

(Model.)

O. W. LUNDHOLM.  
LOCK.

No. 411,994.

Patented Oct. 1, 1889.

Fig. 1.

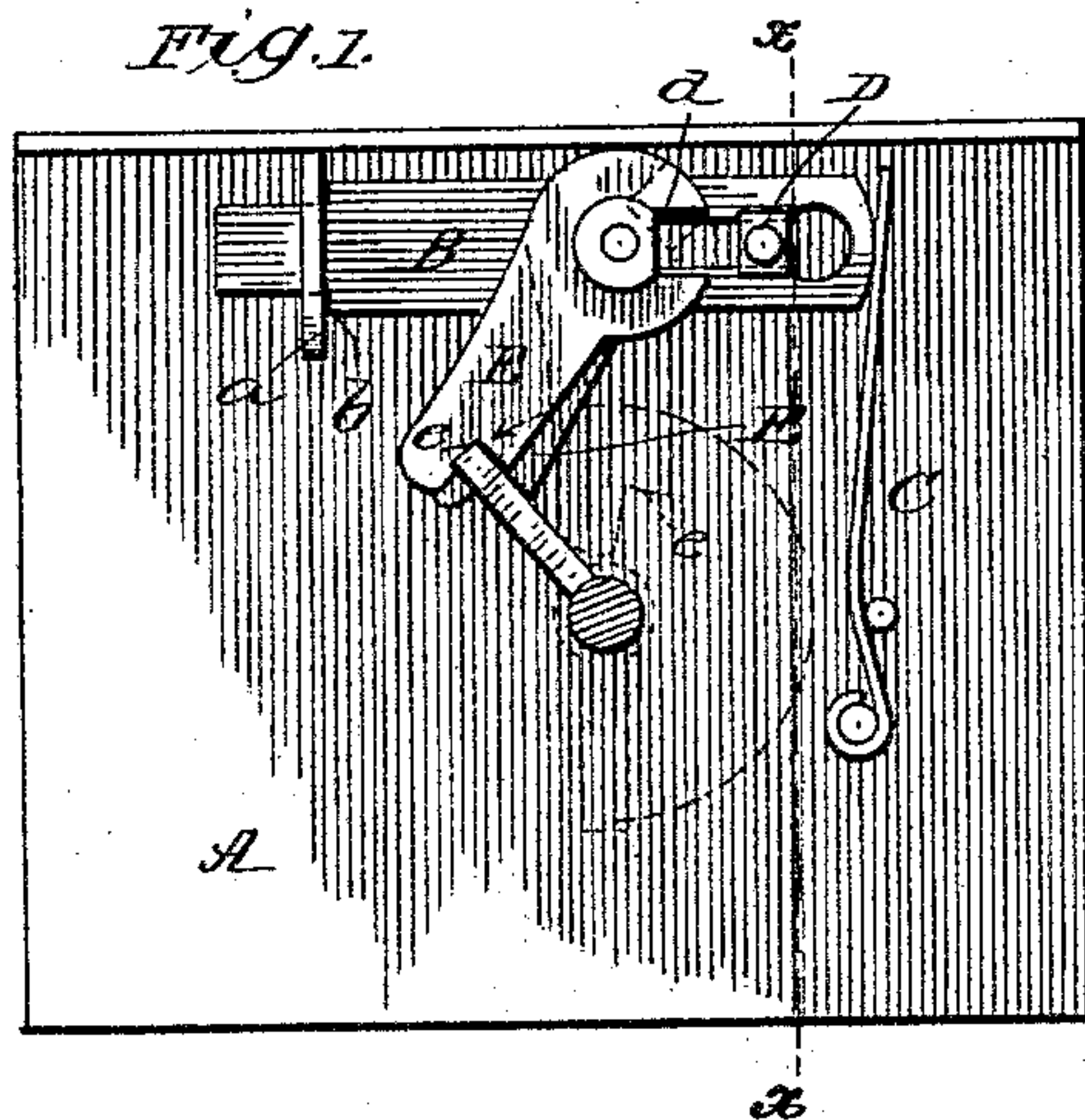


Fig. 2.

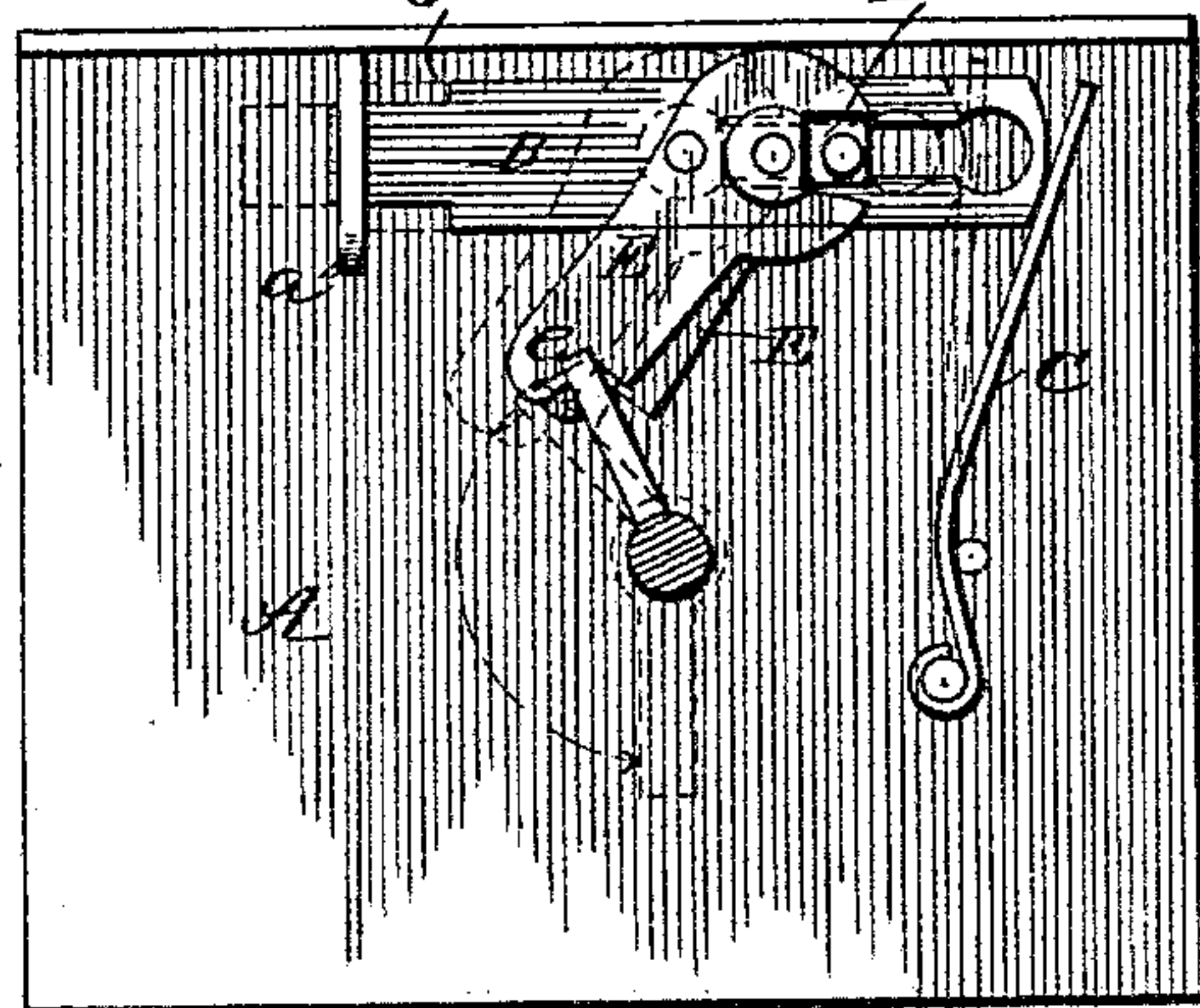
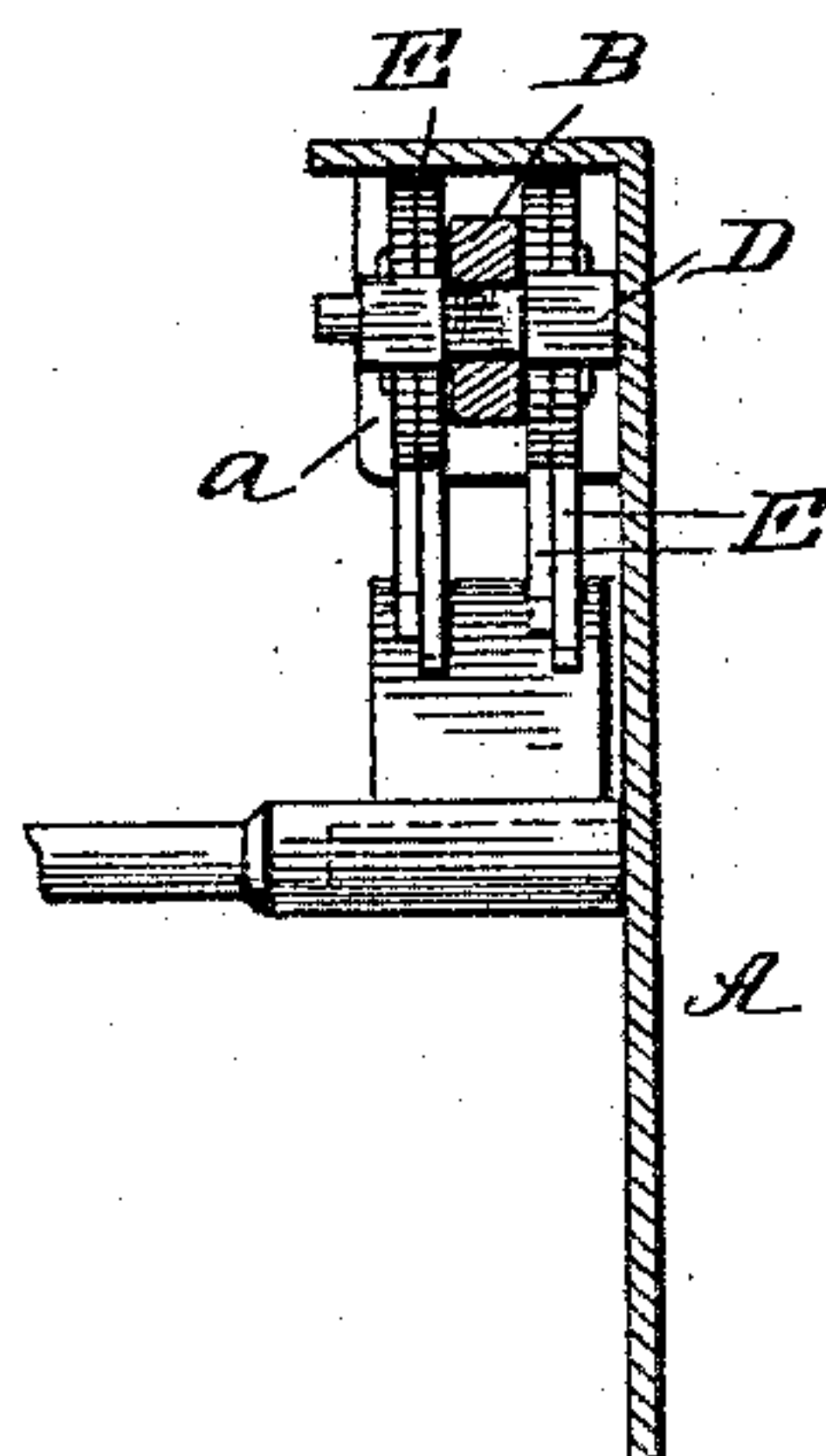


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

OTTO W. LUNDHOLM, OF MUCHACHINOCK, IOWA, ASSIGNOR TO EDWARD  
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## LOCK.

SPECIFICATION forming part of Letters Patent No. 411,994, dated October 1, 1889.

Application filed May 22, 1889. Serial No. 311,746. (Model.)

*To all whom it may concern:*

Be it known that I, OTTO W. LUNDHOLM, of Muchachinock, in the county of Mahaska and State of Iowa, have invented a new and  
5 useful Improvement in Locks, of which the following is a specification.

My invention is in the nature of an improvement in locks, designed more especially for that class of locks which have a  
10 horizontally-sliding bolt—such as are used for trunks, desk-lids, &c.—but applicable also to all sliding bolts.

It consists in the combination, with the sliding bolt, of a set of swinging tumblers  
15 with registering-notches, which tumblers, when adjusted by the ward-slots of the key to the registering position, also constitute thrust-bars to transmit the strain of the key to the sliding bolt to force the latter  
20 back against a spring, as will be hereinafter fully described.

Figure 1 is an inside view of the lock with the bit of the key fitted to the tumblers ready to throw back the bolt. Fig. 2 shows  
25 the position of the parts with the bolt thrown back or unlocked, and Fig. 3 is a transverse section through line *xx* of Fig. 1.

A is the main plate of the lock, in the upper part of which slides horizontally the  
30 bolt B. This bolt is forced to its locked position by a flat spring C, which bears against one end of the bolt. The opposite end of the bolt passes through a guide-keeper *a*, fixed to the plate, and is also shouldered at  
35 *b* to form a stop against the keeper, so as to limit the throw given to the bolt by the spring. The end of the bolt next to the spring is slotted and guided by a post D, passing through said slot. This post has a  
40 square head, overlapping the edges of the bolt at the slot, and to receive this head in applying the bolt thereto one end of the slot in the bolt is made with an enlargement.

E are the tumblers. These are loosely  
45 pivoted to the bolt near the end of the slot and swing freely in a pendent position. These tumblers have near their pivots notches *d*, which, when in position to embrace the post D, a lug, or equivalent device, permit  
50 the bolt to be slid back. At all other times these tumblers hang vertically, as in dotted

lines, with the notches *d* out of registration with the post, and the bolt is thus locked, so that it cannot be picked and withdrawn. At the end of each tumbler is formed a shoulder *e*, adapted to drop into one of the ward-slots of the key, which, being of different  
55 depth, cause the tumblers to stand at different angles when the notches *d* are in the registering position. To raise these swinging tumblers to this position, the key is inserted through the key-hole, (indicated in dotted lines,) and is then turned in a direction reverse to that required for unlocking  
60 until the shoulder *e* of each tumbler drops into its respective bearing on the key-bit. The key then is given a short turn to the right, and the endwise strain on the tumblers causes them to act as thrust-bars to push the sliding bolt back, the key being held until  
65 the desk-lid or door is opened. To withdraw the key, it is rotated in the same direction in which it started after entering the key-hole, and, passing by the tumblers, makes a complete revolution to the key-hole.  
75

I am aware that it is not new to transmit the thrust of the key to a sliding bolt through a bar pivoted to the bolt, and I do not claim this, broadly.

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

1. The combination, in a lock, of a sliding bolt, a post D, guiding said bolt, and one or more swinging tumblers E, pivoted to the bolt and having notches *d*, adapted to pass  
85 over or embrace the post D when thrust back by the key, so as to allow the bolt to be withdrawn, substantially as described.

2. The combination, in a lock, of a sliding bolt having a longitudinal slot at one end  
90 and a shoulder at the other, a spring for shooting the bolt to the locked position, a fixed guide-post arranged in the slot of the bolt, and a set of combined tumblers and thrust-bars pivoted to the bolt and provided  
95 with registering notches adapted to be projected over the guide-post, substantially as shown and described.

OTTO W. LUNDHOLM.

Witnesses:

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