2 Sheets—Sheet 1.

J. A. de MESTRE.

BOTTLE CORKING MACHINES.

No. 180,559. Patented Aug. 1, 1876.

Fig. 1.

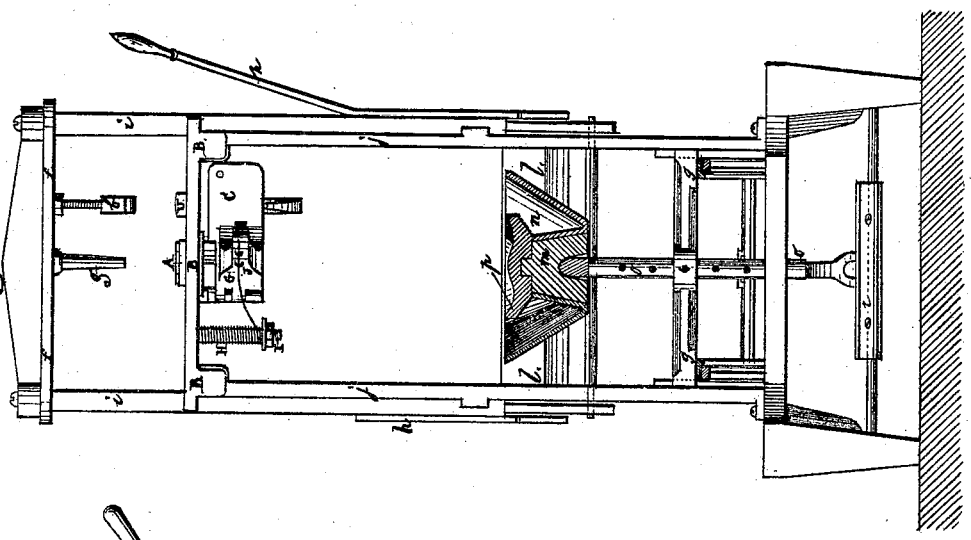
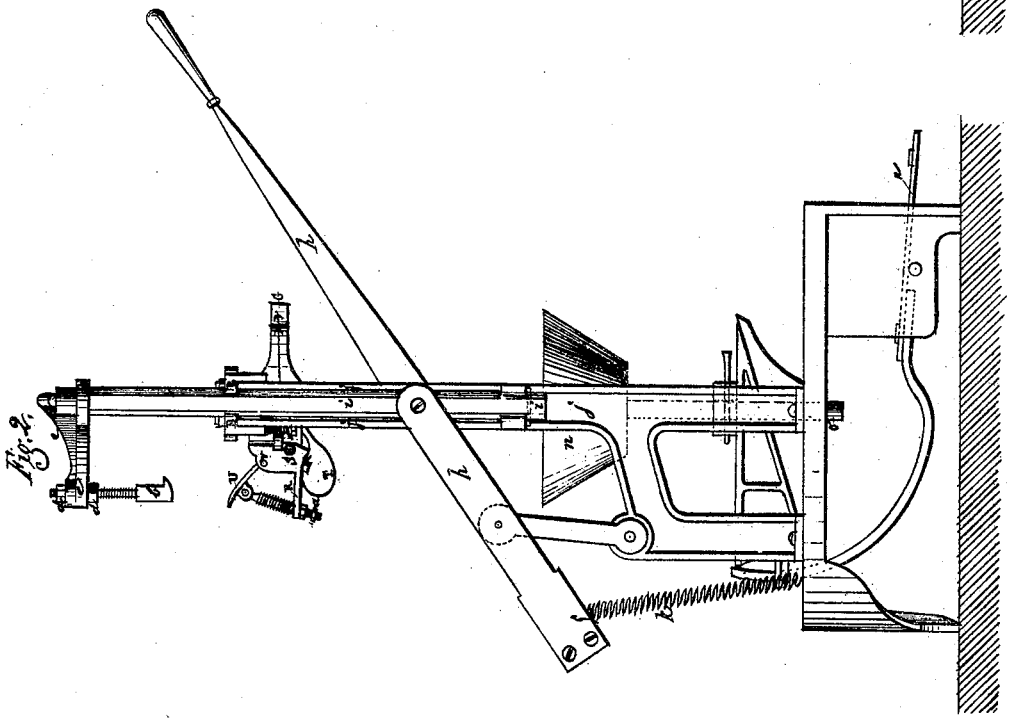


Fig. 2.



Witnesses.
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2 Sheets—Sheet 2.

J. A. de MESTRE.

BOTTLE CORKING MACHINES.

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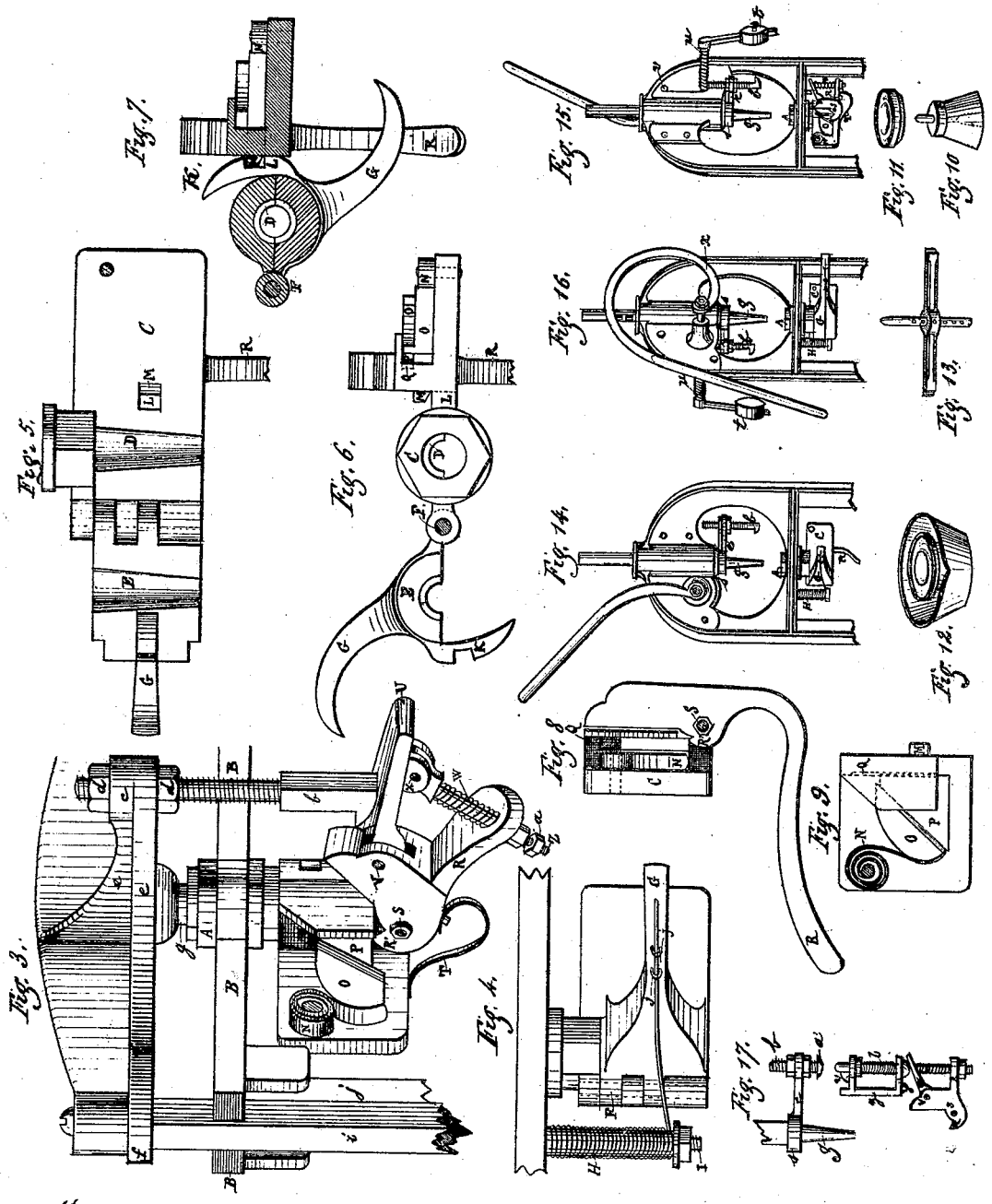

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UNITED STATES PATENT OFFICE.

JEAN ADRIEN DE MESTRE, OF BORDEAUX, FRANCE.

IMPROVEMENT IN BOTTLE-CORKING MACHINES.

Specification forming part of Letters Patent No. **180,559**, dated August 1, 1876; application filed June 15, 1876.

To all whom it may concern:

Be it known that I, JEAN ADRIEN DE MESTRE, of Bordeaux, France, have invented a new and useful Improvement in Bottle-Corking Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a side elevation of a corking-machine containing my improvement. Fig. 2 is a front view thereof, partly in section. Fig. 3 is a front view of the mechanism for locking the cork-receiver, on a larger scale than in the previous figures. Fig. 4 is a front view of the cork-receiver when shut. Fig. 5 is a like view thereof, when open. Fig. 6 is a plan or top view of the same when open. Fig. 7 is a horizontal section thereof, when shut. Fig. 8 shows a modification of the locking mechanism. Fig. 9 is a front view of the locking-bolt. Figs. 10, 11, 12, and 13 are detail views of the parts composing the bottle-support. Fig. 14 is a front view of a "rack" corking-machine containing my improvement. Fig. 15 is a perspective view thereof. Fig. 16 is a rear view of the same. Fig. 17 shows modifications of the locking mechanism as applied to the machines last named.

Similar letters indicate corresponding parts.

My invention relates to machines for corking bottles, and especially for applying the cork in such a way as to leave a portion thereof project from the mouth of the bottle to form a head or flange and permit of fastening the cork by a wire cap, as described in my Letters Patent No. 136,045, dated May 30, 1874.

My invention consists in a tubular cork-receiver, which is divided into two parts, one of which is fixedly secured to the machine-frame while the other part is movable, and is hinged to the fixed part, in conjunction with a locking-bolt, which is adapted to fasten the movable part of the cork-receiver, and with a reciprocating plunger, which is arranged in the plane of the cork-receiver in such a manner that when the receiver or its movable part is shut, and a cork is inserted in the upper end thereof while a bottle is held under it, the cork can be driven into the mouth of the bottle by imparting a downward motion to the plunger, and if a portion of the cork is allowed to remain in the receiver so as to project from the bottle for the purpose of forming the head or flange above mentioned, this portion (which it would otherwise be difficult to remove) can be readily removed from the receiver by opening it or its movable part. It consists, also, in combining with the locking-bolt for confining the movable part of the cork-receiver a pivoted arm, which is arranged to actuate the bolt, and a reciprocating hammer, which is arranged in such relation to the plunger as to move simultaneously therewith, and when the hammer is caused to descend it comes in contact with the pivoted arm, and thereby the bolt is withdrawn, so as to release the movable part of the receiver. It consists, further, in a bottle-support composed of a plate which is swiveled on the top end of a vertical rod, so that this plate can be inclined to any side, and hence when the bottle is placed thereon it can be properly presented to the cork-receiver. It consists, also, in combining a cup with the bottle supporting plate for the purpose of collecting the liquid in case of breakage of the bottle, such cup being attached to the supporting-plate, so as to partake of its movement.

In the drawing, the letter A designates a tubular nut, which is secured in a cross-beam, B, of the machine-frame, and which forms a support for the cork-receiver of my apparatus. This receiver is made in the form of a tube, and it is divided into two parts, marked D E, one part being fixedly secured to the machine-frame by the tubular nut A, while the other part is movable, and is connected to the fixed part by means of a hinge-joint, F. (Best seen in Figs. 5, 6, and 7.) The inner surfaces of the parts D E of the receiver are preferably made to taper toward the lower end, as seen in Fig. 5. The movable part E of the receiver is provided with a handle, G, by which such movable part can readily be moved toward or away from the fixed part D.

The movable part E of the receiver is, moreover, provided with a catch, K, and with it is combined a locking-bolt, O, having a beveled face, M, which is adapted to engage with the catch K, the bolt O being so arranged that when the movable part E of the receiver is

shut, as seen in Fig. 7, and the bolt is pushed home, the said movable part is firmly locked in position.

The letter *g* designates the plunger of my apparatus, affixed to a cross-head, *f*, which is secured to the upper end of the vertical slides *i i*, moving in ways formed in or upon standards *j j* of the machine-frame. A reciprocating motion is imparted to the plunger *g* through a lever, *h*, acting on the slides *i i*, as will be hereinafter described in detail.

If the movable part E of the cork-receiver is shut and a cork is inserted in the upper end of the latter, while a bottle is held under it, and the plunger *g* is caused to descend, the cork is thereby driven into the mouth of the bottle, and if the extent of motion of the plunger *g* is so regulated that when the cork is driven into the mouth of the bottle a portion of the cork is allowed to project therefrom, a head or flange is formed to receive a wire cap, by which the cork is fastened to the bottle. This projecting portion of the cork remains in the lower part of the cork-receiver when the cork is driven into the bottle, and to permit of removing the said portion of the cork with facility I open the receiver, or in other words, swing the movable part E away from the fixed part, having first withdrawn the bolt O. The bottle is then free to be taken away without obstruction to the cork.

In some cases a spring, H, is combined with the movable part E of the receiver, for the purpose of shutting it automatically, the free end of such spring being arranged to bear on the handle G, and to pass through staples J, affixed to the handle, as seen in Figs. 1 and 4.

The bolt O is actuated by an arm, R, which is pivoted at S to a bracket, C, such bracket being formed on or secured to the fixed part of the cork-receiver, and forming also a support for the bolt O. The method of actuating the bolt O by this arm R consists in providing the bolt with an inclined edge, and placing a wedge, P, in contact therewith, which wedge slides up and down in a suitable guide, and is situated immediately above the inner end of said arm R, so that when the outer end of said arm is depressed the wedge P is raised by its inner end, while by the action of the wedge the bolt O is moved back, so as to release the movable part of the receiver. The bolt O is subjected to the action of a spring, N, which has a tendency to force it in an opposite direction than the lever R and wedge P, or in other words, the said spring serves to force the bolt home automatically.

To the cross-head *f*, which supports the reciprocating plunger *g* is attached a hammer, *b*, which thus partakes of the motion of the plunger, and this hammer is so arranged that when the plunger is caused to descend, the hammer actuates the outer end of the arm R, and thereby the bolt O is withdrawn, so as to release the movable part of the receiver. To obtain a regular opening and closing of the said movable part of the receiver, the length of the hammer *b* should be so regulated that the catch K is disengaged from the bolt at the moment the reciprocating plunger *g* has reached the end of its downward course.

In case the said plunger *g* is shortened—as, for instance, for the purpose of increasing the size of the portion of cork allowed to project from the bottle, as above stated—the hammer *b* will have to be lengthened in proportion.

Inasmuch as it may happen by a want of attention on the part of the attendant, or from any other cause, that the hammer *b* comes to the end of its course before the plunger *g* arrives at the end of its stroke, and which might occasion the breaking of the machine under the heavy fall of the plunger, I combine with the arm R a branch arm, U, which latter is pivoted to the arm R, while between it and the arm R is interposed a spring, W. The said branch arm U is arranged to receive the stroke of the hammer *b*, and the spring W is made of such strength that when the hammer *b* comes in contact with the branch arm, the movement thereof is communicated to the arm R without yielding of the spring W, while the spring yields at the moment the bolt O is withdrawn by the arm R, so as to obviate the breakage of any of the parts, in case the hammer *b* is of too great length relatively to the plunger.

The arm R is subjected to the action of a spring, T, which has a tendency to throw it upward when released from the action of the hammer *b*. The hammer *b* is fastened to the cross-head *f* by means of nuts *d*, or in any other suitable manner.

The spring W, which is interposed between the main arm R and the branch arm U, is made of wire coiled on a rod, Z, which is pivoted at one end to the branch arm, and which slides through a hole formed in the main arm. The lever *h*, by which motion is given to the cross-beam *f* carrying the plunger *g* and hammer *b*, forms a continuation of one of two links which are pivoted to the slides *i i* and to the standards *j*, while they are connected together by a cross-piece, *l*. To this cross-piece *l* is fastened one end of a spring, *k*, the other end of which is fastened to the base or pedestal of the apparatus. By depressing the outer end of the lever *h* the slides *i i* are drawn downward, together with the cross-head *f* and its concomitant parts, while, when the lever is released, it and the parts referred to are automatically returned to their normal position by the action of the spring *k*. If seen fit, a weight may be added to the spring *k*, so that the spring can be made comparatively weak, and less power is required for operating the machine.

In presenting the bottle to be corked to the cork-receiver it is placed on a support, the arrangement of the parts of which forms one of the features of my invention.

The letter *p* designates a plate which is swiveled on the top end of a vertical rod, *o*, by means of a base or supporting piece, *m*,

which is provided with a hole or socket in its under surface and placed loosely on the top of the said rod *o*, as shown in Fig. 1. The bottle to be filled is placed on the plate *p*, and in case any crookedness exists in the bottle, the same can readily be corrected by inclining the plate accordingly; hence a proper application of the mouth of the bottle to the cork-receiver is obtained in every case.

n is a cup, which is combined with the supporting-plate *p*, so that in case of leakage or breakage of a bottle the contents thereof are collected in this cup. The said cup *n* is affixed to the base-piece *m* of the supporting-plate, the bottom of the cup being turned upward to form a truncated cone, and the base-piece *m* being made of a corresponding shape, while the cup is placed loosely on the base-piece.

The vertical rod *o*, which forms the support of the plate *p* and cup *n*, is adjustably fastened to a cross-piece, *q*, which slides in vertical ways formed in the standards *j*, and this cross-piece *q* rests on one of two wedges which are placed above each other, so that by sliding the said wedges toward each other the rod *o* and the parts which it carries are moved upward, and vice versa. For the purpose of operating the said wedges, I make use of a treadle, *r*, which is curved upward, as seen in Fig. 2, while such curved part is situated immediately behind one of the wedges.

My improvement is applicable to corking-machines of various constructions, and in Figs. 14, 15, and 16 I have shown it applied to a so-called "rack" machine.

It is obvious that the hammer *b* may be dispensed with and the arm R operated by hand; but in such case I elongate the said arm, as shown in Fig. 8.

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

1. In a bottle-corking machine, a tubular cork-receiver, constructed of the fixed part D, and a movable or hinged part, E, in combination with a locking-bolt, *o*, for fastening the said movable or hinged part E, and a reciprocating plunger, *g*, the whole being adapted to operate substantially as described.

2. In combination with a tubular cork-receiver, constructed of the fixed part D and movable or hinged part E, with the locking-bolt O and reciprocating plunger *g*, the pivoted arm R and hammer *b* for actuating the locking-bolt, substantially in the manner described.

3. In a bottle-corking machine, a bottle-support, composed of a plate, *p*, which is swiveled on the upper end of a rod, *o*, substantially as described.

4. In combination with the swiveled supporting-plate *p*, the cup *n*, to prevent the loss of liquid, substantially as described.

JEAN ADRIEN DE MESTRE.

Witnesses:

LOUIS BORDES,

A. DENNIS.