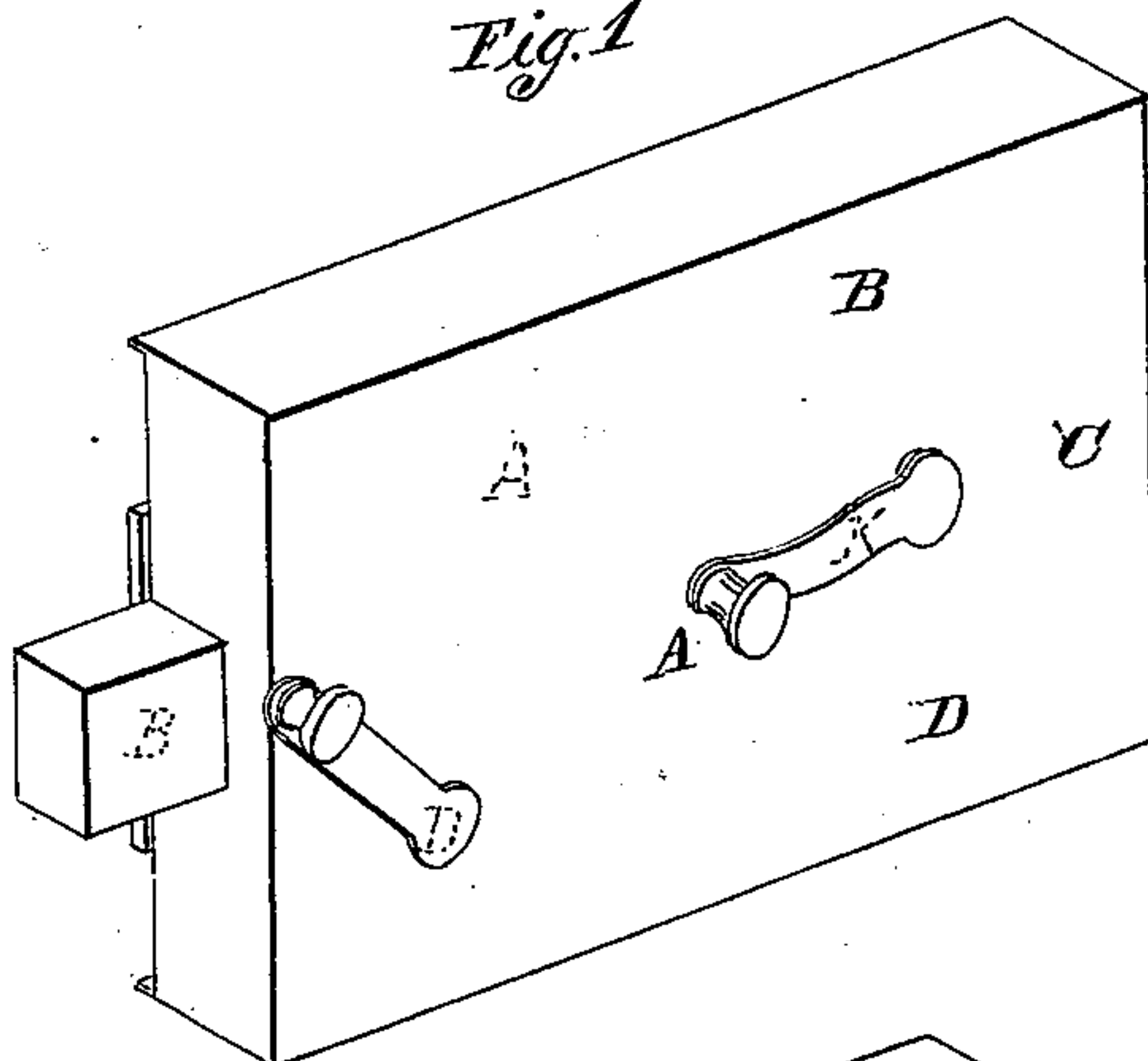


*Lock and Bolt.*

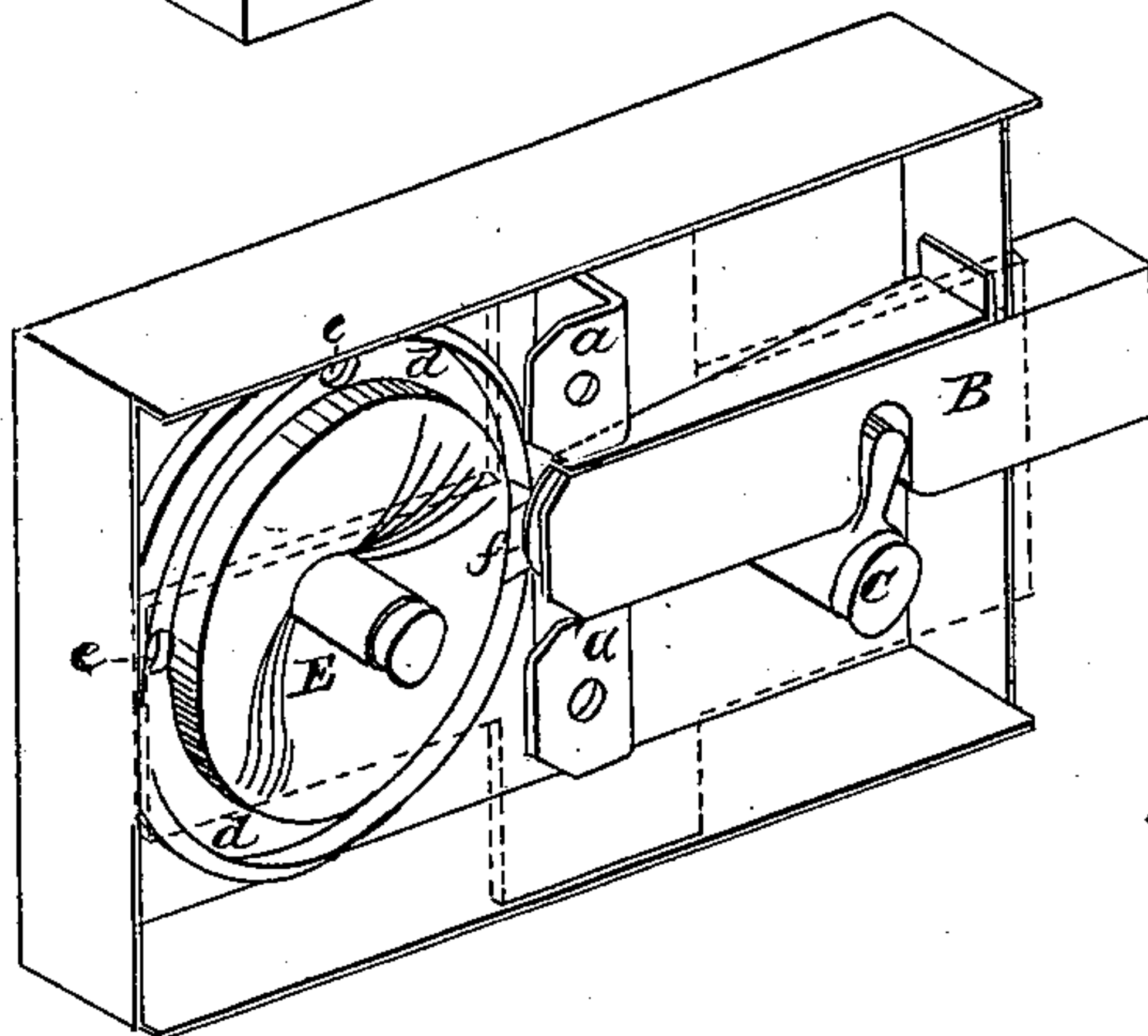
*№ 76,671.*

*Patented Apr. 14, 1868.*

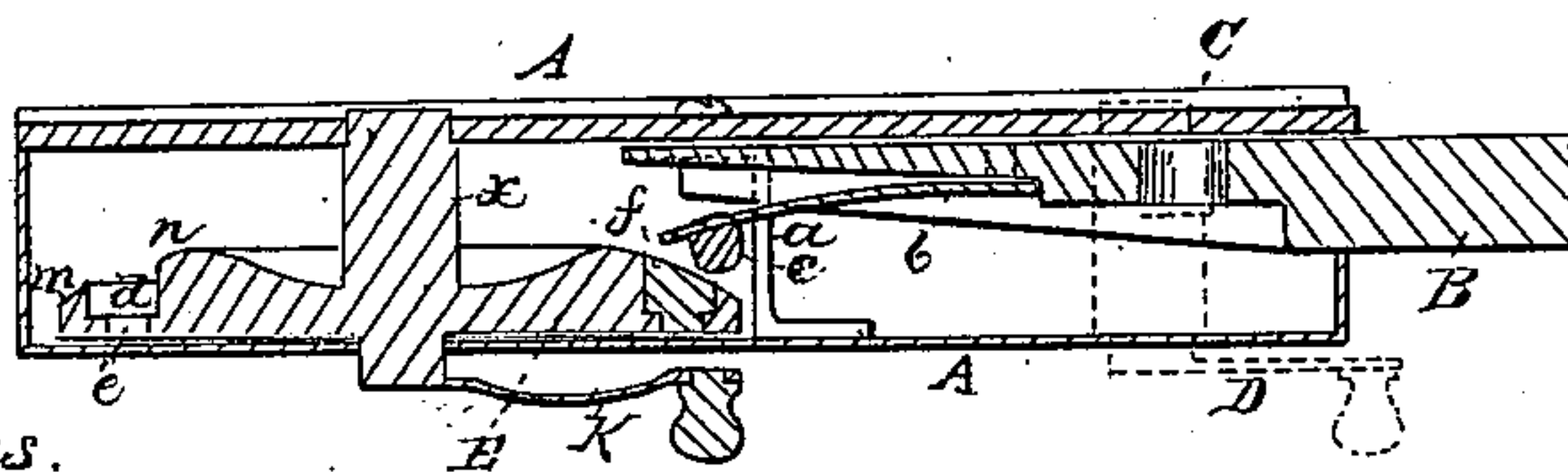
*Fig. 1*



*Fig. 2*



*Fig. 3*



Witnesses.  
 Inaullus Bailey  
 C. S. Page jr.

Inventor:  
Charles Sulzmann  
by J Pollock  
his atty.

# United States Patent Office.

CHARLES SULZMAN, OF WATERFORD, NEW YORK.

*Letters Patent No. 76,671, dated April 14, 1868.*

## IMPROVEMENT IN DOOR-BOLTS AND LOCKS.

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

### TO WHOM IT MAY CONCERN:

Be it known that I, CHARLES SULZMAN, of Waterford, in the county of Saratoga, and State of New York, have invented certain new and useful Improvements in Bolts and Locks; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view from the front of my improved bolt or lock.

Figure 2 is a like view from the rear side, showing the general arrangement of the interior parts.

Figure 3 is a longitudinal vertical section through the centre of the bolt-case, bolt, and its operative mechanism.

My invention has for its object to produce a bolt or lock of simplified construction and arrangement, and one which can be picked or unlocked with difficulty, unless by one acquainted thoroughly with its organization.

The bolt, as shown in the drawings, consists of a case, A, in which the bolt proper, B, slides, supported in the usual aperture in the end of the case, and between two ways or guides, *a a*. The rear end of the bolt is bevelled or recessed, so as to admit a spring, *b*, carrying at its free end a locking-pin, *c*. The bolt is moved forward and backward by means of a key or tongued arbor, C, which is operated from the outside of the case by a crank or handle, D. Near the other end of the case, and so as to occupy a proper position in relation to the locking-pin *c*, is a grooved wheel or disk, E, the shaft or axis *x* of which is supported in suitable bearings in the bolt-case. In the upper face of the wheel, (which has a curved or undulating surface, as shown in figs. 2 and 3,) and near its circumference, is formed an annular groove, *d*, whose bottom may be pierced with a series of holes or sockets, *e*. In one of these sockets a bridge or stud, *f*, is inserted, so that its face shall be flush with that of the disk, and lie in the plane of its curve. This bridge can be removed and detached, so as to be set in any one of the sockets *e*, as desired.

The arrangement of the wheel with relation to the bolt is such that when the bridge *f* is in a line with or in the plane of motion of the bolt, and the latter is turned back, or retracted within the case by the action of the key C, the locking-pin *c* will ride over the bridge, and will be received into the concave or depressed portion of the face of the wheel immediately surrounding the axis *x*. When, on the contrary, the wheel is turned by means of a crank, K, or other suitable device for operating the shaft *x*, so as to carry the bridge out of the line of movement of the bolt, the locking-pin *c*, thrown down by the action of its spring, will (when the bolt is moved back by means of the key,) ride over the bevelled part, *m*, between the groove and the periphery of the wheel, and will then drop down into the groove, where it will be held by its spring, bearing against the shoulder *n*, so as to prevent the further retraction of the bolt. By this means the latter may, at pleasure, be held firmly and securely in position, either projected from or withdrawn within the case.

The device shown in the drawing is a simple arrangement, adapted for use as a door-bolt. When the wheel-crank K is in line with the letter A, the bolt can be retracted. If the bridge be set in any other one of the holes *e*, the crank must, of course, be turned so as to cover the letter B, C, or D, corresponding to the position of the bridge on the wheel within. It will be seen that by multiplying the number of these wheels, by providing the bolt with a correspondingly-increased number of springs and locking-pins, a lock operating on the principle of a permutation lock will be produced. The combinations can be changed by shifting the bridges from one socket *e* to another, and there may be as many of these sockets in each wheel as deemed expedient. The lock and wheel or disk can, of course, be operated by ordinary keys, or any other suitable devices, instead of by the cranks referred to.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the sliding bolt and locking-pin, and its actuating-spring, of the grooved wheel or disk, and bridge which it carries, arranged to operate in connection with the bolt, substantially in the manner and for the purposes shown and set forth.



2. In a bolt or lock, such as described, I claim providing the grooved wheel or disk with a bridge or stud, capable of being removed from and adjusted to any one of the sockets formed in the annular groove of the said wheel, substantially as and for the purposes herein shown and specified.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

CHARLS SULZMAN.

Witnesses:

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JOHN ROE.