

(No Model.)

2 Sheets—Sheet 1.

M. BADONI.
LOCK.

No. 501,639.

Patented July 18, 1893.

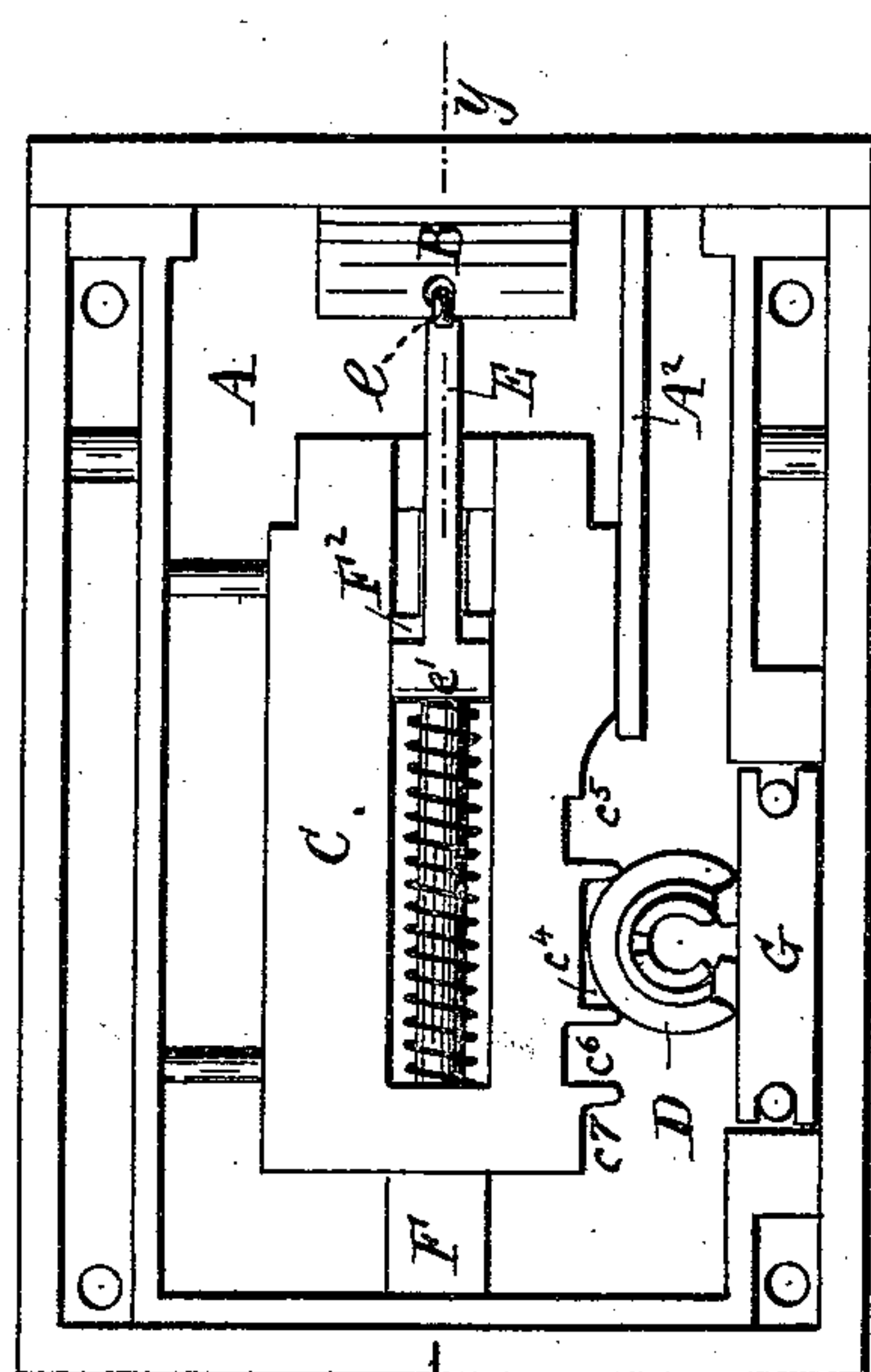


Fig. 3

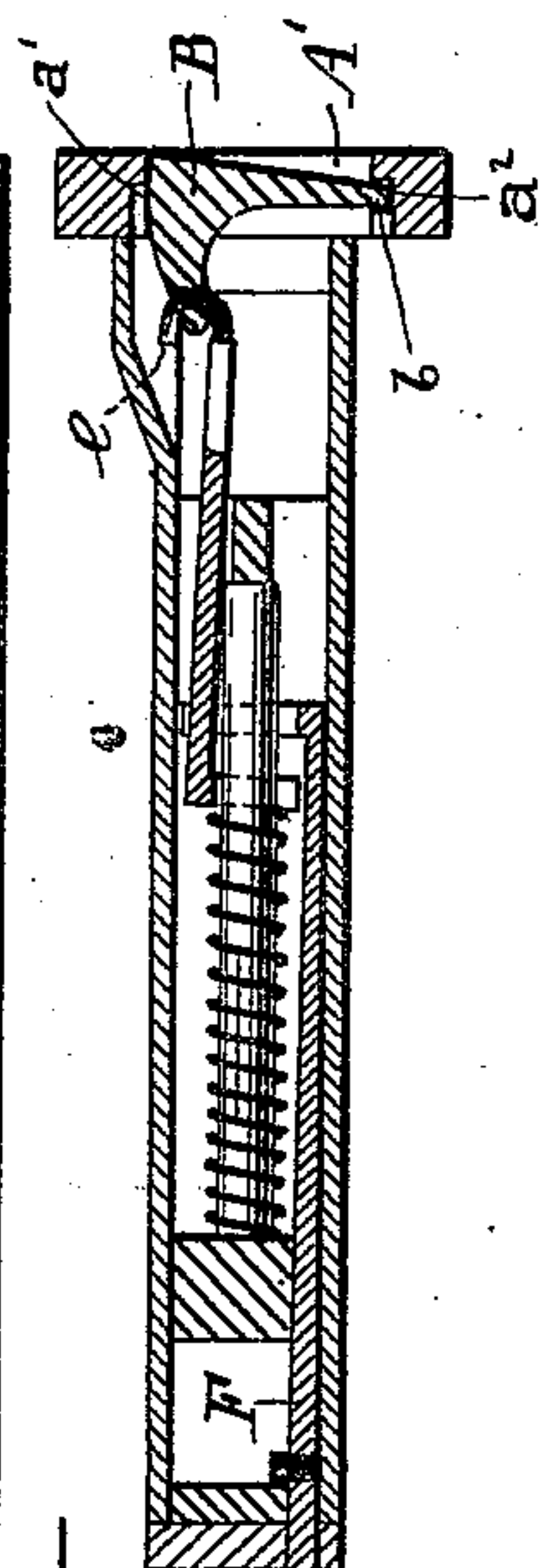
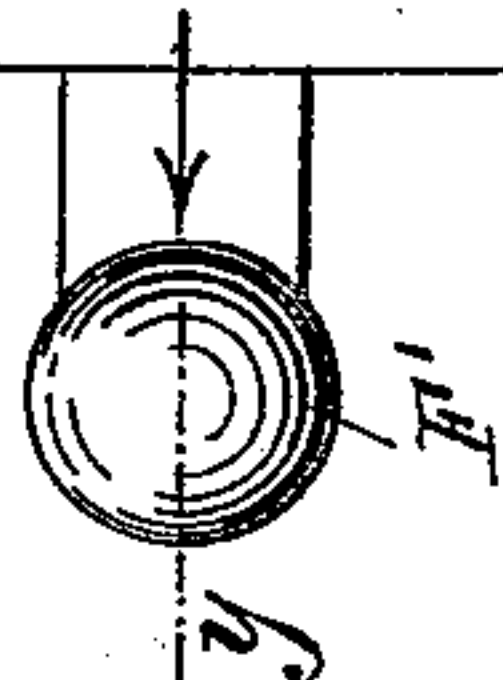


Fig. 4

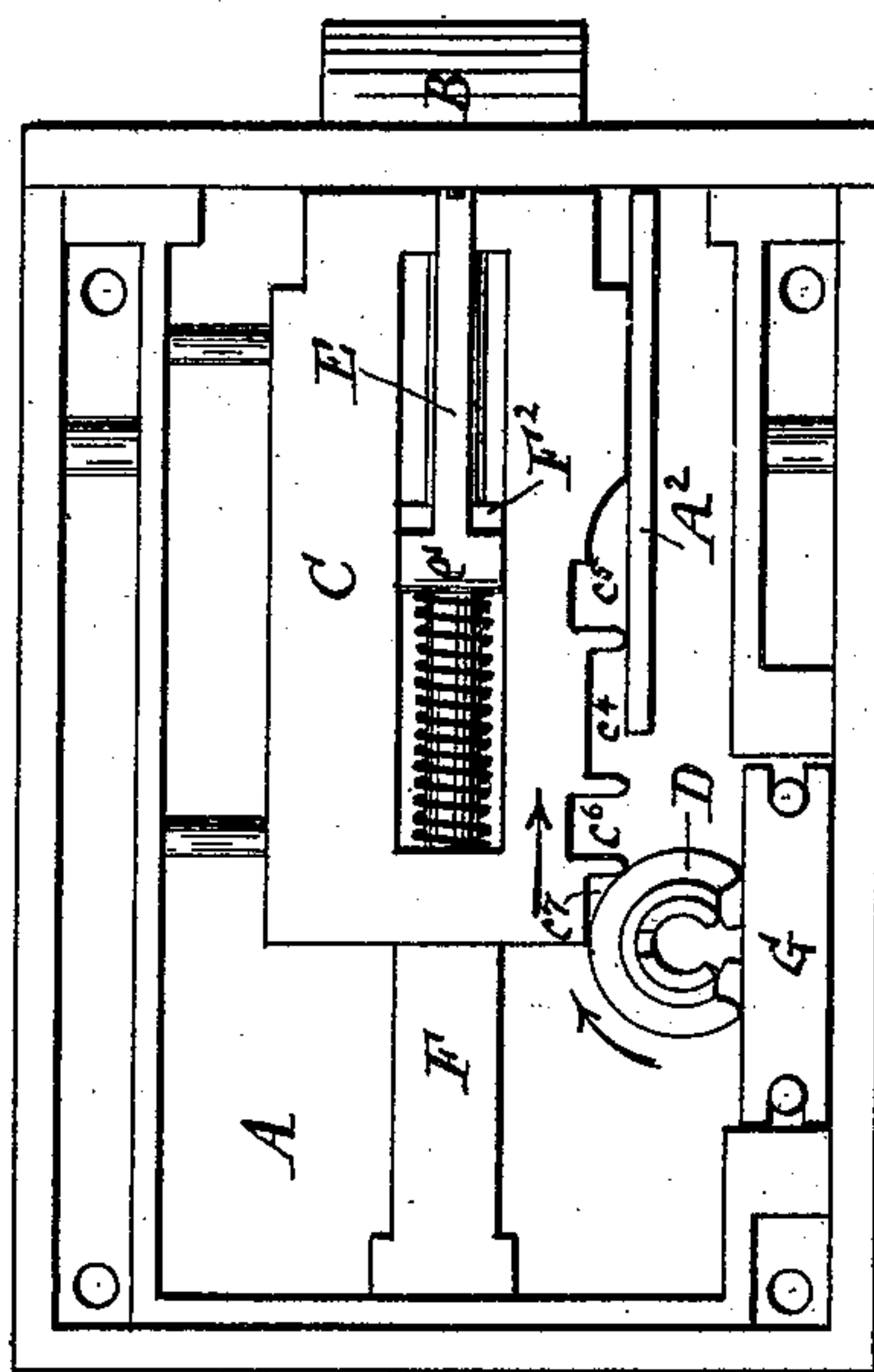


Fig. 6

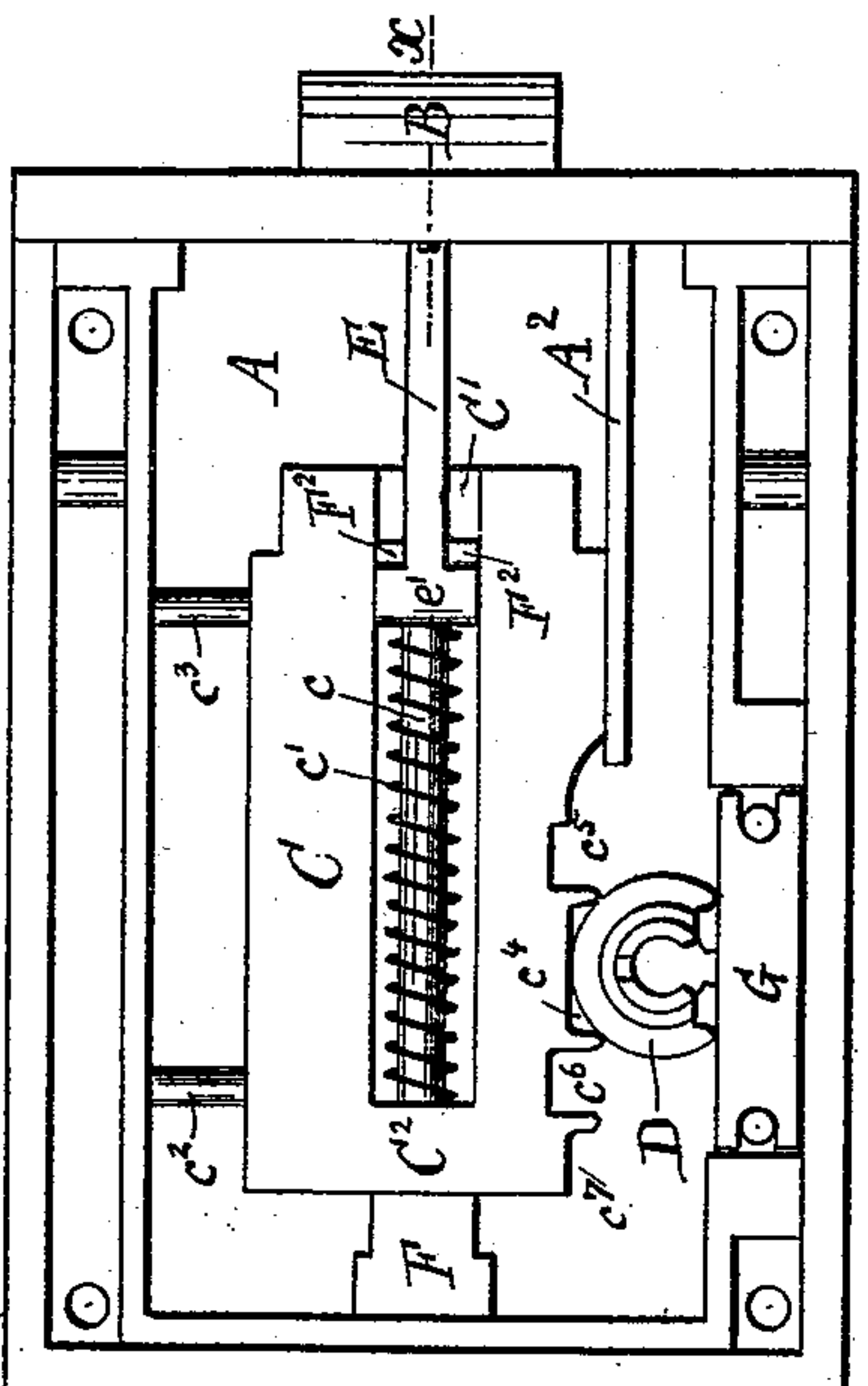


Fig. 1

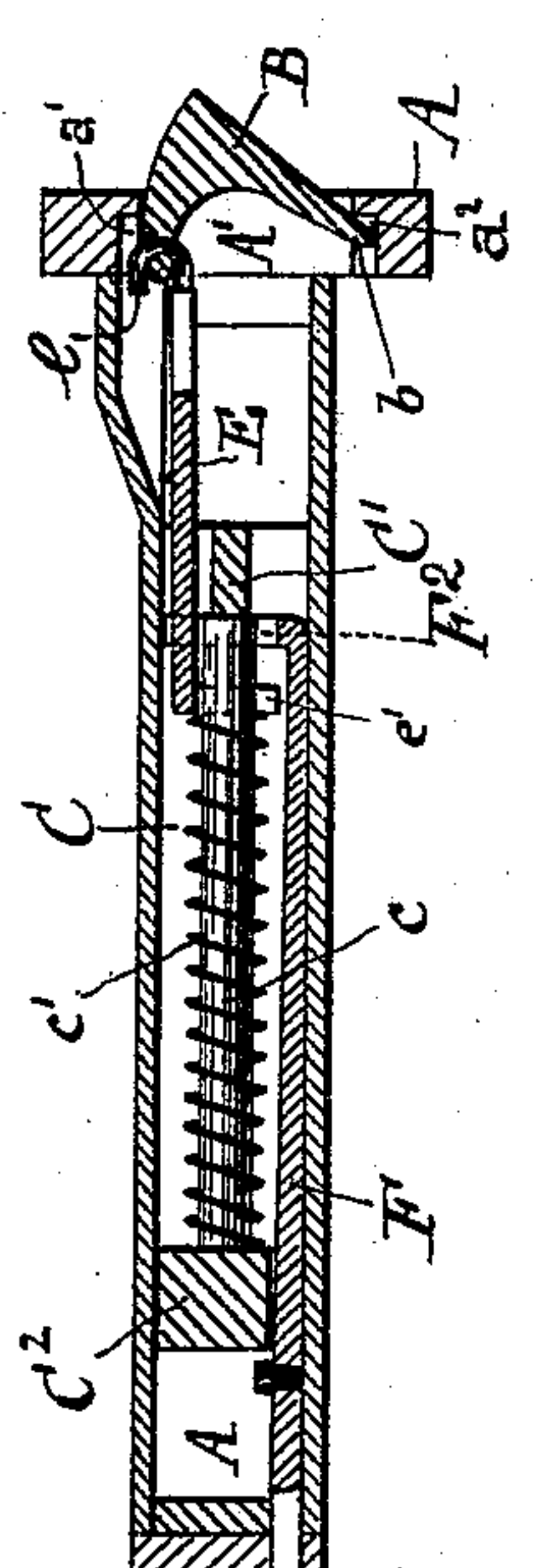


Fig. 2

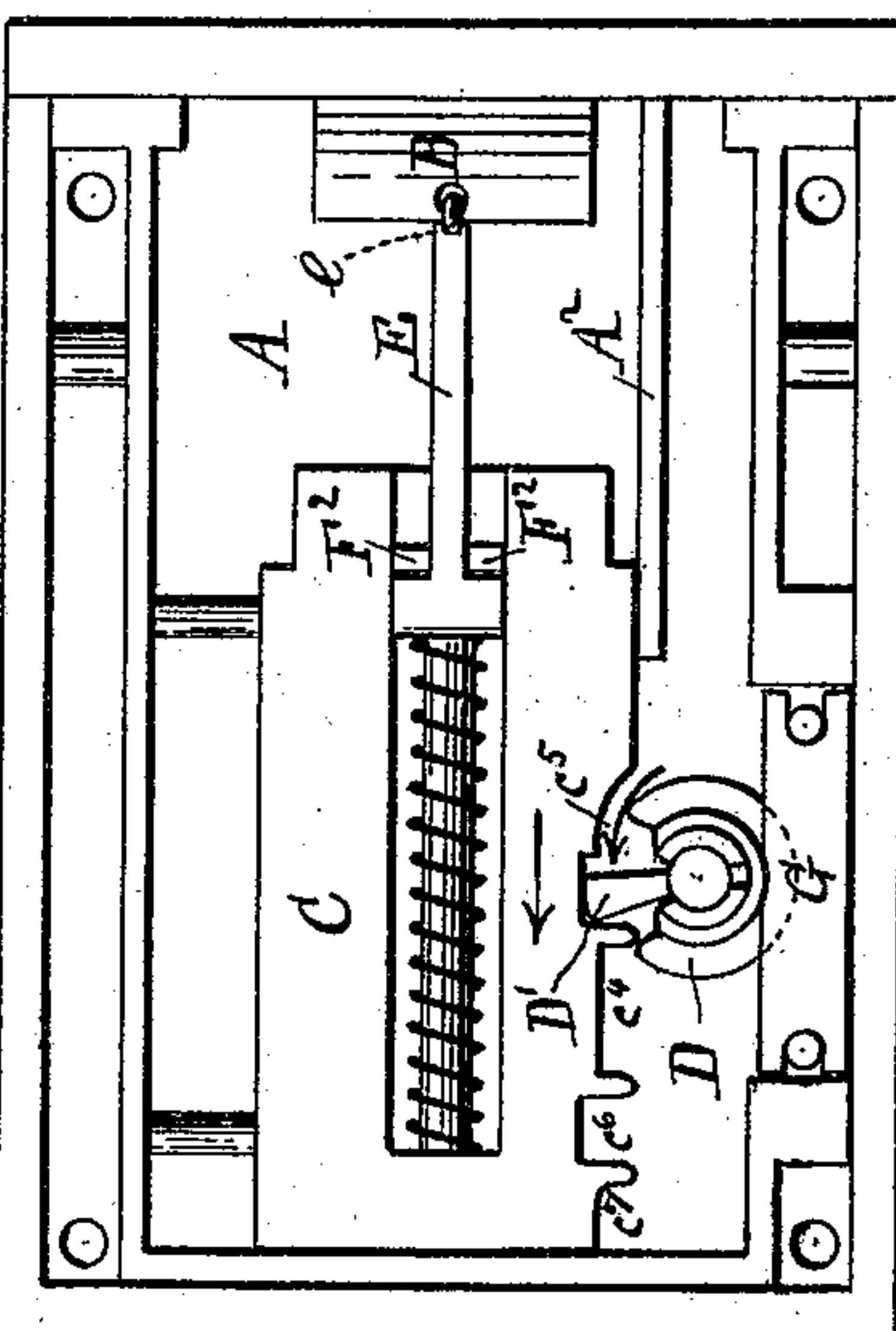



Fig. 5



Witnesses:
J. Strait
Chas H. Smith

Fig.  Inventor:
Maximilian Sadoni
per Lemuel W. Ferrell atty.

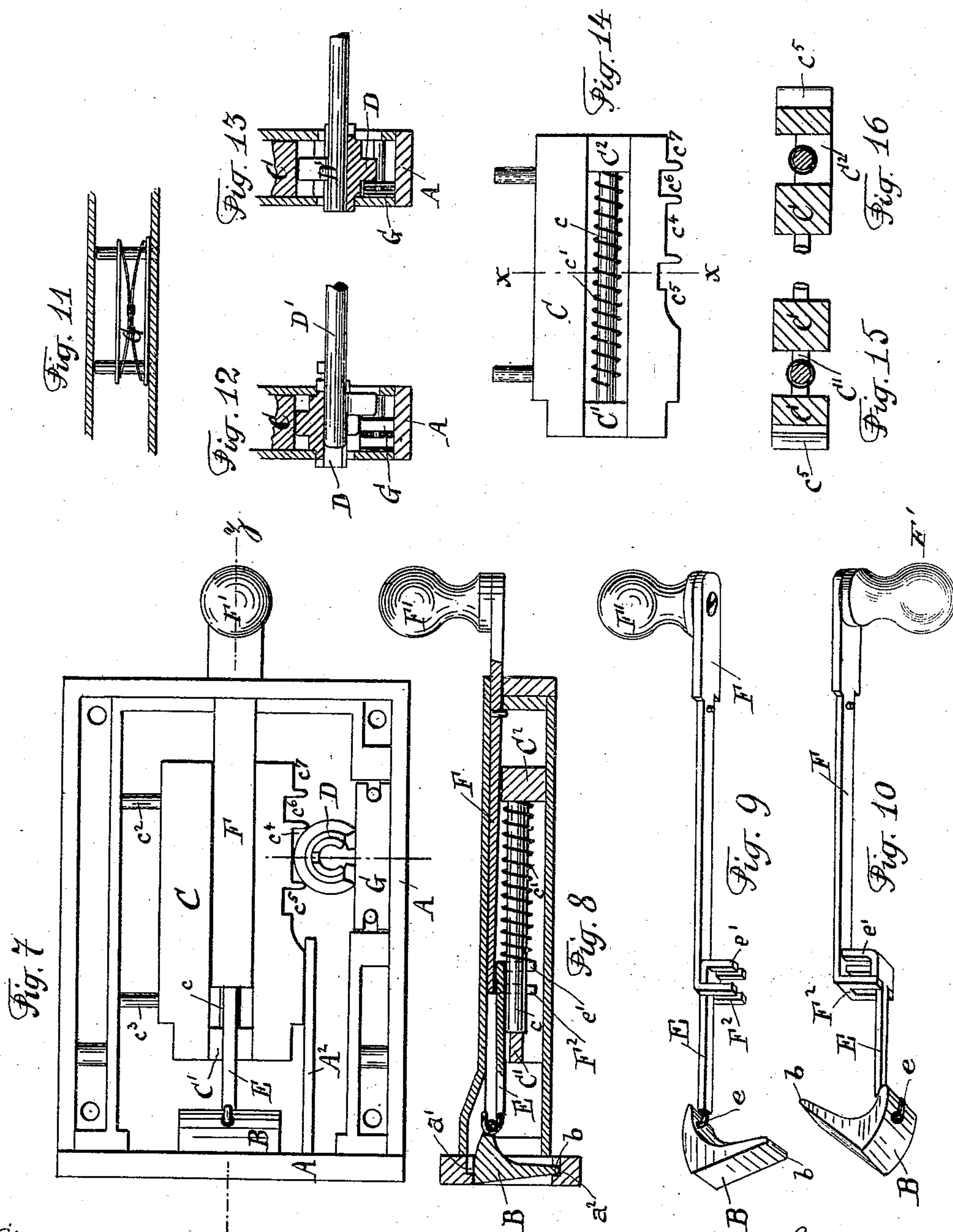
(No Model.)

M. BADONI.
LOCK.

2 Sheets—Sheet 2.

No. 501,639.

Patented July 18, 1893.



Witnesses:
J. Stait
Chas. Smith

Inventor
Massimiliano Badoni
per Lemuel W. Serrell
Atty

UNITED STATES PATENT OFFICE.

MASSIMILIANO BADONI, OF GENEVA, SWITZERLAND, ASSIGNOR TO ALOYS
REVILLIOD-DE MURALT, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 501,639, dated July 18, 1893.

Application filed June 20, 1892. Serial No. 437,411. (No model.)

To all whom it may concern:

Be it known that I, MASSIMILIANO BADONI, mechanician, of Geneva, Switzerland, have invented certain new and useful Improvements in Locks and Latches, of which the following is a specification.

Within a case there is a bolt that is movable by a key and key cylinder, and this bolt carries a guide rod and a spring that acts upon a rod extending to a latch to project the same, and there is a handle and a bar therewith connected that can be used to withdraw the spring latch. When the bolt is moved in one direction by the key and key cylinder, the latch is drawn back into the lock and so held, and when the bolt is moved in the other direction it holds the latch to prevent the same being withdrawn until the key is used in the reverse direction. The invention consists in the combination of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is an elevation of my improved mechanism with the plate removed. Fig. 2 is a cross section through xx of Fig. 1. Fig. 3 is an elevation of my improved mechanism with the plate removed, the latch being withdrawn by moving the handle in the direction of the arrow. Fig. 4 is a cross section through yy of Fig. 3. Fig. 5 is an elevation of my improved mechanism with the plate removed showing the bolt as moved to one side by the key to retract the catch. Fig. 6 is a similar view with the bolt moved to the opposite side and securing the latch as projected. Fig. 7 is an elevation of my improved mechanism with the plate removed, the parts being in the opposite position to that shown in the figures heretofore named. Fig. 8 is a cross section through zz of Fig. 7. Fig. 9 shows the catch, handle and respective rods in perspective with the forked ends interlocked as shown in Figs. 7 and 8, and Fig. 10 shows (in an inverted position) the same parts with the forked ends interlocked in the relation shown in Figs. 1 to 6 inclusive. Fig. 11 is an elevation of a safety spring hereinafter described. Figs. 12 and 13 are sections of the key cylinder and safety spring, the said spring in Fig. 12 being in the normal condition and in Fig. 13 com-

pressed. Fig. 14 is a separate elevation of the bolt, its center rod and spring. Figs. 15 and 16 are cross sections through xx of Fig. 14 in opposite directions.

In all the figures the same letters of reference refer to the same parts.

The casing of the lock and latch is represented at A and there is an opening at A', the lateral edges of which are provided with a notch a' and a recess a^2 .

The latch is represented at B and provided with a knife-shaped edge b which is to be received in the recess a^2 .

The bolt is represented at C and the same has an open center and is provided with a rod c and helical spring c' around said rod.

C' and C^2 are cross pieces connecting the respective longitudinal portions of the bolt, and there are pins c^2 c^3 projecting from one side of the bolt, and there is a plate A^2 within the casing and the bolt moves through the casing, the plate A^2 acting as a guide at one side, and the pins c^2 c^3 bearing against the case at the other side.

The lower edge of the bolt C is provided with notches c^4 c^5 c^6 and c^7 between which are talons or projections. The key cylinder is represented at D and the same is adapted to be rotated within the casing, a circumferential portion of said key cylinder being adapted to fit in the notch c^4 , and its respective ends to engage the talons between the notches c^4 and c^5 or c^4 and c^6 .

E represents a bar having a hook e at one end engaging the latch B and at its other end provided with a forked end e' and shoulders.

F represents another bar, on one end of which outside the casing is the handle F' . The other end of this bar F has a forked end F^2 which engages with the shoulder of the forked end e' , the parts thereby interlocking. Both of these forked ends straddle the bar c within the bolt C, and the spring c' presses at one end against the bolt and at the other end against the face of the forked end e' , its expansive action tending to press the said hooked ends toward one side of the bolt C.

G represents a leaf spring shown particularly in Figs. 11, 12 and 13, the same being contained in the lower part of the casing and

in its normally expanded condition coming below the edges of the key cylinder to prevent the same being rotated.

In the position shown in Figs. 1, 2, 3 and 4, the device is adapted to be used as a latch from within the door, Figs. 1 and 2 showing the normal position of the parts wherein the disk of the key cylinder D rests within the notch c^4 of the bolt, and the bolt is thus prevented from being moved endwise, but the handle F' can be grasped and the rod F pulled outwardly, thus acting against the spring c' to draw along the rod E and retract the latch B, which retracted position is shown in Figs. 3 and 4. The door may thus be opened by operating the mechanism as a latch.

Fig. 5 shows the position the parts will assume when the key is inserted into the casing from outside the door and is turned, the disk of the key cylinder being rotated out of the notch c^4 so that the bit of the key D' comes against the talon at the side of the notch c^5 , moving the bolt backward into the position Fig. 5, and with it withdrawing the catch B so that the door can be opened.

After the door has been opened the key to be withdrawn must be partially turned, and this will return the parts to the position shown in Figs. 1 and 3, wherein they can be operated again as a latch either in shutting the door or in opening it from the inside.

Fig. 6 shows the position the parts will assume when the key operates the mechanism to lock and secure the door. The key may be inserted from either side, and this act compresses the spring G so that the key cylinder is free to be turned (this was also the case with the operation described in connection with Fig. 5); the key is now turned in the opposite direction to that employed in opening the door, namely in the direction of the arrow Fig.

6. The disk of the key cylinder is turned out of the notch c^4 and the bit of the key operates the talon at the side of the notch c^6 , moving the bolt along so that its end comes against the inner face of the casing at the right hand side, and as the key is turned further to be removed, the disk of the key cylinder is turned into the notch c^7 . The bolt is thus locked and secured in this which is its extreme movement in one direction, and the latch B cannot be operated, because the edge of the bolt C comes up against its inner edge, thereby preventing its movement; the door is thus locked and to unlock the door the reverse operation of the key is effected.

My improved device contains but few parts and its construction is exceedingly simple and the same is not liable to become broken or misplaced.

I claim as my invention—

1. The combination with the casing, the bolt C, and means for moving and holding the bolt within the casing, of the latch B, the rods E and F; the handle F' , the forked interlocking ends e' and F^2 , the rod c which said forked ends straddle, and a spring c' , substantially as and for the purposes set forth.

2. The combination with the casing, the latch B and means for operating the same, of the bolt C having notches c^4 , c^5 , c^6 and c^7 on its under edge and intermediate talons, the key cylinder D engaging the notches and talons of the bolt C, and the compressible spring G engaging the key cylinder, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MASSIMILIANO BADONI.

Witnesses:

E. IMER SCHNEIDER,
A. REVILLIOD DE MURALT.