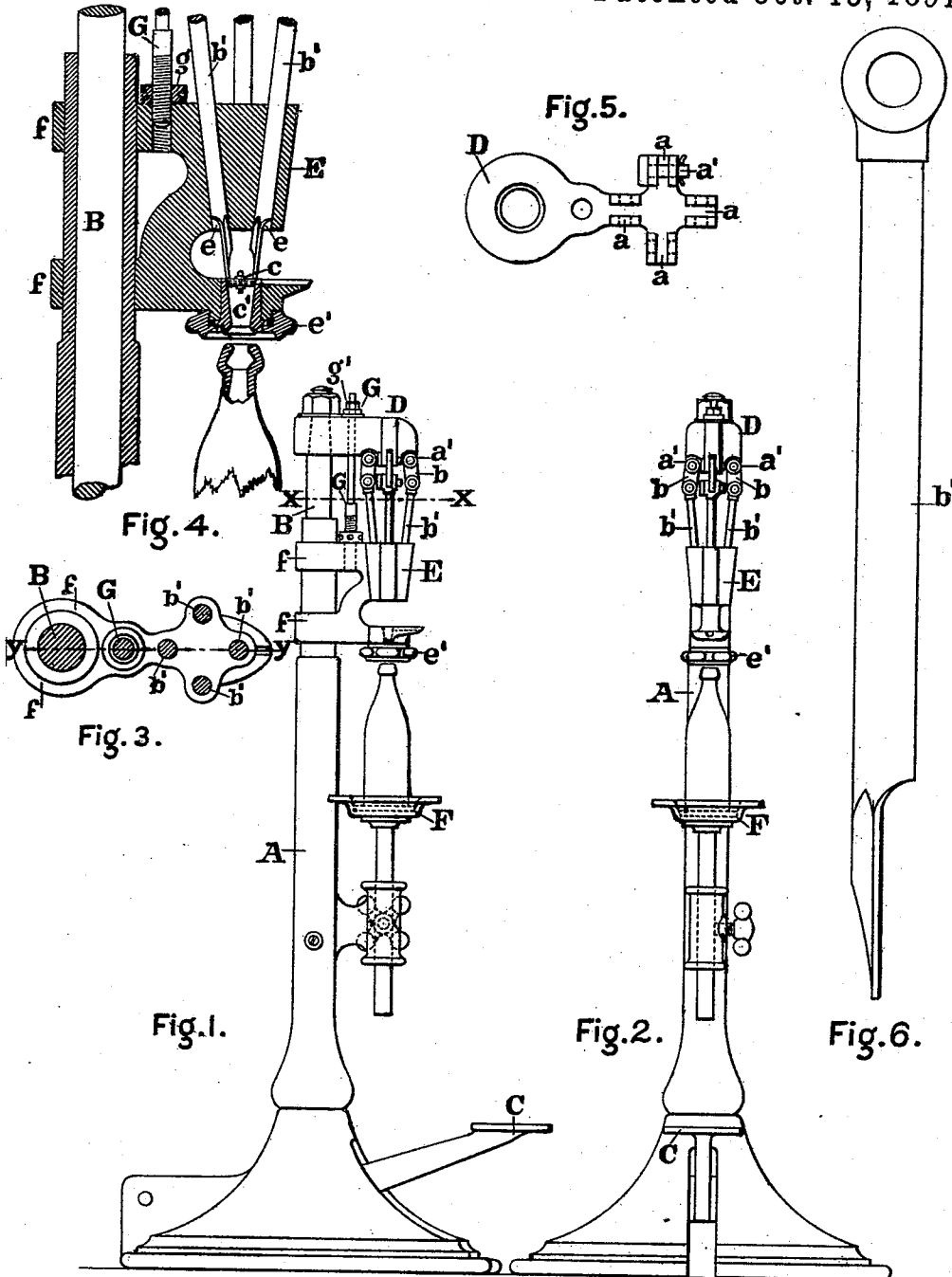


(No Model.)

A. SIEBERT.  
CORKING MACHINE.

No. 461,285.

Patented Oct. 13, 1891.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## CORKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 461,285, dated October 13, 1891.

Application filed March 4, 1891. Serial No. 383,795. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED SIEBERT, a citizen of the United States, and a resident of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Corking-Machines, of which the following is such a full, clear, concise, and exact description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The invention is here shown and will be particularly described with reference to its application in a machine for the insertion of bottle stoppers or seals made of rubber or other elastic and compressible material, though it is adaptable for the insertion of various other styles of corks and stoppers.

In certain corking-machines heretofore constructed, in which the plunger was seated upon the outer circumference of the stopper immediately prior to its being compressed through a tapering tube or throat, it was considered necessary to make provision for the collapse of the plunger in order to enable it to pass through the throat so as to insert the stopper. In the use of a machine so constructed sufficient force must be applied to compress not only the stopper, but also to collapse the elastic plunger-fingers, and as the fingers of a collapsible plunger exert a pressure against the walls of the tapering tube or throat during the period of their downward and upward movements through the same the frictional contact occasions a wearing of the parts.

The chief object of my invention is to construct a corking-machine with convergent plungers adapted to the varying diameter of the stopper during its compression into a bottle, and which, being free from the objectionable features of a collapsible plunger, will readily and easily perform the work of forcing the stopper into the aperture or cork-receptacle of a bottle.

The invention consists, primarily, in providing a machine for inserting bottle-stoppers with two or more plungers arranged to move in an oblique downward direction and means whereby the several plungers may be

actuated, and more specifically in the construction and arrangement of the parts, as hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a corking-machine embodying my improvements, and Fig. 2 is a front elevation thereof. Fig. 3 is an enlarged horizontal sectional plan of the plungers and connecting parts, taken on the line *xx* of Fig. 1. Fig. 4 is an enlarged vertical section taken on the line *yy* of Fig. 3. Fig. 5 is an enlarged bottom plan of the head or bracket for connecting the plungers to the actuating-rod. Fig. 6 is an enlarged detail view of one of the plungers detached.

In the drawings, A represents the standard or casting, within which the actuating-rod B may be moved in a foot-power machine by its attachment to a connecting-lever C. In a steam-power machine the rod B can of course be actuated by a suitable pulley and crank-shaft. The actuating-rod B and connecting-lever C may be supported in the ordinary way by a spring within the standard or casting A. To the upper end of the rod B a head or bracket D may be connected for the purpose of imparting motion to the plungers as the rod B moves up and down within the standard or casting A. The head or bracket D is preferably provided with ears *a a* for receiving bolts *a' a'*, which form journals for links *b b'*. These links have their opposite ends journaled in like manner to the upper end of the plungers *b' b'*. These plungers are shown in the form of rods, which have a portion cut away from the lower ends or extremities, which are preferably shaped, finished, and arranged so that if the several plungers are brought into contact with each other such parts will take the form of a conical or tapering plug, filling the tapering tube through which the stopper may be compressed in its passage to the bottle, as shown. The lower ends of the plungers are blunt or present a flat surface of sufficient area to prevent injury or cutting of the stopper when seated thereon. The plungers *b' b'* are arranged and adjusted so as to move in an oblique or inclined direction, and the several plungers approach or recede from each other according to the varying planes of

movement as the actuating-rod goes up or down.

In order that the plungers may always maintain their inclined position and have an oblique movement, they are preferably passed through apertures in a guide-piece of any suitable construction, as through the apertures *ee* in the casting *E*. The casting or guide-piece may be of a form or construction which will also contain or receive the tapering tube or throat through which the stopper is to be forced into the aperture or cork-receptacle of the bottle. As shown in the drawings, the casting *E* is shaped so as to leave a space below the guide-apertures, which forms an opening or mouth to permit the feeding of the stoppers *c* into the throat *c'* beneath the plungers and above the bottle. The lower part of the casting *E* may be finished around the tapering tube by a flaring collar *e'* or otherwise, so as to adapt it to seat properly and center the bottle, which rests beneath the throat, upon a suitable support, as the bracket or bottle-rest *F*. The casting *E*, which in the construction shown contains both the guide-apertures and the converging throat, is provided with projecting collars *ff*, placed over and movable on the upper portion of the standard *A*, which may be finished for the purpose. The adjusting-rod *G* may be employed to regulate the distance and relative position of the plungers to the guide and throat. The adjusting-rod *G* is shown as screw-threaded at its lower end and provided with an adjusting-nut *g*, the screw-threads on the lower end being fitted to a female-threaded socket in the casting *E*, as shown in Fig. 4. Above the nut *g* for a suitable distance the rod *G* may be enlarged and provided with a shoulder, beyond which it is of lesser diameter, and extends upwardly through the bracket *D*, being provided at its upper end with a nut *g''*, which acts as a means for lifting the casting *E* and throat of the bottle when the actuating-rod *B* moves upward. By moving the nut *g* on the rod *G* the distance between the casting *E* and the bracket *C* may be regulated so that the downward movement of the plungers will be limited by the shoulder on the rod *G*. When the actuating-rod *B* moves in a downward direction, it carries the bracket *C* and plungers, which movement permits the throat-piece to seat itself upon the top of the bottle, and the plungers pass on downward through the same until their movement is arrested by the bracket coming into contact with the shoulder on the rod *G*, thus limiting the distance which the plungers are permitted to move beyond the depth of the throat and into the bottle. When the actuating-rod *B* moves upwardly, the throat will retain its position on the bottle until the bracket *D* bears against the nut or cap *g'*, when the same will be lifted and the bottle released, so that it can be removed and another one placed in position for receiving a cork or stopper, which is inserted in like manner.

In the arrangement shown I have made use of four plungers, which I find to be a convenient number; but the compression of the stopper may be effected by any desired number, not less than two when arranged to move continuously in an inclined direction, so that as they approach the plane of the largest diameter of the throat they will come within a circle equal or nearly equal to the same. The plungers, being arranged to move in an oblique direction, pass directly downward through the throat, which is practically of the same incline as the line of movement of the plungers, and when the plungers have passed through the same the ends thereof will come within the mouth of the bottle, maintaining their force upon the stopper until it is finally seated in the aperture or cork-receptacle of the bottle. The movements of the plungers in an oblique direction of the same incline as that of the throat enables them to pass through the same without material, if any, friction against the sides of the walls of the throat, thus making the operation an easy one, besides obviating the wearing of the machine incident to the use of a collapsible form of plunger.

While I prefer to construct the machine with a tapering tube or throat, still, as the action of the plungers is not dependent upon the presence of such throat, but upon their convergency, the throat may even be dispensed with and a stopper compressed directly into the bottle-mouth.

I have shown the plungers and their connecting parts in the form which I deem best; but it is obvious that they may be arranged and connected in various ways, and I do not therefore confine myself to the specific construction shown in the drawings, nor to any special construction of the mechanism whereby the several plungers are actuated.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a corking-machine, two or more convergent plungers having blunt ends arranged to be seated upon the top of a stopper near its outer circumference, a guide for the stopper beneath said plungers, and means adapted to actuate the several plungers, whereby a stopper may be compressed and forced downwardly into the aperture or cork-receptacle of a bottle.

2. In a corking-machine, two or more convergent plungers having their lower end portions diminished and arranged to be seated upon the top of a stopper near its outer circumference, a guide for the stopper beneath said plungers, and means adapted to actuate said plungers, whereby a stopper may be compressed and forced downwardly into the aperture or cork-receptacle of a bottle.

3. In a corking-machine, two or more convergent plungers having their lower end portions diminished and the inner surfaces thereof recessed, said plungers being arranged to

be seated upon the top of a stopper over a pull-wire extending upwardly from the same, a guide for the stopper beneath said plungers, and means adapted to actuate said several plungers, whereby a stopper may be compressed and forced downwardly into the aperture or cork-receptacle of a bottle.

4. In a corking-machine, a plunger-guide having downwardly-converging apertures, two or more plungers movable within the apertures of said guide, said plungers being provided with blunt ends arranged to be seated upon the top of a stopper, a guide for the same beneath said plungers, and means adapted to actuate the several plungers, whereby a stopper may be compressed and forced downwardly into the aperture or cork-receptacle of a bottle.

5. In a corking-machine, a plunger-guide having downwardly-converging apertures, two or more plungers having their lower end portions diminished and having rounded

outer surfaces, said plungers being movable within said apertures and arranged to be seated upon the top of a stopper, a guide for the same beneath said plungers, and means adapted to actuate said several plungers, whereby a stopper may be compressed and forced downwardly into the aperture or cork-receptacle of a bottle.

6. In a corking-machine, two or more convergent plungers having blunt ends arranged to be seated upon the top of a stopper, in combination with a bracket or head-piece with which said plungers are connected, and an actuating-rod connected with said head-piece, and a guide for the stopper beneath said plungers, whereby said stopper may be compressed and forced downwardly into the aperture or cork-receptacle of a bottle.

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Witnesses:

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LOUIS BLOCK.