(No Model.)

R. WALSH.

CAPSULE FILLING MACHINE.

No. 346,964. Patented Aug. 10, 1886.

Fig. 1.

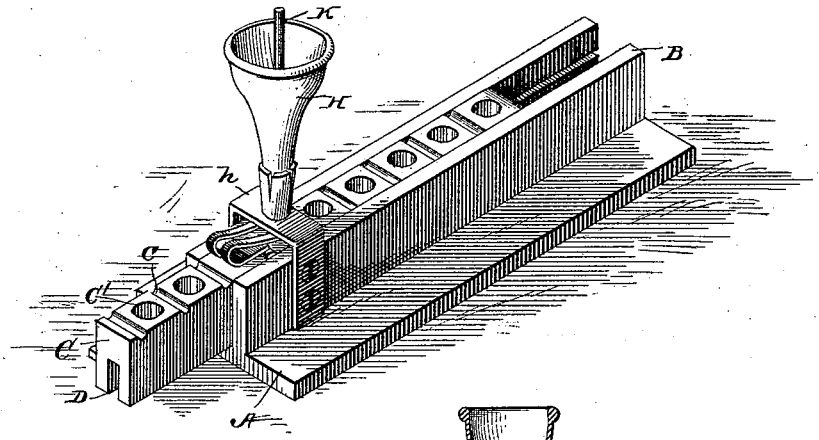


Fig. 2.

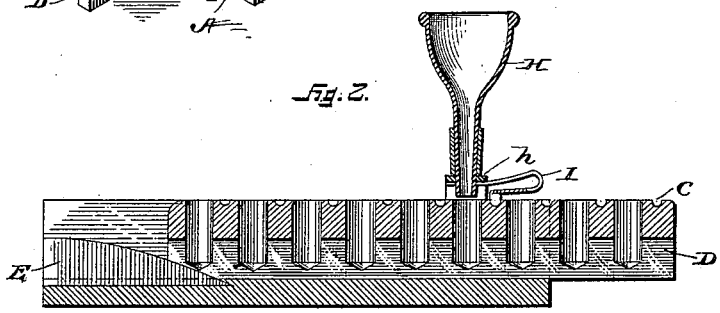


Fig. 3.

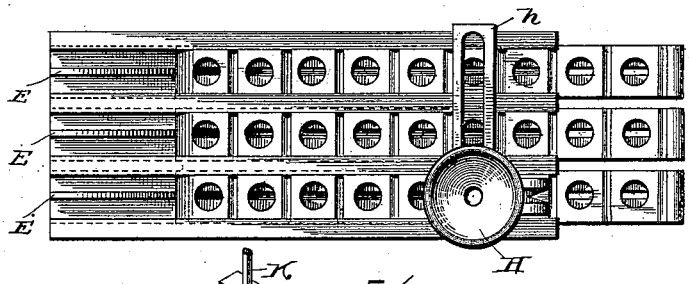
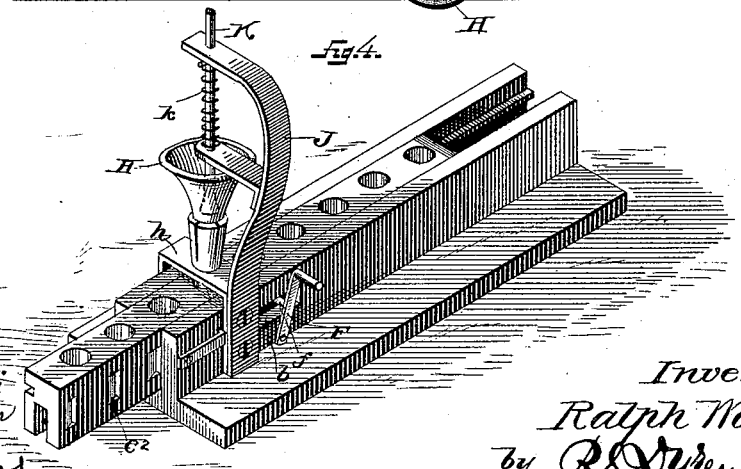


Fig. 4.



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UNITED STATES PATENT OFFICE.

RALPH WALSH, OF WASHINGTON, DISTRICT OF COLUMBIA.

CAPSULE-FILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 346,964, dated August 10, 1886.

Application filed January 11, 1886. Serial No. 188,235. (No model.)

To all whom it may concern:

Be it known that I, RALPH WALSH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Capsule-Filling Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for filling capsules.

The object of the invention is to produce a simple, economic, and at once reliable, rapidly-operating, and convenient device for use in filling capsules.

With this object in view my invention consists, essentially, in a holder provided with a number of holes for the reception of the capsule-shells, and a frame or base in or upon which the holder slides, the frame or base being provided with an incline with which the capsules come in contact, whereby they are moved from their seats either for the purpose of presenting them to receive their caps or to remove them when filled and capped.

Furthermore, the invention consists in a holder for the capsule-shells and a frame or base in which the holder slides, provided with a funnel or the like, through which the material to be put into the capsules is introduced, and provided, also, with an incline, with which the capsule comes in contact to be moved from its seat, either for the purpose of receiving the cap or for facilitating the removal of the filled and capped capsules.

Furthermore, the invention consists in a holder for the shells and a frame or base in or upon which the holder slides, the said frame or base being provided with an incline, with which the capsule come in contact to be unseated, a hopper through which the material is fed into the shells, and a stop or catch engaging the holder and retaining it in proper position in relation to the hopper to allow the material to be introduced into the shells resting in the holder.

Finally, the invention consists in various details of construction, whereby the objects of the invention are attained.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, various forms of apparatus embodying my invention are illustrated.

Figure 1 is a perspective view of a capsule-filling apparatus embodying some of the principal features of my invention. Fig. 2 is a central longitudinal vertical section of the same; Fig. 3, a plan view of a modified form; and Fig. 4 is a perspective view of another modified form of apparatus embodying my invention.

In the drawings, A represents the base of the apparatus, which has attached to it the guides B, by means of which the sliding holder for containing the capsules is directed.

C represents the holder, which may be of any desired or convenient length and of any suitable material. It is provided with a series of holes, C', which are of a size to receive the capsules which it is desired to fill. The holder is slotted in such manner as to allow the introduction of an ejector, by which the capsule may be raised to allow the cap to be applied, and the frame or base in or upon which the holder slides is provided with a suitable projection, which enters the slot and unseats the capsule.

In Fig. 2 of the drawings I have illustrated one form of the parts whereby this unseating may be accomplished. In this figure, D represents a slot which extends the entire length of the holder, preferably about the center thereof, and which extends upward a sufficient distance to allow the capsules to be unseated by the incline E as the holder is moved forward. This incline, which is attached to the frame or base of the apparatus, is so formed that the capsule is raised gradually as the holder is moved forward to bring the capsules successively beneath the hopper through which the material is introduced, thus insuring the raising of the capsule to a position facilitating capping before being removed entirely from the holder. The holder may be moved through or along the frame or base by simply pushing against its end; but, if desired, the mechanism shown in Fig. 4, or any other suitable means for the purpose, may be employed. This consists in a lever, F, of spring metal, pivoted to one of the guides B, and having a projection,

f, which passes through and slides in a groove, *b*, in the side of the guide. The projection *f* bears against the side of the holder C and enters the notches C^2, which are, as shown, square upon the front end and inclined toward the rear end, thus allowing the lever to be moved back to engage a notch situated in the rear of the position occupied by it, and to push the holder forward when moved in that direction.

The material to be fed to the capsules is introduced through a hopper, H, placed upon a cross piece, *h*, which is attached to the guides B of the frame, and so situated as to have its outlet end directly over the capsules as they are moved along. It is not absolutely necessary that the hopper should be permanently attached to the stationary parts of the device, as obviously the material may be introduced from a receptacle independent of the principal parts of the device. When any material which is liable to stick in the hopper is to be fed to the capsules, it may be necessary to employ a plunger to force the material down through the hopper. This plunger may be simply an independent piece, or, as shown in Fig. 4, it may be mounted in a suitable standard, J, which is attached at its lower end to the guide B, or any other convenient part of the device.

The plunger K is provided with a spring, *k*, whereby it is held normally in an elevated position. This spring is of such strength as to be easily overcome when it is desired to depress the plunger.

It is obvious that any desired number of holders *c* may be placed upon or within the same base or frame, and when a number of holders are employed they are arranged side by side, as shown in Fig. 3 of the drawings. When more than one holder is employed, the hopper may be moved laterally upon the crosspiece *h* to bring it over any one of the holders containing the capsules to be filled.

In order to form a convenient means of retaining the holder in proper position in relation to the hopper to allow the material to be introduced successively into the capsules, I provide the holder with a series of indentations or projections, which are entered or engaged by an extension from the stationary part of the device, this extension being so arranged in relation to the holder and the hopper that when it is engaged with one of the indentations or grooves one of the capsules in the holder is directly beneath the hopper.

In the embodiment of the device shown in Fig. 1 the holder is provided along its upper edge with a series of grooves, *c*, which are entered by a spring-pawl or projection, I, which slides along the top of the holder and enters the grooves as they are presented to it, and retains the holder against displacement, except by direct pressure applied to move it along.

In the use of the device the openings C′ in the holders are filled with empty capsules, and then placed between the ways of the frame and pushed inward to bring the first capsule beneath the hopper, the desired amount of material is passed through the hopper, pressed down by the plunger, if necessary, and the holder moved forward to bring the next capsule beneath the hopper.

As holders are moved forward their lower ends are brought into contact with the incline E, and by this gradually raised, at first sufficiently to allow the cap to be placed upon the shell, and finally enough to allow the completed capsule to be removed.

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

1. A device for use in filling capsules, consisting of the base or frame provided with guides and with an incline, and a holder provided with openings for the reception of the capsules, and a slot entered by the incline upon the frame, substantially as described.

2. A device for use in filling capsules, consisting of a base or frame provided with guides and an incline, a longitudinally-sliding holder provided with openings for the reception of the capsules, and a slot entered by the incline, and a hopper arranged above the holder, substantially as described.

3. A device for filling capsules, consisting of a base or frame provided with guides and with an incline, a sliding holder provided with openings for the reception of the capsules and with a slot entered by the incline, and also provided with notches, and a catch placed upon the base or frame and entering the said notches, substantially as described.

4. The combination, in a device for use in filling capsules, of a base or frame provided with an inclined projection, a holder having openings for the reception of the capsules, and a slot entered by the projection from the frame, and also provided with notches, a hopper arranged above the holder, and a spring-catch attached to the frame and engaging the notches in the holder, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

RALPH WALSH.

Witnesses:
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