

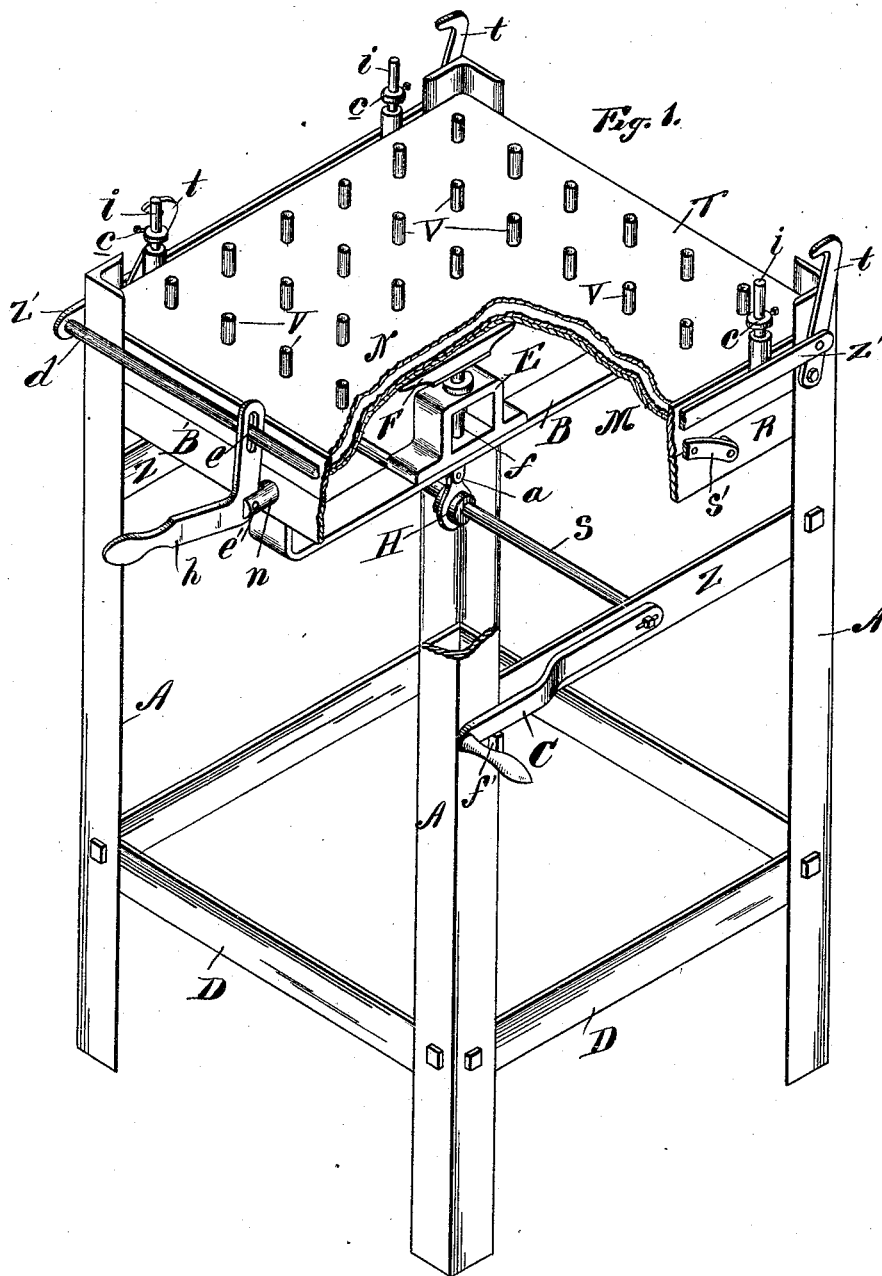
(No Model.)

2 Sheets—Sheet 1.

S. R. BATESON.
CAPSULE JOINING MACHINE.

No. 422,365.

Patented Mar. 4, 1890.



WITNESSES.
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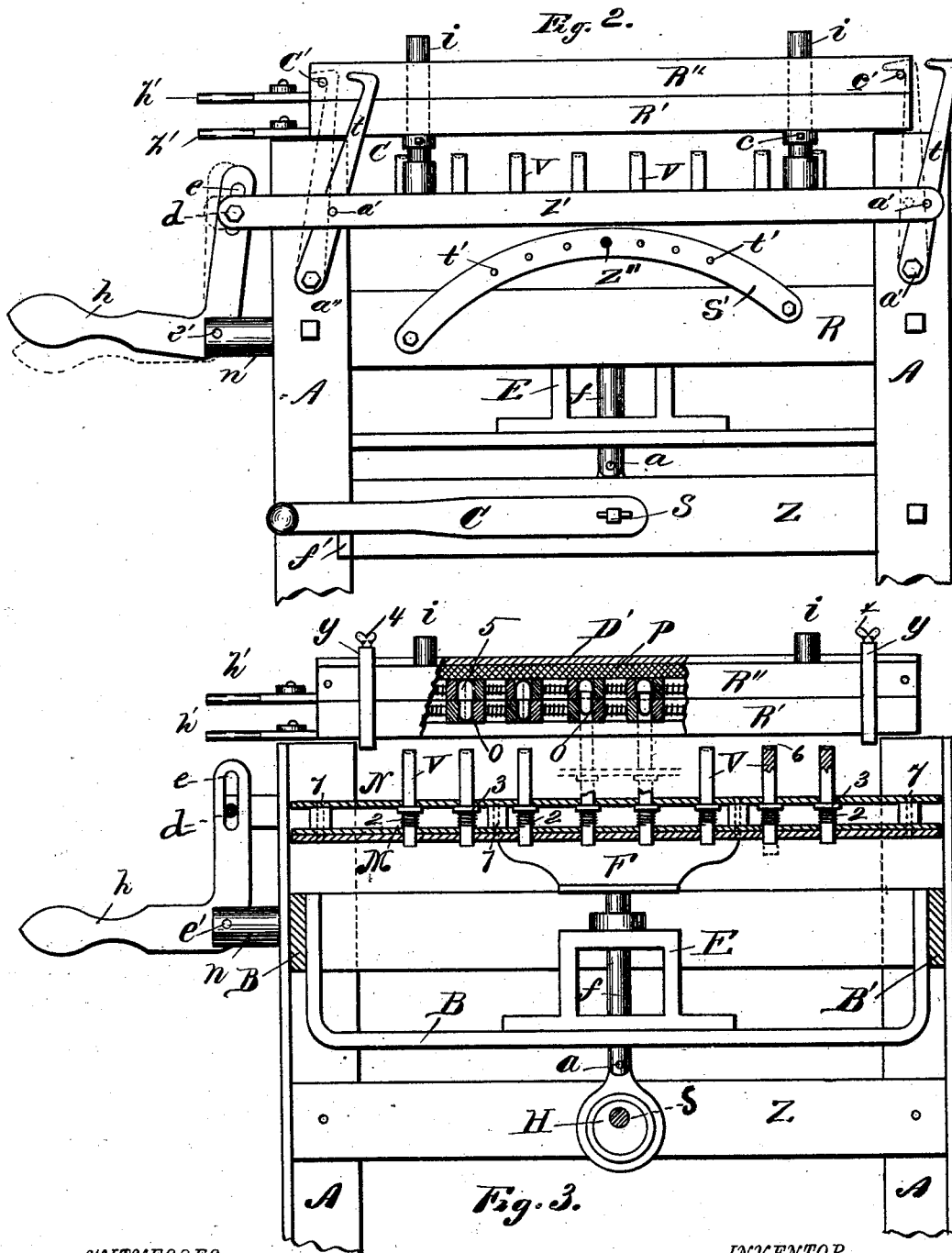
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UNITED STATES PATENT OFFICE.

SAMUEL R. BATESON, OF DETROIT, MICHIGAN.

CAPSULE-JOINING MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,365, dated March 4, 1890.

Application filed June 24, 1889. Serial No. 315,383. (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-Joining 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 of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in capsule-closing machines, known as "joiners," in which an upright frame carries a vertically-reciprocating table having in its upper face a series of pins or plungers; and the object of the invention is to provide means for automatically closing or joining the cap and body of the capsule while being held in the cells of the closing-frames. This result is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an isometrical view of the machine, a corner-post of the frame and a portion of the table of the machine being broken away, showing the operating mechanism. Fig. 2 is a side elevation of the machine, (the base of the frame being broken away,) showing the closing-frames in position thereon. Fig. 3 is a vertical section through the machine, a portion of the closing-frames thereon being broken away, showing the capsules in the cells of said frames.

The main frame of the machine is composed of the upright corner-posts A, the bottom rails D, the upper side and end rails R and B', and the side cross-rails Z. The bar B, supporting the head E, crosses the frame, its upwardly-bent ends being secured to the inner face of the end rails B', as shown in Figs. 1 and 3.

The shaft S is journaled in the cross-bars Z, and to its outer end is secured the crank or lever C, and mounted on said shaft near its longitudinal center is the eccentric H, which is pivotally coupled at a to the rod f, passing through the bar B and head E, the upper end of said rod being secured in the follower F, which supports the reciprocating

table T and is permanently secured thereto. The table T is composed of the lower double plate M and the upper plate N, these plates being secured to each other at a certain distance apart by means of the hollow posts 7, (see Fig. 3,) and are provided with the pins or plungers v, which pass through said plates and fit loosely therein. The coiled springs 2, which environ the pins v between the lower plate M and the shoulder or collar 3 of said pins, force said collar against the under face of the upper plate N, thereby retaining the pins in position, as clearly shown in Fig. 3; but the yielding nature of the springs will allow the pins to drop down should the upper end of the pin meet with a firm resistance as the table T is being raised, as shown by dotted line at the right of Fig. 3. The upper end of the pins v are concaved to fit the rounded end of the capsule, as shown at 6 in Fig. 3.

The hooked arms t are pivoted at a'' to the uprights A of the frame and at a' to the connecting-bars Z', the forward end of the bars Z' being connected by the rod d, which crosses the front of the machine and passes through the elongated opening e in the elbow-lever h, which is pivoted at e' to the support n. Secured to the side rail R is the circle-iron S', provided with the series of holes h'', adapted to receive the removable pin Z''.

R' and R'' represent the frames in which the caps and bodies of the capsules are held while being joined. The manner of filling these frames, their construction, and operation form the subject-matter of a separate application filed herewith.

The operation of the device is as follows: The machine being in position, as shown in Fig. 1, the frame R', containing the bodies of the capsules, is placed on the posts i on the machine-frame and rests on the set-collar c, the open ends of the capsule-bodies being upward. The holes in the frame R' that receive the posts i are in such position as, when the frame is placed thereon, will cause the cells O of said frame in which are the bodies of the capsules to register with the pins or plungers v in the reciprocating table, as clearly shown in Fig. 3. Then the frame R'', in the cells of which are the caps of the capsules, is placed on the posts i over the frame

R, the open ends of the caps down and so as to meet and register perfectly with the bodies of the capsules in the frame R'. (See Fig. 3.) The buffer-plate D', having the soft padded surface P, is placed on the frame R'', covering the upper openings in the cells of said frame in which are the caps of the capsules, as clearly shown in Fig. 3. Said padded surface prevents the caps from crushing when the bodies of the capsules are forced into them in the act of joining the capsules. The plate D' is secured on the frame R'' by means of the clamps Y and thumb-screws 4.

When the frames R' and R'' are in position on the machine as above described, by a downward pressure on the elbow-lever h the upright end of said lever is thrown out, drawing the bars Z' forward and causing the hooked ends of the arms t to engage the pins c' in the frame R'', as shown by dotted lines in Fig. 2, whereby the frames R' and R'' are firmly secured to the machine. The crank or lever C is then raised, rotating the shaft S, thereby actuating the eccentric and imparting an upward stroke to the rod f, whereby the table T is raised, carrying the pins v against the bodies of the capsules in the frame R' and forcing said bodies into the caps of the frame R'', joining the capsules, as clearly shown by dotted lines in Fig. 3. The lever C is then thrown down, lowering the table and withdrawing the pins v from the cells O in the frame R', said lever resting on the stop f'. The capsules being joined, the frames R' and R'' are removed, and by means of the levers h' the bars of said frames are separated and the joined capsules discharged into a proper receptacle.

When the table is raised in the operation of joining the capsules, should one or more of the pins v meet with a capsule that failed to join or close, the spring 2 will allow said pin to drop down, as shown by dotted lines at the right of Fig. 3 and before described, thus in no way interfering with the other pins joining capsules.

The height to which the table is raised in joining short or long capsules is regulated by means of the stop-pin Z'' in the circle-iron S', against which the lever C strikes when swung up in the act of raising the table. By setting the pin Z'' to the left in the holes t' of the circle S' will shorten the stroke, lessening the height to which the table is raised, and placing said pin to the right will increase the stroke, raising the table higher,

as the work requires, and which will be readily understood.

It will be seen that the corner-posts A of the frame are L-shaped in cross-section and receive the square corners of the table T, forming guides in which said table travels.

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

1. In combination with the main frame, the central rail B, the head mounted thereon, the shaft journaled in said frame, said shaft having a crank at one end and an eccentric at its longitudinal center, the rod passing through the head and having a pivotal connection with the eccentric, the follower and table mounted on said rod, the series of plungers mounted on the table, each plunger having a spring to hold it in its normal position and allowing each plunger to have endwise movement through the table, substantially as specified.

2. In combination with the frame having post L-shaped in cross-section, the traveling table located within the angles thereof, said table carrying a series of independently-acting plungers, a spring to hold each plunger in its normal position, and mechanism, substantially as set forth, to raise and lower said table.

3. In combination with the frame, the circle-iron mounted thereon and having a series of holes therein, the pin adapted to engage with said holes, the table, the series of plungers passing through said table, the coiled springs encircling the plungers and having engagement therewith, the shaft, the crank upon said shaft, the eccentric, and the mechanism coupling the eccentric to the table, as and for the purposes set forth.

4. In combination with the frame, the hooked arms pivoted to the posts A thereof, the rod d, the bars coupling said rod to the hooked arms, said bars having pivotal connection with the hooked arms, the elbow-lever pivoted to the frame and having engagement with the rod, whereby the hooked arms are adapted to be engaged with and disengaged from the pins of the closing-frame, substantially as and for the purposes specified.

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

SAMUEL R. BATESON.

Witnesses:

E. S. WHEELER,
P. A. SCHMIDT.