

(No Model.)

2 Sheets—Sheet 1.

F. A. HUBEL & F. J. REINHOLD.

CAPSULE MOLD GREASING MACHINE.

No. 345,591.

Patented July 13, 1886.

Fig. 1

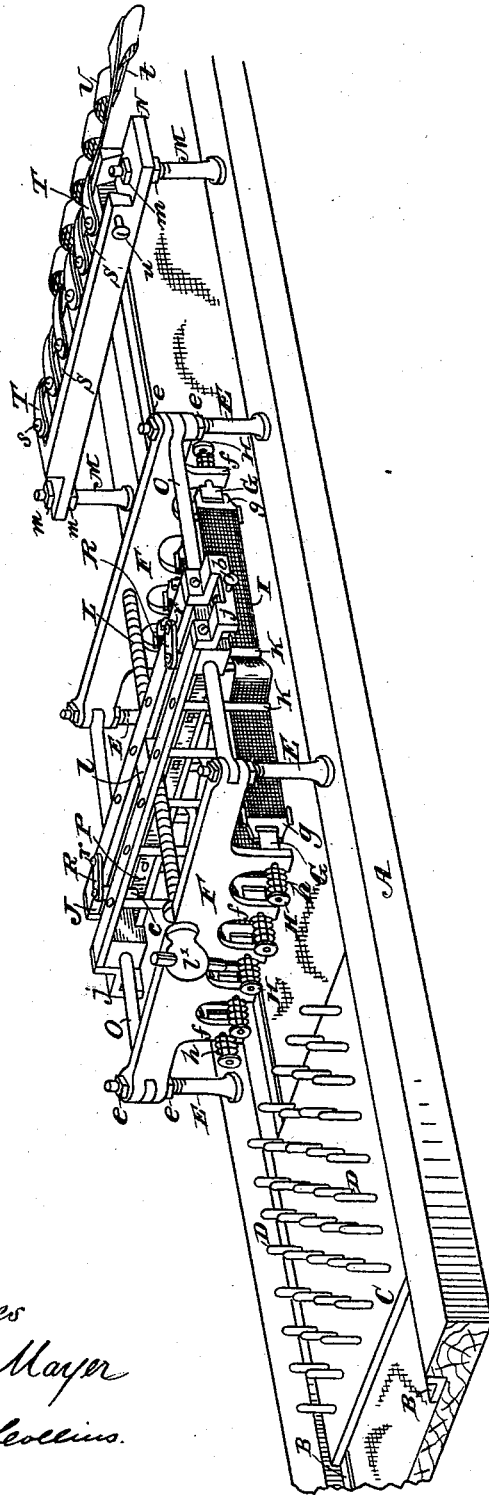
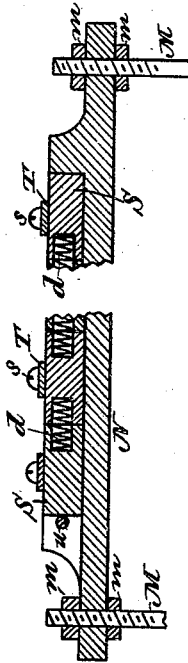


Fig. 7



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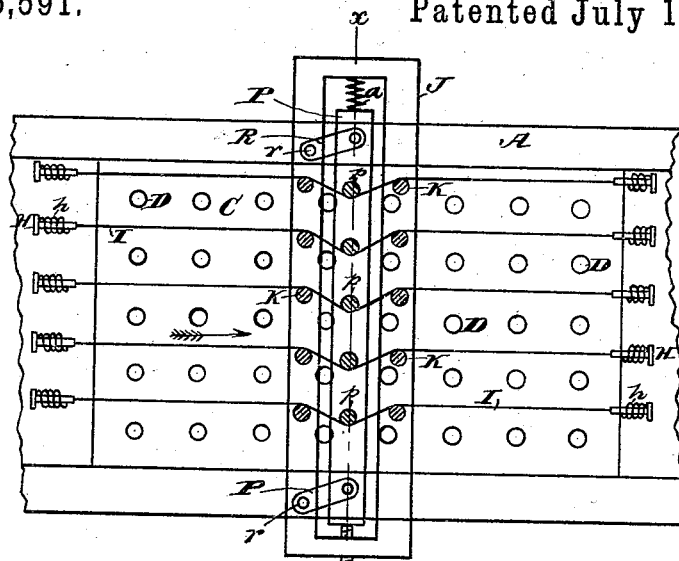


Fig. 2

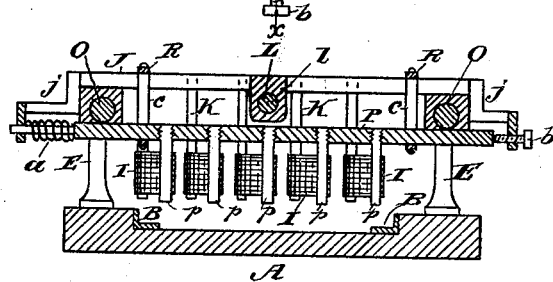


Fig. 3

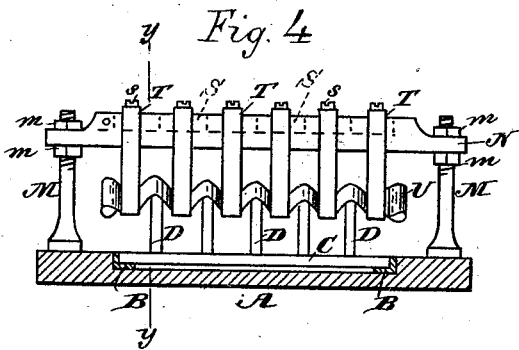


Fig. 4

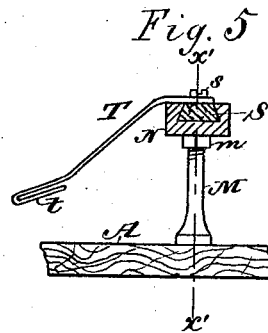


Fig. 5

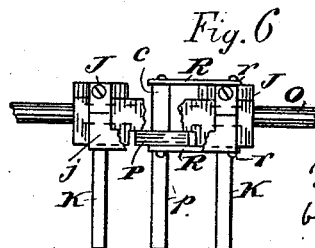


Fig. 6

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UNITED STATES PATENT OFFICE.

FREDERICK A. HUBEL AND FRANK J. REINHOLD, OF DETROIT, MICHIGAN;
SAID REINHOLD ASSIGNOR OF ONE-HALF TO SAID HUBEL.

CAPSULE-MOLD-GREASING MACHINE.

SPECIFICATION forming part of Letters Patent No. 345,591, dated July 13, 1886.

Application filed October 24, 1885. Serial No. 180,862. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK A. HUBEL and FRANK J. REINHOLD, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Capsule-Mold-Greasing Machines, of which the following is a specification.

Our invention consists in a device for lubricating gelatine-capsule mold-pins, in which the mold-pins travel past a series of greased ribbons parallel with the line of travel of the pins, and each pin comes in contact with a loop formed in each ribbon by an elastic support, and is hereinafter fully pointed out.

Figure 1 is a perspective of the machine. Fig. 2 is a plan view of the greasing mechanism. Fig. 3 is a section on the line *x x*, Fig. 2. Fig. 4 is an elevation of the mechanism for greasing the tops of the pins. Fig. 5 is a section on the line *y y*, Fig. 4. Fig. 6 is an elevation of a portion of the mechanism, partly broken away. Fig. 7 is a section on the line *x' x'*, Fig. 5.

A represents a bed or frame adapted to lie on a table or be supported by legs, and recessed on its upper surface.

B B represent guides on the surface of bed A, to receive the edges of a plate of mold-pins, and guide the plate as it is pushed along the bed.

C represents a plate carrying the ordinary pins D D.

E E E E represent four posts, secured to frame A outside of the guides B B.

F F represent two plates extending across the bed A, and supported on posts E, and each plate F is provided with as many depending fingers *f* as there are rows of pins on plate C, these fingers being so set as to pass the rows of pins D when plate C is pushed along guides B B.

O O represents two bars, which extend between plates F F, being secured to posts E E at each end, and by threading the ends of posts E E and using two nuts, *e*, on each post, the plates F F and bars O O can be adjustably secured thereon.

I I represent greased ribbons, one for each row of pins on plate C, which are stretched between the opposing fingers *f* on plates F F. Each end of each ribbon is fastened to a

buckle, *g*, which engages with a hook, G, the shank of which passes through the finger *f*, is encircled by a coil-spring, *h*, and carries on its end a nut, H, by which the tension of the spring *h* can be regulated.

J represents a frame, consisting of two parallel bars extending across the machine and adapted to slide on bars O O, being connected together at their ends by the downwardly-projecting plates *j j*.

In each of the bars of frame J is set a row of pins, K, extending downwardly to or below the bottom edge of ribbons I and in line with fingers *f*, so that they will not come in contact with pins D.

P represents a bar, which is movably hung between the bars of frame J J by means of four links, R R, two near each end of said bar, and said links are pivoted to said frame by pins *r* and to bar P by pins *c*, so that said bar P is movable across the machine, and parallel with frame J. We prefer to hang the bar P below the level of the upper surface of frame J, as shown in Fig. 3, so that it will not interfere with a screw, L, which is movably secured in plates F F, passes through a threaded nut, *l*, fastened to frame J, and is provided with a crank, *l'*, at one end, whereby the frame J can be moved between the plates F F to bring said frame over different portions of the ribbons I.

a represents a coil-spring at one end of bar P, tending to press it away from the adjacent end of frame J, and *b* represents a screw-stop in the other end of frame J to limit the motion of said bar.

p represents a row of pins set in and depending from bar P, so arranged that when bar P is pressed against stop *b*, said pins will be nearly in line with the rows of pins D, and each pin *p* will press a portion of each ribbon I toward one of the rows of pins D, thus forming a loop of that portion of the ribbon which lies between the opposing pins K K in the frame J, as shown in Fig. 2.

M M represent two posts, secured to the bed A beyond the plate F F, and N represents a shelf secured to said posts and reaching across the machine.

In the upper surface of shelf N is cut a groove, preferably dovetailed, and in this

groove rests slides S, one for each row of pins D, and between these slides S are coil-springs *d*, which tend to force the slides S apart.

T represents a curved arm, secured to each slide S by a screw, *s*, and the end of arm T is bent back upon itself to form a clamp, *t*, which will receive and hold a ribbon, U, like ribbons I.

m represents nuts on posts M, by which the height of shelf N may be adjusted.

u represents a stop-pin in shelf N, to hold the slides S pressed together. Upon taking out stop-pin *u*, the springs *d* will press slides S apart. The ribbon U is now placed in the clamps *t*, the slides S are pressed together, and locked by pin *u*, and ribbon U is held by the clamps *t* in a series of loops, one over the path of each row of pins D, as shown in Fig. 4. The pins K K may be omitted, if desired, as the machine is operative without them.

The operation of our invention is as follows: The parts of the machine being in the position shown in Figs. 1, 2, and 4, a plate of pins is placed on the guides B B, and pushed toward the frame J. As the first pin D in each row passes the adjacent pin K in the nearer bar of frame J, it strikes the loop of the ribbon I formed by the pins K K and pin *p*, and rubs along said loop, being thereby greased until it comes in contact with pin *p*, when the inclined surfaces, or, rather, rounding surfaces, of said pins D *p* act like wedges, and pin *p* is forced away, the bar P moving on links R R, and against the pressure of spring *a*, until pin D passes pin *p*, when bar P returns, being forced back by spring *a* and holds the loop against the pin D until said pin passes entirely clear of said loop, and the operation is similar with each pin D on plate C. After leaving the ribbons I each row of pins D passes under one of the loops of the ribbon U, and said ribbon comes in contact with and greases the tops of all the pins D in one row successively. The arms T are elastic, to permit the ribbon U to come in contact with all parts of the top of each pin. After leaving that part of the machine shown in the drawings all the pins are greased about one-quarter around their circumferences, and each plate is then passed through an exactly similar machine, except that the ribbons I are looped in the opposite direction from that shown herein. The plate of pins is then given one-quarter turn and passed through two more similar machines, by which the greasing is completed all around the pins. The bed may be L-shaped, each part carrying two greasing devices, the ribbons I looped in opposite directions thereon, so that the plate C may pass straight through two greasing devices, and then slide at right angles to its former travel through two more, finally coming out under the ribbon U with all the pins D completely greased. When the grease on the acting loops of the ribbons I is worn off, said loops may be formed in a new place in the ribbons by turn-

ing the screw L, which moves the frame J, while the ribbons remain stationary.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a capsule-mold-pin greasing machine, a bed, a pair of guides adapted to receive a plate of pins, two plates supported across said bed, each having a series of depending fingers corresponding in number to the rows of pins on said plate and placed to come between said rows, a series of greased ribbons stretched between the opposing fingers on said plates, a frame consisting of two bars extending across the bed of the machine between said plates, each bar carrying a row of depending pins set therein in line with the fingers in the plates, and a movable bar hung between said bars and carrying a row of depending pins set therein, substantially in line with the rows of mold-pins, substantially as shown and described.

2. In combination with the bed A, the guides B B, plates F F, supported on the posts E and having the depending fingers *f*, ribbons I, attached to buckles *g*, hooks G, having screw-heads H and encircled by springs *h*, bars O O, frame J, carrying pins K, and movable bar P, having set therein the pins *p* and actuated by spring *a*, substantially as shown and described.

3. In combination with the ribbons I, the frame J, carrying pins K, bar P, carrying pins *p* and hung on frame J by links R R, spring *a*, and stop *b*, substantially as shown and described.

4. In combination with the bed A and guides B B, the shelf N, slides S, secured therein, springs *d*, between said slides S, stop-pin *u*, arms T, having clamps *t* formed thereon, secured to slides S, and ribbon U, held in loops in clamps *t*, substantially as shown and described.

5. In combination with the plates F F and ribbons I, the bars O O, frame J, nut *l*, and screw L, substantially as shown and described.

6. In combination with the plate C, carrying pins D, the ribbon U, held in clamps *t* on arms T, substantially as shown and described.

7. In a capsule-mold-pin-greasing machine, a bed, a pair of guides adapted to receive a plate of pins, two plates supported across said bed, each having a series of depending fingers corresponding in number to the rows of mold-pins and placed to come between said rows, a series of greased ribbons stretched between the opposing fingers on said plates, and a bar movable across said bed and carrying thereon as many depending fingers as there are ribbons, whereby a portion of each ribbon may be forced into the line of travel of a row of mold-pins, substantially as described.

F. A. HUBEL.
FRANK J. REINHOLD.

Witnesses:

SUMNER COLLINS,
GEO. H. LOTHROP.

Correction in Letters Patent No. 345,591.

It is hereby certified that Letters Patent No. 345,591, granted July 13, 1886, upon the application of Frederick A. Hubel and Frank J. Reinhold, of Detroit, Michigan, for an improvement in "Capsule-Mold-Greasing Machines," was erroneously issued to said applicants jointly; that said Letters Patent should have been issued to *Frederick A. Hubel, of Detroit, Michigan*, said Hubel being assignee of said Reinhold's interest in the invention; and that said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 27th day of July, A. D. 1886.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.