

(No Model.)

2 Sheets—Sheet 1.

W. O. VILTER.

VENT ATTACHMENT FOR CORKING MACHINES.

No. 573,426.

Patented Dec. 15, 1896.

Fig. 1.

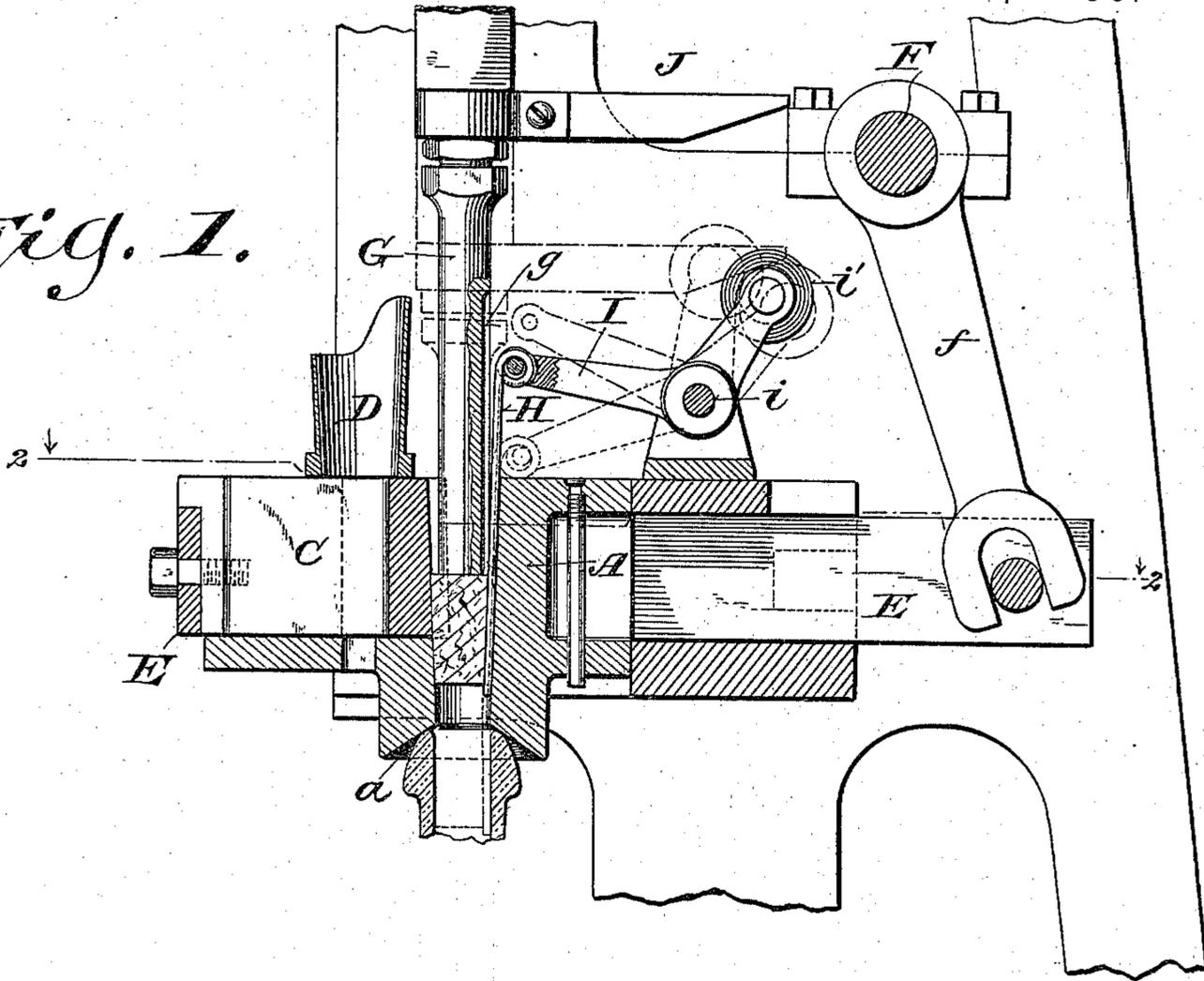
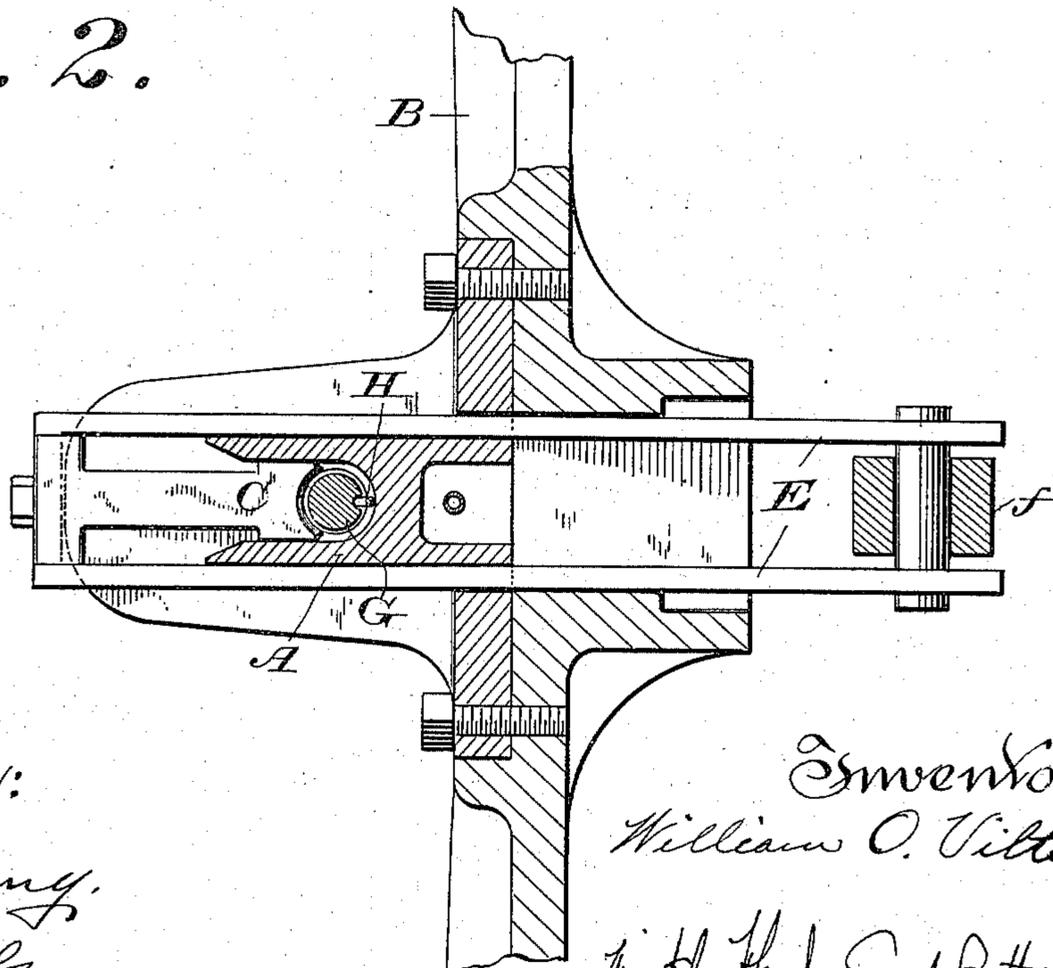


Fig. 2.



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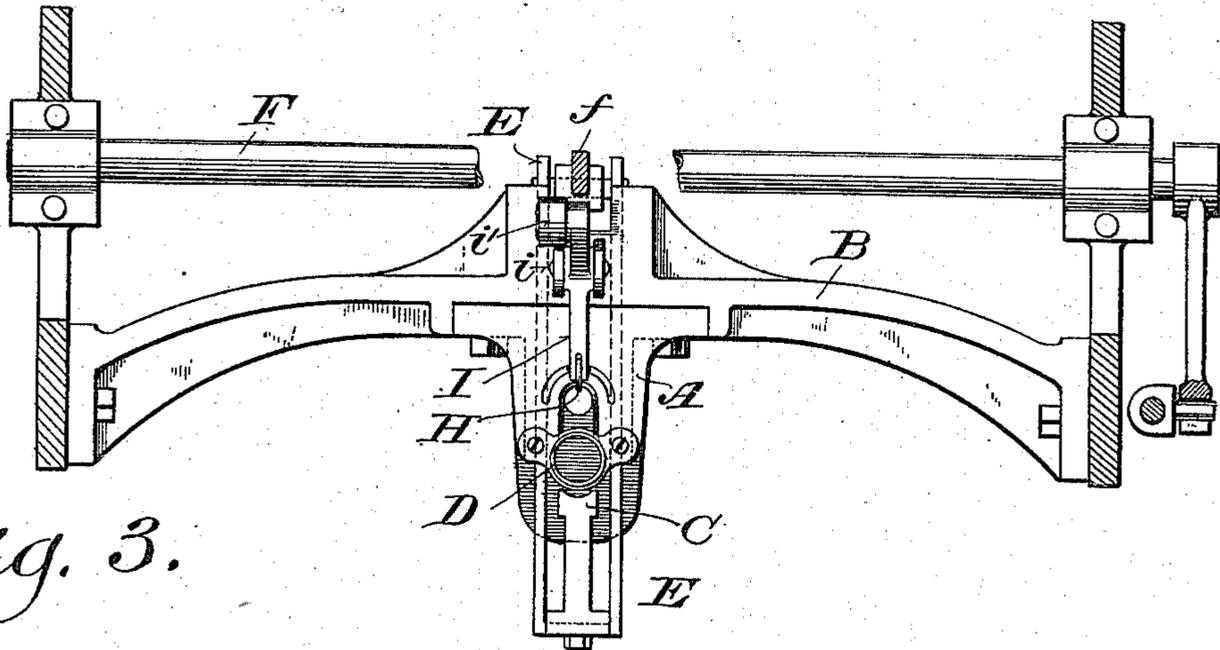


Fig. 3.

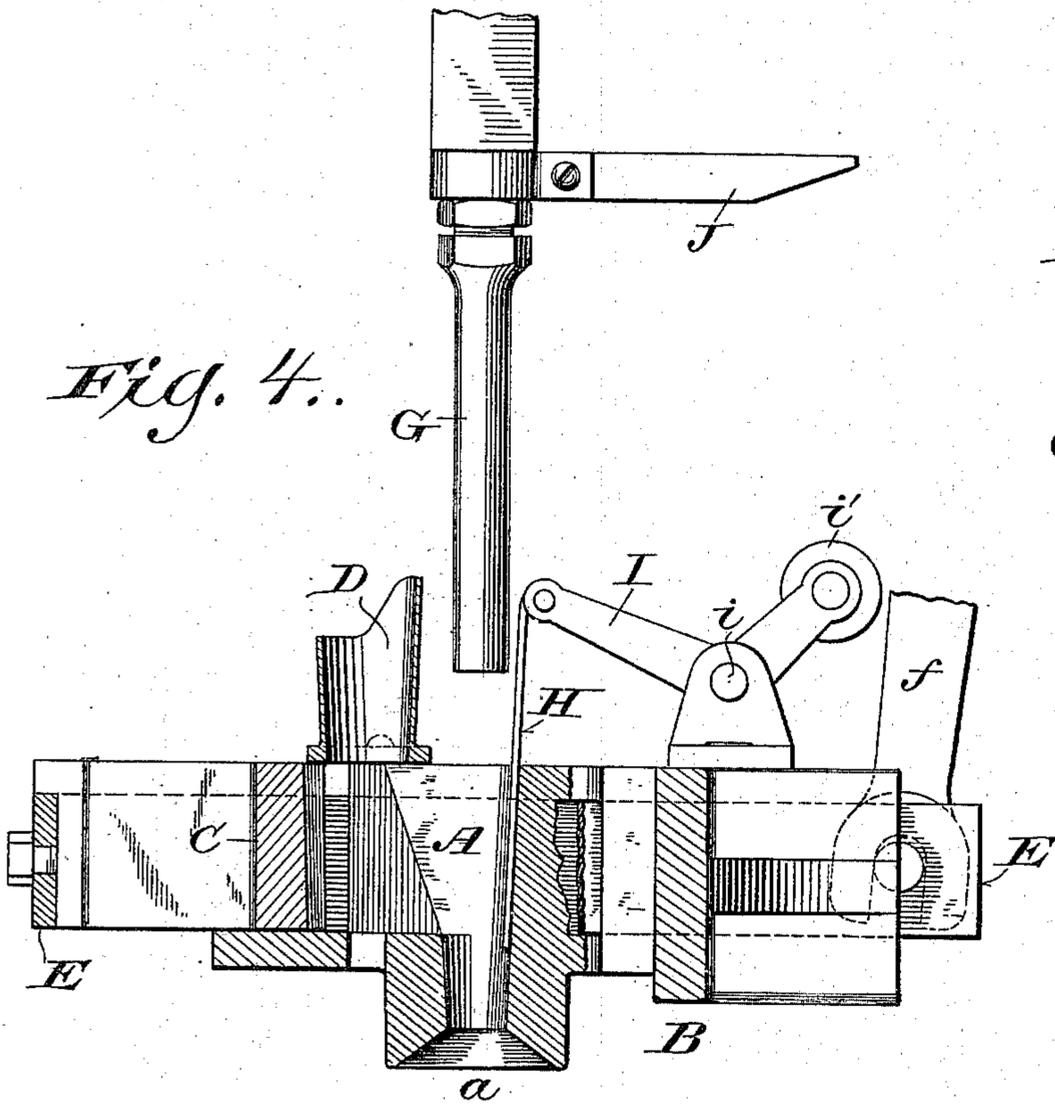
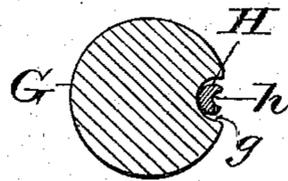


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM O. VILTER, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE
VILTER MANUFACTURING COMPANY, OF SAME PLACE.

VENT ATTACHMENT FOR CORKING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 573,426, dated December 15, 1896.

Application filed May 1, 1896. Serial No. 589,865. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. VILTER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Vent Attachments for Corking-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main object of my invention is to provide a vent in corking bottles and to prevent injury to the contents of bottles by the air entrapped and compressed therein by the usual methods of corking.

It consists, essentially, of an automatic vent attachment for corking-machines, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a vertical section of so much of a bottle-corking machine as is necessary to a clear understanding of my improvement, the machine being shown in the operation of corking. Fig. 2 is a horizontal section on the line 2 2, Fig. 1. Fig. 3 is a plan view on a smaller scale. Fig. 4 is a sectional view similar to Fig. 1, showing the parts in position to receive a cork; and Fig. 5 is a cross-section, on an enlarged scale, of the cork-plunger and vent-spindle.

A designates the cork holder and guide, which is rigidly attached to a cross-piece B or other suitable part of the frame. It is formed with a vertical bore, having a lateral opening to receive corks one at a time, and terminates at its lower end in a flaring mouth *a* for centering the mouth of a bottle with the lower end of said bore.

C is a horizontally-reciprocating cork-compressor adapted to travel back and forth through the lateral opening in the cork holder and guide A and underneath a feeding funnel or opening D, located above and just in front of the bore in the cork-holder. The

compressor is attached to a slide E, which is actuated by a vibrating arm *f* on a rock-shaft F.

G is a vertically-reciprocating plunger having suitable guiding-bearings and actuating connections (not shown) adapted to move it up and down through the bore of the cork holder and guide A.

The parts of the machine above mentioned are like or similar in construction, arrangement, and operation to those in general use, and I make no claim thereto *per se*.

It is obvious that in the operation of a corking-machine of the kind described that air will be entrapped and compressed in the necks of the bottles by the insertion of the corks. This is objectionable, as it not only tends to burst and break the bottles, but the air entrapped by the corks in the necks of the bottles also injuriously affects the contents of the bottles, particularly when they contain carbonated beverages.

I am aware that it has been proposed to provide the cork-plungers of corking-machines with a venting-needle to be rigidly attached thereto, so as to impress a groove or channel in the sides of the corks when they are forced into the bottles, such groove or channel serving immediately after the needle is withdrawn as a vent for the air forced into the bottle by the cork, but soon closing by the expansion of the cork to its normal condition. It has also been proposed to loosely suspend a needle with a longitudinal groove from the lower end of the cork holder and guide of a bottling-machine so that it would project into the neck of a bottle placed in position to receive a cork. Both of these devices are, however, objectionable in practice—the first because it does not afford a sufficient or certain vent and because it is liable to mutilate the corks, and the second because it is inconvenient, considerable care being required in placing the bottle in the machine so that the loosely-suspended needle will enter its mouth instead of passing outside of it.

I am enabled by my improved attachment not only to afford a certain and effective vent for the escape of air and of the surplus contents of overfilled bottles in the operation of

corking, but also to avoid the objections to the devices above mentioned and heretofore proposed for this purpose.

Referring to the drawings, II designates a small vent-rod pivoted at its upper end to one arm of a bell-crank lever I and loosely suspended therefrom in the bore of the cork holder and guide A opposite the compressor C. It is formed in one side next to the cork holder with a longitudinal groove *h*, as shown in Fig. 5, and the plunger G is formed with a similar but larger groove *g* to permit it to pass over said vent-rod, as shown in Figs. 1 and 5, without interfering with its operation and at the same time guiding and holding it in its proper working position. The lever I is fulcrumed at *i* in a bracket on the cross-piece B or any other convenient part of the machine, and its rearwardly and upwardly projecting arm is provided with a friction-roller *i'* in the path of an incline on an arm J, attached to the plunger-bar. The weight of lever I is so disposed that it will retain the vent-rod H normally in its upper or retracted position, as shown in Fig. 4.

The machine provided with my improved attachment operates as follows: The corks being swelled and rendered elastic and pliable by soaking them in water are placed one at a time in the funnel D or feed-opening, and the bottles to be corked are placed as shown in Fig. 1. When the compressor C is withdrawn into the position shown in Fig. 4, a cork placed in funnel D will drop into the lateral opening in the cork-holder, and as the compressor advances it will force it into the bore of said holder against the vent-rod H. The plunger G thereupon descends and forces the cork with the vent-rod into the mouth of the bottle, the vent-rod being carried by frictional engagement with the cork. The cork is in the usual way compressed to a smaller than its normal diameter in the bore of the holder and guide A by the action of the compressor C and plunger G, so that it will readily enter the mouth of the bottle. The vent-rod projecting below the lower end of the cork, as shown in Fig. 1, allows the air entrapped in the bottle and any surplus contents of an overfilled bottle to escape through the groove *h*. As the plunger G approaches the limit of its downward or advance movement the incline on the arm or projection J, engaging with the roller *i'* of lever I, quickly withdraws the vent-rod upwardly from the mouth of the bottle as the cork is driven home, said rod moving freely in the groove *g* of the plunger. The vent-rod H being thus withdrawn will be held by the lever I in its upper or normal position until it is again forced with a cork into the mouth of a bottle in the manner above explained.

The extreme positions of lever I are indicated by dotted lines in Fig. 1.

Machines of this class are usually provided with interchangeable cork holders and guides, compressors, and plungers, so that they may

be readily adapted to corking various sizes and shapes of bottles with corks of various dimensions, and my improved venting device may also be supplied in different interchangeable sizes for the same purpose.

It will be observed that the venting device as shown and described is perfectly automatic in its operation and requires no extra care or attention in operating the machine to which it is attached.

I do not wish to be understood as limiting myself to the precise details of construction shown and described, as they may be variously modified within the spirit and intended scope of my invention.

I claim—

1. The combination with a corking-machine comprising a cork holder and guide, a compressor and plunger, of a longitudinally-movable vent-rod suspended in the cork holder and guide opposite the compressor so as to be forced by the engagement therewith of a cork into a bottle, and means of automatically retracting said vent-rod from the bottle after it is corked, substantially as and for the purposes set forth.

2. The combination with a corking-machine comprising a cork holder and guide, a compressor and plunger, of a longitudinally-grooved vent-rod, loosely suspended in the cork holder and guide opposite the compressor, a lever to which said rod is pivoted at its upper end, and a projection on the cork-plunger adapted to engage said lever and to withdraw said rod from a bottle as the plunger approaches the limit of its advance movement, substantially as and for the purposes set forth.

3. In a corking-machine the combination with a cork holder and guide, a compressor adapted to force a cork into the bore of said holder and guide, a reciprocating plunger having a longitudinal groove in one side and adapted to force a cork from said holder and guide into a bottle, of a vent-rod loosely suspended in the bore of the cork holder and guide opposite the compressor and in line with the groove in said plunger, a lever from which said rod is suspended and an arm or projection on the plunger adapted to engage said lever and to withdraw said rod from the mouth of a bottle as the plunger approaches the limit of its advance movement, substantially as and for the purposes set forth.

4. The combination in a corking-machine with the cork holder and guide, compressor and plunger, of a lever having one arm overhanging the cork holder and guide, a longitudinally-grooved vent-rod pivoted at its upper end to said arm and loosely suspended therefrom in the bore of said holder and guide opposite the compressor, and an incline on the plunger adapted to engage the other arm of said lever and to withdraw the vent-rod from a bottle when the plunger approaches the limit of its advance movement, substantially as and for the purposes set forth.

5. In a bottle-corking machine the combination with the cork holder and guide having a lateral opening in one side, a compressor movable in said opening transversely to the bore of said holder and guide, and a reciprocating plunger movable axially through said holder and guide and provided with an arm or projection formed with an incline, a bell-crank lever one arm of which is provided with a roller in the path of said incline and the other arm projects over the cork holder and guide, and a vent-rod pivoted at its upper end

to the overhanging arm of said lever and loosely suspended therefrom in the bore of the cork holder and guide opposite the compressor, substantially as and for the purposes set forth. 15

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM O. VILTER.

Witnesses:

CHAS. L. GOSS,
E. V. WRIGHT.