

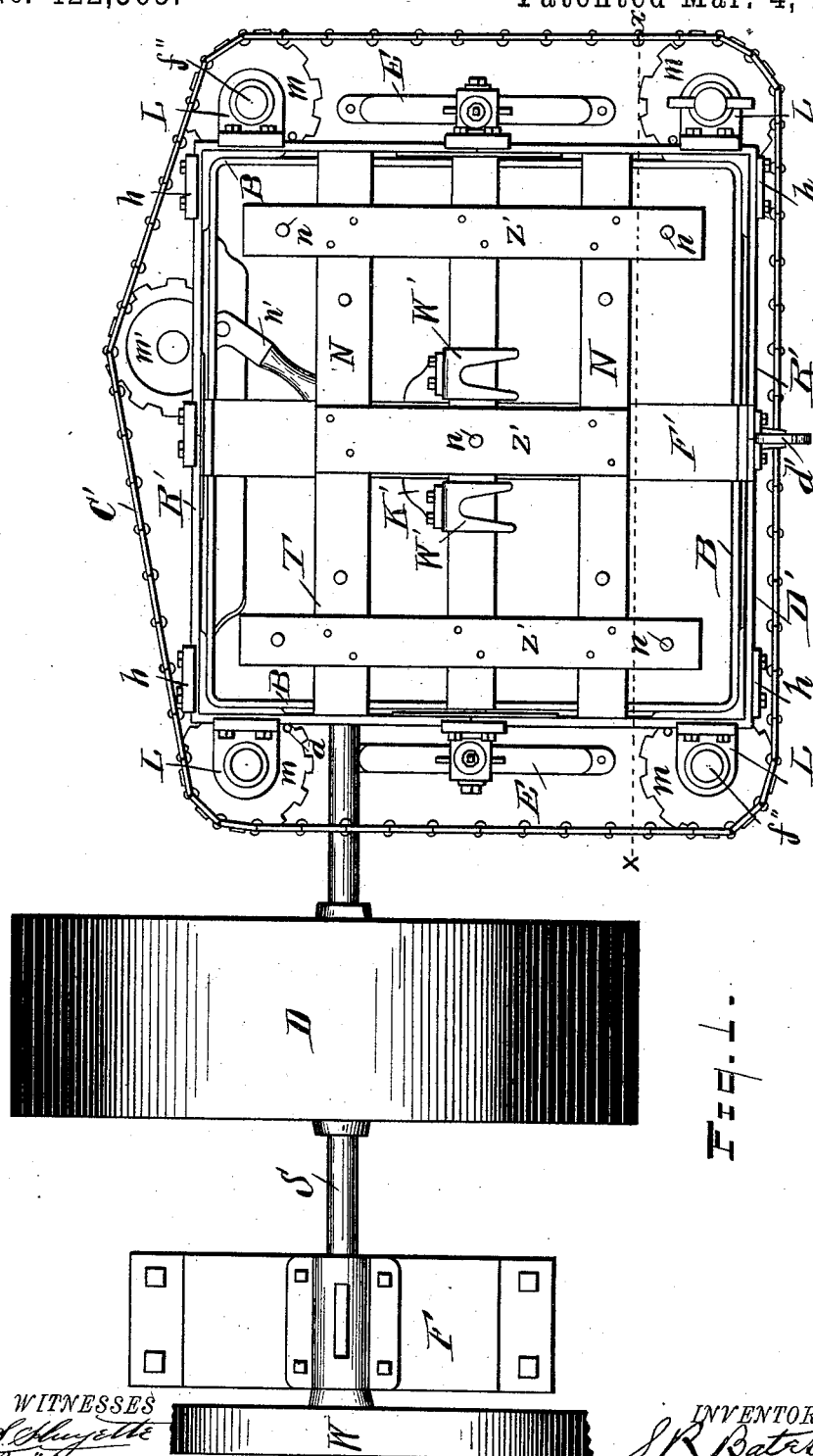
(No Model.)

4 Sheets—Sheet 1.

S. R. BATESON.
CAPSULE MACHINE.

No. 422,363.

Patented Mar. 4, 1890.



WITNESSES
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(No Model.)

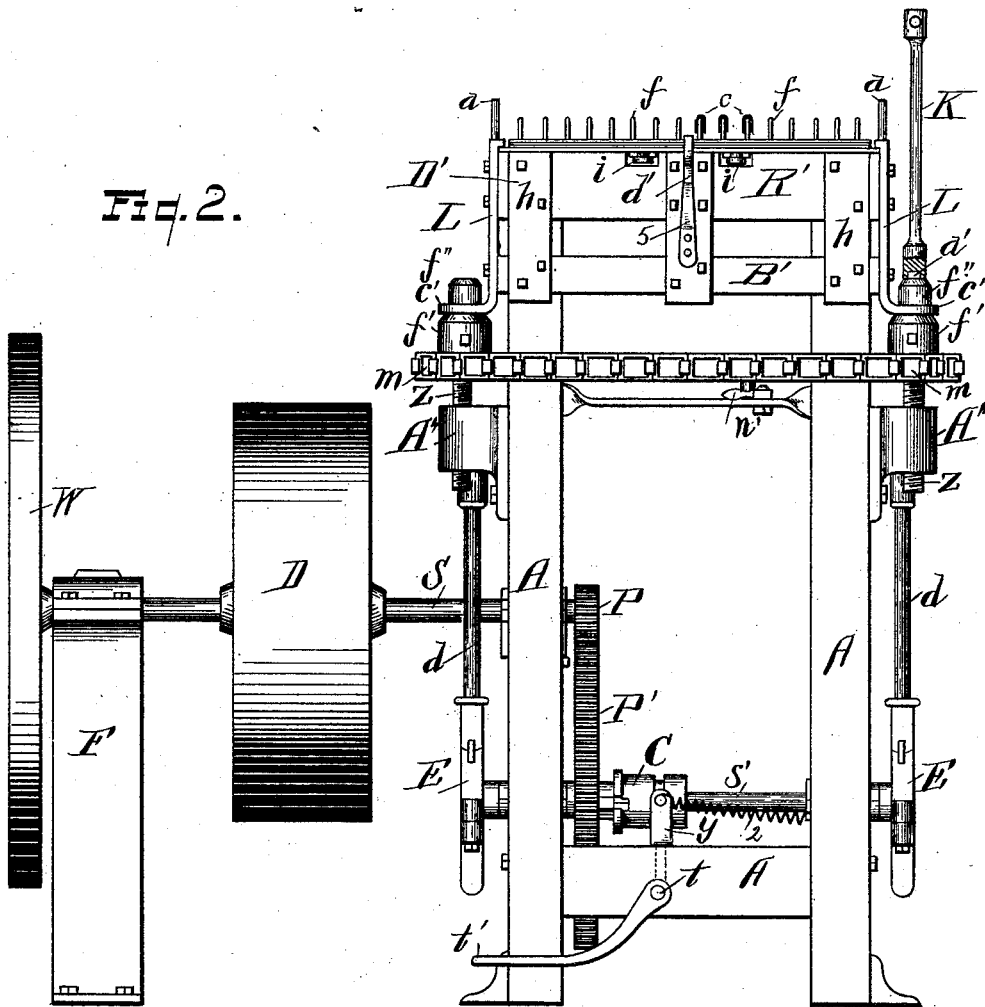
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Fig. 2.



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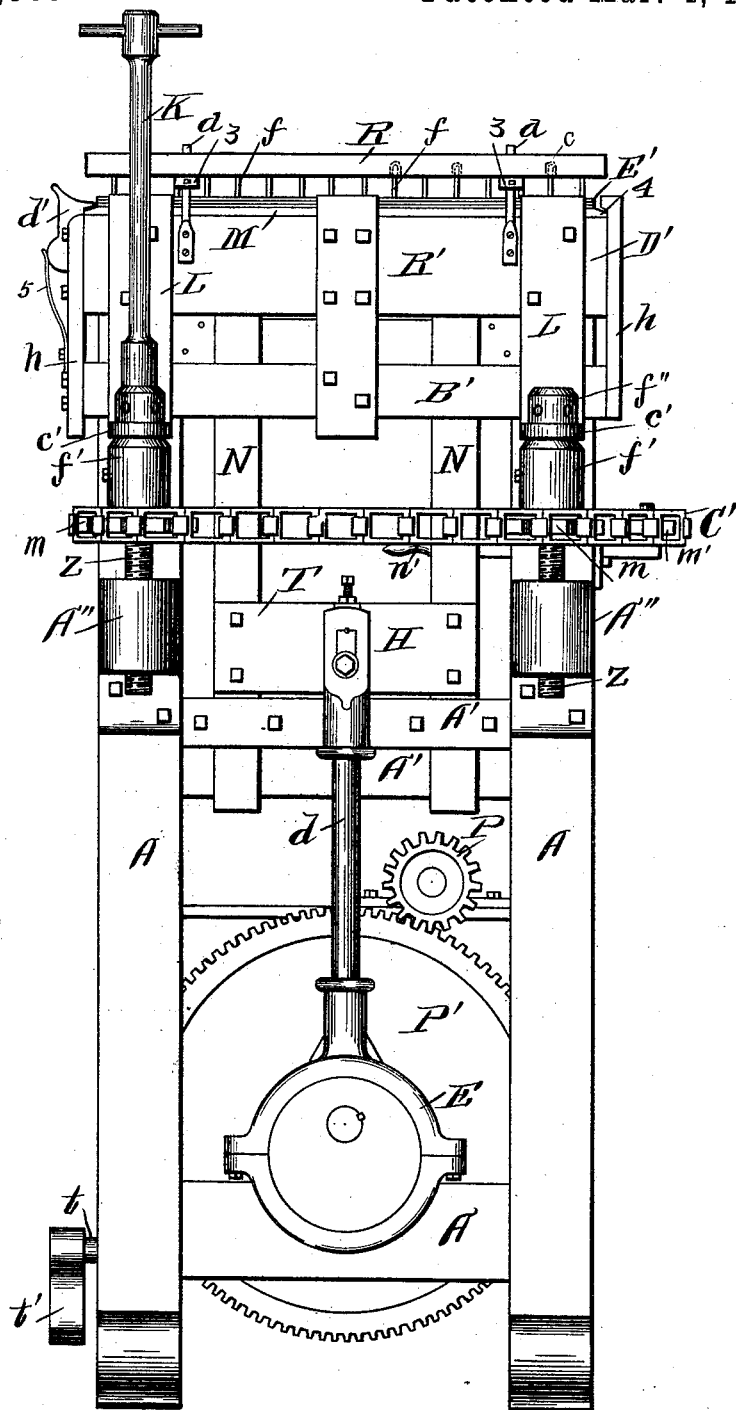


Fig. 3.

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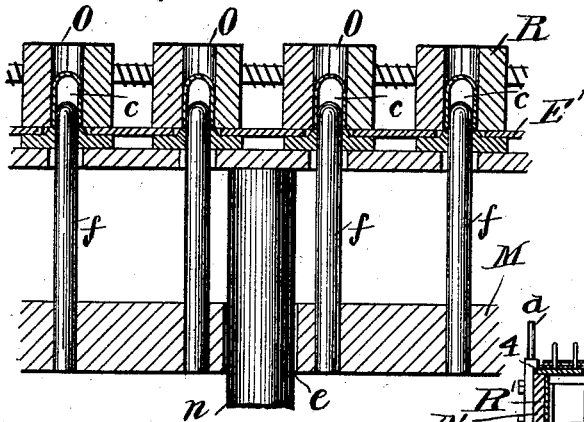


Fig. 5.

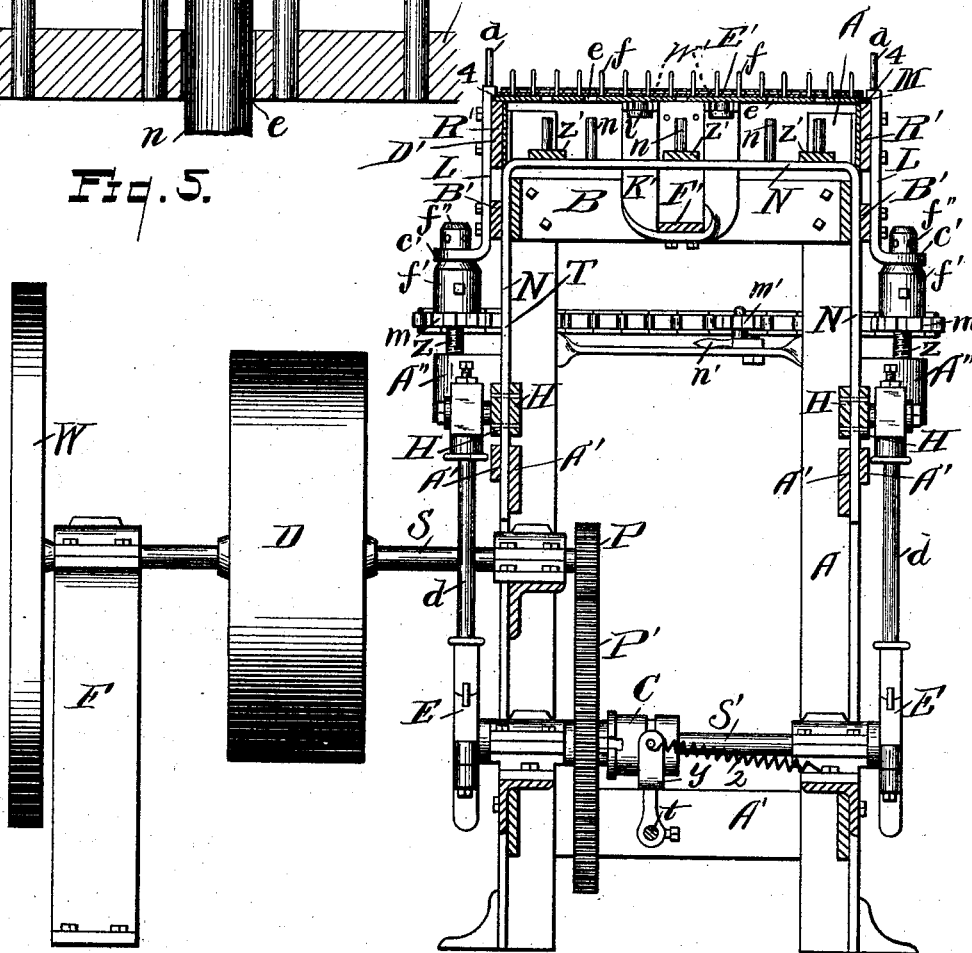


Fig. 4.

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UNITED STATES PATENT OFFICE.

SAMUEL R. BATESON, OF DETROIT, MICHIGAN.

CAPSULE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,363, dated March 4, 1890.

Application filed June 24, 1889. Serial No. 315,381. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. BATESON, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Capsule-Machines; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in capsule-machines, in which the main frame of the machine carries a vertically-reciprocating or traveling frame having plungers in its upper face which play against and actuate the stripping device of the capsule mold-pin plate; and the object of the invention is to provide means for actuating the stripping device of the capsule mold-pin plate, whereby the capsules are stripped from the mold-pins and placed in the cells or pockets of the receiving-frame. This result is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the machine. Fig. 2 is a front elevation showing the mold-pin plate thereon. Fig. 3 is an end elevation showing the receiving-frame in position above the mold-pin plate. Fig. 4 is a vertical section on dotted line *xx* of Fig. 1. Fig. 5 is an enlarged detail, partly in section; to be referred to.

As indicated in the drawings, the parts lettered A, A', and B represent the stationary or main frame of the machine.

T represents the vertically-reciprocating or traveling frame, which is composed of U-shaped sliding arms N, coupled near their free ends by the cross-head H and the bars Z', which are bolted to and cross at right angles the horizontal portions of the arms N, said bars Z' having mounted thereon the series of plungers *n*, as shown in Figs. 1, 3, and 4.

W represents the fly-wheel mounted on the outer end of the drive-shaft S, the inner end of said shaft being journaled in the frame of the machine.

F represents a supporting-frame for the shaft S, and D the drive-pulley on said shaft.

Journaled in the base of the main frame of the machine is the counter-shaft S', carrying at its ends the eccentrics E, which are connected by the rods *d* to the cross-heads H of the traveling frame T, (see Figs. 3 and 4,) said shaft S' also carrying the sliding clutch C, which, by means of the treadle *t'*, shaft *t*, and yoke Y, may be caused to engage with the large cog-wheel P', said wheel being loosely mounted on the shaft S' and meshing with the pinion P on the inner end of the drive-shaft S, the spring 2 drawing the clutch C from engagement with the cog-wheel P' when the pressure is released from the treadle *t'*, as shown in Figs. 2 and 4.

A'' are brackets secured to the uprights A of the main frame, said brackets receiving the threaded shaft Z of the sprocket-wheels *m*, and over the reduced ends *f''* of the hub *f'* of said sprocket-wheels rests the foot *c'* of the supporting-legs L of the adjustable frame, said legs being bolted to and supporting the adjustable frame D', which is composed of the rails R' and B' and the upright pieces *h*, said frame being adjusted in height by turning the threaded shaft Z of the sprocket-wheels in the brackets A'', whereby the frame D' may be raised or lowered, as desired.

The employment of the chain belt C', passing around the series of sprocket-wheels *m* and engaging therewith, enables the simultaneous turning of said wheels, the shaft Z of which is screwed into the brackets A''. Therefore the turning of one of said wheels by means of the wrench K turns them all alike, thus uniformly raising or lowering the frame D', the idle sprocket-wheel *m'* serving to tighten the chain belt C', and by means of the lever *n'* is operated to give said chain the required tension.

K' is a yoke, which is bolted to the bar F' of the stationary frame (see Fig. 4) and extending upward, its forked ends W' projecting horizontally toward the front of the machine, and above the bars forming the top of the traveling frame T (see Figs. 1 and 4) engage the shoulders of the buttons *i* in the under face of the mold-pin plate M, and assist in holding said plate in position when placed

on the upper face of the rails R' of the frame D', as shown in Figs. 2 and 4.

The operation of the machine is as follows: The mold-pin plate M, having capsules on its pins which have been previously trimmed, is slid sidewise onto the frame D'. The shoulders 4 (see Fig. 4) of the legs L and the upright pieces *h* engage over the edge of said mold-pin plate. The forked ends W' of the yoke K' also engage the heads of the buttons *i* on the bottom of said mold-plate, and the dog *d'*, which is held by the spring 5, (see Figs. 2 and 3.) is hooked over and secures the front edge of said plate, whereby said mold-pin plate is securely held on the frame D' and in position so as to cause the holes *e* in said plate to register with the plungers *n* in the upper face of the reciprocating or traveling frame T. The capsule-receiving frame R is then placed over the mold-pin plate M and rests on the set-collars 3 on the posts *a*. (See Fig. 3.) The upper end of the pins *f*, on which are formed capsules, project into the cells O of the adjustable bars of said frame R, as shown by dotted lines in Fig. 3. (See also Fig. 5.) The receiving-frame R consists of a series of parallel bars, with cells or pockets O formed in their joined faces. Said cells are enlarged by a separation of the bars. When the bars have been separated, the receiving-frame is placed over the pins of the mold-plate, as before described. The bars of the receiving-frame R are then closed or moved together, thereby pressing slightly the capsules *c* upon the capsule-pins *f*, as shown in Fig. 5. (The receiving-frame constitutes another invention and is not fully set forth herein, as it is clearly explained in another application filed with this.) When the receiving-frame is in position, as before stated, the operator throws the treadle *t'* down, sliding the clutch into gear, starting the eccentrics, which impart an upward stroke to the traveling frame, thereby forcing the plungers *n* through the openings *e* of the mold-plate M, striking the stripping-plate E', raising it and also carrying with it the receiving-frame R. The upward stroke of the eccentrics E is sufficient to carry the capsules *c* off the upper ends of the capsule-pins, leaving them in the cells O of the receiving-frame. A partial removal of the capsule-plates is shown in Fig. 5. The frame R then being filled is lifted from the machine. A further rotation of the shaft S' carries the reciprocating frame T down to the position shown in Fig. 4, withdrawing the plungers *n* from the holes *e* in the mold-pin plate M, when said plate may be removed from the machine, another replaced, and the operation of filling the receiving-frames continued, as before described.

As the stroke of the eccentrics is always the same, a varying in the length of the mold-pins *f* for short or long capsules requires an adjustment of the upper supporting-frame D'. In making large capsules the pins are longer, when the supporting-frame must be lowered to bring the point of the pins down to a position where the upward stroke of the plungers *n* will raise the stripping-plate E' sufficiently high to freely strip them, and in the use of shorter pins the frame D' must be raised accordingly, as will be readily understood. The frame D' is raised and lowered by means of the sprocket-wheels and chain-belt mechanism hereinbefore described.

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

1. In a capsule-machine, the combination of the main frame, the traveling frame, the mechanism for operating the traveling frame, the adjustable frame, and means for adjusting said frame, consisting of the brackets, threaded shaft, sprocket-wheels, and chain belt, substantially as specified.

2. In a device for the purposes set forth, the main frame, in combination with the drive and counter shafts, the pinions on said shafts, the sliding clutch on the counter-shaft, the treadle mechanism to operate the clutch, the eccentrics on the ends of the counter-shaft, the traveling frame, the rods coupling said traveling frame to the eccentrics, the adjustable frame, the mold-pin, and stripping-plates, the former having holes to receive the plunger-pins of the traveling frame, as and for the purposes specified.

3. In combination with the main frame having the brackets, the series of sprocket-wheels, the shafts of which have threaded engagement with the brackets, the frame mounted on the hubs of the sprocket-wheels, the wrench, the chain belt, and means for tightening said belt, as and for the purposes specified.

4. In combination with the main frame having the brackets A'' and the forked yoke, the chain belt, the series of sprocket-wheels, their threaded stems having engagement with the brackets, the frame mounted on the hubs of the sprocket-wheels, the posts *a* on said frame, the collars on said posts, and the dog adapted to engage with a mold-pin plate, substantially as and for the purposes specified.

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

SAMUEL R. BATESON.

Witnesses:

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