

E. HAND.
Burglar-Alarm.

No. 166,696

Patented Aug. 17, 1875.

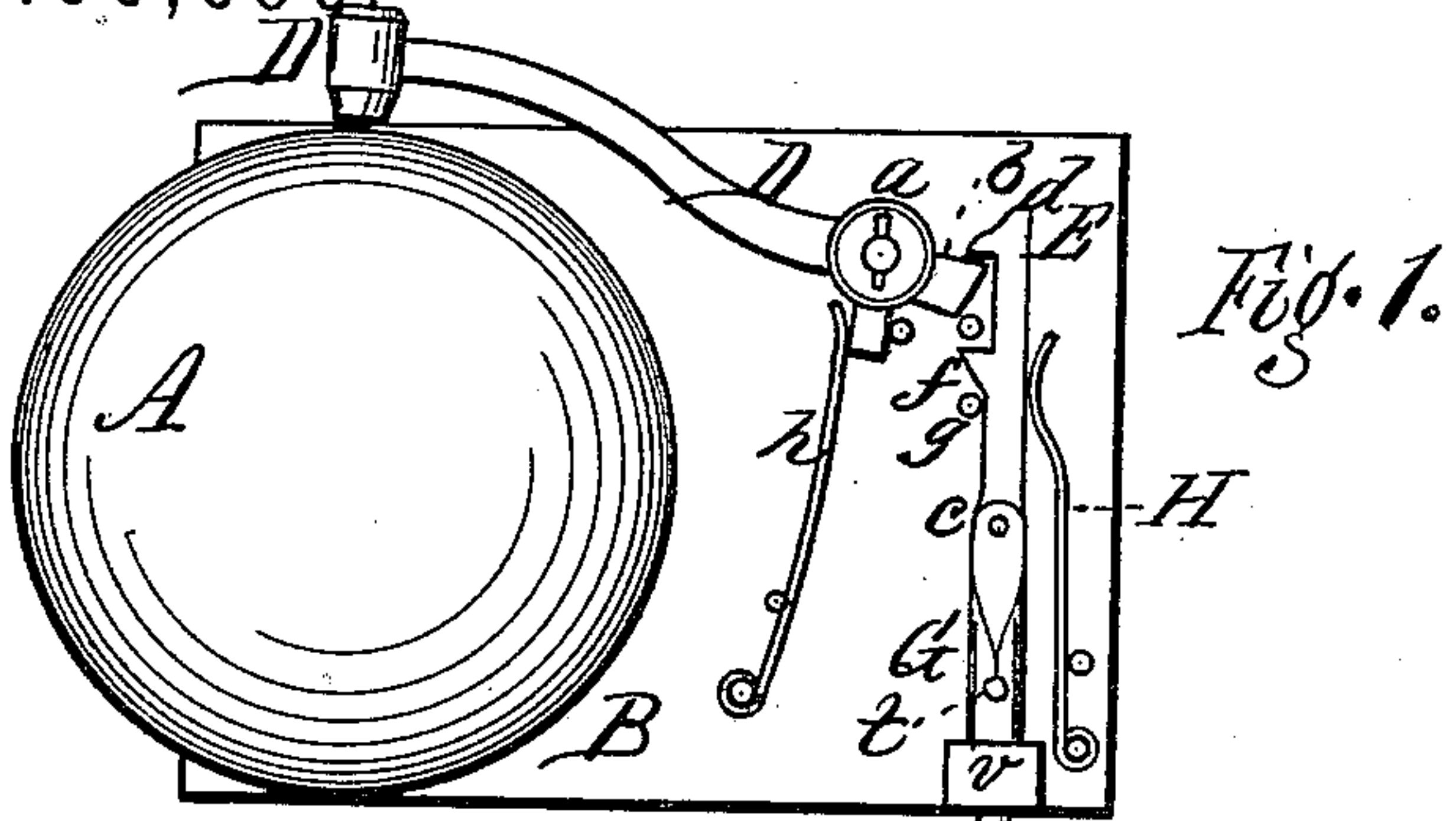


Fig. 1.

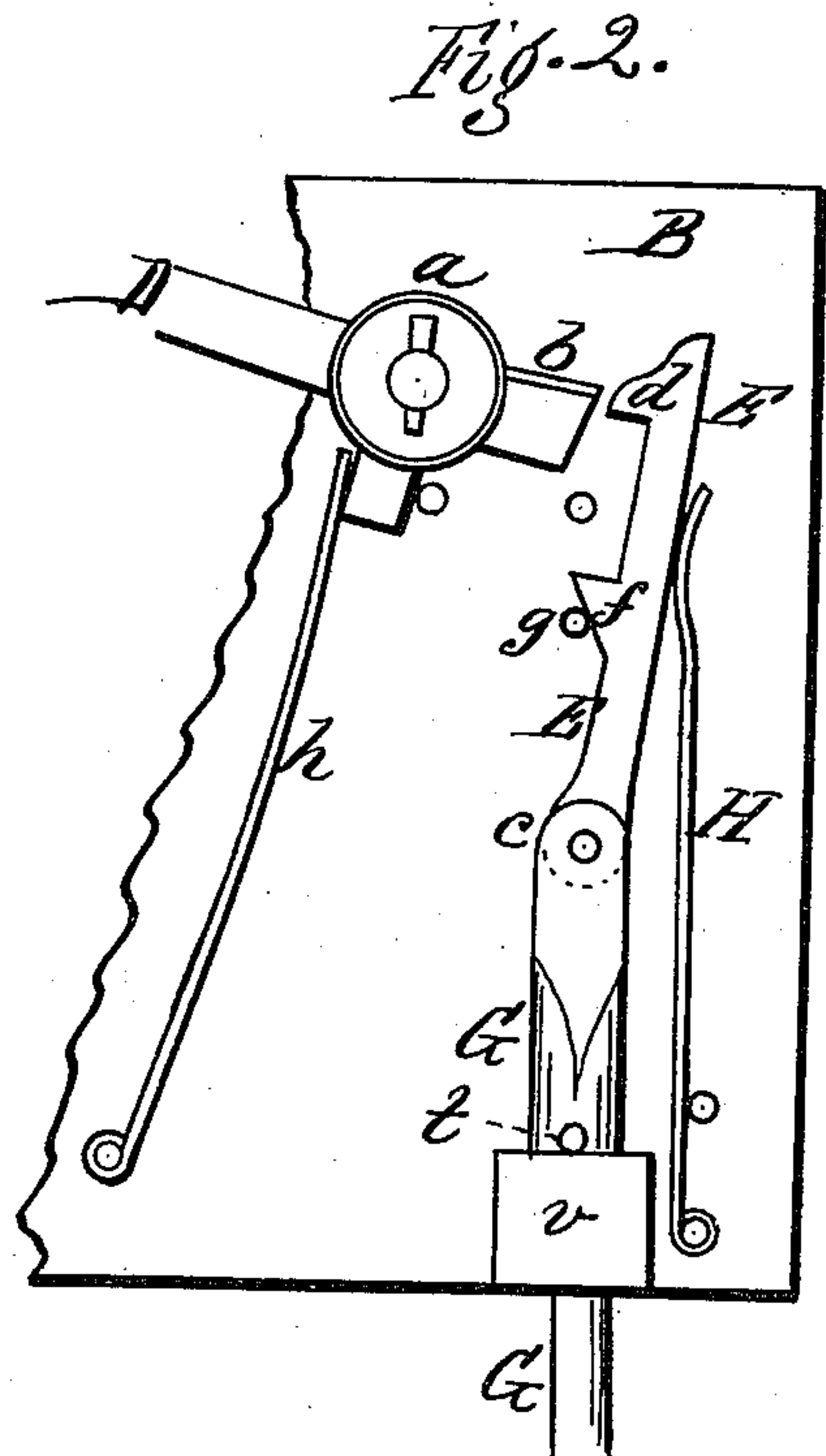


Fig. 2.

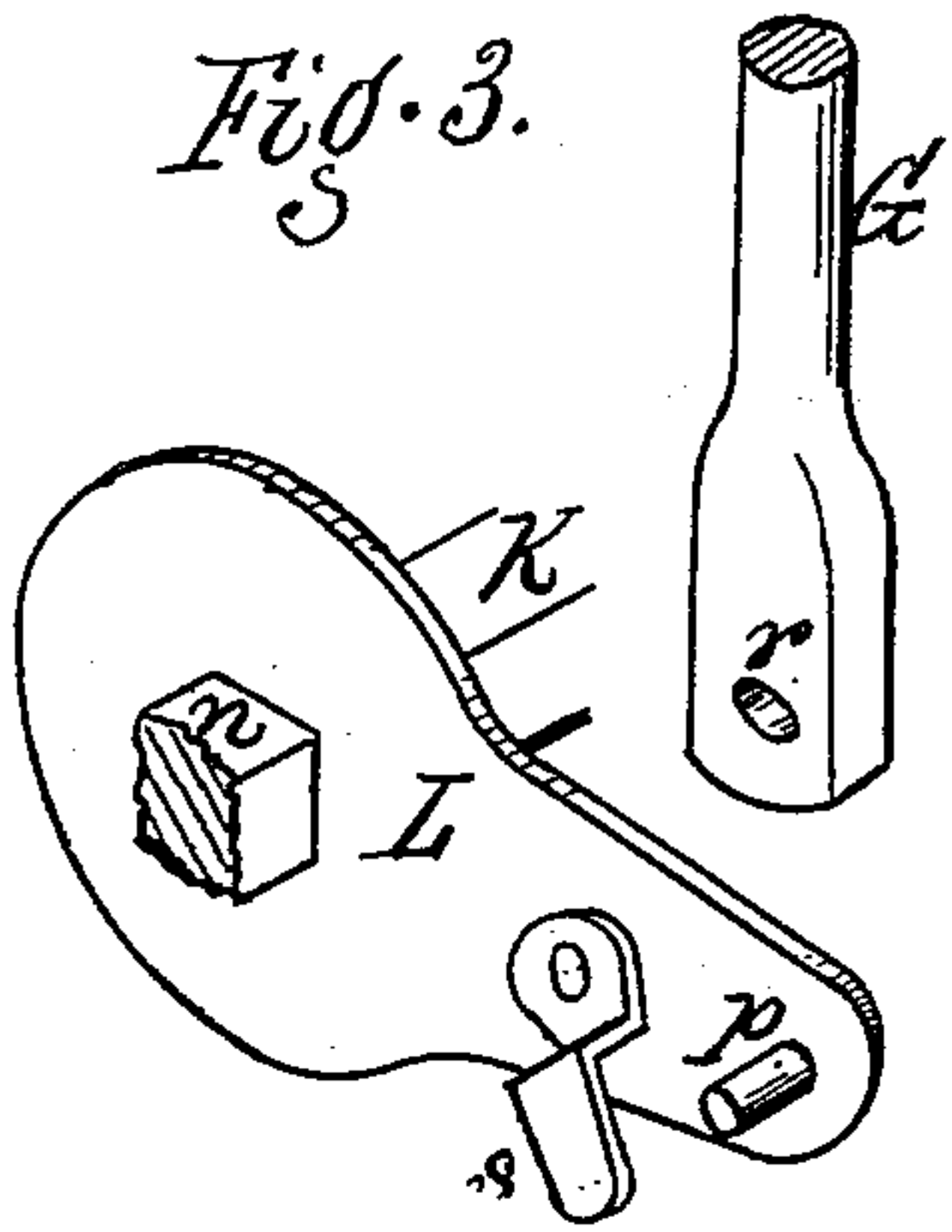
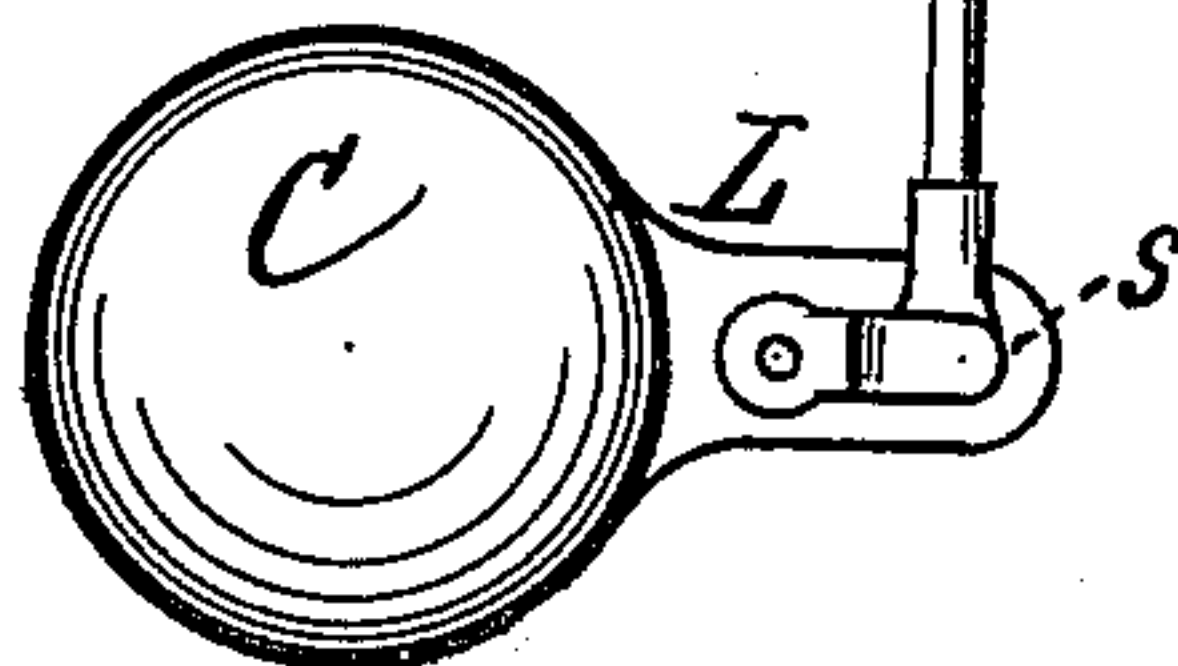
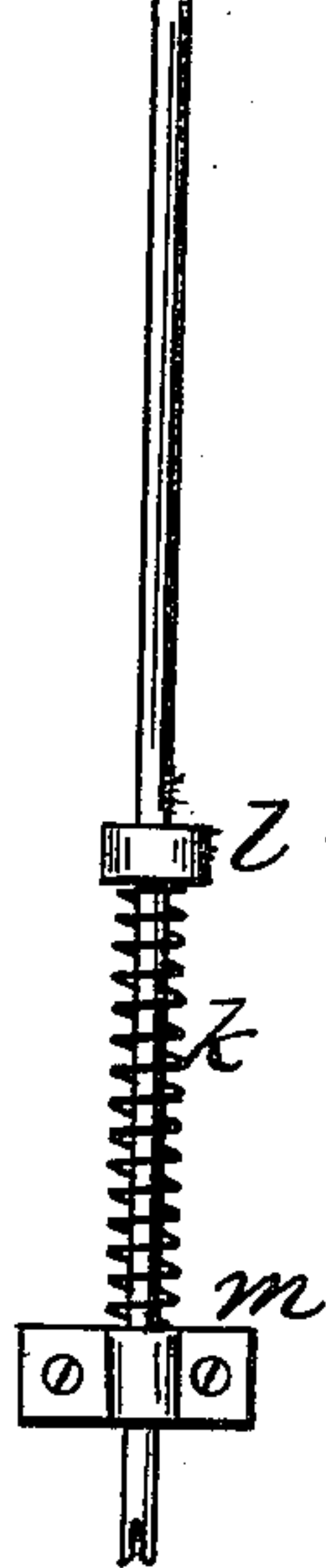


Fig. 3.



Witnesses.
Edwin B. Scott.
Louis Spahn

Inventor.
E. Hand,
per R. F. Osgood,
Atty.

UNITED STATES PATENT OFFICE

EKINS HAND, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF HIS
RIGHT TO CLARK D. PAGE, OF SAME PLACE.

IMPROVEMENT IN BURGLAR-ALARMS.

Specification forming part of Letters Patent No. **166,696**, dated August 17, 1875; application filed
October 9, 1874.

To all whom it may concern:

Be it known that I, EKINS HAND, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Burglar-Alarms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation, showing my improvement applied to a door. Fig. 2 is an enlarged view of the upper part of Fig. 1, showing the pawl drawn down and disengaged from the hammer. Fig. 3 is a perspective view of the crank and rod connection.

This improvement belongs to that class of burglar-alarms in which a bell is connected with the door, and is sounded upon attempt to open the door. Such devices are usually operated by the swinging of the door. I connect my alarm with the spindle of the door-knob, so that the alarm is sounded upon the attempt to turn the knob, and before the door can be released to swing.

The improvements will be fully hereinafter described and pointed out in the claims.

In the drawings, A indicates the alarm-bell, which is attached by means of the plate B to the door at any desired distance from the knob C. The alarm is struck by means of a hammer, D, which is pivoted at *a*, and has a tang or stem, *b*, projecting on the reverse side of the pivot. On the rear side of this tang is a pawl, E, jointed at *c* to the rod G, which extends to the knob. The pawl plays loose, like a latch, but is pressed up to the engagement with the tang by means of a spring, H, and on the upper end of the pawl is a hook, *d*, which catches over the tang, as shown in Fig. 1. Beneath this is a wedge-shaped cam, *f*, which, when the pawl is drawn down, strikes on a fixed stop, *g*, and throws the pawl backward out of engagement with the tang, as shown in Fig. 2. In the act of drawing down, however, the pawl draws upon the tang and elevates the hammer, and the latter, when released by the pawl, strikes upon the bell by means of the reacting spring *h*. When the operating-rod G is released the pawl is thrown

back to place again by the coiled spring *k*, which encircles the rod, and is held by a shoulder or stop, *l*, upon the bearing *m*. In returning to place the hook *d* of the pawl slips over and re-engages with the tang of the hammer, and the same is in condition for action a second time. In this arrangement of the loosely engaging and disengaging pawl consists the first feature of my invention. It differs from other devices in operating the hammer, and being thrown off from the engagement by one and the same movement downward, and then re-engaging by the simple reverse movement upward, thereby corresponding with the action of turning and releasing the knob, as will presently be described.

K is the shank or spindle of the knob, which operates the lock-work. It has upon its square part *n* a crank-arm, L, which fits loosely. As the spindle is turned the crank-arm is turned with it. On the outer end of the crank-arm is a crank-pin, *p*, and on this slips the end of the rod G, which has a hole, *r*, for the purpose. When in place on the crank-pin the end of the rod G is covered by a button, *s*, of the crank-arm, which keeps it from slipping off. By turning the knob in attempting to open the door it will be seen that the crank-arm will be correspondingly turned, and this will operate the rod G downward, and consequently sound the alarm. But the spindle of the knob cannot be turned sufficiently to draw the lock-catch from its keeper in the jamb, for the reason that a pin, *t*, on the rod G strikes down upon a fixed bearing, *v*, and stays the turning movement of the spindle as soon as the alarm is sounded, and before the lock-catch moves from the keeper. The device, therefore, serves as a lock as well as an alarm. When it is desired not to use the alarm, but to employ the knob in the ordinary way, the button *s* is turned down, the end of the rod disengaged from the crank-pin, and the rod then placed over a pin or stay, *w*, which clears it of the crank, and holds it out of the way. In this arrangement of the crank-arm fitting over a square bearing of the knob-spindle, and combined with a rod extending to the bell, consists the second feature of my invention. By this means the alarm is

sounded on the initial movement of the knob, and before the door can be opened, and the device also constitutes a lock in itself.

The crank and rod might be connected with the bell in various ways, so as to sound the alarm on the turning of the knob; but the connection of the same with the pawl E is simple and effective. By the use of this pawl, pivoted only to the upper end of the rod G, the reciprocating action of the rod is best accommodated, and the action is alternate—the effect being produced without any complication of mechanical parts, such as are generally employed in burglar-alarms.

Having thus described my invention, what I claim as new is—

1. The combination, with the hammer D and rod G, connected with the spindle of the door-knob, of the sliding pawl E pivoted to

the end of the rod, and provided with the hook *d* and cam *f* for alternately engaging with and disengaging from the tang of the hammer, as herein shown and described.

2. The combination, with the knob-spindle K, of the crank-arm L and rod G, the latter connecting with the hammer-lever, and having a pin, *t*, and stop *v*, the whole constructed to operate, substantially as described, whereby the knob sounds the alarm in the initial movement, but is stopped before withdrawing the latch-bolt from its keeper, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EKINS HAND.

Witnesses:

R. F. OSGOOD,
EDWIN B. SCOTT.