

(No Model.)

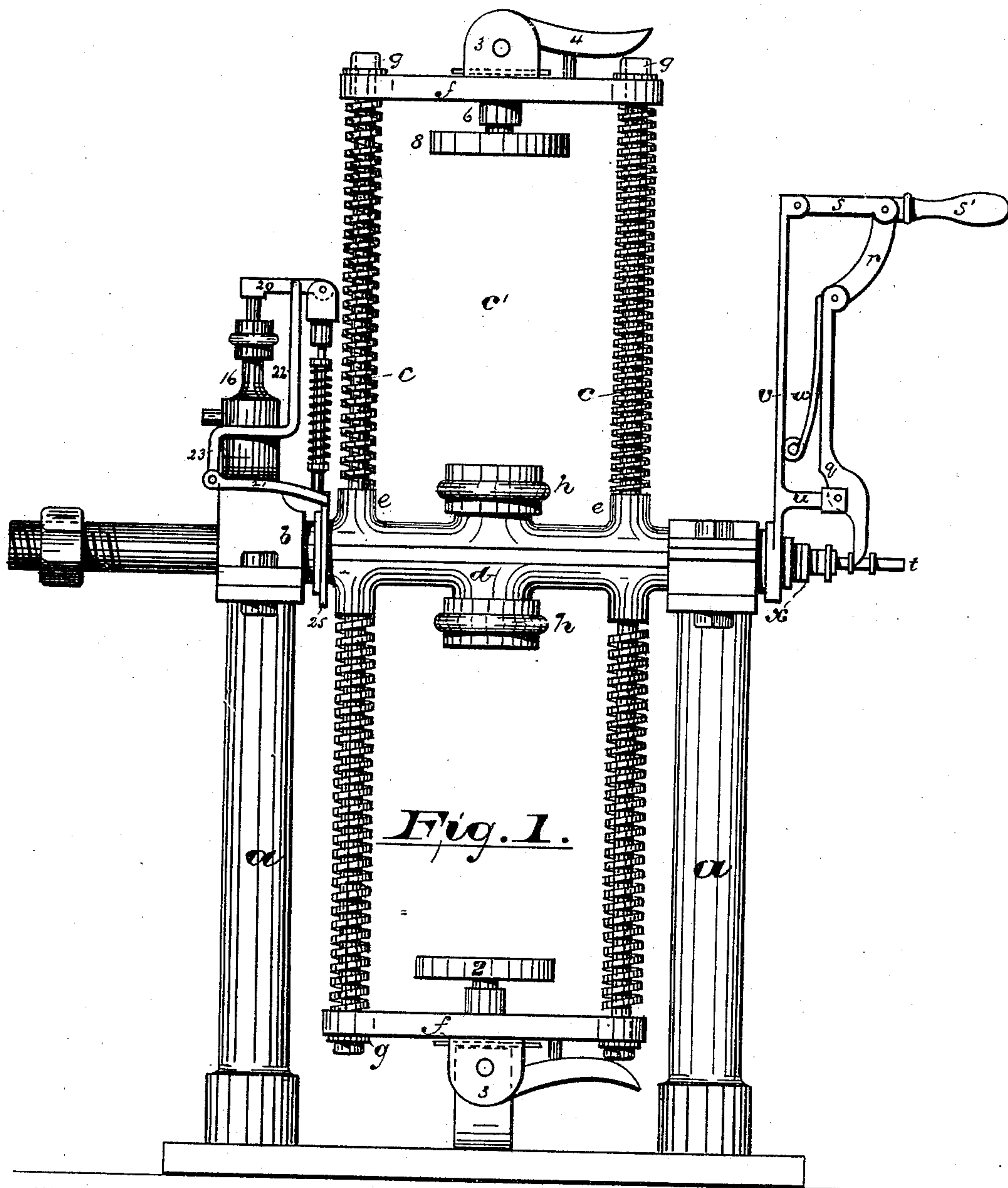
2 Sheets—Sheet 1.

C. C. HALEY.

APPARATUS FOR BOTTLING SODA WATER, &c.

No. 396,928.

Patented Jan. 29, 1889.



WITNESSES:

INVENTOR:

Oscar A. Michel.  
Philip G. Voegtlin.

*Charles C. Haley,*

BY *Drake & Co.*, ATT'YS.

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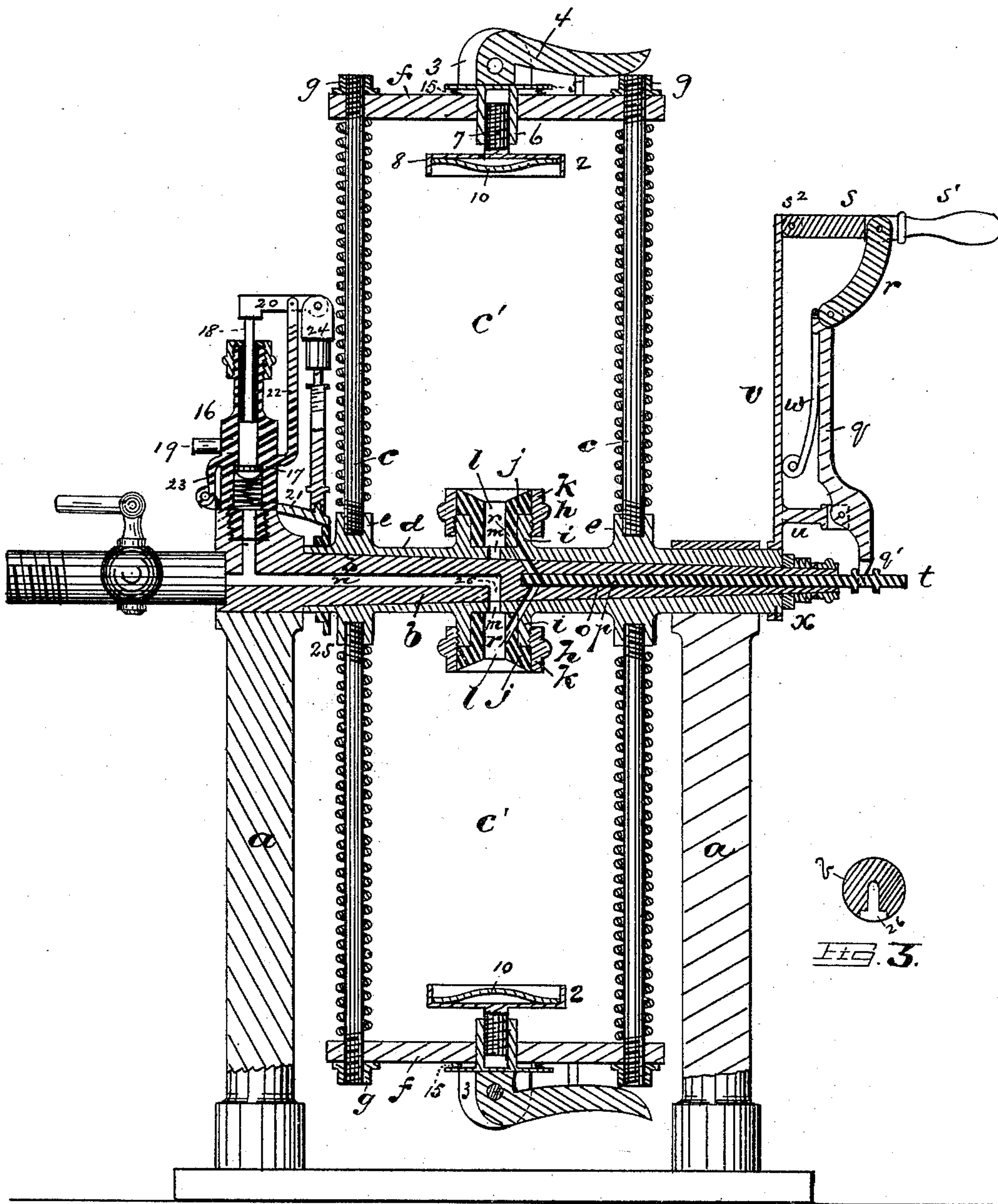


FIG. 3.

WITNESSES:

Fig. 2

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Oscar A. Michel.  
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# UNITED STATES PATENT OFFICE.

CHARLES C. HALEY, OF NEWARK, NEW JERSEY.

## APPARATUS FOR BOTTLING SODA-WATER, &c.

SPECIFICATION forming part of Letters Patent No. 396,928, dated January 29, 1889.

Application filed December 22, 1887. Serial No. 258,654. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. HALEY, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Bottling Soda-Water, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to facilitate the process of bottling "soda" and mineral waters or other fluids impregnated with gas under pressure, and to carry on said process without waste or loss of liquid.

The invention consists in the improved bottling machine or device having the arrangements and combinations of parts substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, embraced in two sheets, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a front elevation of the improved bottling apparatus, and Fig. 2 is a central vertical section of the same. Fig. 3 is a transverse section of the bored shaft, taken across the escape-passage thereof.

In said drawings, *a a* indicate suitable posts or standards, which provide bearings for a shaft, *b*, and sleeve or collar *d*, the first of said parts being permanently secured on one of said posts or standards and extending through the said sleeve or collar, as shown in Fig. 2. The shaft *b* and the bore or central aperture in the sleeve taper correspondingly, and thus allow wear to be taken up, so that there can be no leakage occasioned thereby.

Upon the sleeve *d* are formed suitable frames or bottle-holders adapted to hold the bottles thereto, so that they will revolve therewith, the preferred construction being such as is shown in the drawings. Of said frames, *c c* indicate radial rods disposed sufficiently apart to allow the insertion of the bottles therebetween, said rods being preferably

screwed into threaded lugs *e e* formed on the sleeve. At their outer ends said rods *c* are connected by plates or bars *f f*, which slide or may slide on said rods or be adjusted to adapt the frame for bottles of varying sizes, the space *c'* for the bottles being reduced by means of set or adjustable nuts or screws *g g*, adapted to turn on the threaded extremities of said rods, or by other suitable means.

About midway between the rods *c c* the sleeve *d* is provided with heads *h h*, adapted to receive the heads of the bottles when the latter are arranged in the frame-work. Said heads *h h* may be of any suitable construction, but are preferably as indicated in Fig. 2, in which *i i* are lugs or sockets and *j j* rubber or elastic packing or cushions, with which the heads of the bottles may make an impervious joint, adapted to prevent the escape of liquid under the pressure of the gas. *k k* are collars for holding said packing *j j* in place on the sockets. Said packings are perforated at *l l*, the perforations corresponding with passages *m m* through the sleeve.

Within the shaft *b* is formed a passage, *n*, Fig. 2, adapted to lead the sirup and gas-impregnated water to the heads *h*, and thus into the bottle, said passage *n* connecting with any ordinary gage or device for dealing out sirup and with reservoirs of water impregnated with gas in the ordinary manner. The said passage *n* leads through the continuation into but one of the passages *m* at a time, the rotation of the sleeve on the spindle or shaft *b* serving to cause the passage *n* to communicate with one and then the other of the passages, as will be understood. At or toward the opposite end of the shaft or spindle from that having the passage *n* is a central passage, opening, or boring, *o*, having therein a valve-rod, *p*. From said boring extend divergent passages *r r*, which lead into the passages in the heads *h*, and are closed by means of the said valve-rod *p*. Said rod *p* is closed and opened by means of a system of levers, *q r s*, or by means of any other suitable construction; but when said levers are employed I prefer to arrange them as shown in the drawings, in which a forked end, *q'*, of the lever *q* engages the projecting end *t* of the valve-rod *p*, and is adapted to move the same longitudi-



nally within the shaft or spindle *b*, said lever *q* being fulcrumed on a projection, *u*, of a crank, *v*. A spring, *w*, interposed between the lever and said crank *v*, serves to hold said valve-rod in its closed position automatically. The lever *s* of the series is also fulcrumed on the crank *v*, as at *s*<sup>2</sup>, and is connected with the lever *q* by the connection *r*. By depressing the handle *s*' of the lever *s* the lever *q* is operated, so that it withdraws the valve-rod from the divergent passages, forming a continuous passage from one head *h* to the other. The handle *s* also serves as a handle for the crank *v*, so that the latter may be conveniently turned pivotally with the sleeve or collar *d*, to which said crank is securely fixed. The shaft and spindle are securely locked, so as not to allow any independent lateral movement by means of lock-nuts *x* or other suitable means.

To hold the head of the bottle into close engagement with the seat or head *h*, I may employ a clamp, 2, adapted to engage the bottom of the bottle and force said bottle into intimate engagement with said head *h*. To this end I prefer to arrange on the cross-bars *f* ears 3, between which cam-levers 4 are fulcrumed. Said cam-levers engage a bearing, 5, seated on springs 15, interposed between said bearings 5 and the cross-bars *f*. Each of said bearings 5 is provided with a shank, 6, with which a screw-shank, 7, formed or arranged on the clamp-head 8, engages. By depressing the cam-lever 4 the clamp-head is forced into intimate contact with the bottom of the bottle, and by a return movement of said cam-lever the springs 9 are allowed to act to raise said clamp-head from the bottle.

The clamp-head may be lined with rubber, 10, or other soft or elastic pliable material, to allow for slight variations in the sizes of the bottles and to cushion the contact of the bottle with the clamp.

The clamp may be formed and be adapted to be operated in a variety of ways without avoiding the invention; but I prefer the construction described because of its simplicity.

To allow the escape of air from the bottle in the operation of filling, as hereinafter described, I provide a certain automatic vent in connection with the shaft or spindle *b* and the passage *n* therein. Said vent consists of a cylindrical head, 16, suitably secured on said shaft *b* or upon any other part of the device properly connected therewith. Said head 16 provides a valve-seat, bearings for a valve-rod, 18, and also a vent pipe or passage, 19. The valve-rod 18 connects with suitable mechanism—such as levers 20 21—the first of which is fulcrumed on an arm, 22, and the second on an arm, 23, of said head. The lever 20 communicates with the lever 21 through a connection, 24, and is operated by the sleeve *d* through the intervention of a double cam, 25, secured or formed on said sleeve.

In operating the device a bottle is placed

in the upper of the two frames, being preferably clamped therein by the mechanism above described. The crank *v* is then turned, and with it the sleeve *d* and the frames thereon, until the bottle assumes the second position, with its head upward in the then lower frame. When in this position, the passage *n*, leading from the water and sirup gage above referred to, opens into or is brought to a coincident position with one of the openings or passages *m* in the sleeve *d* and head *h*, and the water and sirup are thus allowed (the valve of said pump having been turned on in the ordinary manner) to pass into and fill the bottle until the air therein is brought to a pressure equal to that of the gased water, when the filling stops, leaving the bottle not quite sufficiently full. While the first bottle is filling a second is arranged in the upper frame, and when the first bottle is in the partially-full condition above described the second or empty bottle is in an air-tight relation to its head *h*. The lever *s*' is then depressed, and the valve-rod *p* is withdrawn from the passages *r r*, allowing a free communication between the two bottles and allowing the air of the lower bottle to be "sniffed" into the upper bottle, the escaping gas carrying with it a considerable quantity of gas-impregnated water which heretofore has been wasted. The pressure being thus removed from the lower bottle, the water from the reservoir and sirup-gage is allowed to pass into the same to complete the filling. The crank is now turned another partial revolution, and the first bottle is brought to its first inverted position. A certain automatic stopper within the bottle then falls by gravity into the mouth of the bottle. The handles *s*' before the second bottle is brought into communication with the passage *n* are depressed, and the water and gas beneath or on the outer side of the stopper thus in position are sniffed into said second bottle, and the gas within the first bottle immediately acts on the stopper to cause the same to make a tight joint with the packing in the neck thereof. The first bottle may then be removed, the second bottle brought into communication with the reservoir and sirup-gage by opening the valve of said gage, and a third bottle inserted into the empty frame-work. As the empty bottle (into which has been sniffed gas and water from the bottle having the gas under pressure) is turned down, while it passes downward with the sleeve *d* the opening or passage *m* comes into communication with the portion 26 of the passage, (said portion being of considerable width at the periphery of the shaft.) At about the quarter-point in the revolution the passages *m*, 26, communicate, as above stated, and at the same time the cam 25 opens the valve or vent, and the air in the bottle is sniffed into the open air. The valve or vent then closes immediately, so that when the water from the reservoir and the sirup are turned on they will flow into the bottle in the lower frame and



not escape through the said valve and vent. The bottle to receive the liquid through the passage or duct *n* is thus empty or nearly empty of atmospheric air.

5 By the construction and operation above detailed it will be observed that the water that was under or on the outer side of the stopper when the same was closed, and the water that was sniffed out when the bottle was relieved  
10 of pressure, in order to allow the same to be filled to completion, is saved by being caused to pass into the empty bottle next to be filled. The water and sirup are not only saved, but  
15 the same are saved with the gas impressing the same, thus in the aggregate making considerable difference in the cost of bottling, and also keeping the floor of the bottling-establishment dry, or more so than heretofore.

Having thus described the invention, what I  
20 claim as new is—

1. In a bottling apparatus, the combination, with a shaft having a duct, *n*, a sleeve, *d*, having passages to coincide therewith, said sleeve being adapted to revolve on said shaft, a plurality of bottle-holding frames, and a secondary passage, *r*, across the shaft between the mouth-holding portions of the bottle-frames, and a valve for controlling said passage, substantially as described, whereby the water  
25 and gas from a bottle in one frame may be sniffed into a bottle in another, substantially as herein set forth.

2. In combination, in a bottling apparatus, with a shaft having a duct, *n*, heads *h h*, hav-

ing ducts or passages *l*, adapted to coincide 35 with said ducts *n*, and revolving frames or bottle-holders adapted to hold the heads of the bottles into impervious engagement with said heads *h*, and passages or ducts *r r*, providing open communication between the said 40 heads *h h*, and means, substantially as described, for closing such communication, substantially as set forth.

3. In combination, in a bottling apparatus, posts *a a*, a shaft, *b*, having a duct, *n*, a sleeve, 45 *d*, bottle-holders revolving with said sleeve, heads *h h*, having passages *l l*, ducts or passages *r r*, a valve for closing communication between the same, and means *v* for revolving the sleeve, substantially as set forth. 50

4. In a bottling apparatus, the shaft having ducts or passages *n*, a vent adapted to be opened to allow the escape of air from the duct or passage *n*, frames revolving on said shaft and adapted to hold two independent 55 bottles, a duct leading from one to the other of said bottles, and a valve for opening closed communication through said ducts, and means for revolving said frames, substantially as set forth. 60

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of November, 1887.

CHAS. C. HALEY.

Witnesses:

OLIVER DRAKE,  
OSCAR A. MICHEL.