

(No Model.)

3 Sheets—Sheet 1.

E. S. MORTON.

DOOR LATCH.

No. 294,326.

Patented Feb. 26, 1884.

Fig. 1.

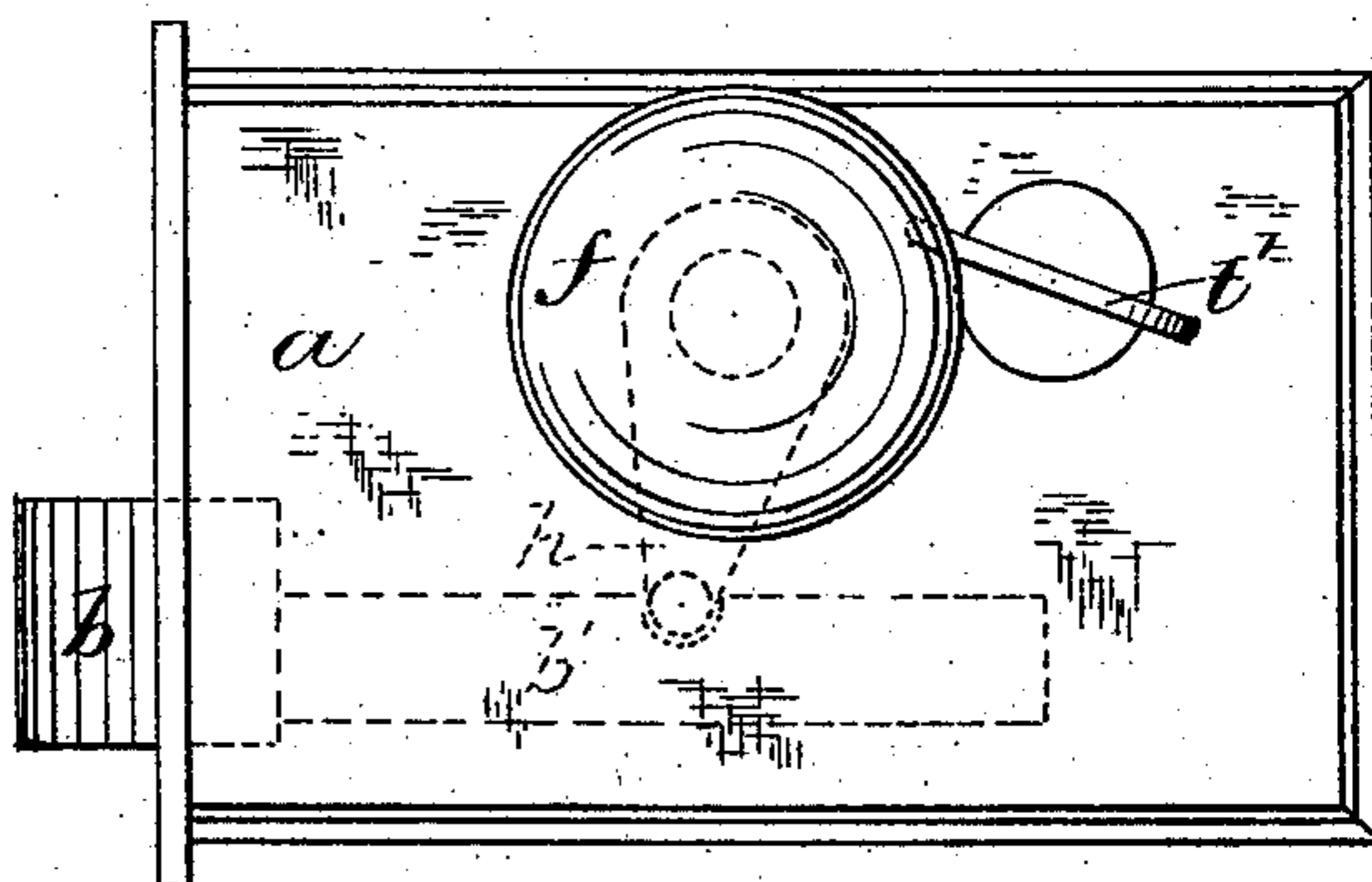


Fig. 2.

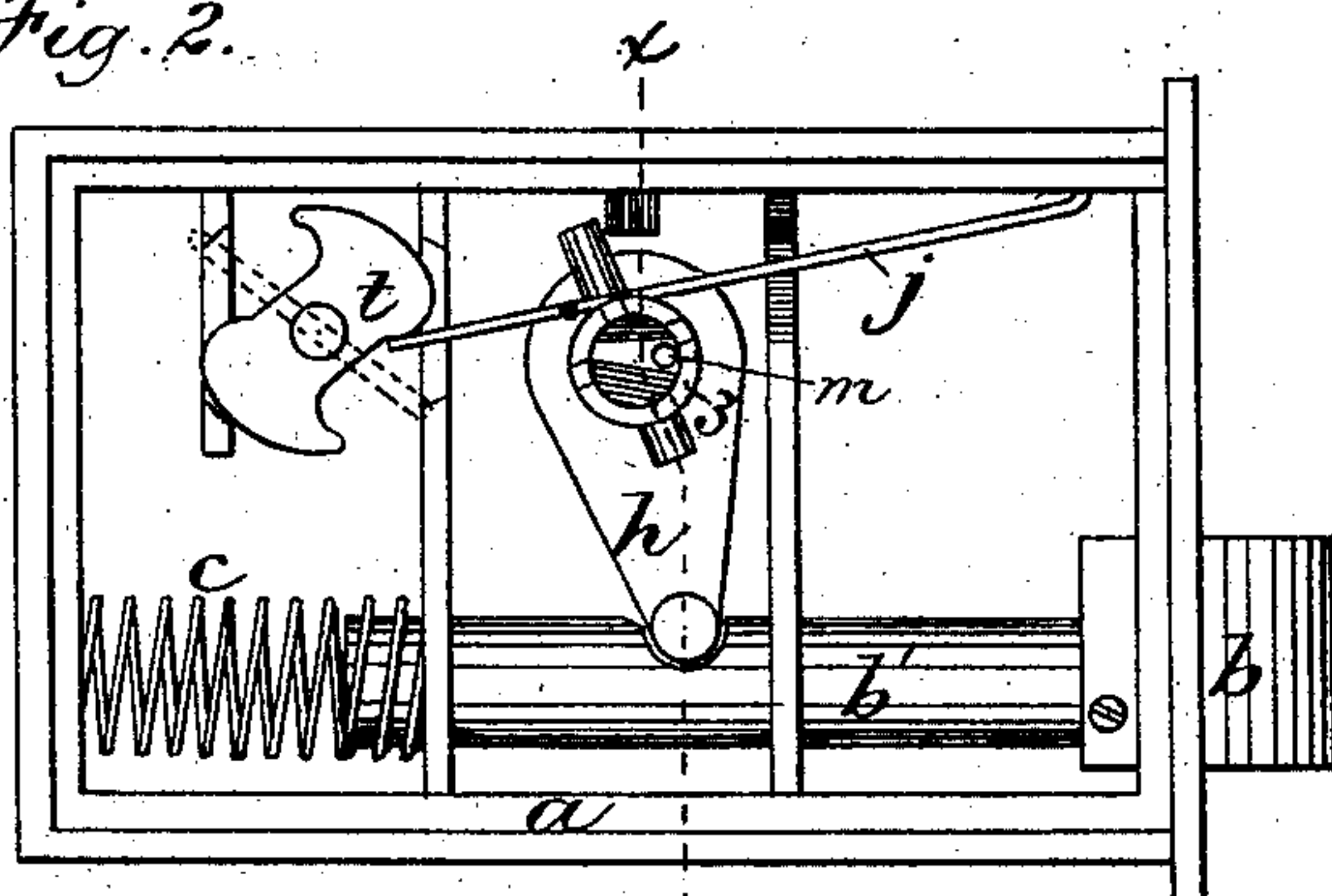
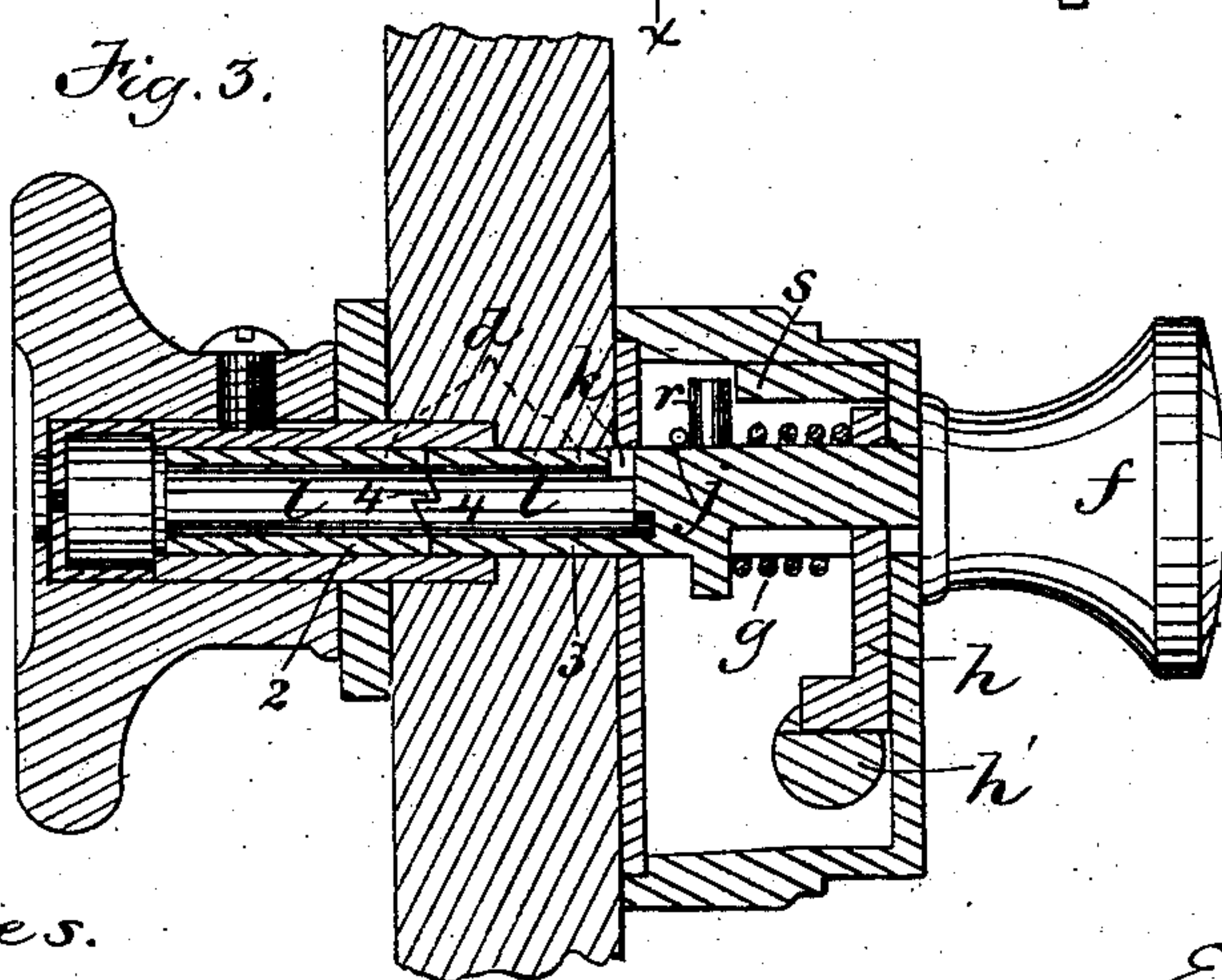


Fig. 3.



Witnesses.

Wm. White
John M. Tushay

Inventor.

E. S. Morton
by Wright & Brown
Atty.

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Fig. 4.

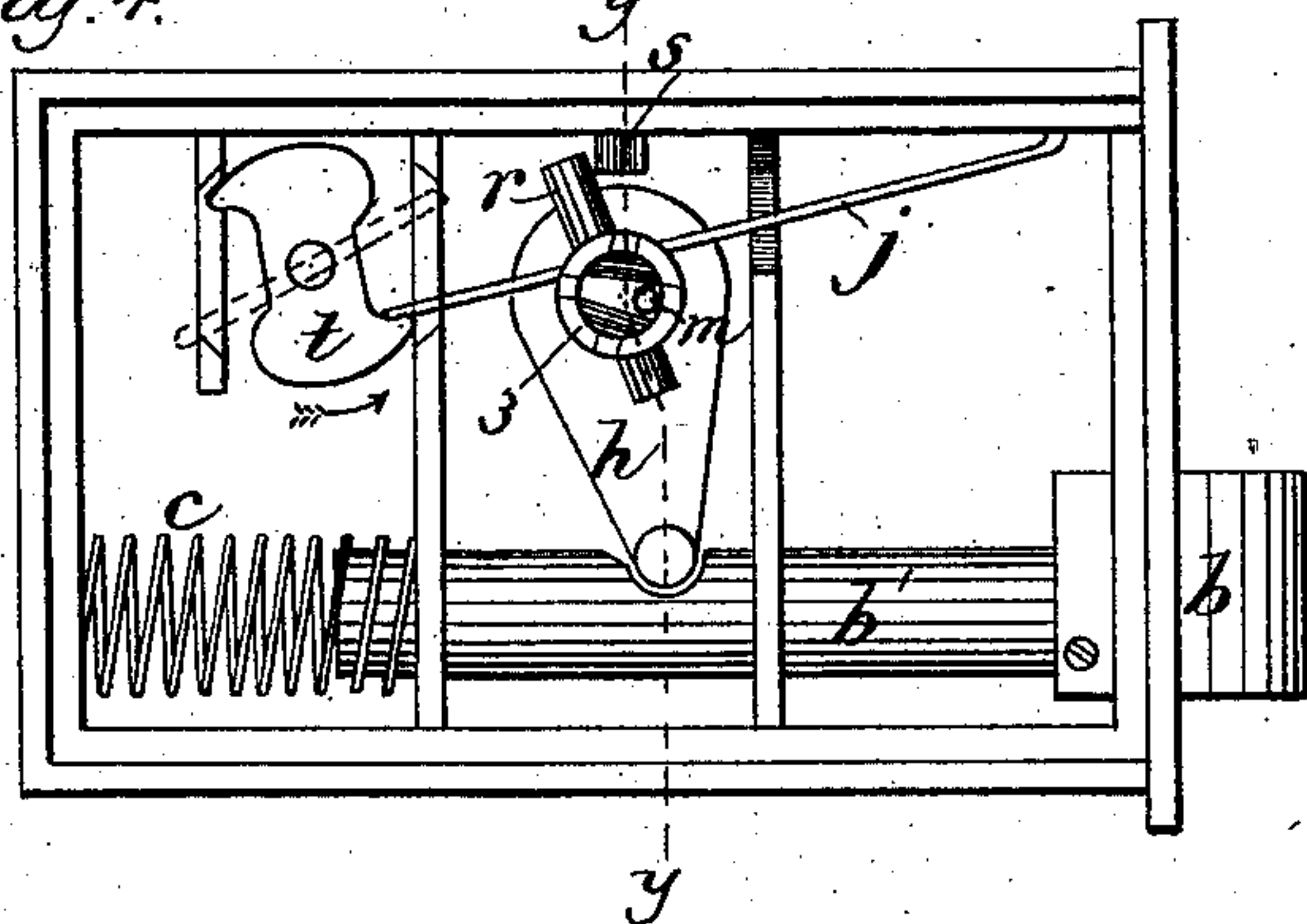


Fig. 5.

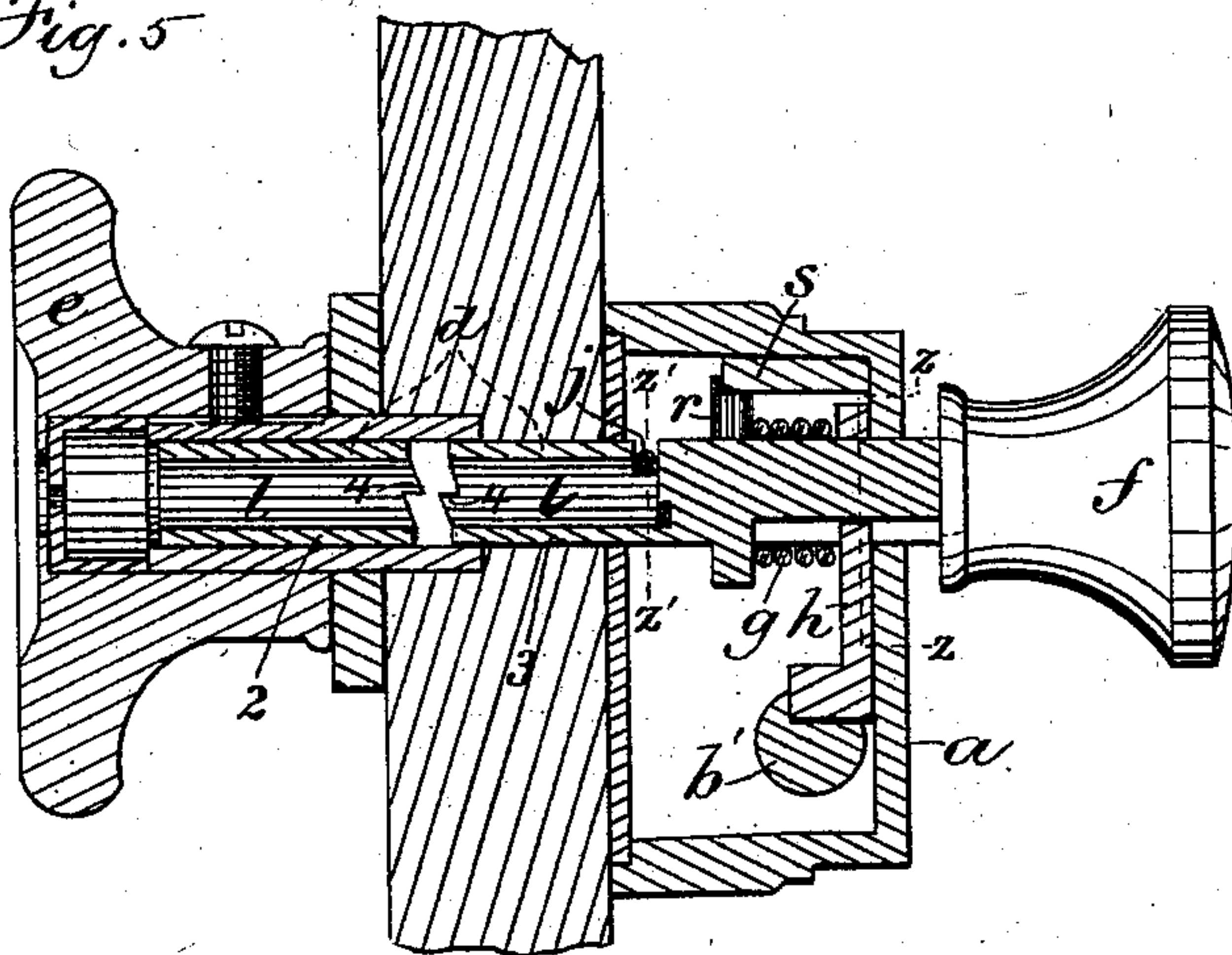
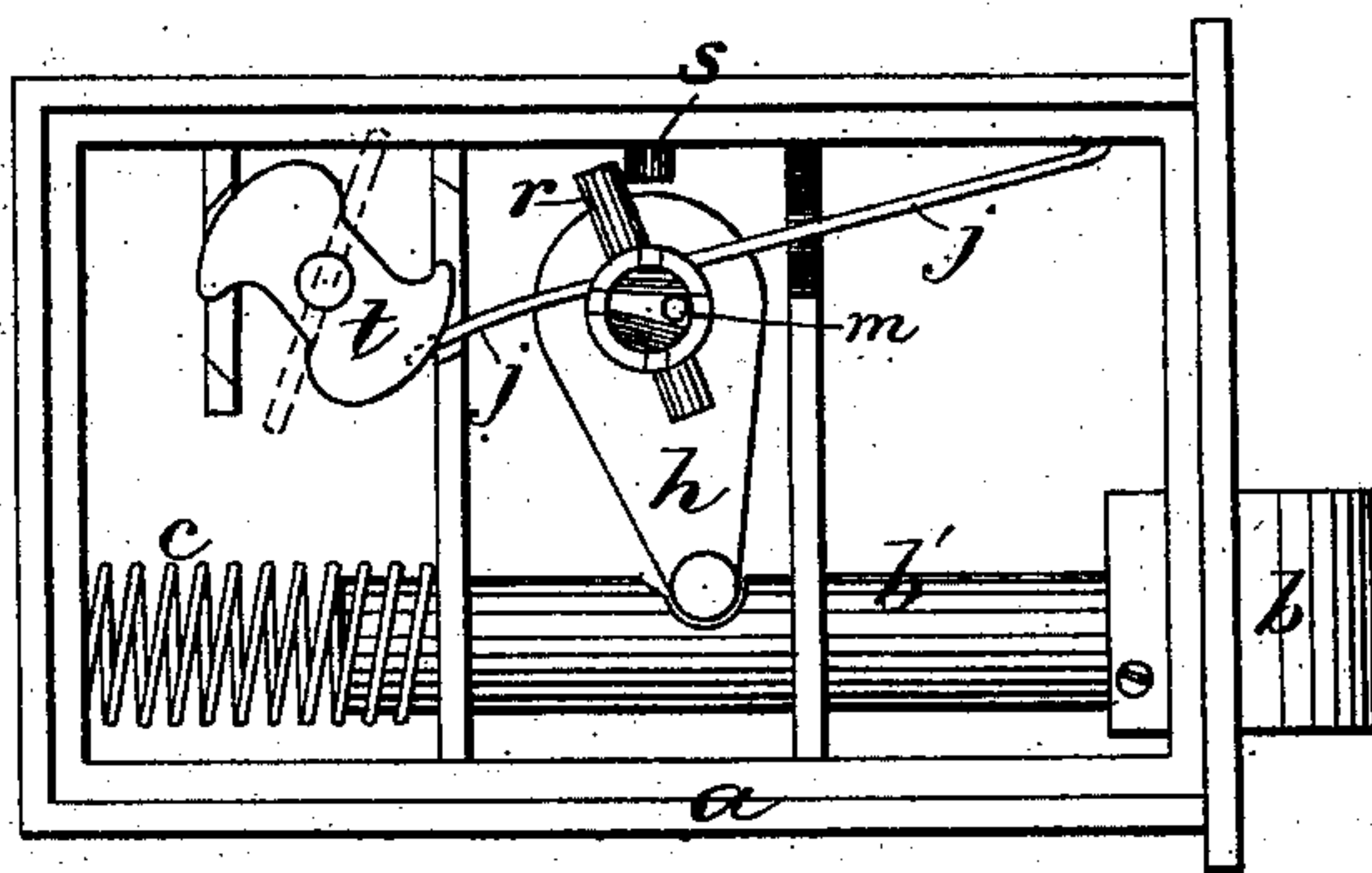


Fig. 6.



Witnesses.

A. L. White
John M. Tashay

Inventor

E. S. Morton
by Wright & Brown
Attys.

(No Model.)

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Fig. 7.

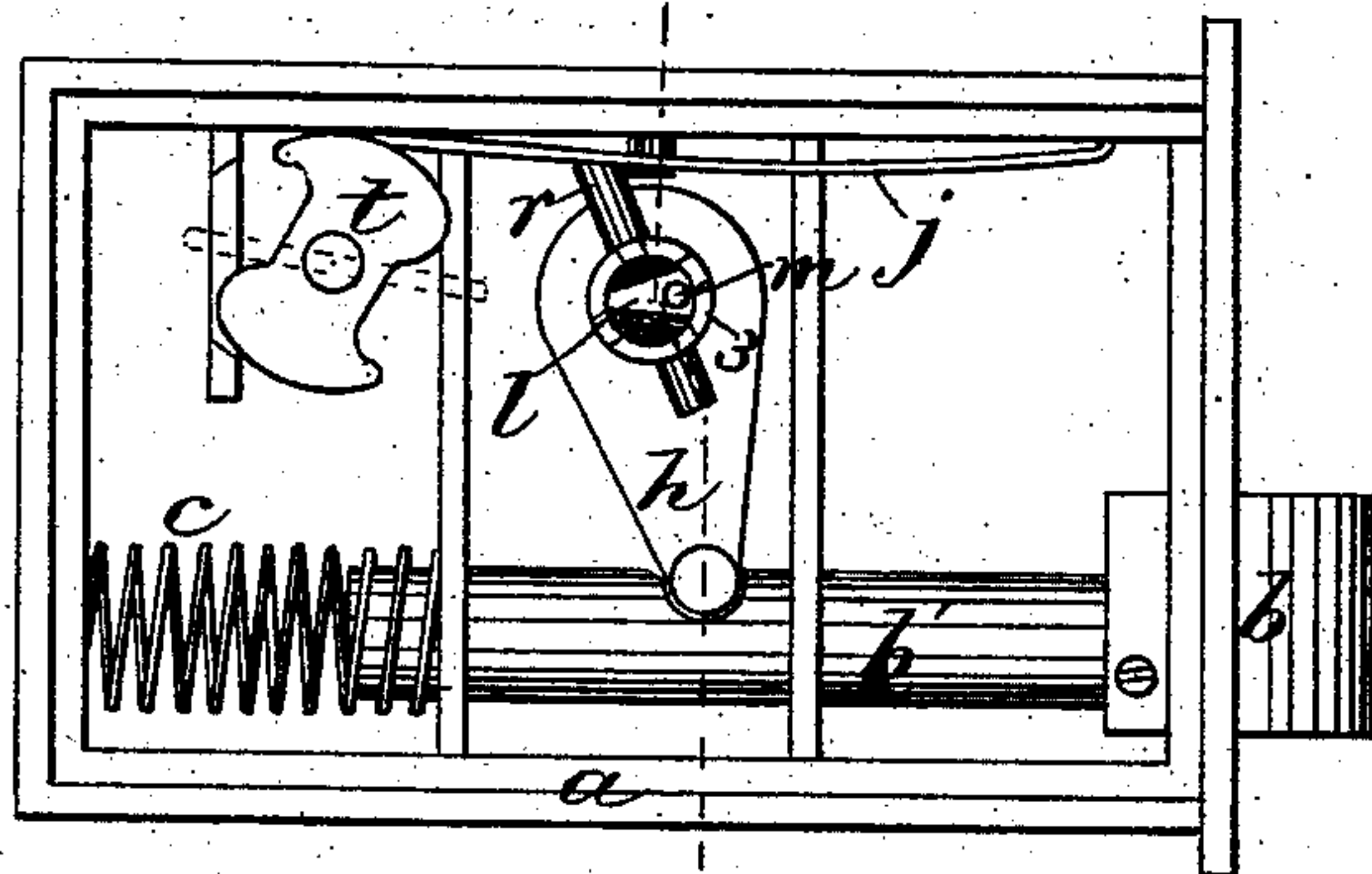


Fig. 8.

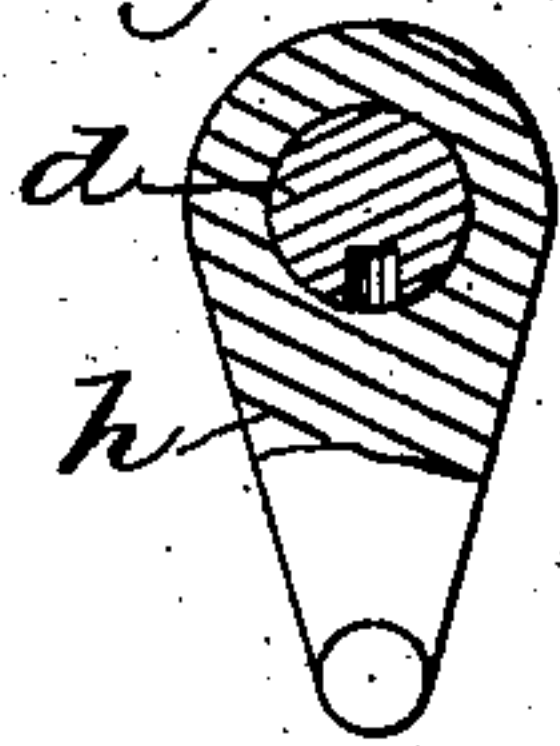


Fig. 9.



Fig. 10.

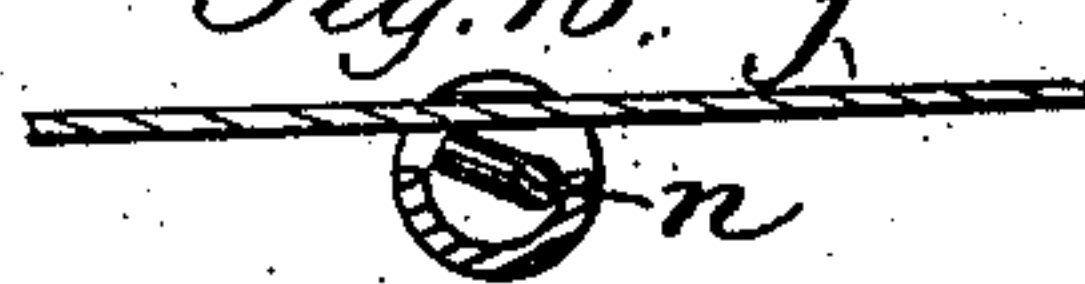


Fig. 11.

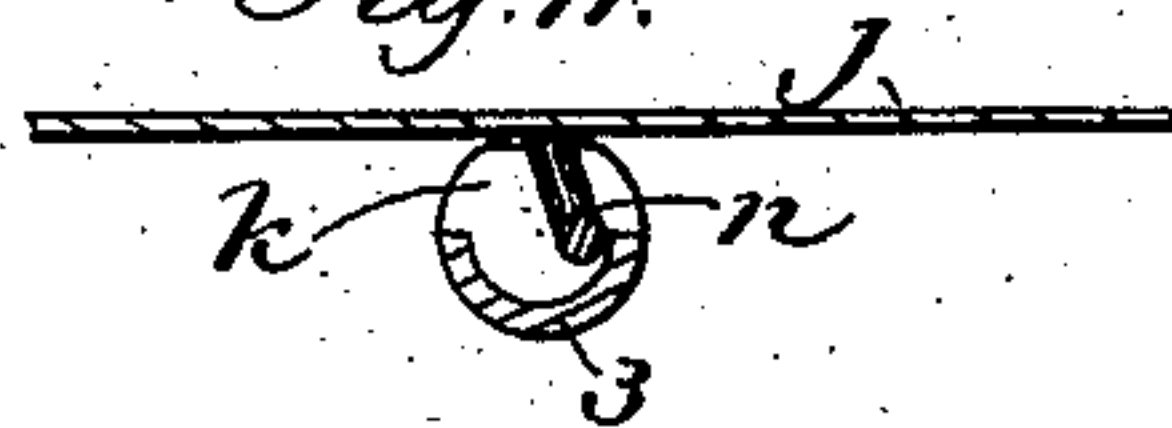
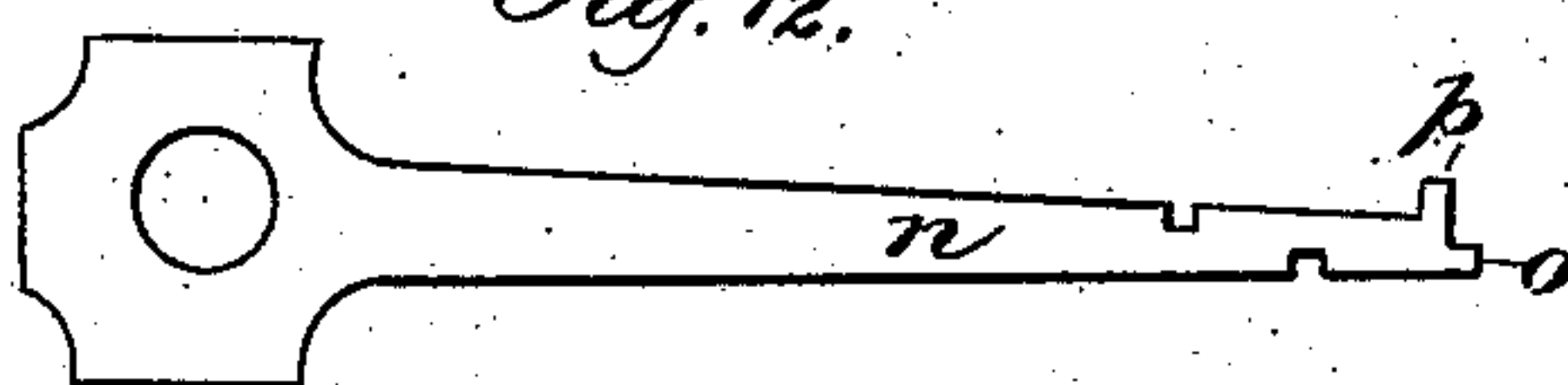


Fig. 12.



Witnesses.

A. L. White

John M. Tuohy

Inventor.

E. S. Morton

by Myatt & Brown

Attys

UNITED STATES PATENT OFFICE.

EPHRAIM S. MORTON, OF PLYMOUTH, ASSIGNOR OF ONE-HALF TO SAMUEL LORING, OF DUXBURY, MASSACHUSETTS.

DOOR-LATCH.

SPECIFICATION forming part of Letters Patent No. 294,326, dated February 26, 1884.

Application filed December 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM S. MORTON, of Plymouth, in the county of Plymouth and State of Massachusetts, have invented certain
5 Improvements in Latches and Locks, of which the following is a specification.

This invention consists in a combined door latch and lock having a bolt and a rotary operating-spindle adapted to retract said bolt,
10 the spindle being made in two sections, the inner one of which is connected with the bolt, so that it can retract the latter, and is adapted to be disconnected from the outer section, and thus make the latter inoperative.

15 The invention also consists in the provision of a locking device adapted to automatically hold the inner section when it is disengaged from the outer section, and in the provision of means for releasing the inner section from
20 said locking device, said means comprising a key-hole formed in the spindle, and a key adapted to be inserted in said key-hole.

The invention also consists in the provision of a device adapted either to hold said locking device so that it cannot be disengaged
25 from the inner section by said key, or to hold said locking device away from the inner section, so that it will not lock the latter.

The invention also consists in certain details
30 of construction, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a face lock and latch embodying my invention. Fig. 2 represents a view
35 of the opposite side of the same, (a part of the casing being removed,) showing the spindle disengaged from the device that locks its inner section. Fig. 3 represents a section on line *xx*, Fig. 2. Fig. 4 represents a side view showing the locking device engaged with the inner section of the spindle. Fig. 5 represents a section on line *yy*, Fig. 4. Fig. 6 represents a side view showing the locking device held in engagement with the inner section
45 of the spindle. Fig. 7 represents a side view showing the locking device held away from the inner section of the spindle. Fig. 8 represents a section on line *zz*, Fig. 5. Figs. 9, 10, 11 represent sections on line *z'z'*, Fig.

5, showing the operation of the key on the locking device. Fig. 12 represents a side view of the key.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the casing in which the latch-bolt *b* is contained, said bolt being retracted by the spindle hereinafter described, and projected by a spring, *c*.

d represents the rotary spindle which retracts the bolt. Said spindle is composed of an outer section, 2, projecting from the outer side of the door, and an inner section, 3, projecting from the inner side of the door. The outer ends of said sections have operating knobs
65 or handles *e f*, and their inner ends have interlocking teeth 44, formed so that when either section is rotated in one direction its teeth will engage with and rotate those of the other section, but when rotated in the opposite direction the teeth will slip. The inner section, 3,
70 is movable lengthwise, so that it can be separated from the outer section, 2, but is normally held in engagement with the latter by a spring, *g*, which presses the inner section against the outer. An arm-lever, *h*, is secured to the inner section, 3, by means of a groove in the section and a projection on the lever, as shown in Fig. 8, said connection enabling the section 3 to oscillate the lever *h* and to move
80 lengthwise independently thereof. The outer end of the lever *h* enters a slot in the shank *b'* of the bolt *b*, and enables the section 3 to retract said bolt. It will be seen that when the sections 2 and 3 of the operating-spindle are interlocked at their meeting ends they rotate together, and a person at the outside of the door can retract the bolt by grasping the knob *e* of the outer section. When the inner section is separated from the outer one, as
90 shown in Fig. 5, the outer section is inoperative, and will rotate idly. It is obvious, therefore, that the operation of separating the inner section from the outer locks the bolt *b*.

j represents a spring arm or latch, which normally bears with a yielding pressure against the inner section, 3, and drops automatically into a transverse notch or slot, *k*, in the section 3 when the latter is moved to the position shown in Fig. 5, and locks or holds said section
100

tion away from the section 2. The following means are employed to enable a person at the outside of the door to release the section 3, and thus make the outer section operative: The spindle is provided with a longitudinal cavity or key-hole, *l*, extending from the outer end of the section 2 into the section 3 beyond the slot *k*. At the inner end of said key-hole is a socket, *m*, which is eccentric to the key-hole.

(See Fig. 9.)

n represents a key adapted to be inserted in the key-hole, and provided with a projection, *o*, at one edge, adapted to enter the socket *m*, and with a bit, *p*, adapted, when the projection *o* is turned in the socket *m*, to bear against the spring-latch *j* and force the same out of the slot *k*, as shown in Figs. 10 and 11, thus releasing the section 3 and permitting the spring *g* to engage it with the outer section, 2, so that the bolt *b* can be retracted by turning said outer section. When the inner section, 3, is separated from the outer section, a pin, *r*, secured to the inner section, bears against one side of a fixed projection or shoulder, *s*, on the casing *a*. Said projection prevents the inner section from being rotated, the latch *j* at the same time preventing it from being moved lengthwise. The bolt *b* is thus secured, so that it cannot be released by turning the knob *f* of the inner section. In case, however, a person at the inside desired to release the section 3, a cam or button, *t*, journaled in the casing *a* and provided with a thumb-piece or handle, *t'*, on the exterior of the casing *a*, may be turned in the direction indicated by the arrow in Fig. 4, and will thus be caused to raise the latch *j* out of engagement with the section 3, as shown in Fig. 7. While the cam *t* is allowed to remain in said position, it holds the latch *j* away from the section 3, so that the section 2 cannot be made inoperative, or, in other words, the bolt cannot be locked. The cam *t* is adapted, when rotated in the opposite direction, to press the latch *j* downwardly and hold it in engagement with the section 3, as shown in Fig. 6, so that the section 3 cannot be released by means of the key. It will be seen, therefore, that the bolt can be operated by the spindle, like an ordinary knob-latch. The spindle can be made inoperative, so that it cannot retract the bolt, the key can be made inoperative, so that the bolt cannot be unlocked from the outside, and the locking device of the inner section can be made inoperative, so that the bolt cannot be locked. The device, therefore, is capable of a considerable variety of adjustments, and is at the same time simple in construction and not liable to become deranged. A person at the inside of the door *b* pulls the knob *f* and the inner section, 3, of the spindle inwardly until the latch *j* springs into the slot *k* in said section, the door being thus locked. A person at the outside of the door can produce the same result by pushing the section 3 inwardly by means of the key.

Although I have shown my improvements

applied to a face-lock, it is obvious that the invention is applicable to mortise-locks also.

I claim—

1. In a latch and lock, the combination of a bolt, a rotary operating-spindle therefor, composed of an outer and an inner section having operating knobs and handles at their outer ends and interlocking teeth at their inner or meeting ends, the inner section being engaged with the bolt, and adapted to be separated from the outer section to render the latter inoperative, and means for locking the inner section when it is separated from the outer section, as set forth.

2. The combination of a bolt, a rotary operating-spindle therefor, composed of an outer and an inner section having operating knobs or handles at their outer ends and interlocking teeth at their inner or meeting ends, the inner section being adapted to be separated from the outer to render the latter inoperative, an arm or lever whereby the inner section is connected with the bolt, a spring arm or detent adapted to engage with the inner section when it is disconnected from the outer, to hold the two sections apart, and a spring whereby the inner section is engaged with the outer when disengaged from said arm or detent, as set forth.

3. In a latch and lock, the combination of the following elements, viz: first, a bolt; secondly, a rotary operating-spindle therefor, composed of two separable sections automatically engaged, as described, and provided with operating knobs or handles, and a key-hole extending through the outer and into the inner section, the latter having an eccentric socket for the end of a key-shank, a notch or transverse slot for a spring locking-arm, and an arm or lever engaged with the bolt; thirdly, a spring locking-arm adapted to automatically engage with the slot of the inner section when the latter is separated from the outer section; and, fourthly, a key adapted to be inserted in the key-hole of the tubular sectional spindle, to disengage said spring-arm from the inner section, as set forth.

4. The combination of the bolt, the rotary operating-spindle composed of automatically-engaged separable outer and inner sections, and provided with a key-hole extending through the outer and into the inner section, an arm or lever engaging the bolt with the inner section of the spindle, a spring arm or detent adapted to automatically engage and hold the inner section of the spindle when the same is separated from the outer section, to hold the two sections apart, and a rotary button or cam adapted either to lock said spring-arm in engagement with said inner section or to hold it away from said section, as set forth.

5. In a latch and lock, the bolt-operating spindle composed of the separable and automatically-engaged sections 2, 3, the latter having an arm, *h*, engaged with the bolt, a stud, *r*, and a transverse notch or slot, *k*, combined

with the fixed lug or shoulder *s*, and the spring arm or latch *j*, adapted to engage with the stud *r* and notch *k* when the section 3 is separated from the section 2, and prevent both
5 longitudinal and rotary movement of said section 3, as set forth.

In testimony whereof I have signed my name

to this specification, in the presence of two subscribing witnesses, this 30th day of November, 1883.

EPHRAIM S. MORTON.

Witnesses:

SAML. LORING,

ALBERT C. BARNES.