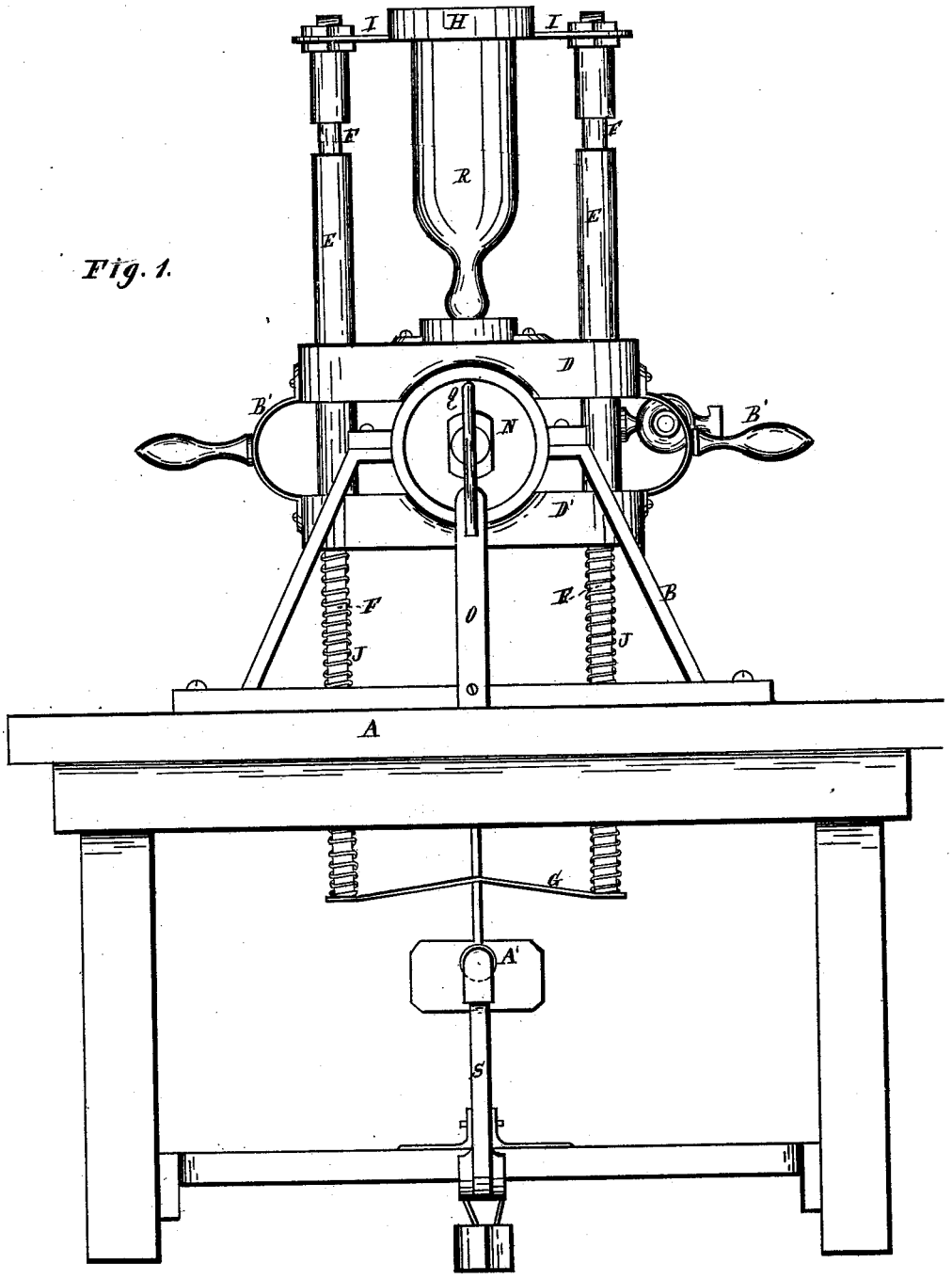
3 Sheets—Sheet 1.

W. H. KELLEY.

BOTTLING-MACHINE.

No. 191,596. Patented June 5, 1877.

Fig. 1.



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3 Sheets—Sheet 2.

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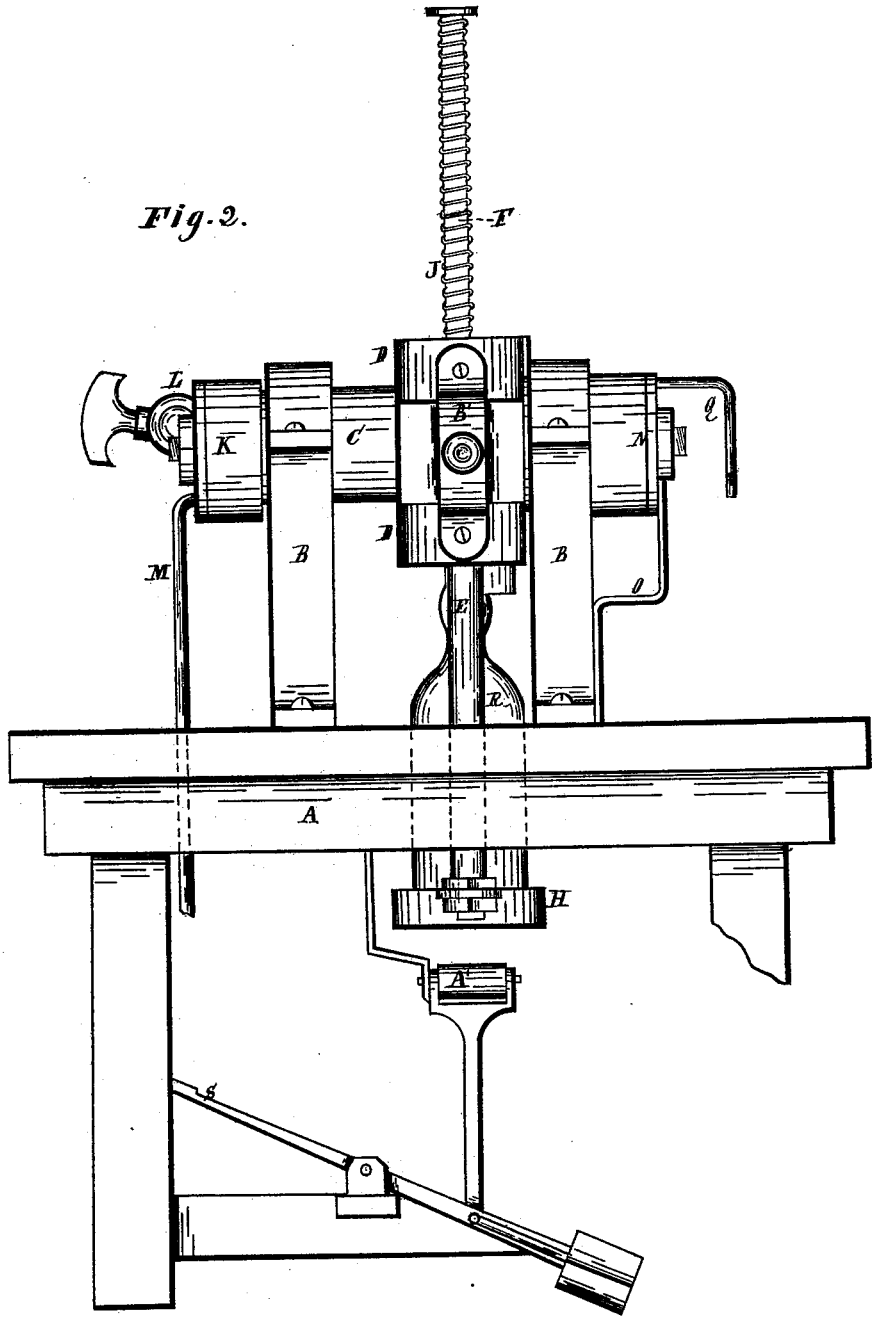
Fig. 2.



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BOTTLING-MACHINE.

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Fig. 3.

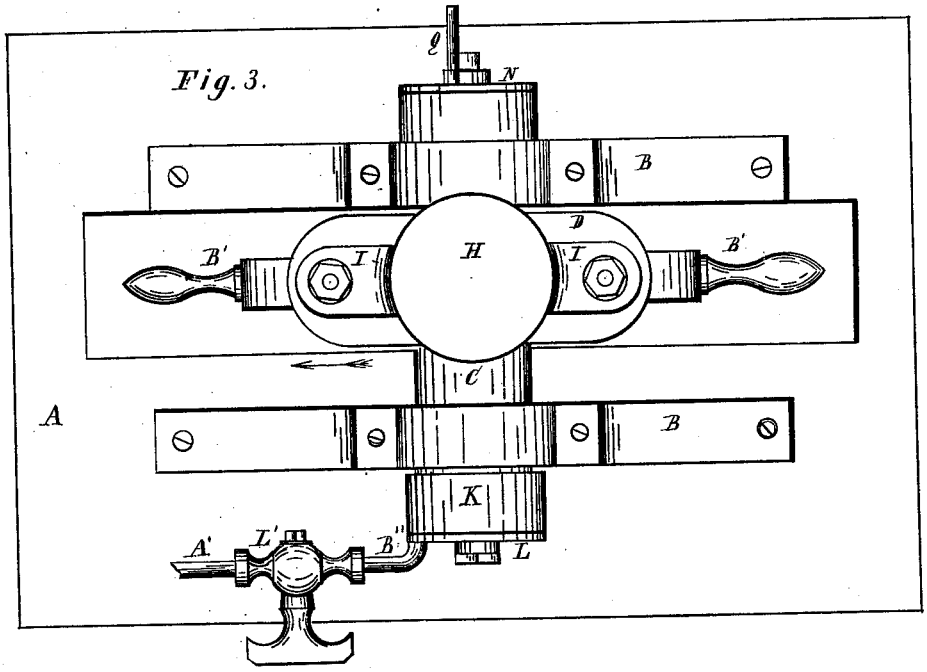


Fig. 4.

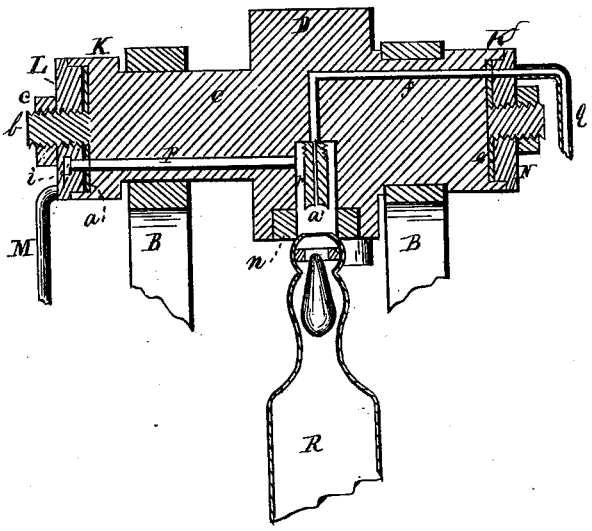
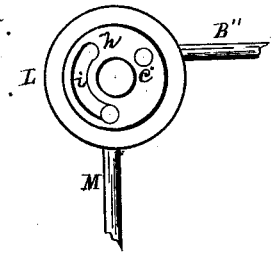


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. KELLEY, OF CLEVELAND, OHIO.

IMPROVEMENT IN BOTTLING-MACHINES.

Specification forming part of Letters Patent No. **191,596**, dated June 5, 1877; application filed May 11, 1877.

To all whom it may concern:

Be it known that I, W. H. KELLEY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Bottling-Machines, of which the following is a description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of the bottling-machine. Fig. 2 is an end view. Fig. 3 is a plan view. Fig. 4 is a longitudinal section; Fig. 5, a detached section.

Like letters of reference refer to like parts in the several views.

This invention relates to a machine for bottling aerated liquors and still liquors while under pressure, and the special object of the same is to preserve the lively sparkling character of the liquors. The machine also facilitates and expedites the work of bottling, as hereinafter more fully described.

On a suitable table or bench, A, is secured a pair of standards, B, wherein is journaled a shaft, C, carrying a yoke, D. In each end of the yoke is a tubular standard, E, Fig. 1, through which passes loosely rods F. Two ends of the standards are connected to each other by a bar, G, whereas the two opposite ends are connected by a cap, H, and arms I, substantially as shown in the drawings.

Around that part of the rods alluded to below the piece D′ of the yoke, is coiled a spring, J, the purpose of which will presently be shown.

The end K of the shaft C above referred to is recessed, forming a chamber, as seen in Fig. 4, wherein is fitted a cap or head, L, on which the shaft revolves. Between said cap and the bottom of the recess is interposed a packing, *a*. Said cap is secured in its relation to the shaft by a screw-stud and nut, *b c*, and which is prevented from revolving therewith by the pipe M, the upper end of which is attached to the head, and the lower end is held in the table, as shown in Fig. 2. Further reference will be made to said pipe hereinafter.

The opposite end of the shaft is also recessed in like manner at the end K, and which is fitted with a cap or head, N. Between said cap and the bottom of the recess is a packing, *e*, Fig. 4. Said cap is held in its relation to the shaft by a screw stud and nut, substantially the same as the cap L is secured in its relation to the opposite end of the shaft. The cap N is prevented from revolving with the shaft by a stay, O, Fig. 2.

On one side of the axial line of the shaft, and parallel therewith, is a conduit, P, Fig. 4, the inner end of which terminates in a chamber, *a′*, whereas the outer end terminates in a recess, *i*, made in the inner side of the cap L, (shown also in Fig. 5,) which represents the inside of the cap.

In said recess *i* terminates the upper end of the induction-pipe, M, and whereby it is put in communication with the conduit P, as shown in Fig. 4.

A conduit is also made in the shaft on the opposite side of the axial line from the conduit P, and parallel to said line, as seen at *f* in said Fig. 4. The inner end of the conduit *f* terminates in the lower end of a tubular plug, *r*, screwed into the bottom of the chamber *a′*, so that the bore of the plug is in direct communication with the conduit *f*, as shown in the drawing. Q, Fig. 2, is a pipe attached to the cap N of the shaft. Said pipe communicates directly with the conduit *f*, which is thereby opened to the outside of the machine.

In a recess around the opening of the chamber *a′*, above referred to, is a rubber ring or packing, *n*, Fig. 4, the purpose of which is to make a close fit of the mouth of the bottle R, when placed over the opening of the chamber.

Having described the construction and arrangement of the machine, the practical operation of the same is as follows:

The bottles used in this machine are provided with glass stoppers, which remain continuously in the neck of the bottles. Said stoppers are conical in shape.

The position of the machine while a bottle is being placed therein to be filled is such as shown in Fig. 1, in which R represents the bottle, which is placed in the machine as follows: The operator by placing his foot on the treadle S forces upward the roller A′ against the cross-piece G, the result of which is a pushing upward of the rods F, and, consequently, the cap H, so far as to admit the

bottle to be placed under the cap with its mouth resting upon the rubber cushion or packing *n* referred to.

In this position the bottle is maintained by the springs J, which, on removing the foot from the treadle, draw downward the cap, thereby forcing the mouth of the bottle firmly upon the packing, and at the same time holding it securely in position.

The bottle when thus adjusted in the machine is then, by the handles B′, turned down under the shaft to the position shown in Fig. 2, in which position it is to be filled, as follows:

The pipe M is supposed to be connected to a generator boiler or barrel containing the liquor for bottling. During the time that the bottle is being placed in the machine the conduit P is above the axial line of the shaft C, and, therefore, not in open relation to the pipe M. By the intervention of the recess *i* said open relation is cut off by the end of the conduit being opposite the blank space *h*, Fig. 5, of the cap L.

It will be obvious that on changing the position of the machine from that shown in Fig. 1 to that shown in Figs. 2 and 4, the conduit P will come below the axial line of the shaft, and in open relation with the pipe M, either directly or by the intervention of the recess *i*, as shown in said Fig. 4.

In consequence of the pressure on the liquor in the generator or barrel, caused by the gas generated therein, or otherwise, the liquor will flow therefrom through the pipe M into the conduit P, thence into the chamber *a′*, around the plug *r*, from which it flows into the bottle, during the filling of which the air escapes therefrom through the bore of the plug *r*. Said bore is of small caliber as compared with the pipe M, and finds its way to the outside through the conduit *f* and pipe Q. During the filling of the bottle the pipe and conduit come in open relation to each other, for conducting the air from the bottle while being filled, as aforesaid.

When the bottle is filled, or nearly so, the machine is again turned to the position shown in Fig. 1, and thereby brings the conduit P above the axial line of the shaft, thus cutting off a further inflow of liquor into the conduit P, and, at the same time, bringing the air-conduit *f* below the axial line and cuts off its connection with the pipe Q.

In this condition of the machine the bottle is removed by pressing down upon the treadle, which forces upward the cap H for removing the filled bottle and placing therein an empty one.

The filled bottle is corked by the glass stopper, which is forced into the mouth thereof by the pressure of the gas or compressed air contained in the bottled liquor.

By the use of the above-described machine effervescent liquor is bottled while under pressure without losing the pressure of gas therefrom; hence the liquor, by bottling, loses none of its sparkle and lively effervescent character.

As before said, the bottle is corked by a glass stopper within the bottle, which, in consequence of the pressure of the gas that the liquor contains, is forced into the mouth of the bottle. In the event of bottling still liquors, or such as may not possess a pressure of gas sufficient to force the stopper into the mouth of the bottle, the necessary pressure is supplied by an ordinary air force-pump, which may be attached to the pipe A′, Fig. 3, of the stop-cock L′. By this means a degree of pressure for the purpose specified is supplied to the bottle.

The introduction of the artificial pressure into the bottle is through the pipe B″, whereby the cock L′ is attached to the head L of the shaft, as follows: A port or hole, *c′*, Fig. 5, in the head L is in conjunction with the pipe B″, as shown in said Fig. 5. The head being stationary, whereas the shaft revolves, it will be obvious that, on turning the machine to the position shown in Figs. 1 and 3, the conduit P will be above the axial line of the shaft C, and the conduit below it. Now, on turning the machine from this position in direction of the arrow, so far as to bring the conduit P in conjunction with the hole *c′*, compressed air will pass from the pipe B″ into said conduit P, thence into the bottle. This may be done immediately after filling the bottle or before. If after, the bottle is turned down to the position shown in Fig. 2, thereby cutting off the open relation of the conduit P from the air-pipe B″.

Instead of compressed air being forced into the bottle, as abovesaid, the bottle may be charged with sirup by forcing it into the bottle with the fluid, or preceding it, by the action of a pump, as stated.

One bottle only is shown in connection with the machine; but, by a simple modification thereof, more than one bottle can be filled at the same time. While the bottle is being filled with liquor a small portion passes along with the excess of air through the conduit *f*, and drips from the pipe Q, under which is to be placed a bottle, which, when partially filled, is placed in the machine, and then further filled under pressure, as are the other bottles; hence no loss of liquor is caused by the drip.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The shaft C, conduits P and *f*, in combination with the chamber *a′* and screw-plug *r*, substantially as described, and for the purpose set forth.

2. The combination, with the shaft C and conduit P, of the cap or head L and pipe M, in the manner substantially as described, and for the purpose set forth.

3. In combination with the shaft C, screw-plug *r*, and conduit *f*, the cap N and pipe Q, as and for the purpose specified.

4. The hollow standards E, rods F, bar or cross-piece G, springs J, and cap H, in combination with the yokes D and shaft C and standards B, as and for the purpose set forth.

5. In combination with the cross-piece G and rods F, the treadle S and roller A′, substantially as and for the purpose specified.

6. The recess *i*, in combination with the head L, pipe M, conduit P, and shaft C, as and for the purpose set forth.

7. In combination with the conduit P, shaft C, head L, pipe B′, and faucet L′, the air being supplied by a force-pump, for the purpose specified.

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Witnesses:
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200 words.