

(Model.)

T. C. MERZ.
CAPSULE MACHINE.

No. 324,868.

Patented Aug. 25, 1885.

Fig. 1.

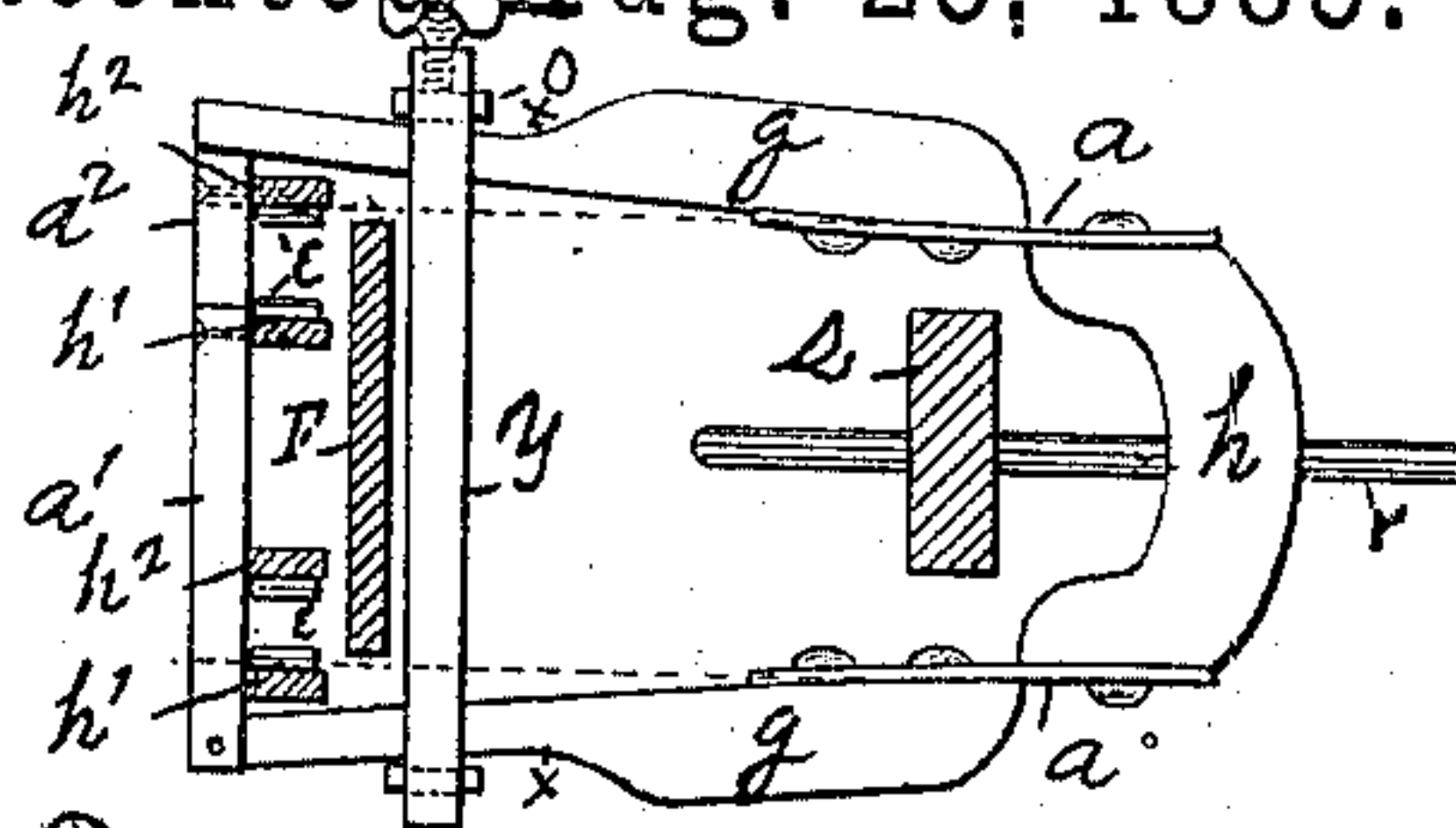
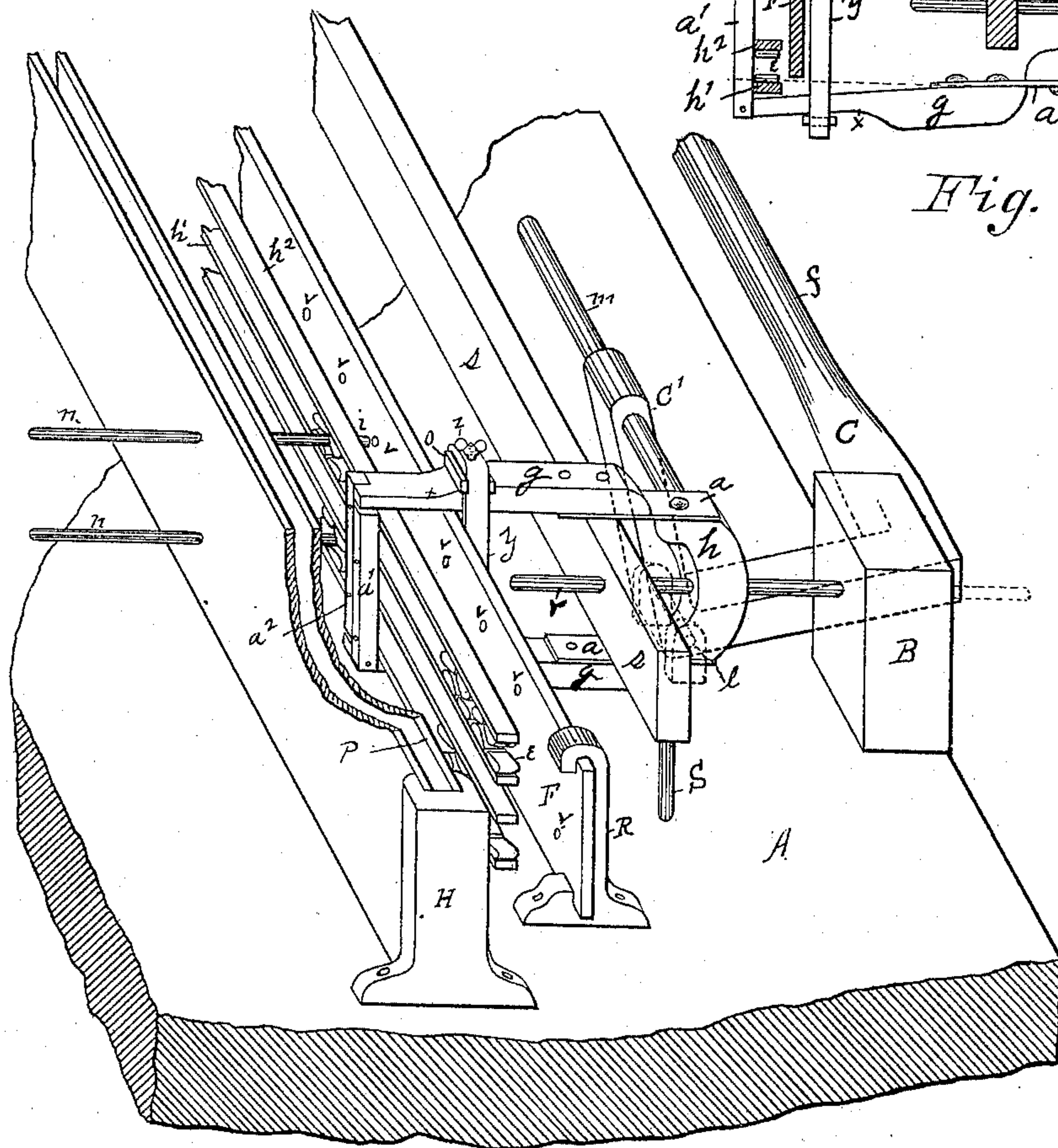


Fig. 4.

Fig. 2.

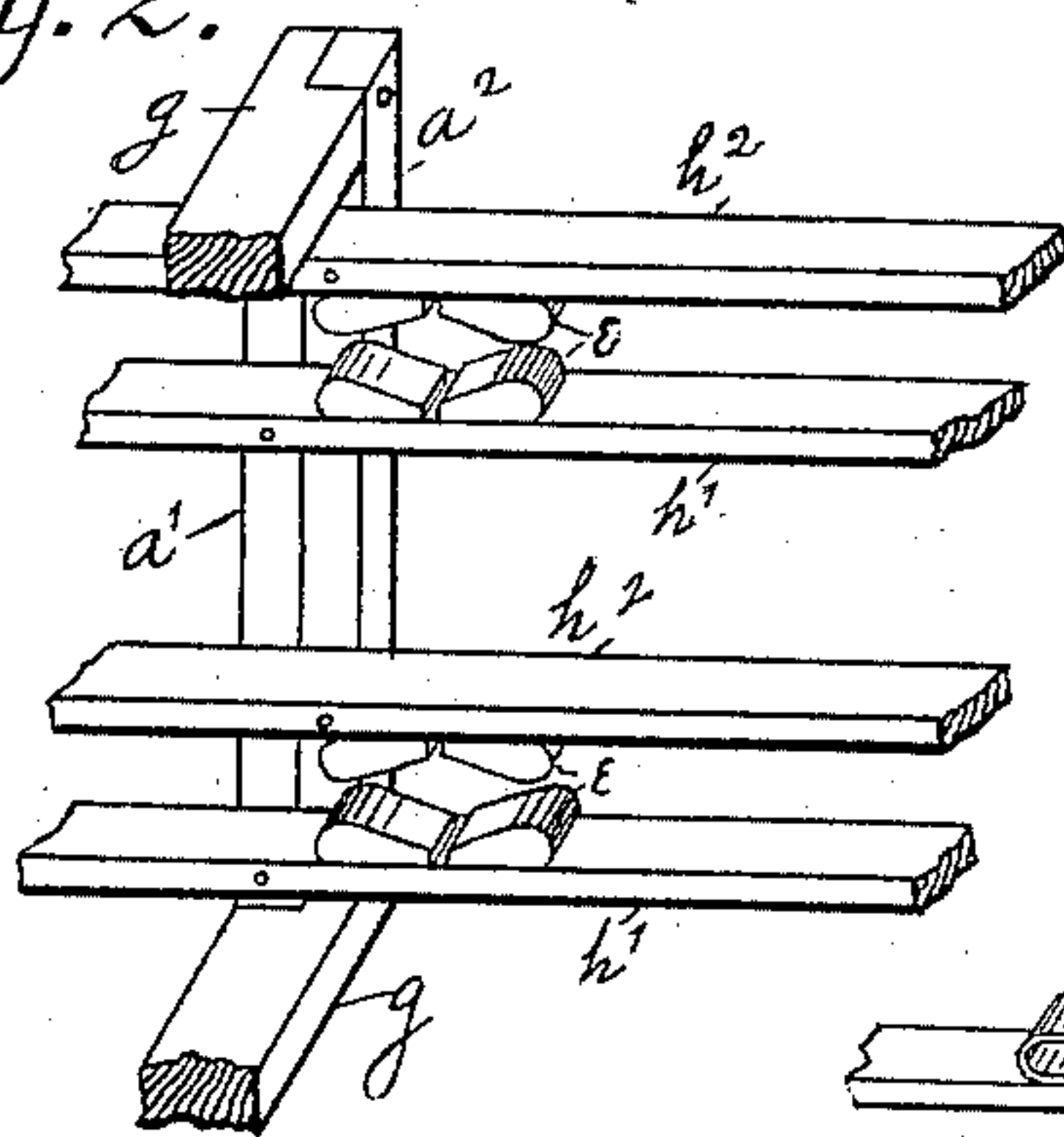


Fig. 3.

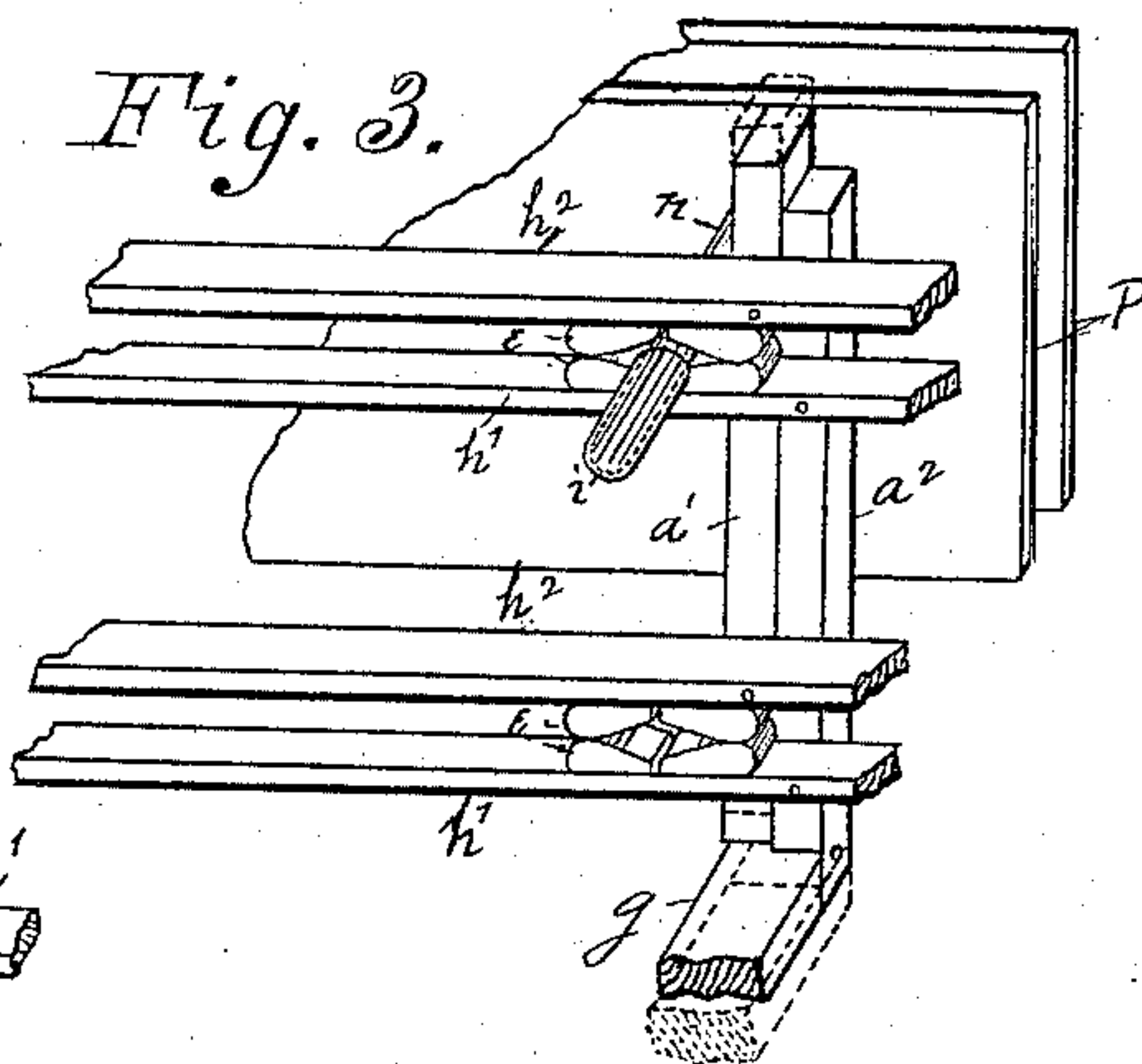


Fig. 5.

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THEODORE C. MERZ, OF DETROIT, MICHIGAN.

CAPSULE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 324,868, dated August 25, 1885.

Application filed May 2, 1885. (Model.)

To all whom it may concern:

Be it known that I, THEODORE C. MERZ, 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.

My present invention is designed to facilitate the manufacture of gelatine capsules; and it consists of devices for removing the parts forming the capsules from the pin or pins upon which they are formed after being properly trimmed, and at the same time placing the removed parts of a capsule—viz., its cap and body—within a plate or plates preparatory to being joined together by means constituting another invention.

In the drawings, forming a part of this specification, Figure 1 is an isometrical view of my invention having one end containing like parts broken away. Figs. 2 and 3 are enlarged details of the machine. Fig. 4 is an enlarged elevation of a portion of the machine, partly in section. Fig. 5 is a view of one of the springs for removing the capsule from the pin or pins.

A represents the table or base, to which I attach two uprights, as B, also two uprights, as H, supporting the capsule-pin plate P. Said plate contains a series of capsule-pins, *n*, which project through said plate, which is made double, or it may be constituted of but a single plate. The bar *s* is secured to the base upon uprights S, passing through said bar freely. I employ two rods, as *r*, sliding freely through said bar and uprights B. Attached to each bar is a traveling head, *h*, carrying the spring-metal bars *a a*. To said spring-bars I attach the jaws *g g*. Said jaws at the free ends are attached to the vertical bars *a' a'*, the lower jaw being attached to the lower end of the bar *a'*, the upper jaw to the upper end of bar *a'*. (See Fig. 1.) Passing

around said jaws is a yoke, *y*, having the the pressure-block *o* and thumb screw *z*. (See Figs. 1 and 4.) Attached to the traveling heads *h* is a horizontal bar, *m*. Said bar also passes through the upturned ends *C'* of the operating-lever C. The portion *C'* extends downward, and is pivoted, as shown by dotted lines, at *l* to the base A, (see Fig. 1,) being there bent outward at right angle, and afterward bent parallel to the pivot to form the handle *f*. To the vertical bar *a'*, I attach the horizontal bars *h'*, and to the vertical bar *a'*, I attach the horizontal bars *h'*. (See Figs. 1 and 2.) To the adjacent faces of each set of horizontal bars *h' h'*, I attach the springs *e*, the body of said springs being secured to said bars and the end portions being bent over toward each other, having the ends slightly depressed, as shown in Fig. 5. The standards R are provided with a recess at the top and bottom sufficiently large to allow the plate F to be freely inserted and removed endwise, as required. Said plate is provided with a series of holes, *v*, made sufficiently large to receive the body of a capsule when removing capsules from the pins *n*.

As the cap of a capsule is larger in diameter than the body of a capsule, when removing caps from the pins upon which they are formed I employ a plate like F, having the holes *v* of a larger diameter to receive the caps in the same manner as the capsules, which will be hereinafter set forth. The plate F is made sufficiently thick to receive the parts of a capsule and not project through when inserted in the holes *v*. The capsule-pin plate may contain any suitable number of pins, and to each pin I mount upon the bars *h' h'* a set of grasping-springs, *e*. The holes in plate F register with the pins *n* of the capsule-plate. The thumb-screw *z* is designed to give the jaws *g g* a slight adjustment.

The operations of the machine are as follows: The lever C is forced down, drawing back the heads *h*, the bars *r*, the jaws *g*, and series of bars *h' h'* until the yoke *y* strikes the face of bar *s*, when said yoke or yokes will be forced back onto the reduced portions *x* of the jaws when the springs *a a* throw said jaws apart, thereby separating the horizontal bars *h' h'*, as

shown in Figs. 2 and 4. The capsule-pin plate P is placed in position, as shown in Fig. 1. The lever C is then raised, forcing the jaws *g* and bars *h' h²* partly back. The plate F is inserted, as shown in Fig. 1. The lever being farther raised brings the yoke *y* against the plate F, forcing said yoke over the enlarged portion of the jaws *g* to the position of Fig. 1, the capsule-pins entering at the same time between the springs *e* of the bars *h' h²*, as shown in Figs. 1 and 3, with the capsule *i* projecting beyond said springs. (See Fig. 3.) As the yokes pass over the enlarged portion of the jaws the springs *e* are forced against the capsule-pins *n*. (See Figs. 1 and 3.) The lever C is then forced down, drawing the jaws and series of bars *h' h²* forward, bringing the springs *e* in contact with the edge of the capsule *i*, (see Fig. 3,) when said capsule or capsules will be gradually forced from said pin or pins, at the same time entering the hole or holes *v* of the receiving-plate F, the lever C being depressed until the capsules have been transferred to said plate. The plate F, containing the capsules, is then removed endwise from the machine. The lever C is then farther depressed until the yokes *y*, striking the bar *s*, is moved back onto the reduced portion *x* of the jaws, when said jaws separate, as before stated. The capsules of capsules are likewise removed from their forming-pins.

Having thus fully set forth my present invention, what I claim as new, and desire Letters Patent therefor, is—

35 1. In a device for removing gelatine capsules from their pins, a series of bars or supports provided with the springs *e*, said bars adapted to be drawn apart to allow the capsules to be projected between and beyond said springs, 40 said bars also adapted to be simultaneously moved toward each other causing the springs to press upon the body of the capsule pin or pins, thence moved along the body of said pin or pins, removing the capsule or capsules, substantially as set forth. 45

2. In a device for removing gelatine capsules from their pins, the combination of the base attached thereto in duplicate, the uprights B S H, the lever attached to the rod *m* and base, as specified, said rod attached to the heads *h*, 50 mounted upon the rods *r*, sliding through the posts S B, the jaws *g*, attached by spring-metal plates to said heads, the free ends of said jaws attached to the vertical bars, said bars attached to the horizontal bars *h' h²*, as specified, said 55 horizontal bars supporting the series of springs *e* which engage with the series of capsule-pins, as and for the purposes specified.

3. In a device for removing gelatine capsules from their pins, the combination of the base, 60 the uprights attached thereto, the capsule plate and pins, the series of horizontal bars *h' h²*, said bars attached to the vertical bars, as specified, said vertical bars attached to the yoke *y*, the capsule-receiving plate located in advance of 65 the capsules upon the pins *n*, the holes *v*, registering with said capsules, and mechanism for reciprocating the parts, as and for the purposes specified.

4. In combination with the pins and capsules 70 of a capsule-plate, the capsule-receiving plate located in advance of said capsules and pins, said receiving-plate provided with a series of holes adapted to register with the mounted capsules of the capsule-plate and to receive said 75 capsules as they are removed from the pins, substantially as specified.

5. The combination, with the horizontally-reciprocating jaws, of the vertical bars attached to the free ends of said jaws, as specified, said 80 vertical bars supporting the horizontal bars, as set forth, and a yoke for holding said jaws, in the manner and for the purposes set forth.

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

THEODORE C. MERZ.

Witnesses:

R. B. WHEELER,
JNO. G. DOYLE.