or less above the surface of the block P a slight variation may be effected in the distance to which the corking-plunger will descend before being arrested by the contact of its cross-bar l with the stop-bolt R, this adjustment being made in accordance with the distance which it is desired to have the cork project above the mouth of the bottle when driven in.

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

1. In a machine for bottling liquids, the combination, with the sliding frames of the corking-plunger and filling-head and the hand-lever and treadle by which they are respectively operated, of a stop-bolt interposed between the cross-bars of the corking-plunger and the filling-head, a yielding support for said stop-bolt placed beneath the filling-head cross-bar and adapted to slide upon a vertical

rod or standard, a spring for holding said sliding support up to the filling-head cross-bar when the latter is drawn down, and a locking device adapted to be operated by the stop-bolt when forced down by pressure applied thereto for clamping said sliding support rigidly to its standard, substantially as and for the purpose set forth.

2. In a machine for bottling liquids, the combination, with the sliding frames of the corking-plunger and filling-head and the hand-lever and treadle by which they are respectively operated, of a block adapted to slide upon a vertical rod or standard, a stop-bolt rising from said block and interposed between the filling-head cross-bar through which it passes, and the cross-bar of the corking-plunger to regulate the descent of the said corking-plunger with relation to the filling-head, a spring for supporting said sliding block and holding it up to the filling-head cross-bar when the filling-head is upon the neck of the bottle, and a locking device operated by the stop-bolt for clamping the sliding block rigidly to its standard and thereby holding the said stop-bolt immovably in position to intercept the cross-bar of the corking-plunger, substantially as set forth.

3. In a machine for bottling liquids, the combination, with the sliding frames of the corking-plunger and filling-head and the hand-lever and treadle by which they are respectively operated, of a block adapted to slide on a vertical rod or standard, a stop bolt or pin rising from said block and interposed between the filling-head cross-bar and the cross-bar of the corking-plunger, a spring for supporting said block and holding it up to the filling-head cross-bar when the filling-head is upon the neck of the bottle, a locking de-

vice operated by the stop-bolt for clamping the block rigidly to its standard, and an adjusting-screw projecting from the upper side of the stop-supporting block and adapted to regulate the distance between the said block and the filling-head cross-bar when the filling-head is in contact with the adjusting-screw, substantially as described.

4. In a machine for bottling liquids, the combination, with the sliding frames H L of the corking-plunger and filling-head and the hand-lever and treadle by which they are respectively operated, of a yielding block or support P, sliding upon the vertical rod or standard C and provided with the regulating-screw s, the supporting-spring Q, encircling the rod C beneath the block P and adapted to hold said block up to the filling-head cross-bar when the filling-head is down upon the mouth of the bottle, the stop-bolt R, seated in the block P and extending up through an aperture in the filling-head cross-bar G into a position to intercept the cross-bar l of the corking-plunger, said bolt R having a tapering shoulder or incline 15, and the locking-cam d', pivoted within a recess in the block P and having one side in contact with the rod C and the opposite side provided with a projection 12, bearing against the tapering shoulder or incline 15 of the bolt R, all constructed to operate substantially in the manner and for the purpose set forth.

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

FREDERIC J. JOHNSTON.
NELSON F. HALLETT.

In presence of—

P. E. TESCHEMACHER,
JOHN MACKSEY.