A. De MESTRE.

Machine for Applying Wire Caps to Bottles.

No. 166,077. Patented July 27, 1875.

Fig. 4.

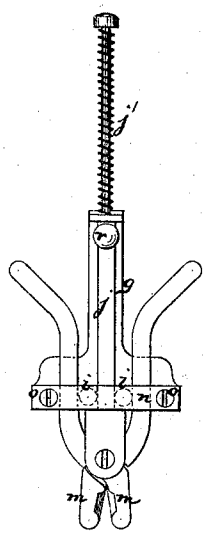


Fig. 2

Fig. 3.

Fig. 1.

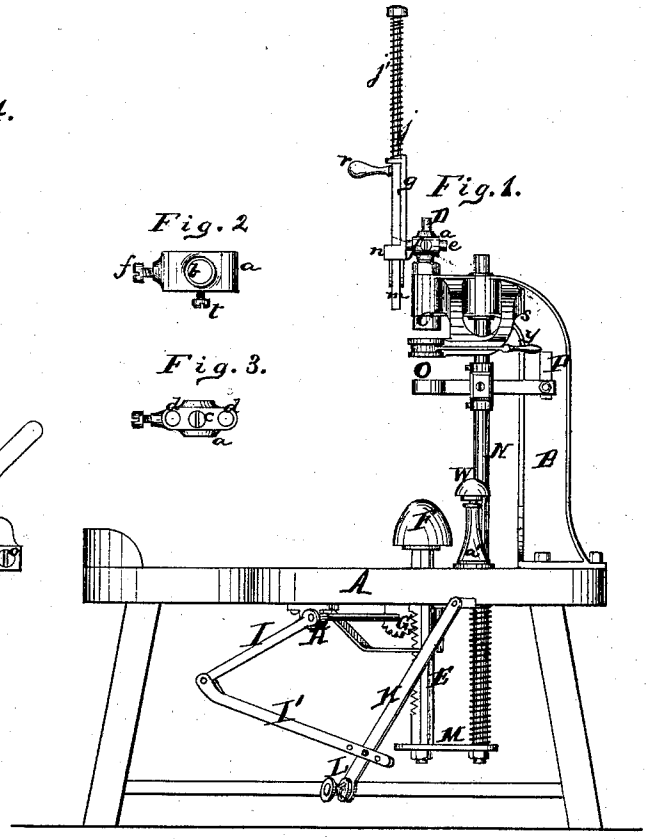


Fig. 5.

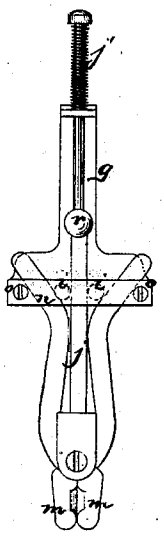


Fig. 6.

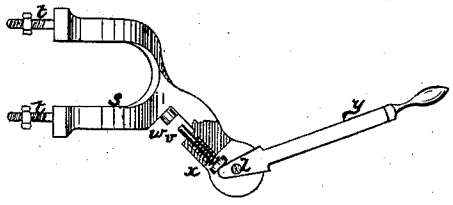
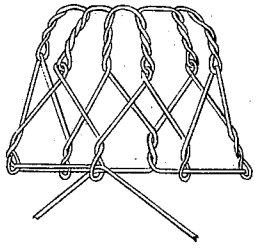


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

ADRIEN DE MESTRE, OF BORDEAUX, FRANCE.

IMPROVEMENT IN MACHINES FOR APPLYING WIRE CAPS TO BOTTLES.

Specification forming part of Letters Patent No. **166,077**, dated July 27, 1875; application filed May 7, 1875.

To all whom it may concern:

Be it known that I, ADRIEN DE MESTRE, of Bordeaux, France, have invented a certain new and useful Improvement in Machines for Applying Wire Caps to Bottles, of which the following is a specification:

This invention is illustrated in the accompanying drawing in which—

Figure 1 represents a side view, partly in section. Figs. 2, 3, 4, 5, and 6 are details which will be referred to as the description progresses. Fig. 7 is a detached view of one of my wire caps.

Similar letters indicate corresponding parts.

This invention consists in the combination of a bottle-supporting slide operated by a foot-lever, a bottle-retaining clamp, and a die for depressing the wire caps on the cork stoppers of the bottles so that said wire caps can be readily and quickly fastened on the necks of the bottles. With the parts above enumerated is combined a cutter for cutting off the ends of the wires projecting from the wire caps, and also a hand-stamp for the purpose of applying to the wire caps lead seals, and for stamping on these lead seals the required designs or characters.

In the drawing, the letter A designates a bench on which the workman is seated, and from which rises a standard, B, which is firmly bolted to it. The outer end of this standard is bored out to form the guide for a rod, D, which is provided with a concave head or die, C, at its bottom end, and which is secured in position by a nut and screw-thread. The concave die C serves to compress the cork stopper and the wire cap, in order to fasten the latter on the neck of the bottle, and it may be changed to suit the size and form of different bottles.

Through the bench A extends a vertical slide, E, on the upper end of which is secured a convex block, F, to fit the bottoms of the bottles. On the edge of said slide is formed a rack, which gears in a cog-wheel, G, mounted on a shaft, which has its bearings in brackets H, secured to the under surface of the bench A. This shaft connects by a lever, I, and rod I′, with a foot-lever, K, which has its fulcrum on a stud secured to the bench, the rod I′ being made adjustable so that the motion of the cog-wheel G can be regulated. On the lever K is secured the pedal L.

The slide E connects at its bottom end by a strap, M, with a vertical rod, N, which extends through the bench A and through a socket in the standard B, and which is subjected to the action of a spiral spring, that has a tendency to depress the same together with the slide E. Said rod forms the fulcrum for two jaws, O, which are retained at the proper height corresponding to the size of the bottles by adjustable collars or other equivalent means. When the rod N is raised, the tail ends of the jaws O slide up on inclined planes P, secured to the standard B, and said jaws close upon the neck of a bottle previously placed upon the block F, which also rises with the rod N, so that the bottle is held in position while its stopper and cap are exposed to the action of the die C. By pressing with the foot on the pedal L, the wire cap is firmly depressed over the neck of the bottle, and it is fastened round said neck by taking hold of the loose ends of the wire cap and twisting the same together by hand. The ends of the wire are finally passed through a lead disk; then they are cut off and the lead disk is exposed to the action of a hand-stamp to receive the required impression, as will be presently explained. The tool for cutting the wire is fastened to the vertical rod D by means of a head, *a*, Figs. 2 and 3, which is provided with a hole, *d*, for the reception of the rod D, being retained in position by a set-screw, *c*. Said head is provided with two horizontal sockets, *d*, to receive pins *e*, which project from the cutting-tool, Fig. 1, and which serve to adjust said tool at the required distance from the rod D, being retained in position by a set-screw, F. The jaws *m m* of the cutting-tool are pivoted to a rod, *j*, which slides up and down in a frame, *g*, supported by the pins *e*. A spring, *j′*, has a tendency to force the rod *j* up, whereby the jaws are opened, (see Fig. 4.) The tail ends of the jaws *m* are curved, and they extend through under a flat plate, *n*, which is fastened to the frame *g* by means of screws *o*. When the rod *j* is depressed the tail ends of the jaws *m* bear against the screws *o*, or against friction-rollers placed on said screws, and the cutting-jaws close, Fig. 5. A handle,

r, serves to depress the rod *j*. The inner edges of the tails of the jaws *m* bear against studs *i*, secured between the plate *n* and frame *g*, so that when the rod *j* is raised by the action of its spring *j'* the cutting-jaws are thrown open. Instead of these studs a spring may be used which has a tendency to keep said jaws open.

After the wire cap has been properly secured on the neck of the bottle by twisting the ends of the wire, as previously stated, and after said ends have been passed through the lead disk, the rod *j* is depressed, and the ends of the wires are cut in the proper place without removing the bottle from the block F, the frame *g* having been previously adjusted in the required position by means of the pins *e*. On the side of the standard B is secured a bracket, *s*, Figs. 1 and 6, by means of two screws, *t*. In this basket is fixed a die, *u*, and from said bracket extends an arm, *x*, which is bored out to receive a plunger, to the end of which is secured a stamp, *v*. A hand-lever, *y*, serves to impart to the plunger the required motion, said lever being provided at its inner end with an eccentric, which turns on the pivot *z* and bears against the end of the plunger. A spiral spring, which acts on the plunger, serves to throw the stamp *v* off from the die *u*.

In order to bring the lead disk conveniently between the die and the stamp, the bottle with the wire cap and disk is removed from the block F and placed on the block W, which is supported by a spiral spring and slides up and down in an upright, *a'*, rising from the bench A. When the bottle is thus supported the lead disk can be conveniently inserted between the die *u* and stamp *v*, and by operating the lever *y* the required impression is produced on said disk.

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

1. The combination of the bench A, upright B, die C, rod D, sliding rod, E, jaws O, and inclines P, all constructed and operating substantially as shown and described.

2. The combination of the treadle L, cog-wheel G, slide E, and bottle-supporting block F with the sliding rod N, die C, jaws O, and inclines P, substantially as set forth.

3. The combination of cutting-jaws *m*, with the rod D, die C, sliding rod E, jaws O, inclines P, and bottle-supporting block F, substantially as shown and described.

4. The combination of a tool for impressing designs on a lead disk with the apparatus for applying wire caps to bottles, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 24th day of March, 1874.

ADRIEN DE MESTRE. [L. S.]

Witnesses:
ALBION P. STEVENS,
CH. F. THIRION.