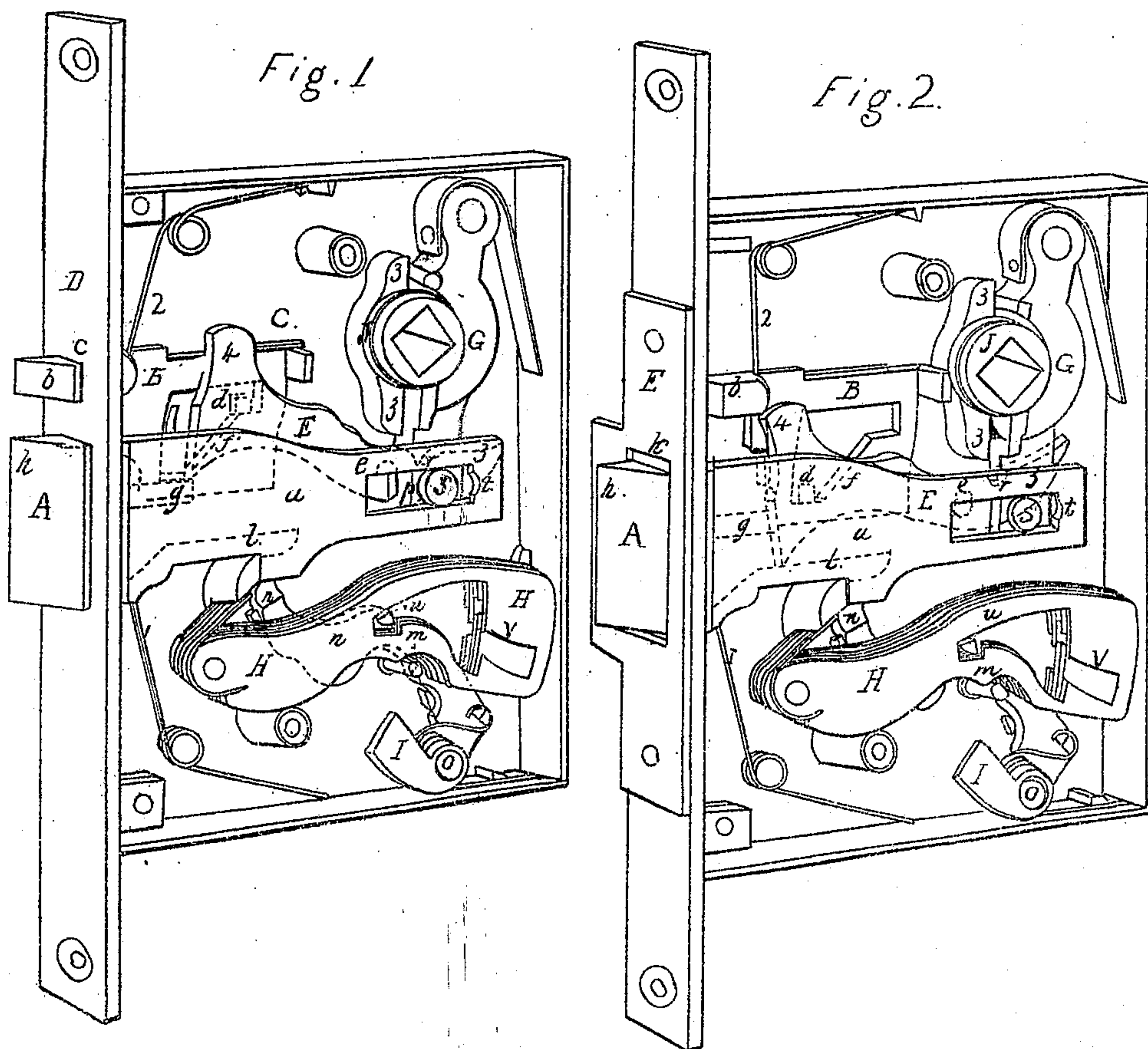


A. T. Brooks.

Knob-Latch.

No 92151.

Patented Jul. 6. 1869.



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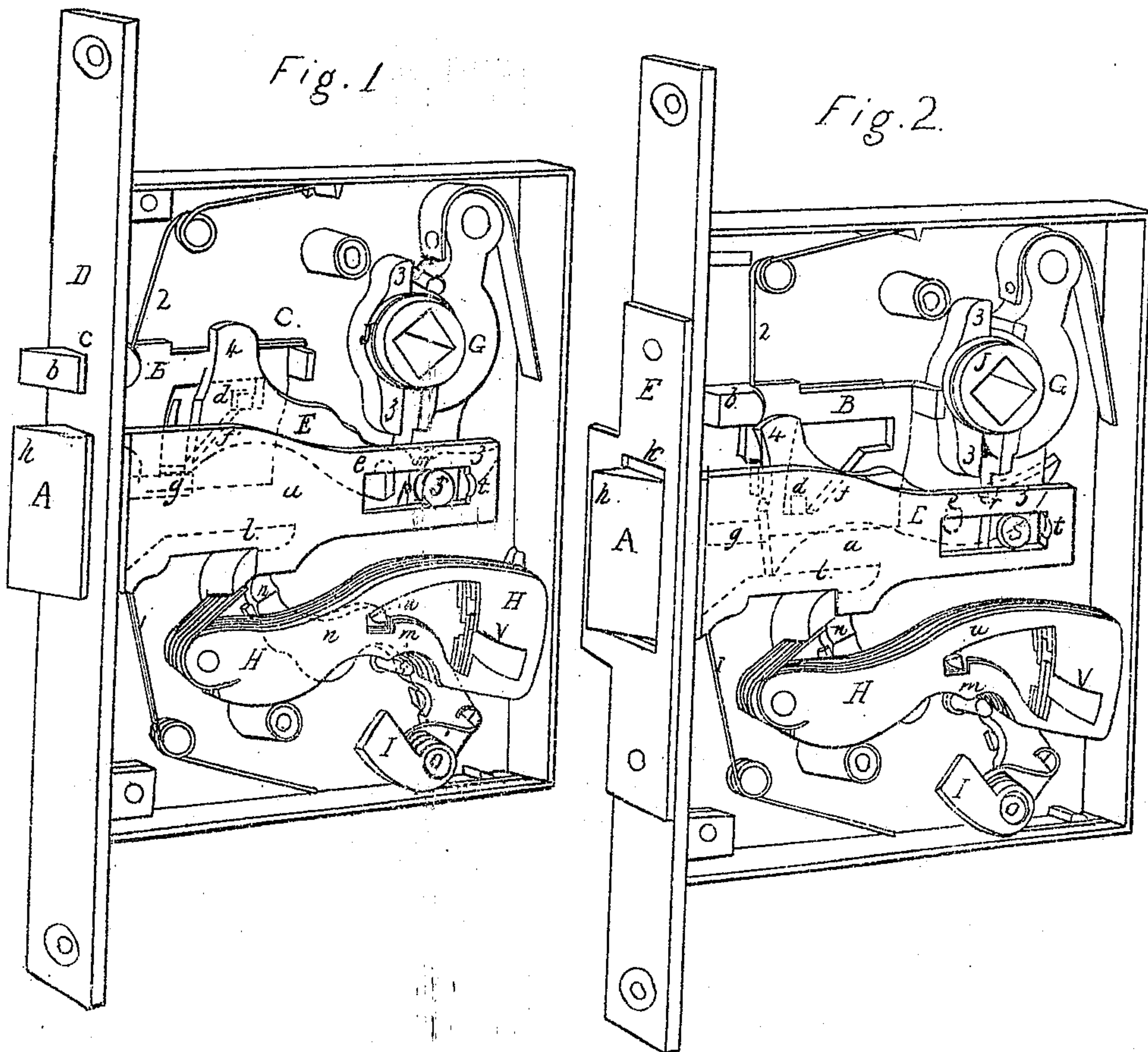
Sheet 1 of 2 Sheets.

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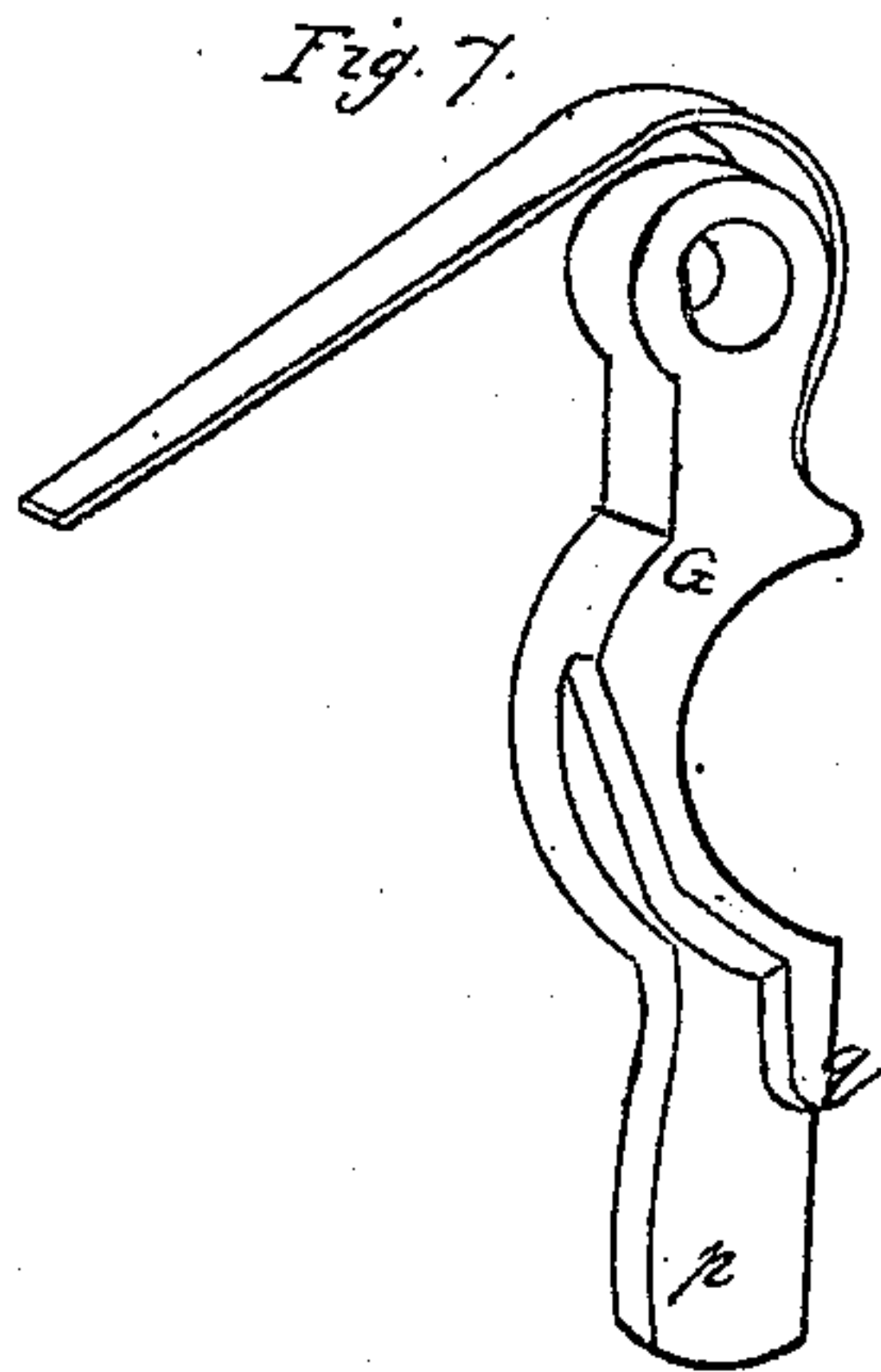
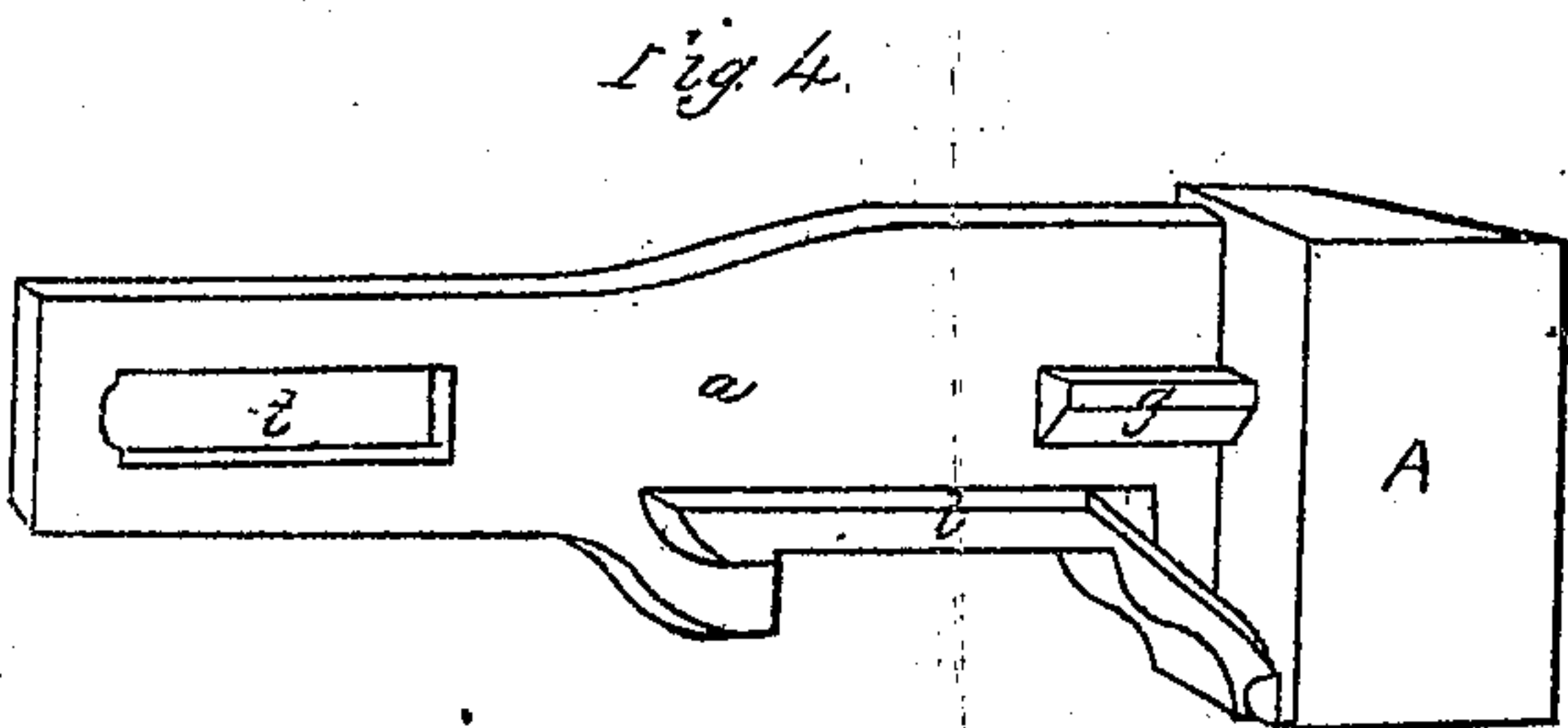
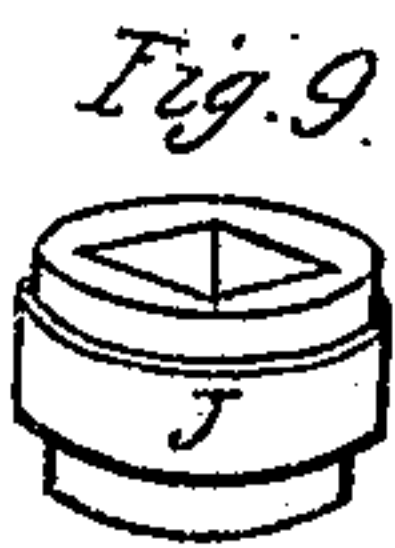
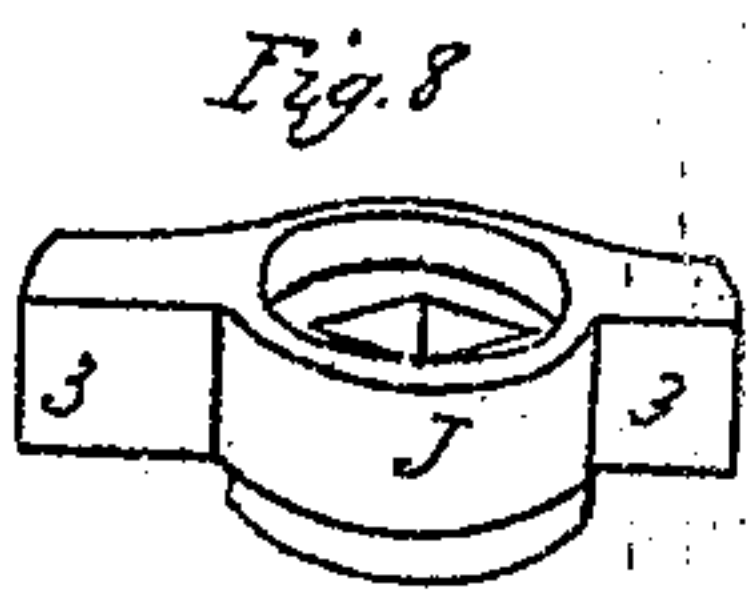
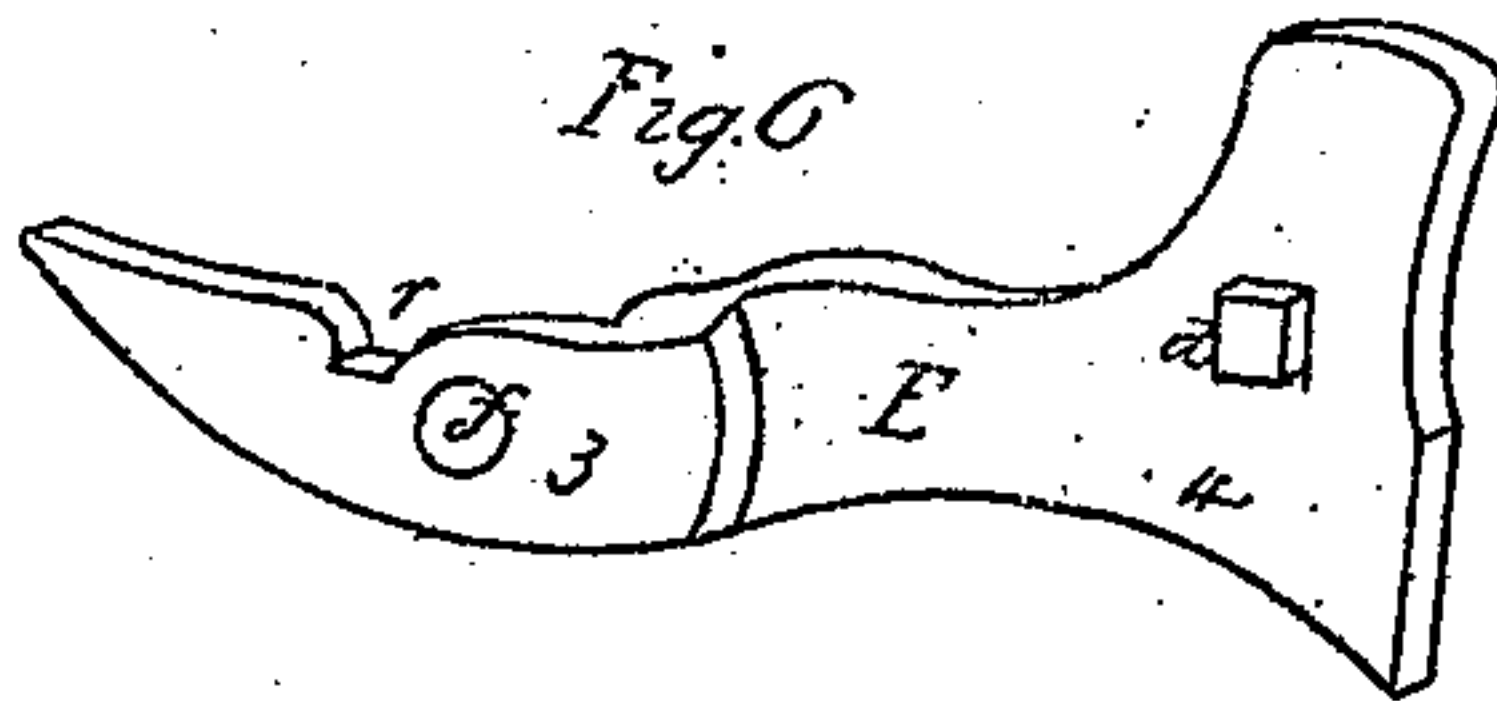
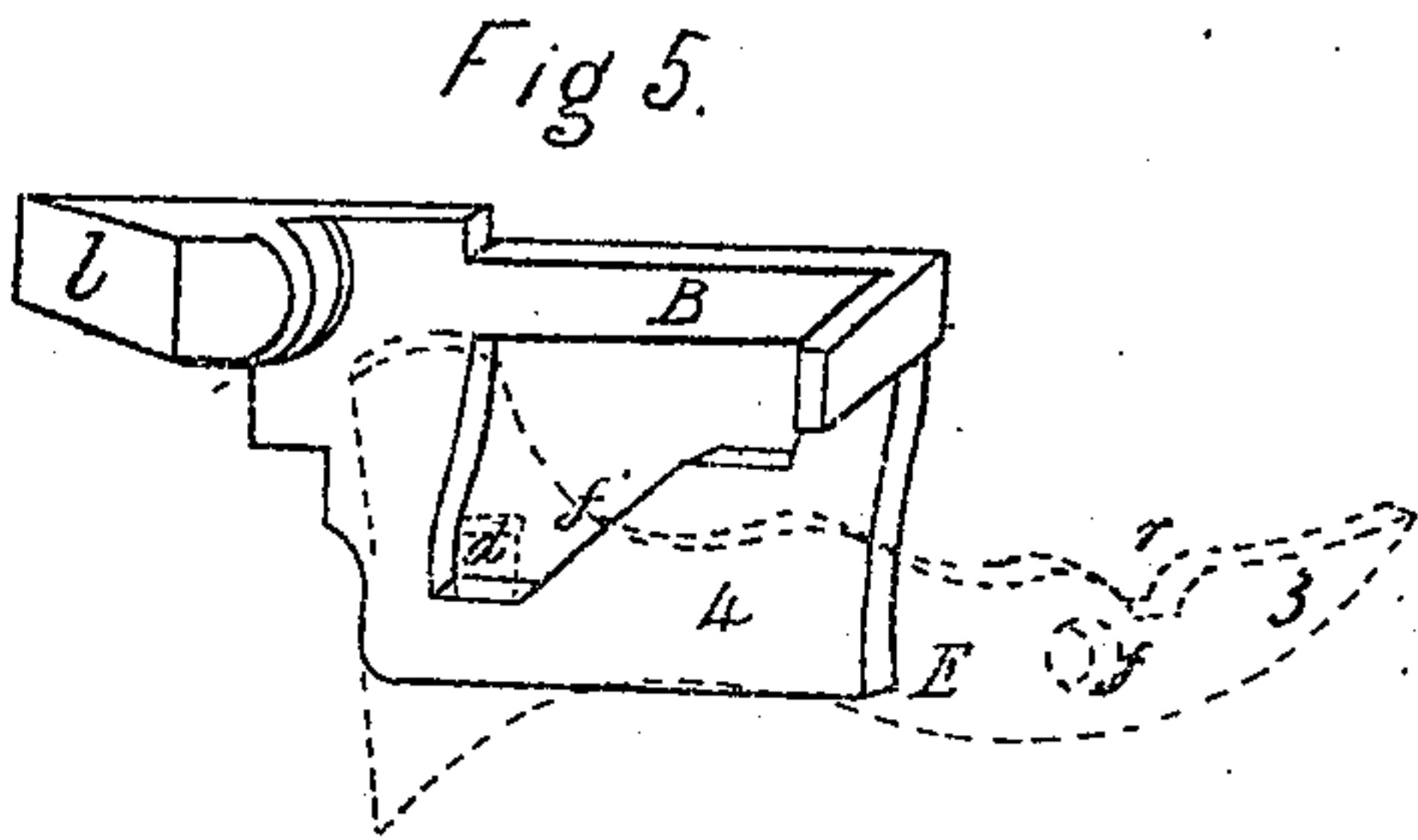
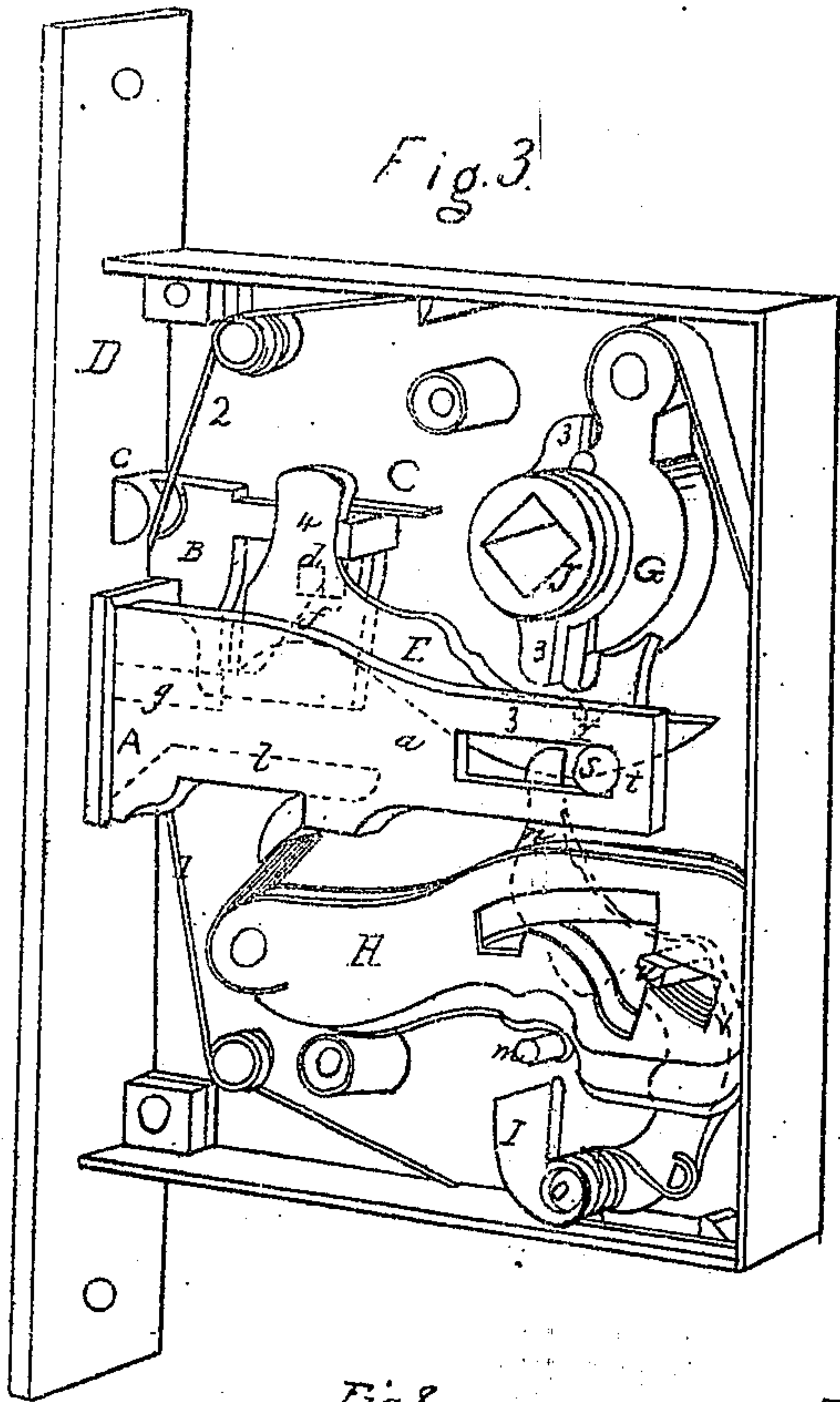
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ASA T. BROOKS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO RUSSELL AND ERWIN MANUFACTURING COMPANY, OF SAME PLACE:

Letters Patent No. 92,151, dated July 6, 1869.

IMPROVEMENT IN KNOB-LATCHES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ASA T. BROOKS, of New Britain, in the county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Locking Knob-Latches; and I do hereby declare that the following is a full, clear, and exact description thereof, and of their mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and making a part of this specification.

The nature or character of my invention or improvement consists in the arrangement and combination with knob-latches, so called, of mechanism by which such latches, as the doors to which they are attached are closed, are locked; and thus prevented from sliding backward until such locking-mechanism is removed or lifted by the action of the key.

Figure 1 shows the position of the latch and the locking-mechanism when the door is open.

Figure 2 shows the position of the same parts when the door is closed and the latch is locked.

Figure 3 shows the manner of releasing the locking-mechanism by the action of the key.

Figure 4 is a view of the under side of the main latch.

Figure 5 is a detached view of the latch-plate of the locking-mechanism.

Figure 6 is a view of the locking-plate, or bar.

Figure 7 is a bottom view of the knob-lever.

Figures 8 and 9 represent the divided hub.

The main latch A, which can also be operated by the knob, is, in its form and construction, substantially like ordinary latches, except in the slight particulars hereinafter mentioned, and is thrown and kept forward, in the position shown in fig. 1, by means of the spring 1.

The locking-mechanism, for locking such latch A when the door is closed, consists of a latch-plate, B, a full-sized representation of which is shown in fig. 5, which lies partially behind the plate *a* of the latch A, and which lies against and slides upon the case-plate C.

On the front end of such plate B is a small latch, *b*, which passes through and moves in a suitable opening, or recess *c*, in the front plate D of the case, and which projects out from such plate, as shown in fig. 1, when the door is open, being so pushed forward by means of the spring 2.

The central part of such plate B is cut away, as shown in fig. 5, to receive a stud or projection, *d*, which is on the under side of the locking-plate or bar E, a full-sized representation of which is shown in fig. 6. Such plate or bar E is pivoted in a stud, *e*, projecting from the case-plate C, one end thereof, 3, lying

against such plate C, and the other part, 4, lying over and upon the latch-plate B, the stud *d* being in the cavity *f*. Such plate or bar E, as well as the latch-plate B, lies partially behind the latch-plate *a*, and their thicknesses are such that they can have free movement in the space between the latch-plate *a* and the case-plate C.

The operation of the latch-plate B and locking-plate or bar E, or the locking-mechanism, is as follows:

The position of such mechanism, before the door is closed, is as shown in fig. 1; that is, the small latch *b*, acted upon by the spring 2, projects beyond the plate D, in the same manner as does the latch A. As the latch-plate B, with the latch *b*, is carried forward by the action of the spring 2, the inclined side of the recess *f*, acting against the stud or projection *d*, on the locking-bar E, raises up the front end, 4, of such plate to the position shown in fig. 1, or above the projection or stud *g*, on the backside of the plate *a* of the latch A, so that such latch can move backward when pressure is applied to its outer end *h*.

When the door is being closed, the main latch A is forced back, by coming in contact with the striking-plate F, which is attached to the door-casing as usual, and the projection *g*, on the under side of the latch-plate *a*, passes below the front end of the locking-bar, and at the same time the head of the latch *b* pushes back the latch-plate B within the case.

When the door is fully closed, the latch A again shoots forward into the opening *k*, in the striking-plate, but the small latch *b*, the striking-plate being solid in front of it, is prevented shooting forward, and is held in the position shown in fig. 2, the inclined face of the central cavity *f*, in the plate B, being pushed back and away from the stud *b* of the locking-plate E. This plate or bar, as soon as the main latch A thus shoots forward into the striking-plate F, drops, by its own weight or gravity, down behind the projection *g*, on the latch-plate *a*, and thus effectually locks the latch A, and prevents its being moved or forced backward out of the striking-plate, until the locking-bar E shall be raised.

A projection, *l*, on the lower edge of the latch-plate *a*, prevents the locking-bar E dropping too far. Fig. 2 shows the locking-bar in the position just described, that is, locking the latch A.

The latch A is released from the locking-mechanism on the bar E, so as to permit it (the latch) to be moved back out of the striking-plate F, and the door to be opened, in the following manner:

The key being inserted in the lock upon the stem *m*, and turned, presses against the bar *n*, (which turns on a pivot or stud, *o*,) and moves it round until its upper end strikes against the lower end *p*, of the knob-lever

G, the end *p* of such lever lying over and projecting below the end 3 of the locking-plate E, and a projection or point, *q*, on the under side of such knob-lever, rests within a notch or recess, *r*, in the end 3 of the locking-plate or bar. As the key is further turned, the bar *n* moves backward the lower end of the knob-lever G, and the point or projection *q* thereon being carried from out the notch *r*, and along the edge of the extreme end 3 of the locking-bar, presses down that end, and consequently raises the other end, (such bar E turning on the stud *e*,) until it wholly passes above the stud or projection *g*, on the under side of the latch-plate *a*, so that the latch A can be moved back, by the action of the key, when the projection *s*, on the top of the knob-lever, reaches the end of the slot *t*, in the latch-plate, and carries along the latch as the knob-lever is further moved by the key. As the first movement of the knob-lever by the action of the key is to elevate the front end, 4, of the locking-lever, and carry it above the projection *g*, the knob-lever stud or projection *s* must move in a slot in the plate *a*, and such slot should be of such extent or length as to allow the front end of the locking-bar to be sufficiently raised, before the stud *s* begins to act on the latch, to move it back. As soon as the latch is carried entirely out of the striker, and the door is opened, both latches are forced forward, as before described, by the springs 1 and 2, and by such forward movement of the latch *b* and its plate B, the locking-bar is kept elevated, as shown in fig. 1. Fig. 3 shows the position of the bar *n* and knob-lever G, when the latter has been moved backward so as to elevate the front end of the locking-bar.

The drawings show a series of guards, H, within the latch-case, which are severally acted upon by different parts of the key, and in combination therewith an upright stem, *u*, on the bar *n*, so arranged that the latch cannot be moved by any key except by such a one as shall so place the guards that the stem *u* can pass into a recess, *v*, made in each of such guards, before operating the knob-lever or locking-plate; and such drawings also show a key-hole guard, I, which is so connected with the bar *n* as to close the key-hole as the key is turned; but these devices, though adding security against the latch being picked, do not in any manner affect the action of the locking-mechanism before described.

As will be observed, the locking-bar or plate E will act, in locking the latch A, by its own weight or gravity, but a spring may be used in connection with such plate, to render its descent more positive, if desired or preferred.

The construction of the divided hub J is peculiar, only one part or half of such hub being provided with arms, 3 3, to act upon the knob-lever G, instead of both parts of the hub having arms, as generally here-

tofore constructed. The part of the hub thus furnished with arms is the inner portion, shown in fig. 8, or that with which the knob on the inside of the door is connected, by means of the spindle, and, consequently, as such knob is turned, the knob-lever will be operated, and the locking-plate raised, and the latch drawn back. The other, or outer portion of the hub, fig. 9, and with which the outside knob of the door is connected, rests upon and partly within the inner portion, in a sort of socket, shown in fig. 8, but can turn or revolve freely in either direction upon such inner portion.

The spindle used is the ordinary swivel-spindle. As the outer part of the hub, fig. 9, has no arms, the outside knob can be turned in either direction, and round and round, without in any degree affecting the latch, which can only be moved from without by means of the key, while from within, the latch can be drawn back, and the door opened, by means of the knob alone.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the latch-bolt A, of the latch-plate B *b* and the locking-plate E, constructed, arranged, and operating substantially as described, and for the purposes set forth.
2. The combination, with the main latch or latch-bolt A, of the locking-plate E, with its notch *r*, arranged and operating substantially as and for the purposes set forth.
3. The combination of the locking-plate E, or its equivalent, with the knob-lever G, when so arranged, that as the latter is moved backward, it will raise the former, substantially as and for the purposes set forth.
4. The arrangement of the slot *t*, or its equivalent, in the latch-plate *a*, in relation to the pin *s*, on the knob-lever, so as to permit the said lever to have a backward movement (to operate the locking-bar E) before acting on the main latch.
5. The combination of the latch-bolt, knob-lever, and locking-plate, so constructed and arranged that the knob-lever, or its equivalent, will adjust the locking-mechanism before actuating the latch.
6. The combination, with the locking-plate E, or its equivalent, of the key-bar *n*, with or without the key-hole guard I, acting upon such locking-bar through the medium of the knob-lever, as described, and for the purposes set forth.
7. In combination with the latch-bolt A, locking-plate E, and knob-lever G, the construction and arrangement of the divided hub J, substantially as and for the purposes set forth.

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