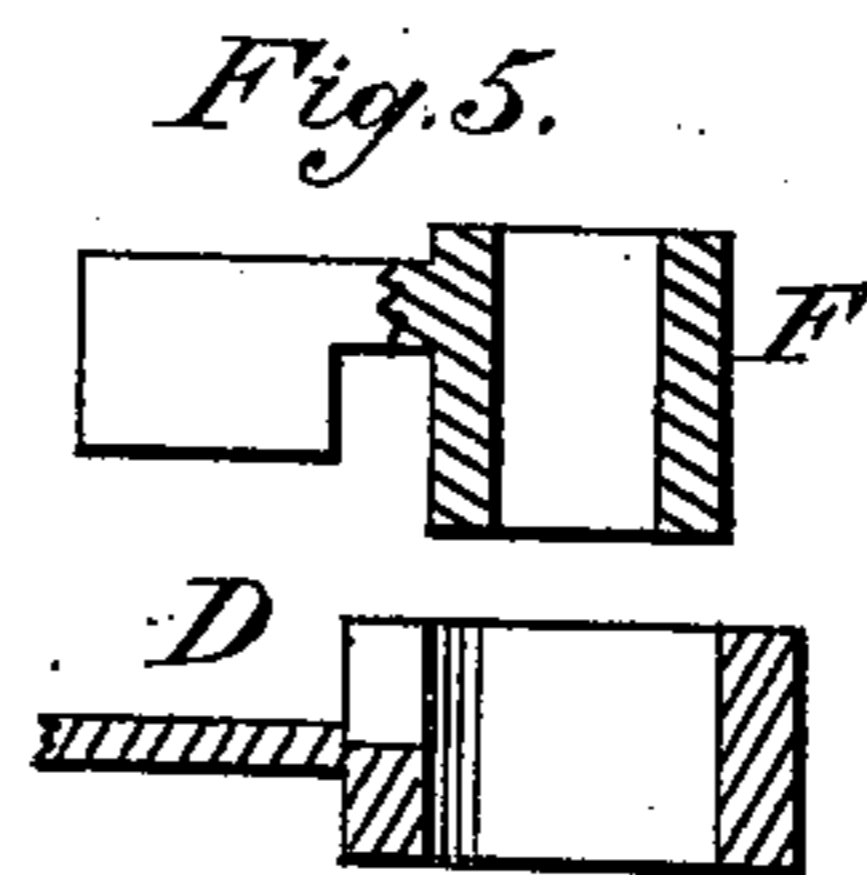
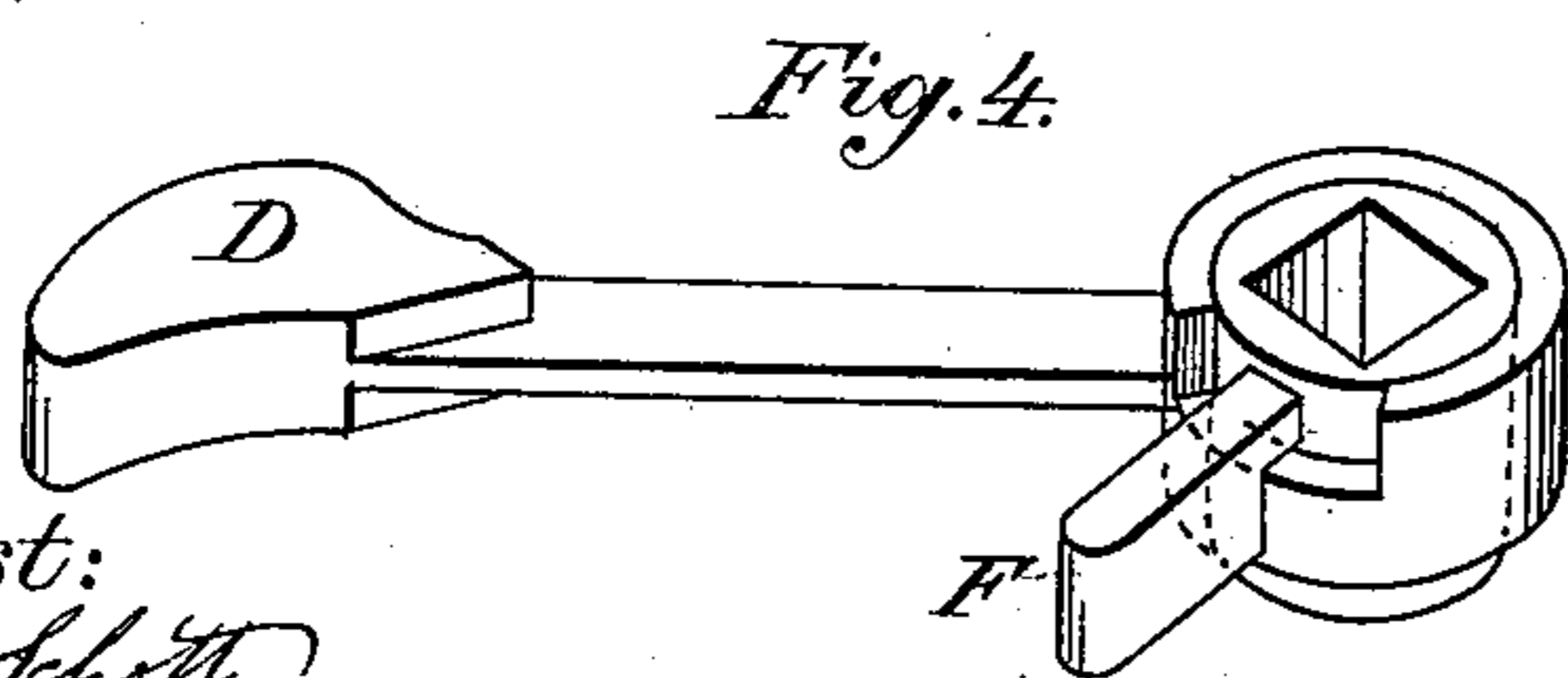
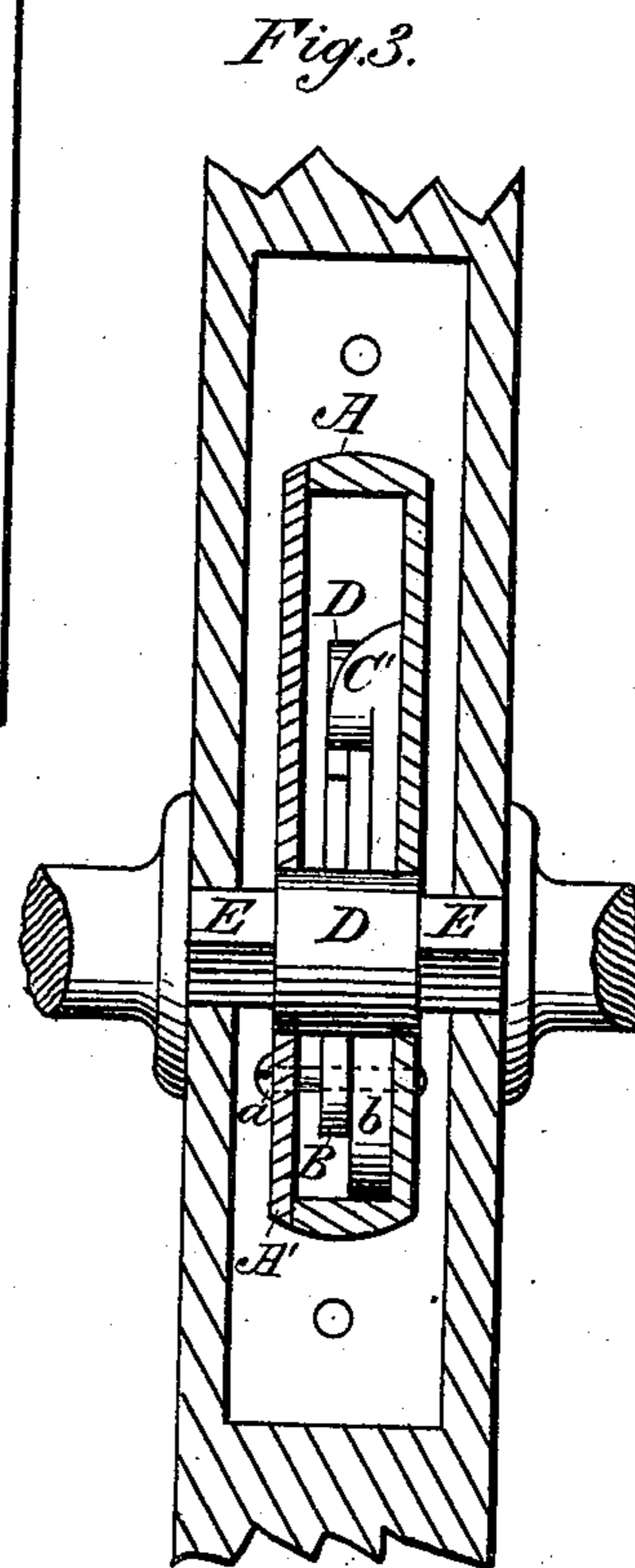
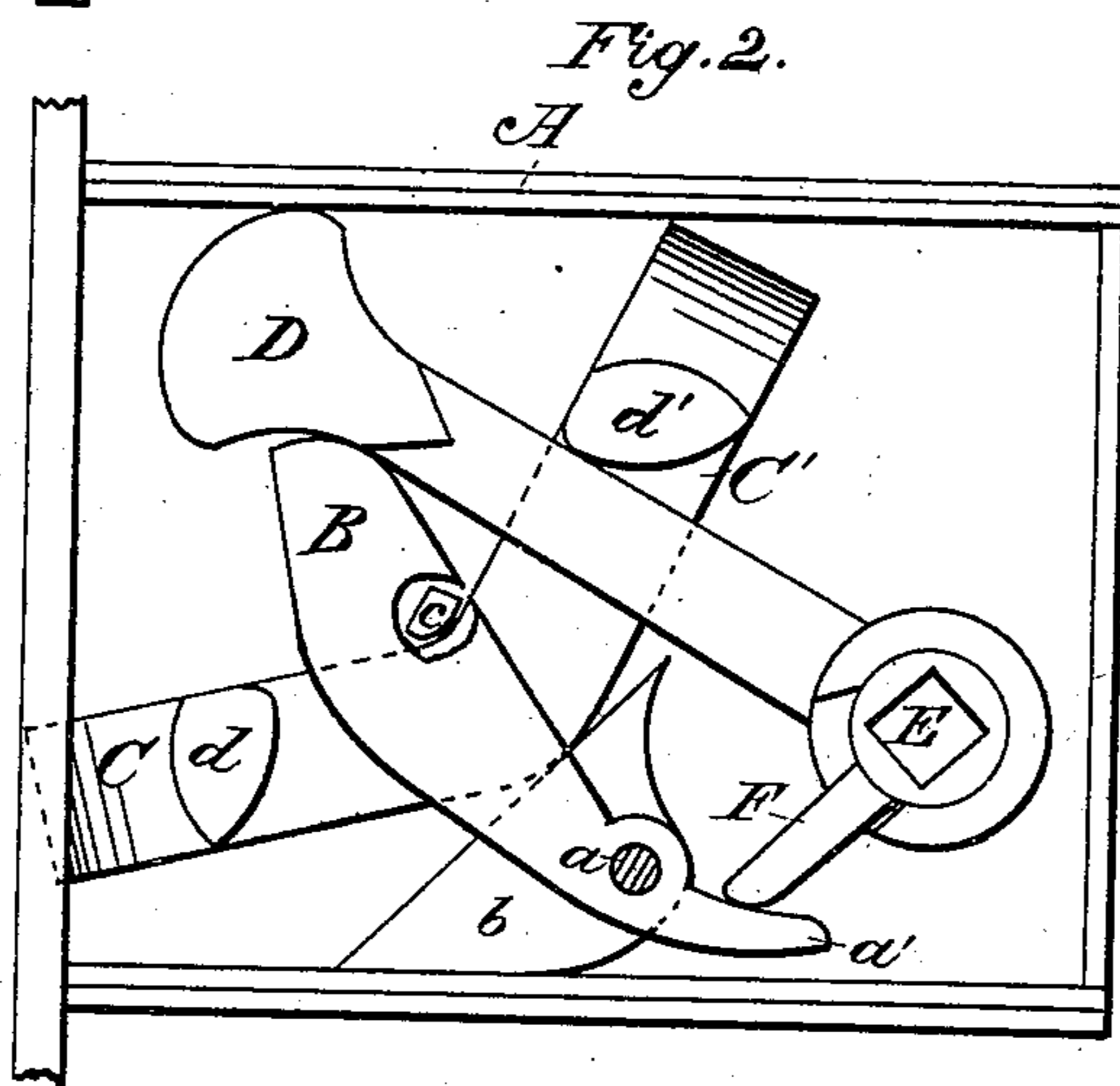
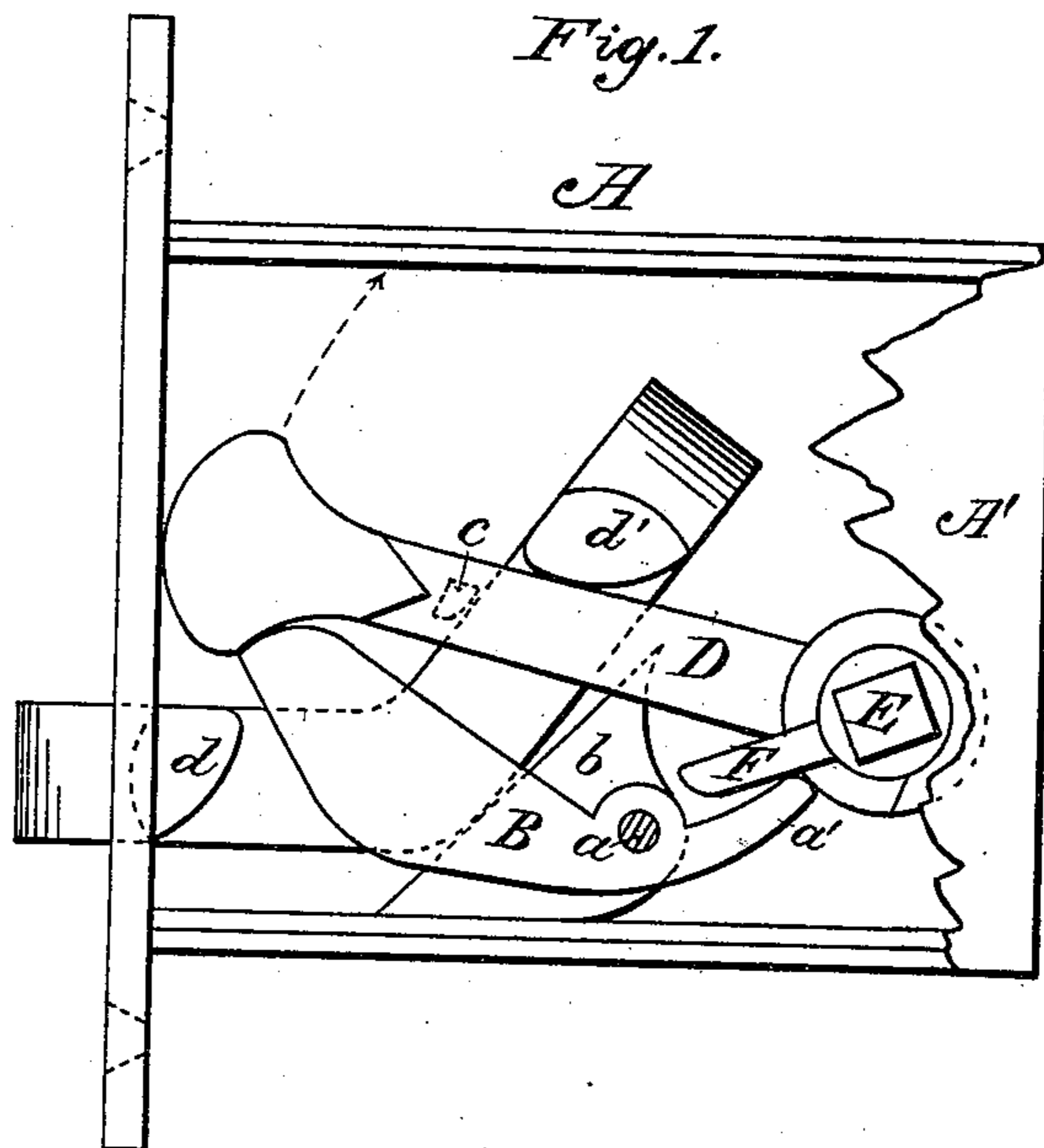


D. C. GEER.
Latch.

No. 207,654.

Patented Sept. 3, 1878.



Attest:
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UNITED STATES PATENT OFFICE.

DON CARLOS GEER, OF WARREN, VERMONT.

IMPROVEMENT IN LATCHES.

Specification forming part of Letters Patent No. **207,654**, dated September 3, 1878; application filed August 1, 1878.

To all whom it may concern:

Be it known that I, DON CARLOS GEER, of Warren, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in Knob-Latches; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 letters of reference marked thereon, which form a part of this specification.

The object of this invention is to produce a latch for doors that shall be perfect in its workings without using springs of any kind to operate the bolt, by substituting in place of the springs a system of weighted levers, which cause the latch to act by gravitation, as will be hereinafter fully explained.

Figure 1 represents the case and latch with a portion of the back plate removed, showing the position of the parts when the end of the bolt is protruding from the case, as when a door to which it is applied is shut. Fig. 2 shows the case with the back plate wholly removed, and representing the bolt and its operating mechanism in the position they occupy when the bolt is withdrawn, as in opening the door to which it is applied. Fig. 3 is a section of a door with the latch attached, and Figs. 4 and 5 are detail views, showing the construction of the weighted lever and operating-lever.

In the drawing, A represents the case, which is of the form commonly used for mortise locks and latches, one side of the case, A', being made removable and held in place by a screw, *a*, which also forms the pivot upon which the lever B oscillates. The bolt C is provided with an upwardly-projecting part, C', which is placed at an angle of about thirty degrees to the part C, the elbow or outer angle formed by this construction resting upon the diagonal guide or slide *b*, which forms a part of or is attached to the case. An additional guide, *c*, is placed above the bolt, leaving room for the latter to move freely between them. A weighted lever, D, is pivoted upon the latch-spindle E, its outer heavy end resting upon the lever

B, and both of them occupying the space upon the bolt between the projections *d* and *d'*. Upon the spindle E is also placed the operating-lever F, so fixed as to rotate with the spindle, and constructed and arranged with relation to the weighted lever D, as is clearly shown in Figs. 4 and 5 of the drawings.

The lever B has a rear extension, *a'*, against which the lever F presses when the spindle is turned in one direction, thus causing the opposite end of B to strike the weighted lever D, raising it, and, by means of the upper projection *d'* of the bolt, raising the latter and drawing it wholly within the lock. If the spindle be rotated in the opposite direction the lever F will strike the lever D, raising it, and consequently withdrawing the bolt, which, so soon as it is relieved from the action of the operating-lever, is caused by the weighted levers acting upon the lower projection *d* and its own gravity to slide down the incline *b*, thus projecting the bolt from the face of the door. This latch, it will be seen, is formed with the smallest number of parts possible to use and produce a perfect-working latch, and with the exception of the screw is wholly of cast metal, thus reducing its cost to a minimum, and by dispensing entirely with springs a great source of annoyance caused by breakage or loss of their resilient properties is avoided.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. The spindle E, carrying the fixed operating-lever F, in combination with the lever B, pivoted to the case, and lever D, as and for the purpose specified.

2. The sliding bolt C, provided with the projections *d* and *d'*, in combination with the levers B D and their operating devices, as set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

DON CARLOS GEER.

Witnesses:

HORACE W. LYFORD,
JOHN HENRY SENTER.