(No Model.)

G. NORTON.

CORKING MACHINE.

No. 527,021. Patented Oct. 2, 1894.

Fig. 1.

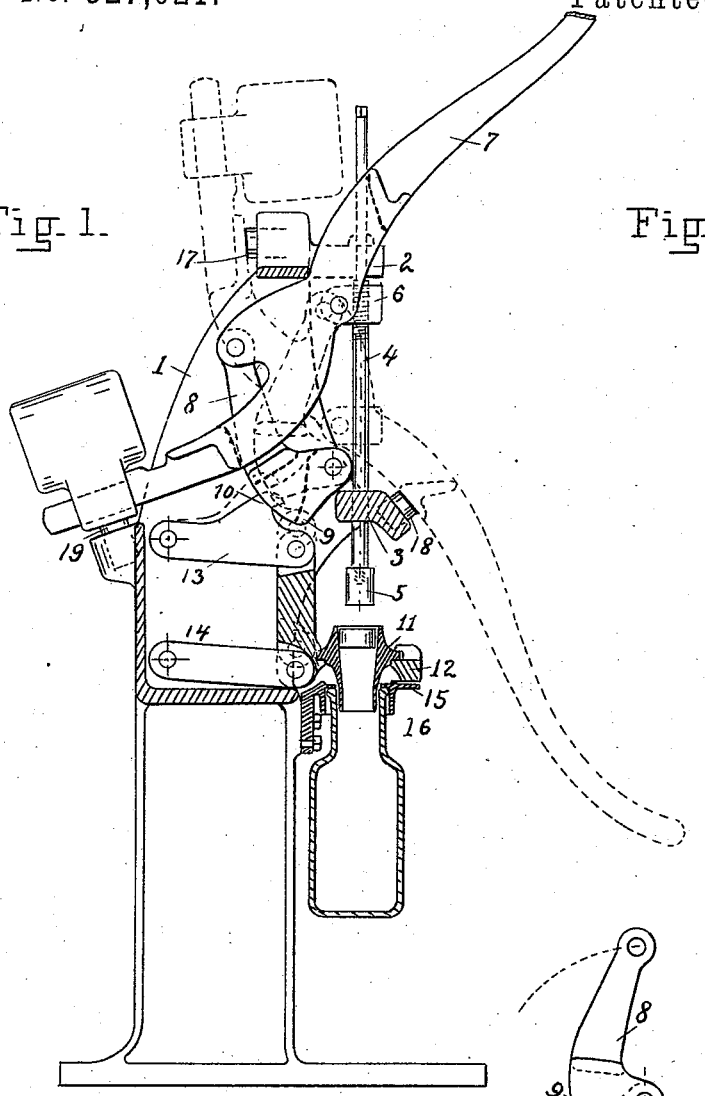


Fig. 2.

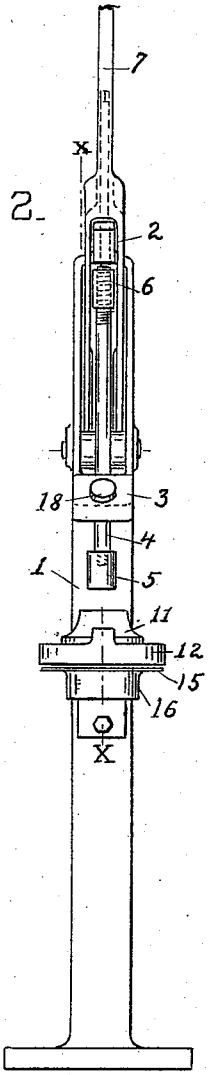


Fig. 3.

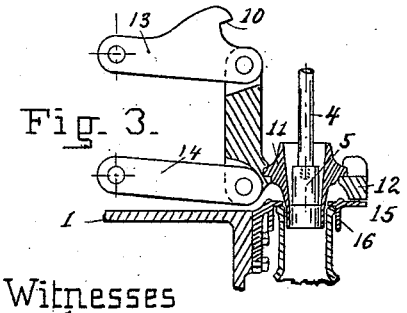
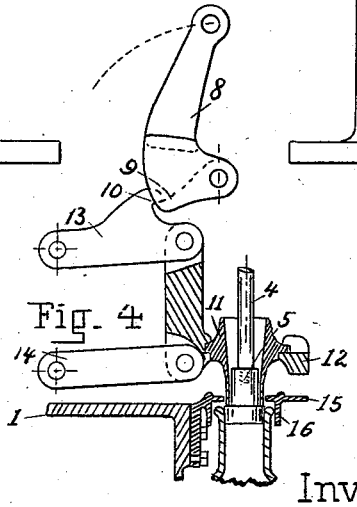


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GERRIT NORTON, OF NEW YORK, N. Y., ASSIGNOR TO MARTHA MATILDA NORTON, OF SAME PLACE.

CORKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 527,021, dated October 2, 1894.

Application filed May 29, 1893. Serial No. 475,860. (No model.)

To all whom it may concern:

Be it known that I, GERRIT NORTON, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Corking-Machines, of which the following is a specification.

The machine herein described inserts corks in bottles. It is operated by means of a hand lever. The cork is placed in a cork-pressing tube which is conical or flaring at its upper end and projects into the neck of the bottle when the latter is held in place for corking. The cork is driven by a plunger through the conical portion by which it is compressed into the lower portion which is straight and projects into the bottle. When in position the plunger and cork come substantially to rest while a further downward movement of the lever withdraws the tube and leaves the cork to expand and fill the mouth of the bottle.

My improvements relate chiefly to the mechanism by which this is accomplished. They are such that the work of compressing the cork and effecting its transfer from the tube to the bottle is derived from as much of the stroke of the lever as possible. Furthermore the construction is such that the purchase of the lever increases as the cork becomes compressed, and thus equalizes the power which is expended on the lever. Other improvements have also been made as hereinafter claimed.

In the accompanying sheet of drawings my machine is drawn to appear one eighth size in the customary lithographic reproduction.

Figure 1 is a side view of my machine, partly in section through the cork-pressing tube and the frame on the line *x*. The position of the movable parts at the completion of the stroke is indicated by dotted lines. Fig. 2 is a front view of the machine. Fig. 3 shows in vertical section the parts directly concerned in the compression and insertion of the cork. This figure shows them in the position taken when the cork is compressed. Fig. 4 is a similar sectional view of the same parts at the completion of the stroke.

The frame 1 has two bearings 2 and 3 which guide the vertically movable spindle 4. This spindle has a head 5 on its lower end and is threaded into the block 6. These parts compose the plunger. A hand lever 7 is hinged to the block. By turning the spindle in the threaded block its height with respect to the rest of the mechanism is adjusted. A toggle-link 8 connects the fulcrum of the hand lever with the frame. It is hinged to the frame close to the plunger and preferably below the lever. During the first part of the stroke this link remains nearly stationary in position, and merely vibrates sufficiently to adjust the curved movement which the lever would otherwise take, to the straight movement of the plunger, but as the lever moves through the lower half of its downward stroke the link swings toward the plunger and the latter moves much slower with a given movement of the lever but with correspondingly more power as the compression of the cork increases. As the hand lever nears the end of its stroke a contact 9 in a mortise in the toggle-link engages with a contact 10 on the tube carrying mechanism and withdraws the tube from the bottle thus completing the operation of corking.

The cork-pressing tube 11 which is in line with the plunger has a vertical movement of about one inch. It is supported in a ring 12. Two links 13 and 14 occupy parallel and nearly horizontal positions one above the other and connect the ring with the frame and serve to guide it through the short distance it is required to move in substantially a vertical line. This construction is adopted instead of an ordinary sliding joint because less machine work is required in making it and because hinge joints do not become exposed when in operation, as a sliding joint would, to the corroding action of the juices which spatter from the bottles when they are being rapidly handled and corked.

In order to further protect the working parts and also the operator from spattering, the tube and its supporting ring are so fashioned that an annular space is left between them on the under side. When any liquid is thrown out of the bottle by the sudden entrance of the cork it is caught in the annular space.

During the operation of corking, the bottle is held by hand against the under side of

a bracket 15 having a central opening through which the tube projects into the bottle. This tube is necessarily light and frail since it lies between the compressed cork and the bottle. Any attempt to force against it the mouth of a bottle not properly centered, as would frequently be liable in rapid and careless working, would therefore soon batter or break the tube and render it useless. To prevent this a centering ring 16 is made a part of the bracket. This ring extends as low or a little lower than the tube and so guides the neck of the bottle that it cannot contact with the tube. The lever on reaching the bottom of its stroke contacts with the frame at 17 and 18 simultaneously. These contacts are so situated that the connections between the lever and the spindle and between it and the toggle-link lie between them. This construction enables the contacts to fully arrest the motion of the lever and relieves the other moving parts of all strain incident to the sudden stoppage of the lever. The lever on its return is stopped against the single contact 19. One of the members at each of these contacts is preferably protected with rubber, leather or other yielding and elastic material.

Without limiting myself to the precise details shown, what I claim, and desire to secure by Letters Patent, is—

1. In a corking machine, a supporting frame, a plunger, a lever mechanism consisting of a lever and a toggle-link to which said lever is hinged, one of the elements of said lever mechanism being hinged to the frame close to the plunger and below the lever and the other hinged to the plunger, in combination with a vertically guided cork-pressing mechanism, so that the depression of the lever will bring all of said hinges into substantially the same vertical plane, and when they are so situated the cork-pressing mechanism will be lifted, substantially as described.

2. In a corking machine, a supporting frame, a plunger, a lever hinged thereto, and a toggle-link to which said lever is hinged, said toggle-link being hinged to the frame close to the plunger, in combination with a vertically guided cork-pressing mechanism, so that the depression of the lever will bring all of said hinges into substantially the same vertical plane, and when they are so situated the cork-pressing mechanism will be lifted, substantially as described.

3. In a corking machine, a supporting frame, a plunger, a lever hinged thereto and a toggle-link to which said lever is hinged, said toggle-link being hinged to the frame close to the plunger and below the lever, in combination with a vertically guided cork-pressing mechanism, so that the depression of the lever will bring all of said hinges into substantially the same vertical plane, and when they are so situated the cork-pressing mechanism will be lifted, substantially as described.

4. The combination with a supporting frame and a vertically guided cork-pressing mechanism of a plunger, a lever attached thereto, a toggle-link to which said lever is fulcrumed, and contacting parts between said toggle-link and cork-pressing mechanism by which the latter is lifted, substantially as described.

5. In a corking machine the combination with a supporting frame of a plunger, a cork-pressing tube, and two parallel links connected therewith one above the other and hinged to the frame, and means for driving the plunger and lifting the cork-pressing tube, substantially as described.

6. The combination with a supporting frame, of a plunger, a lever attached thereto, a toggle-link to which said lever is fulcrumed, a cork-pressing tube, two parallel links connected therewith and hinged to the frame, and a contact between one of said parallel links and the toggle-link, substantially as described.

7. In a corking machine, a cork-pressing tube having a tubular extension and its supporting ring, in combination with a bracket below said cork-pressing tube, and an annular space between said tube and bracket, substantially as described.

8. In a corking machine, a cork-pressing tube having a tubular extension in combination with a bracket below said cork-pressing tube, and a centering ring attached thereto, substantially as described.

9. In a corking machine, the combination with a supporting frame of a plunger, a lever attached thereto, a link to which said lever is fulcrumed, and two contacts between said frame and lever when the latter is depressed, the attachments between said lever and plunger and between said lever and link lying between the said contacts, substantially as described.

Signed by me, in New York city, this 27th day of May, 1893.

GERRIT NORTON.

In presence of—
THOMAS NORTON,
FRANCIS L. HATCH.