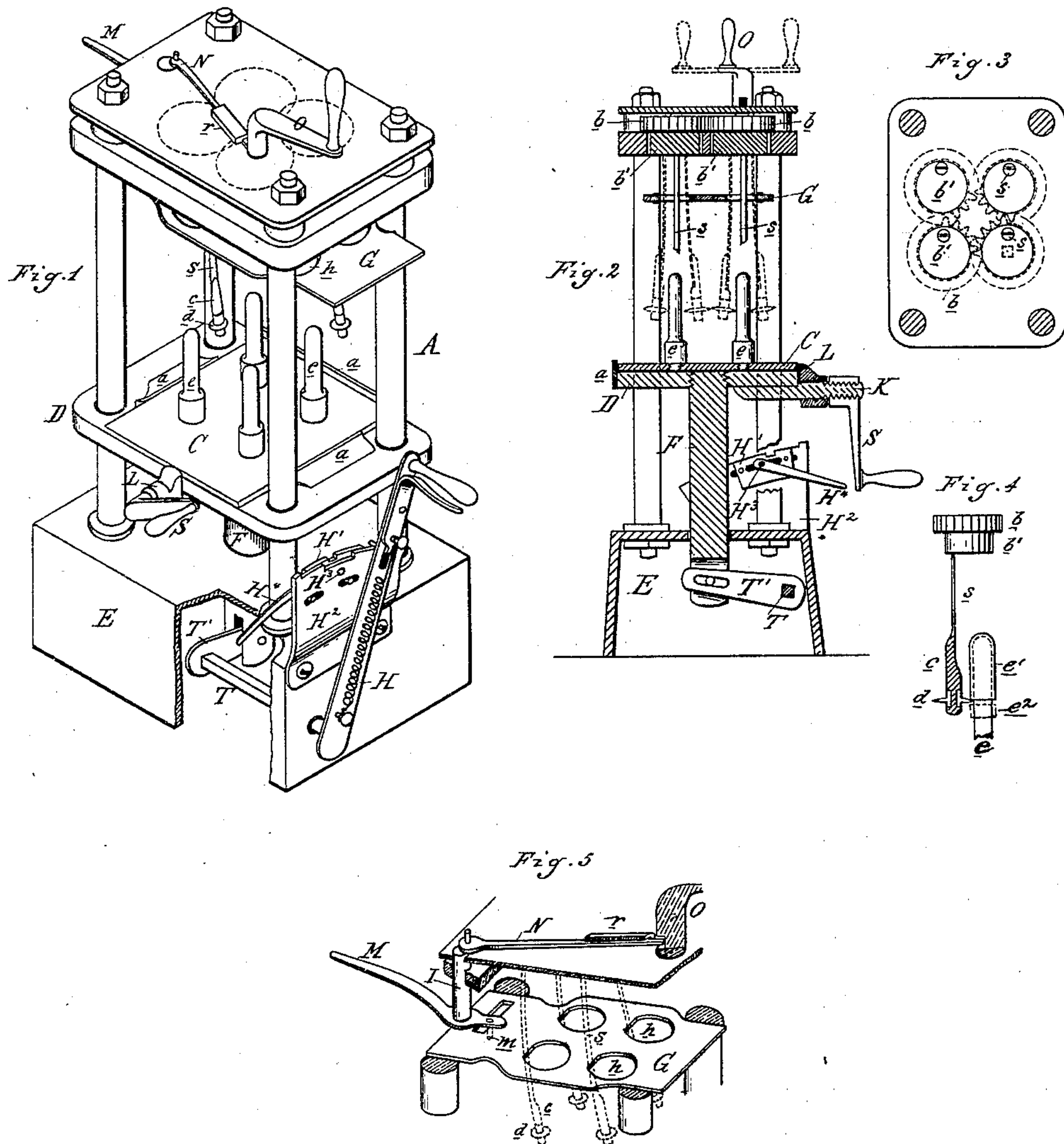


F. A. HUBEL.
Machine for Cutting Off Gelatine Capsules.
No. 223,139. Patented Dec. 30, 1879.



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UNITED STATES PATENT OFFICE.

FREDERICK A. HUBEL, OF DETROIT, MICHIGAN.

IMPROVEMENT IN MACHINES FOR CUTTING OFF GELATINE CAPSULES.

Specification forming part of Letters Patent No. **223,139**, dated December 30, 1879; application filed July 10, 1879.

To all whom it may concern:

Be it known that I, FREDERICK A. HUBEL, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Machines for Cutting off Gelatine Capsules, of which the following is a specification.

The nature of my invention relates to certain new and useful improvements in machines employed to cut off gelatine capsules preparatory to their removal from the molds upon which they are formed, and is especially designed as an improvement upon a similar invention for which Letters Patent were granted to me February 13, 1877, No. 187,279, and reissued October 1, 1878, and numbered 8,440.

The invention consists in the peculiar construction, arrangement, and operation of the various parts, as more fully hereinafter described.

Figure 1 is a perspective view of my improved machine. Fig. 2 is a vertical central section. Fig. 3 is a plan view of the upper plate of the machine, showing the pinions in position. Fig. 4 is an enlarged view of one of the cutters and molds, showing the capsule cut off and prepared for removal from the mold; and Fig. 5 is a perspective view, partially in section, showing the slide-plate for adjusting the knives, and also the device for locking the crank-handle which operates them.

In the accompanying drawings, which form a part of this specification, A represents a suitable frame resting upon the base E, to support the operating parts of my improved machine. D is a platform supported upon the upper end of the rod F, which has a vertical movement through the base by means of the rock-shaft T and arm T', secured at one end to said shaft, and at the other end pivoted to the foot of the rod F. This rock-shaft is properly journaled in the base E, and has secured to its projecting end a bar or lever, H, which engages with an adjustable notch-plate, H', secured to the plate H², which, in turn, is secured to the side of the base E. This notch-plate H' is secured adjustably to the plate H² by means of a screw-bolt, H³, which passes through a slot in the plate H', and is tapped into the plate H², the bolt H³ being operated by a lever, H⁴, secured to its inner end.

By the device just described I am enabled

to raise or lower the platform D to a greater or less degree, as may be required.

To this platform, so that it will have a vertical movement with it, is secured the arm K, the outer end of which is threaded to receive the crank S. There is also placed upon this arm a locking-block, L, by which the mold-plate C is secured within the guides *a* on the platform D, as shown. The molds *c* are secured in a vertical position to the plate C at regular intervals.

G is a plate sliding laterally in proper ways in the frame. In this plate are cut suitable openings *h*, through which the spring-arms, hereinafter described, project. At one side of the machine there is properly journaled a shaft, I, to the lower end of which is pivoted a lever, M, a pin, *m*, in the short arm of which engages with a slot in the plate G, by which means said plate is caused to move back and forth, as may be desired by the operator.

To or in the top of the frame there is journaled a series of small drums, *b'*. To each of these drums is secured a pinion, *b*, arranged to engage with each other, as shown in Figs. 2 and 3. One of these pinions receives motion from a crank, O, and communicates such motion by the engaging pinions to the drums *b'*. The latter should correspond in number to the number of the molds employed on the plate C, and must be placed with like regular intervals between them. To the lower side of each of these drums there is secured a downwardly-projecting spring-arm, *s*, carrying at its free end a cutter-head, *c*, to which is secured a rotary or circular-shaped cutter, *d*.

To the top of the shaft I is pivoted eccentrically a locking-lever, N, the opposite end of which slides in a proper guide, *r*, and engages with a recess in the side of the crank O, to prevent the latter from being turned until said lever or bar is withdrawn.

In practice the molds *c* are immersed to the proper depth in the gelatine prepared for the purpose. After the molds have received a coating of the gelatine of sufficient thickness to make the capsules, the slides are placed upon the platform D and secured in place by the crank S and the block L. The platform D is then raised to the desired height by means of the bar H and its connections, herein de-

scribed. The lever M is then drawn forward, which allows the cutter-knives to come in contact with the upper ends of the molds, and withdraws the locking-bar from the crank O. The crank O is then rotated, which, by the devices hereinbefore described, causes the cutters to perform their office, as is shown in Fig. 4. After the cut has been made, and while the motion of the cutters is still continued, the molds are again forced upward, and by this operation the tag or cut-off portion e^2 is forced away from the capsule e' .

By the means described it will be seen that I am able to produce capsules of uniform length, varying such lengths as may be required, without changing any of the parts of my machine.

What I claim as my invention is—

1. In a machine for cutting off capsules, the combination of the series of molds e and the platform D, rod F, rock-shaft T, and arm T', operated by any suitable lever, for the purpose of regulating the length of the capsules, substantially as described.

2. In a machine for cutting off capsules, the combination of the platform D, rod F, rock-

shaft T, and arm T', operated by a bar or lever, H, which engages with the notch-plate H', for the purpose of raising or lowering the platform D, substantially as specified.

3. In a capsule-cutting machine substantially as described, the combination of the plate G, lever M, shaft I, and locking-lever N, for the purpose of disengaging the cutter-heads from their contact with the molds and locking the crank by which said cutters are rotated, substantially as set forth.

4. In a capsule-cutting machine, the platform D, carrying the plate C, upon which are secured the molds e , in combination with the rod F, rock-shaft T, arm T', levers H M N, segment-plate H', plate G, shaft I, and pinions b , to which are secured the drums b' , carrying the cutters d , when arranged to operate substantially in the manner and for the purposes herein set forth.

FREDERICK A. HUBEL.

Witnesses:

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A. BARTHEL.