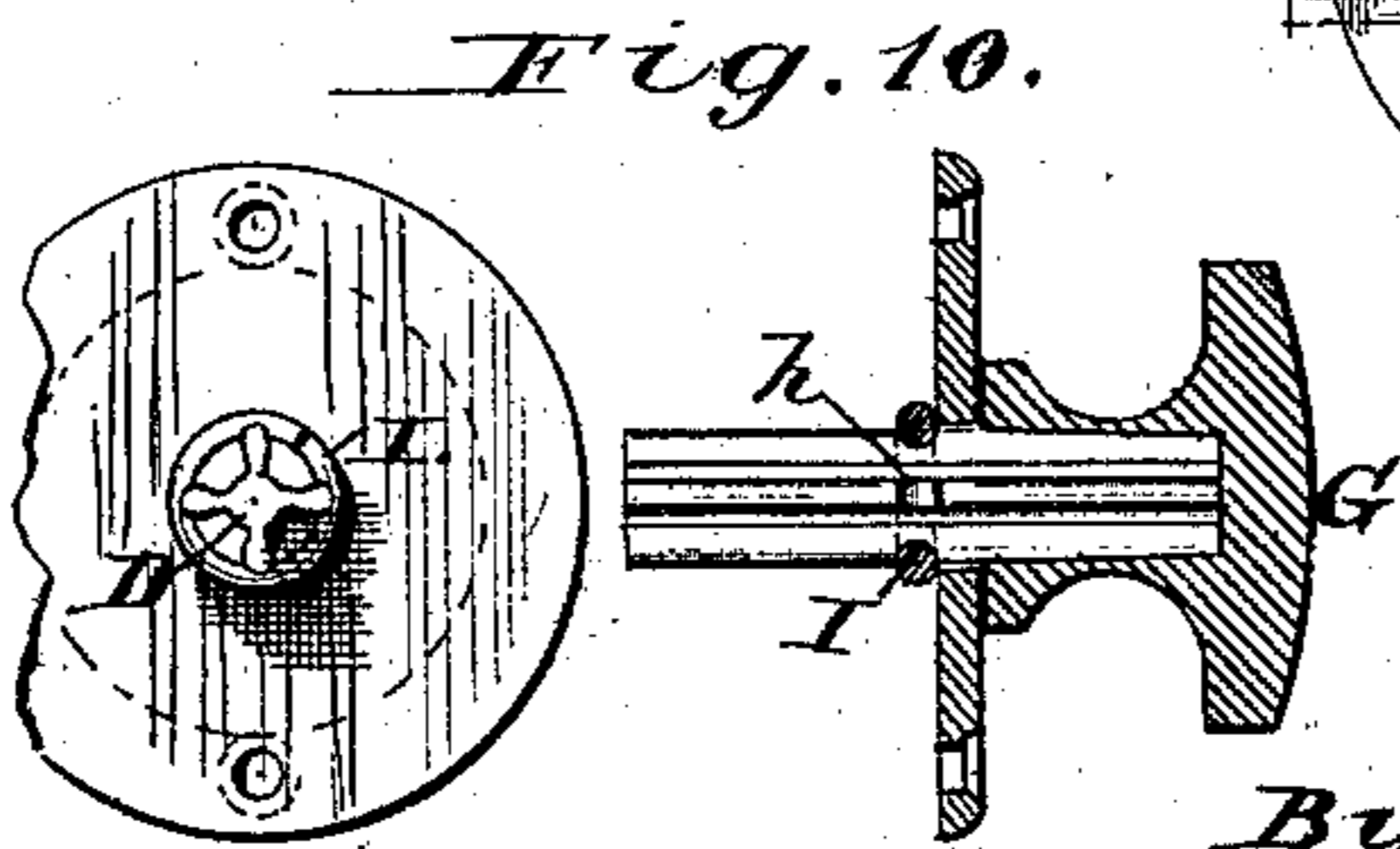
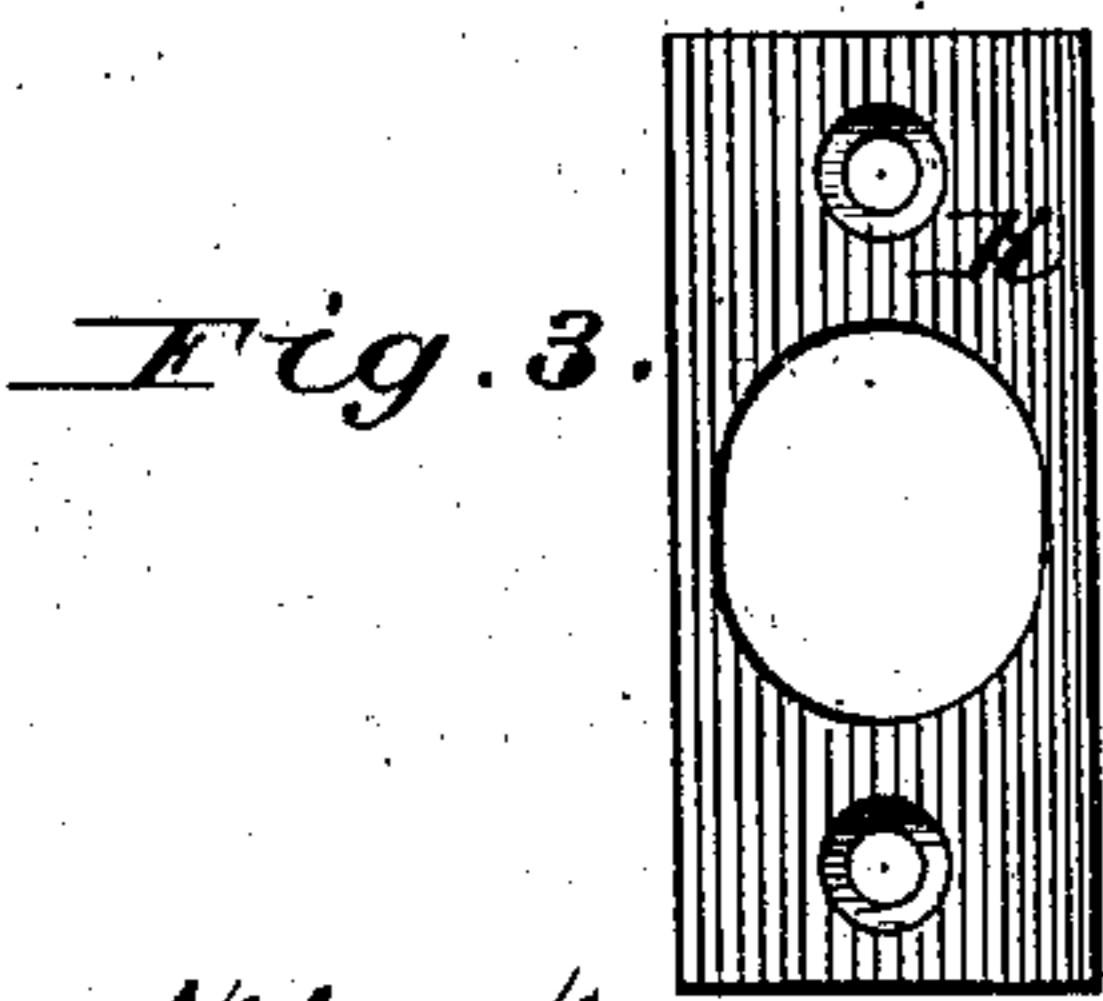
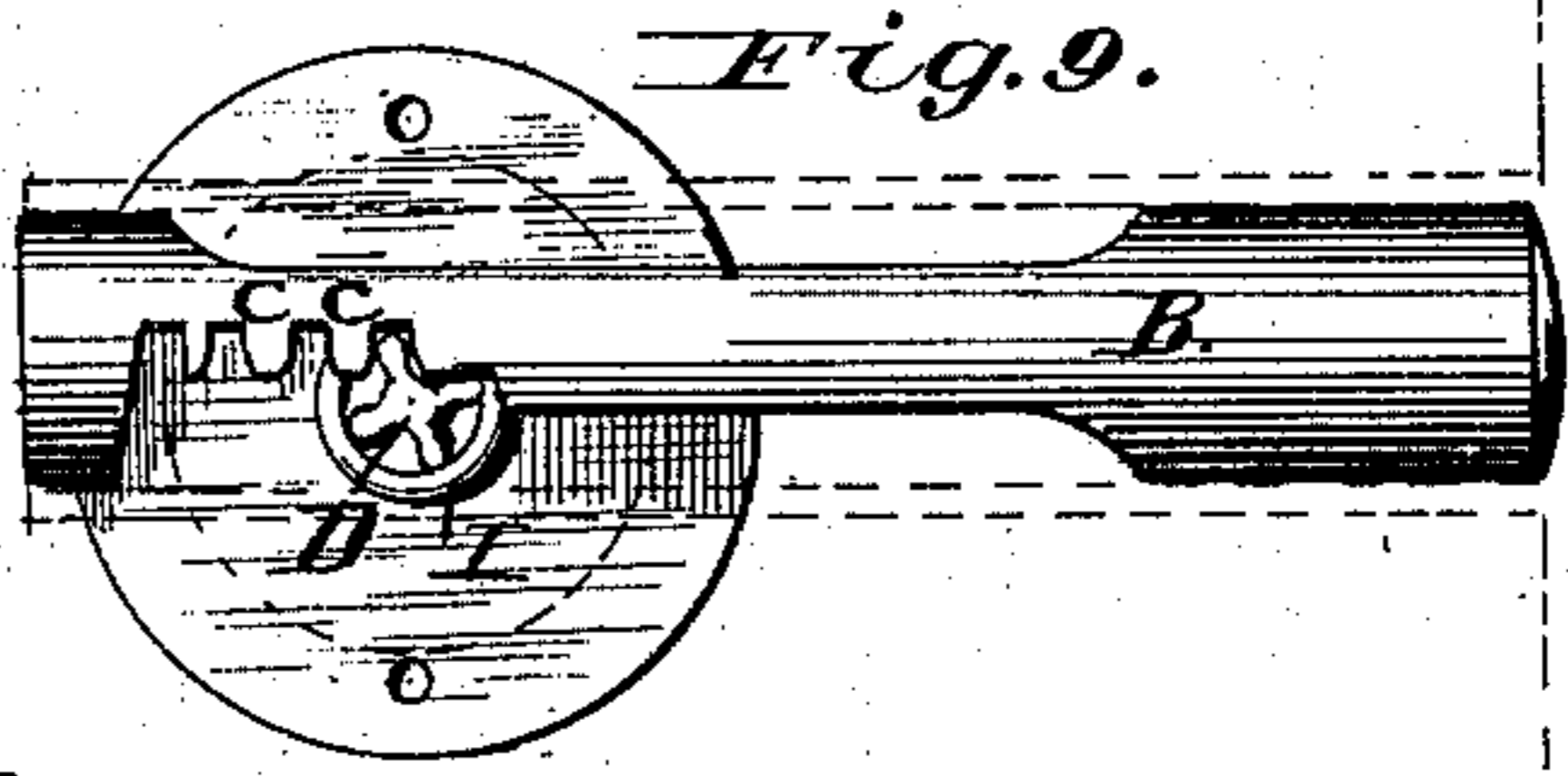
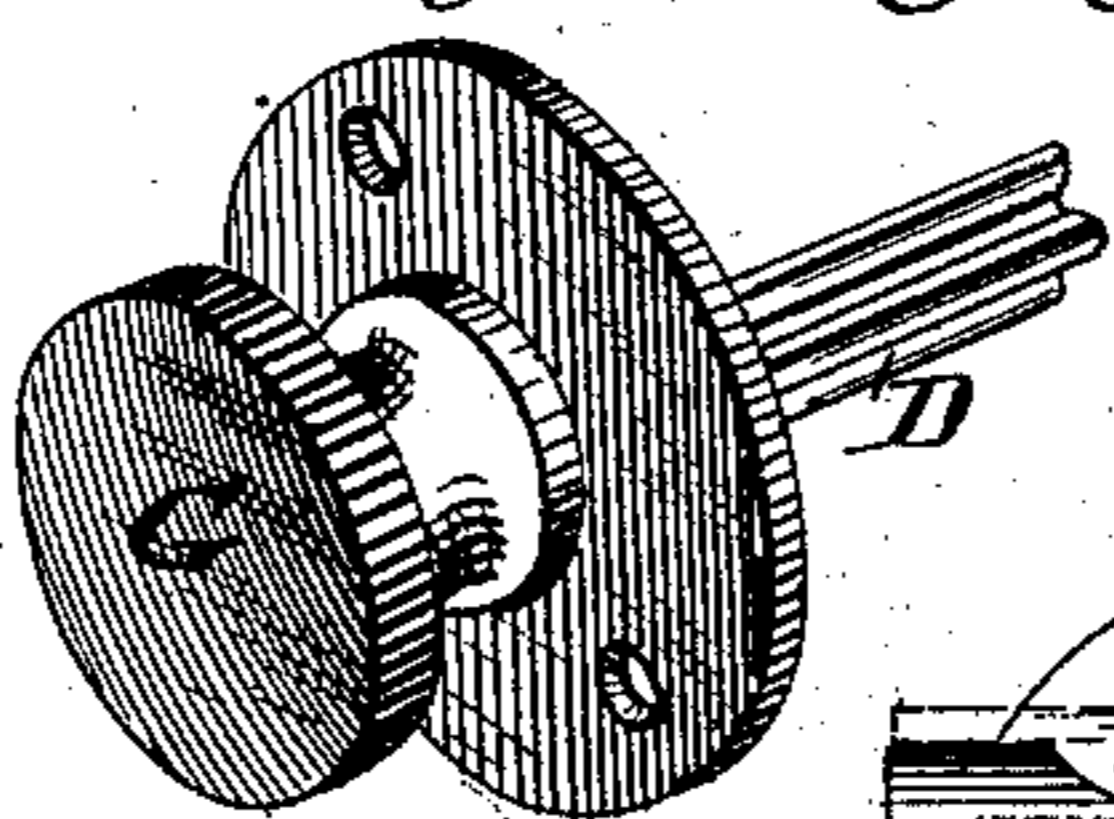
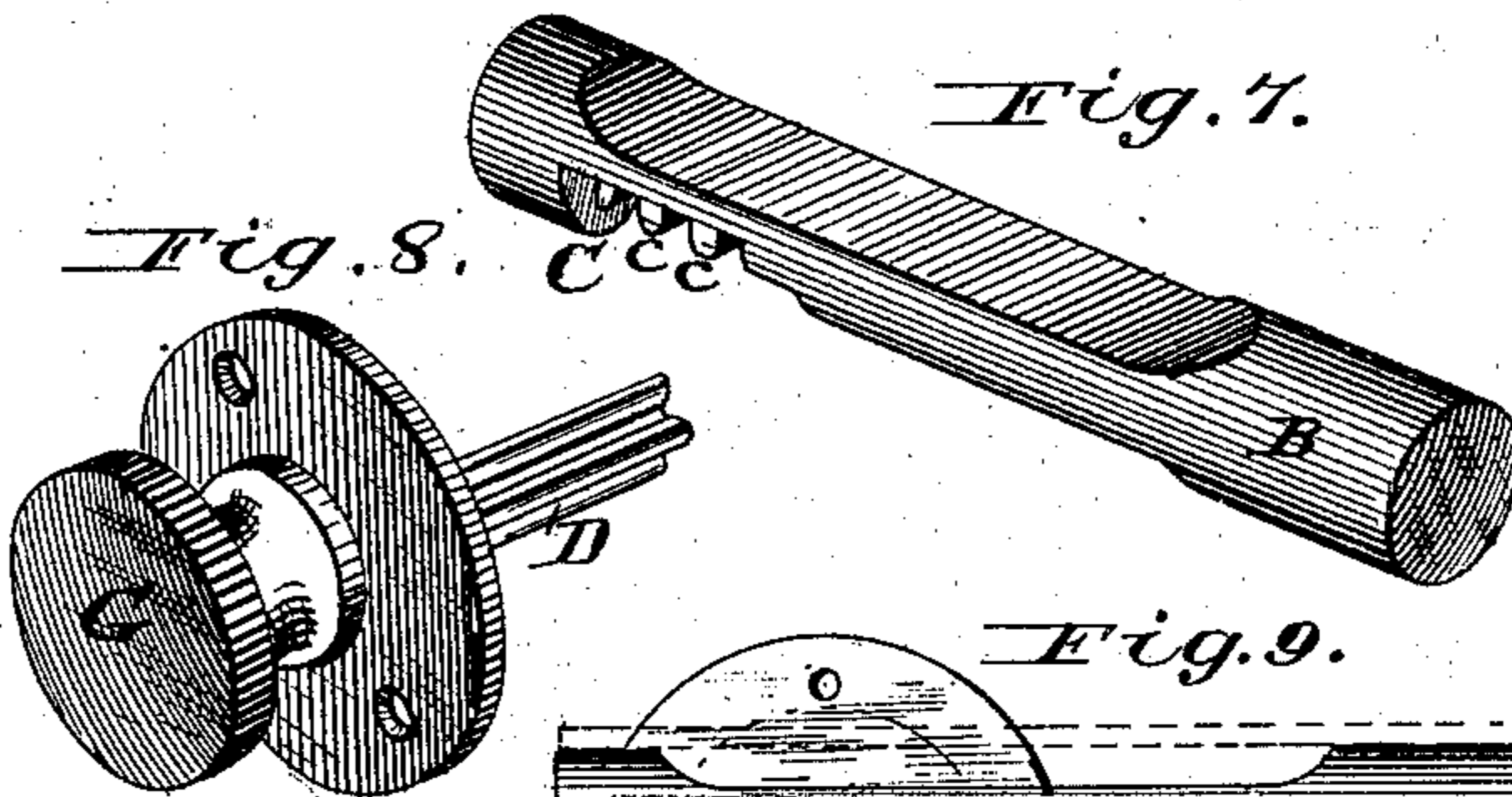
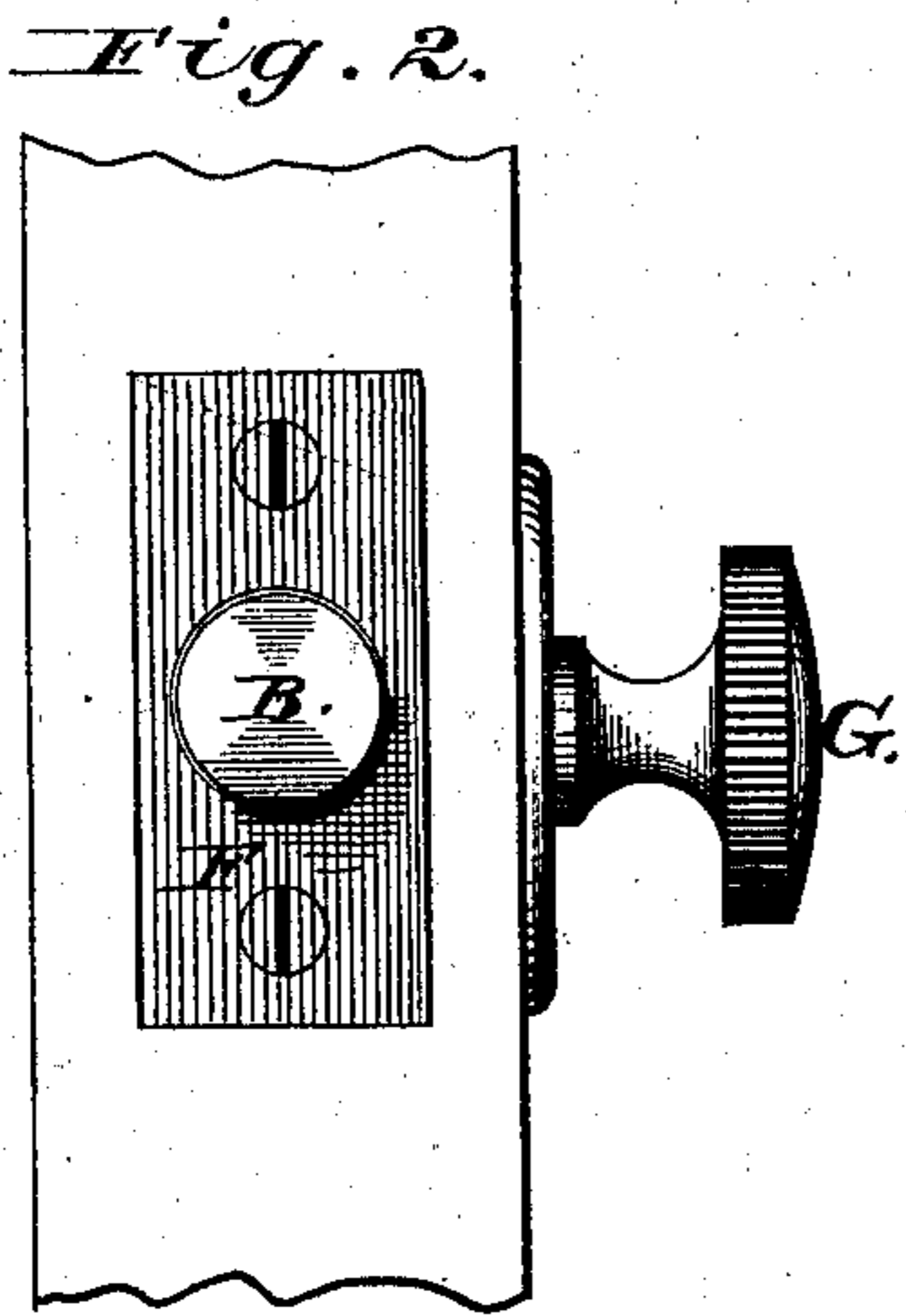
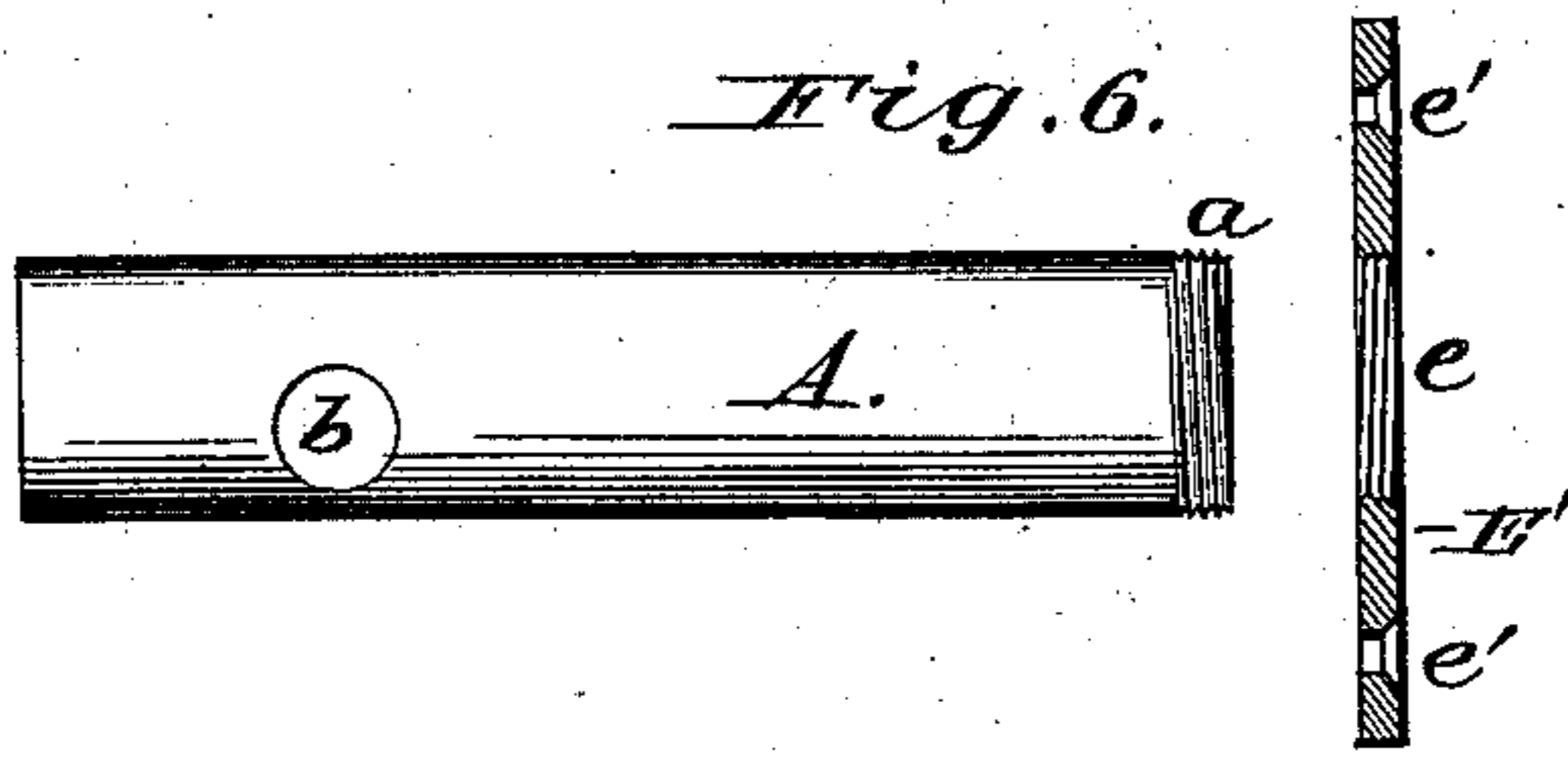
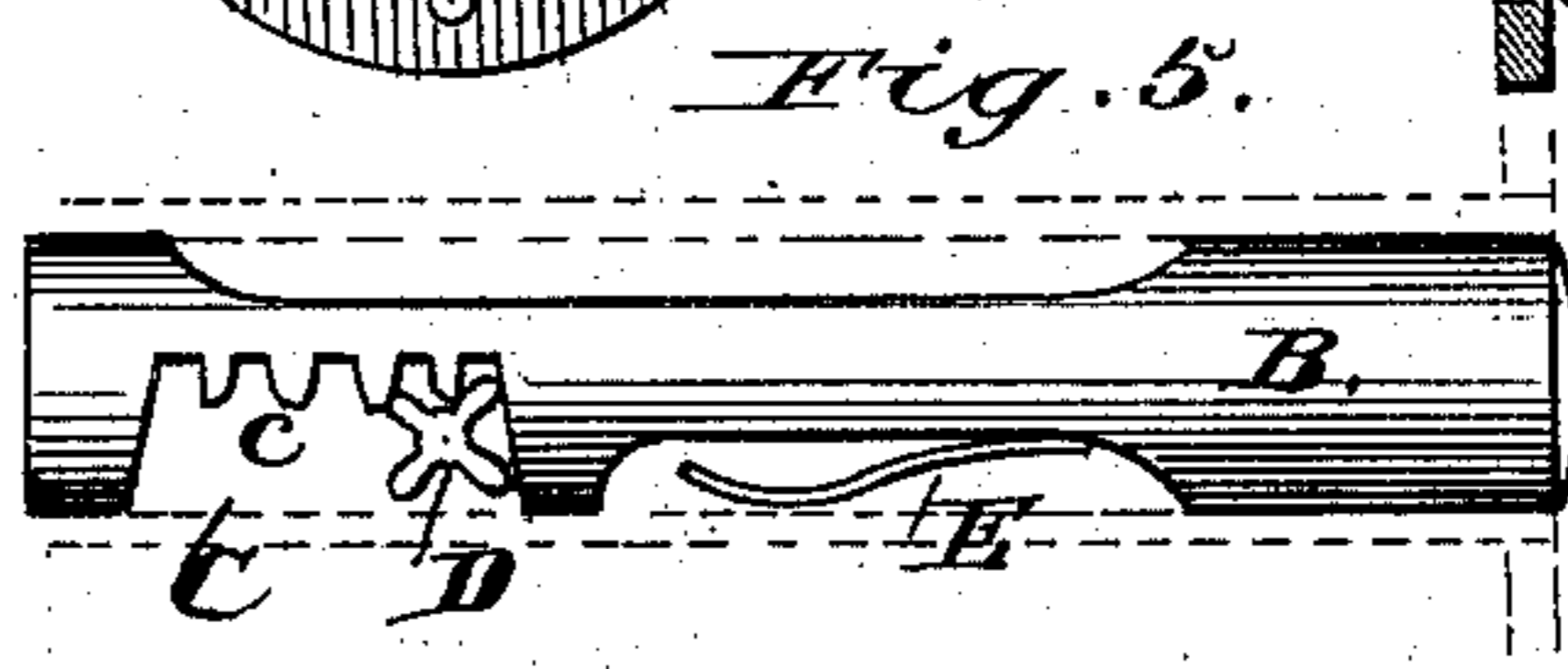
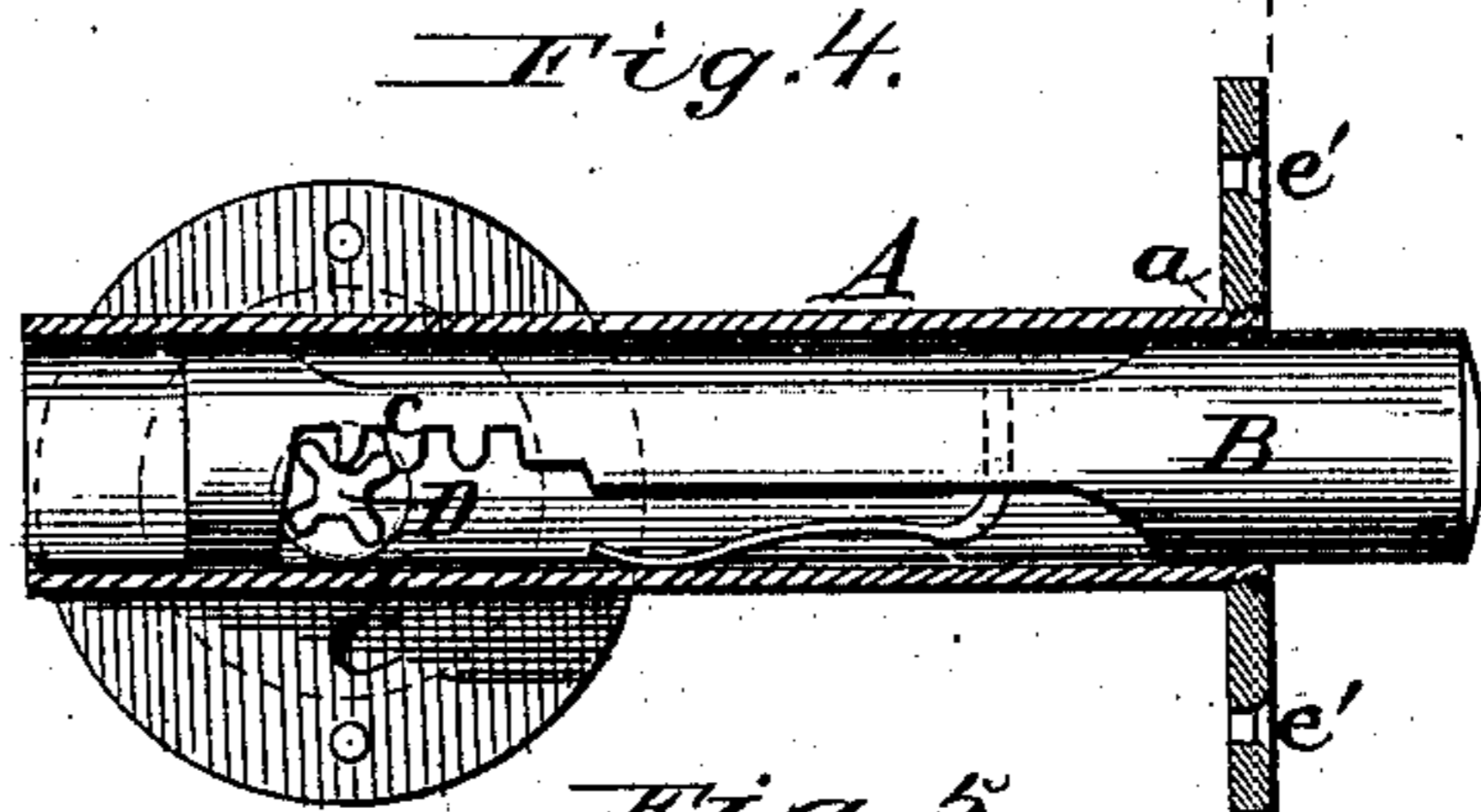
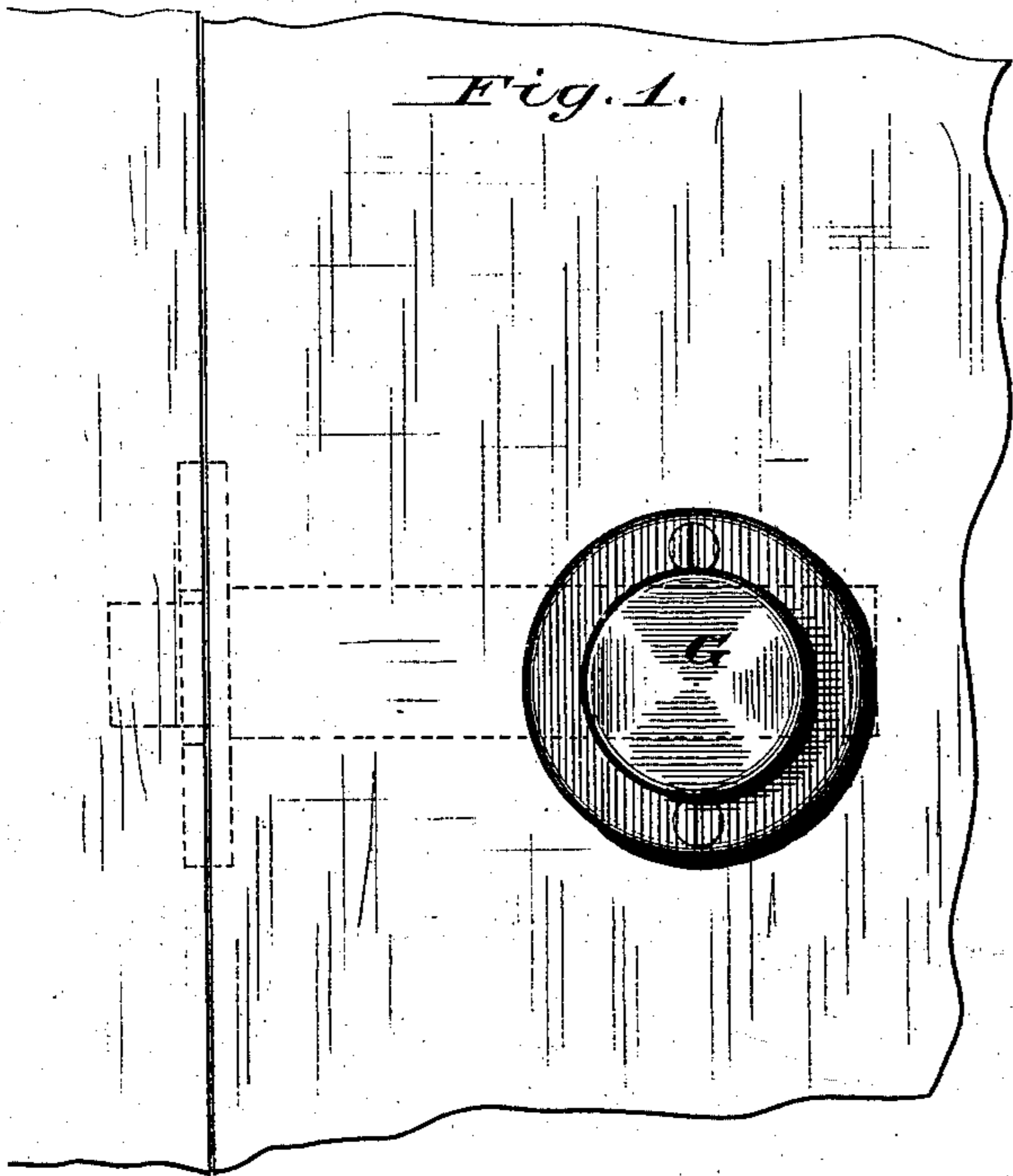


J. SARGENT.
DOOR-BOLTS.

No. 194,000.

Patented Aug. 7, 1877.



Attest:
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Attorney.

UNITED STATES PATENT OFFICE.

JAMES SARGENT, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN DOOR-BOLTS.

Specification forming part of Letters Patent No. 194,000, dated August 7, 1877; application filed July 12, 1877.

To all whom it may concern:

Be it known that I, JAMES SARGENT, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Door-Bolts, of which the following is a specification:

This invention relates to an improved fastening device for doors and other like purposes, in which the bolt is projected and retracted by means of a pinioned key-spindle, operating upon a series of ratchet-teeth formed in a recess in the bolt, the bolt being arranged to reciprocate in a tubular barrel or suitable guide, with apertures on opposite sides forming bearings for the spindle-key.

The invention has for its object to provide for the locking of the bolt either in a projected or retracted position, so that it cannot be shifted by any pressure applied directly to the side or end of said bolt; to provide for securing the handle to the spindle-key, and, incidentally, for the convenient attachment of the tubular barrel or guide to the plate or fastening attachment, by means of which the device is secured in the door.

To these ends the invention consists, first, in providing the bolt with a ratchet or series of teeth formed in a recess therein, either one or both of the terminal teeth of said ratchet or series of teeth being cut away in such manner as to cause one of the teeth of the pinioned spindle to bear against the next succeeding tooth of the ratchet or series of teeth when the bolt is fully projected, said terminal teeth being arranged at such an angle as to prevent the bolt from being retracted by any direct pressure upon the side or end of the same; and, second, in constructing the spindle or key with pinion-teeth extending from one extremity to the other, whereby a pinioned spindle is formed for engaging with the rack of the bolt for projecting and retracting it; and a keyed bearing is likewise formed for the handle, which is thereby secured to the spindle, so as to prevent said handle from turning thereon, all as hereinafter more fully described and claimed.

In the drawings, Figure 1 represents an elevation of a portion of a door with my improved bolt attached thereto. Fig. 2 represents an elevation of a portion of the edge of a door,

showing my improved bolt in position. Fig. 3 represents a detached view of the keeper. Fig. 4 represents a longitudinal section of the tube or guide in which the bolt works, showing the bolt in elevation in a locked position therein. Fig. 5 represents a detached view of the bolt. Fig. 6 represents detached views of the tube or guide in which the bolt works. Fig. 7 represents a detached perspective view of the bolt. Fig. 8 represents a detached view of the spindle-key and the escutcheon. Fig. 9 represents an elevation of the bolt and spindle-key, showing the bolt in a retracted position. Fig. 10 represents a detached elevation and longitudinal section of the escutcheon and spindle.

The letter A represents a tubular barrel, guide, or support, constructed of metal or other suitable material; and B a bolt, constructed with cylindrical ends, adapted to reciprocate back or forth in said tubular barrel, guide, or support.

The bolt is provided with a recess, C, formed, preferably, at the rear end of the same, although it may be formed at some other portion, said recess being provided with a ratchet or series of teeth, *c*.

The letter D represents a pinioned spindle or key, by means of which the bolt is projected and retracted.

The recess C is of a depth equal to the diameter of the spindle or key D, in order to enable the spindle to be journaled in the apertures *b b*, formed directly in the sides of the tubular barrel or guide A, in such position as to properly gear with the ratchet or series of teeth in the bolt.

One or both of the terminal teeth of the ratchet are cut away on one side, or constructed of such relative size or shape to the other teeth, and to the teeth of the pinion key or spindle, as to throw the said terminal teeth out of bearing against the pinion formed on the spindle or key when said bolt is fully retracted, and cause the next succeeding tooth of the ratchet to bear directly against one of the teeth of the pinioned key or spindle, which lies at such an angle in relation to the said tooth of the bolt as to hold said bolt either in its projected or retracted position, as the case may be, and lock or dog it when projected

against any strain or pressure applied to the side or end of that portion of the bolt which projects from the case.

The letter E represents a spring secured to the bolt, which bears against the interior of the tubular barrel, guide, or support A, and aids in regulating, by frictional contact, the movement of the bolt therein.

The tubular barrel, guide, or support A is constructed with an external male screw, *a*, at its forward end, which engages in a similar female screw-thread, *e*, in the plate E', which is provided with countersunk apertures *e'* for the insertion of screws, by means of which the tubular barrel or support is secured in a mortise in the edge of the door.

The spindle or key D is constructed in the form of a pinion, the teeth of which extend from end to end, and the knob or handle G is formed with a recess corresponding to the shape of the teeth, and is forced upon said spindle, the teeth of the same serving to key it securely thereon, and prevent it from becoming loose, without the aid of other fastening devices. The teeth of said spindle, just inside of the escutcheon, are recessed, as shown at *h*, and in said recesses is secured a collar, I, by means of which the spindle is confined in the handle, and held in its bearings when the device is secured to a door.

The device is secured in the edge of a door, in a suitable mortise or recess formed therein, by means of the screws inserted through the plate F, a proper recess being formed in the frame of the door over which is secured a keeper, K, Fig. 3. The spindle is inserted through an aperture in the face of the door formed directly opposite the position of the apertures *b* when the tubular barrel, guide, or support is in position, and is held in its bearings by means of the escutcheon, which is secured to the door in the usual manner.

The operation of my invention will be readily understood in connection with the above description. The bolt is projected and retracted by simply turning the pinioned spindle in the proper direction. When fully pro-

jected the terminal teeth of the ratchet, which are cut away, are thrown out of bearing with the teeth of the spindle, bringing the succeeding tooth against the end of one of the teeth of the spindle, as shown in Fig. 4, which will be in such position in relation to said tooth as to lock and hold the bolt against any strain or pressure brought directly upon the same, so as to prevent it from being retracted except through the medium of the spindle.

In order to provide for greater security against opening from the outside, the tubular barrel may be provided with but one aperture *b* for the pinioned spindle, thus making it impossible to project or elevate the bolt from the outside by means of pliers or any other similar instrument.

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

1. A lock-bolt provided with a ratchet or series of teeth, *c*, in combination with a pinion, spindle, or key, D, one or both of the terminal teeth of said ratchet or series of teeth being cut away, so as to throw said terminal teeth out of bearing against the teeth of the spindle, and cause the succeeding tooth of the ratchet to bear against one of the spindle-teeth, substantially as described, whereby the bolt is held in a locked or dogged position against any pressure or strain applied directly thereto through means other than the spindle, as set forth.

2. In combination with the bolt B, having a rack arranged within a suitable casing, the spindle or key D, formed with pinion-teeth extending from end to end of the same, for receiving the knob or handle G attached thereto, and to operate the bolt, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

JAMES SARGENT.

Witnesses:

JAMES L. NORRIS,

JAMES A. RUTHERFORD.