

(No Model.)

S. T. LAMB.
DOOR SPRING.

No. 315,302.

Patented Apr. 7, 1885.

Fig. 1.

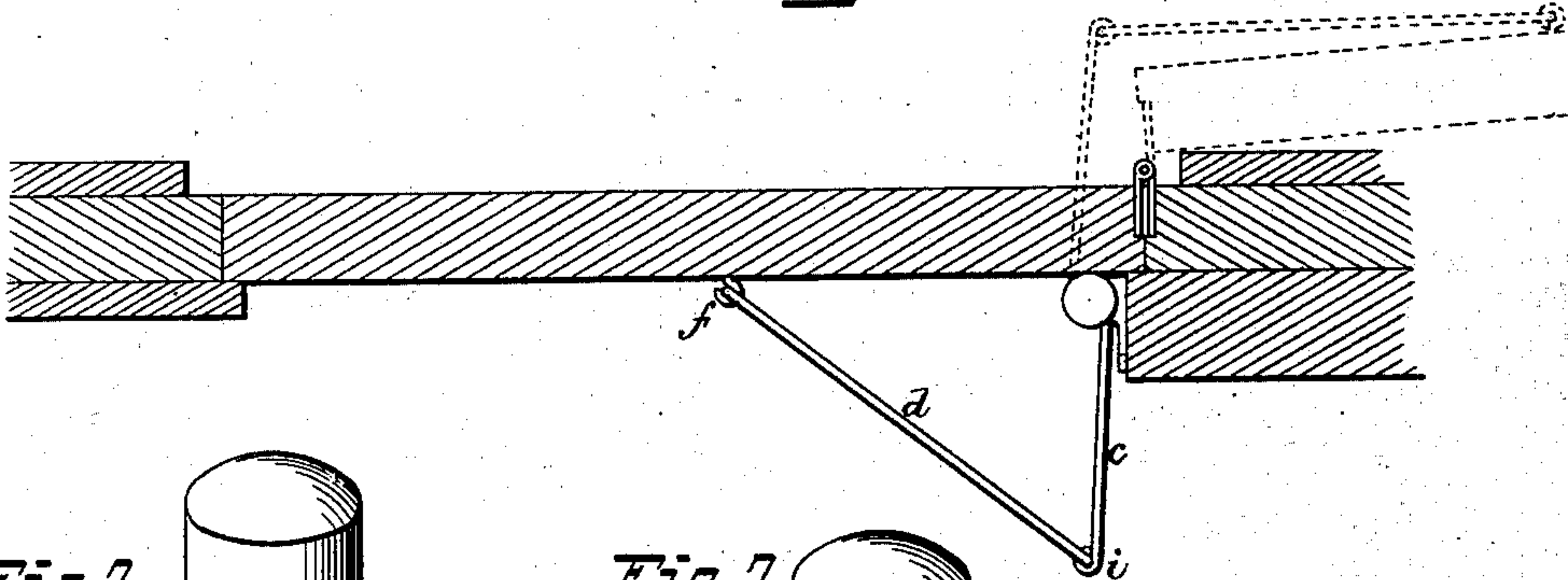


Fig. 2.

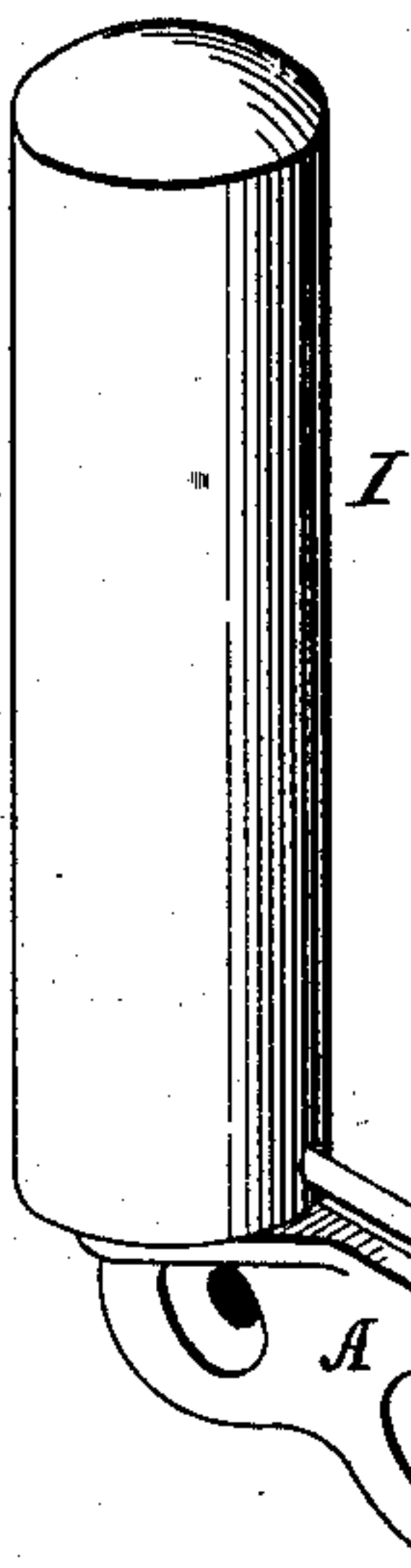


Fig. 7.

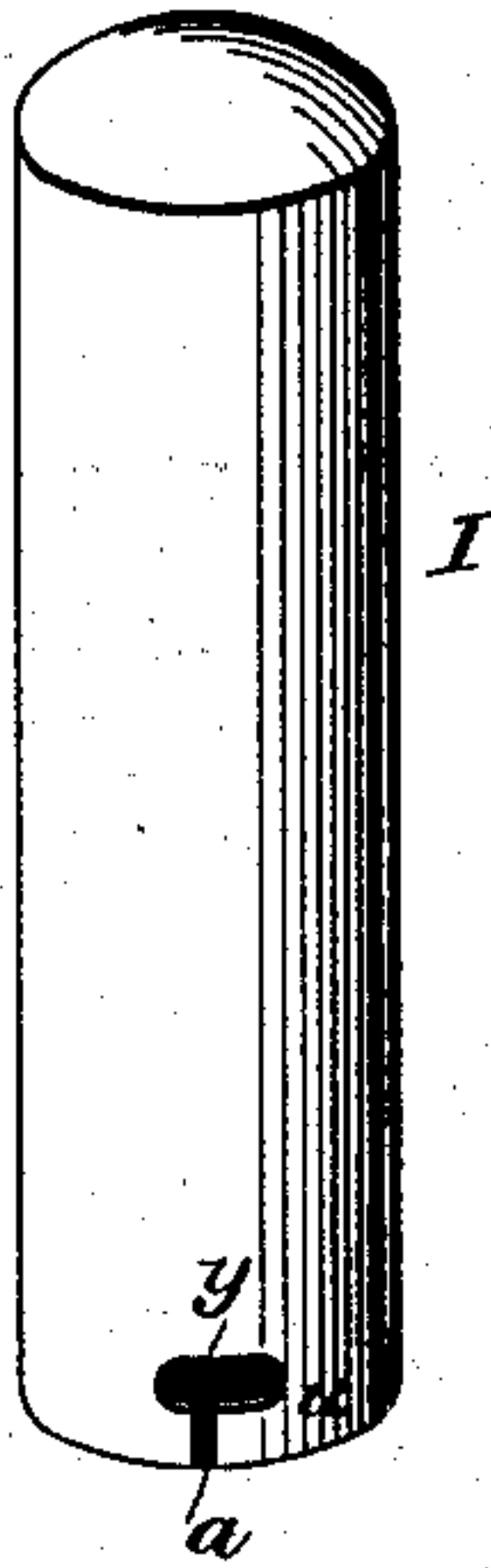


Fig. 3.

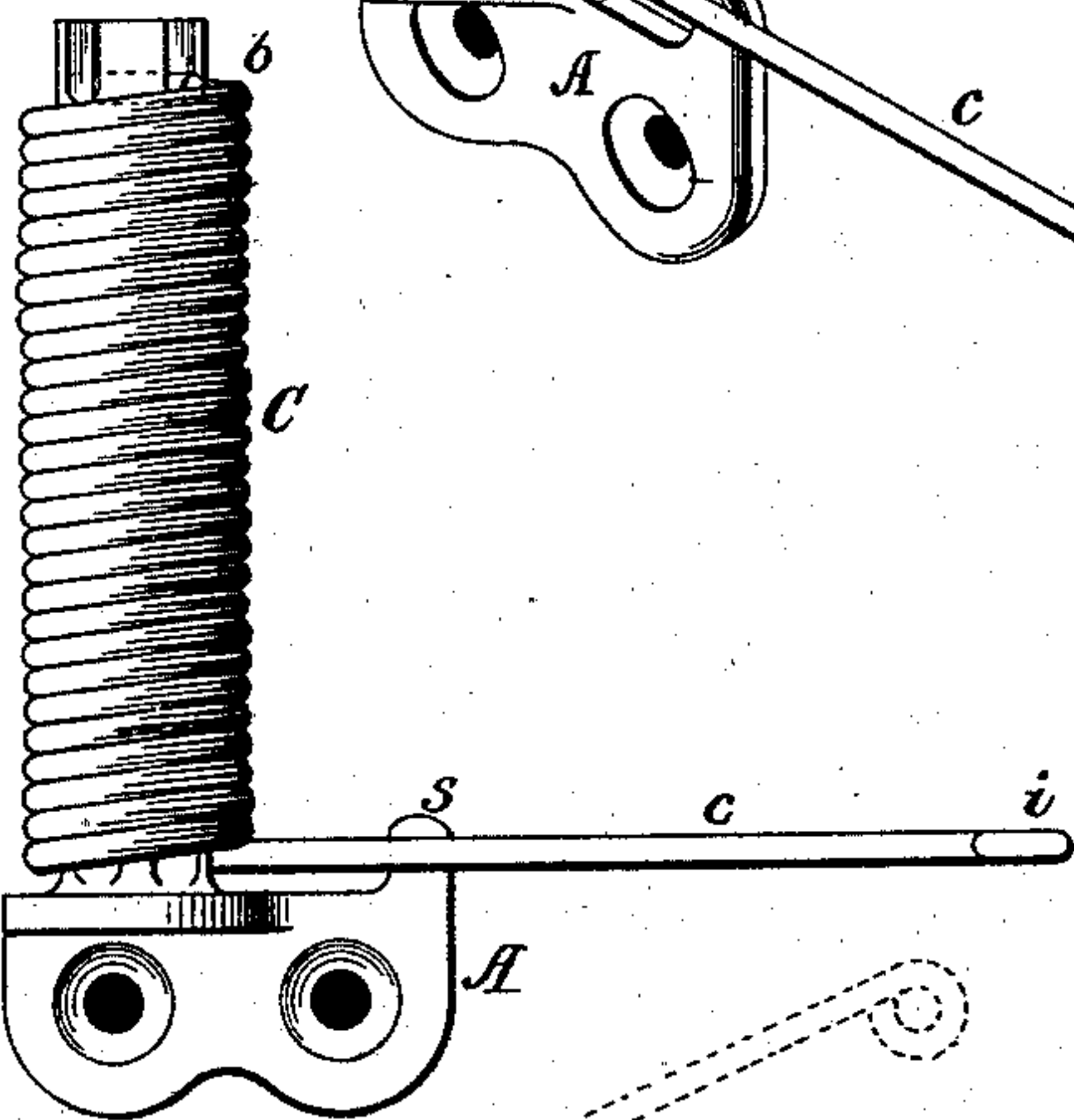


Fig. 5.

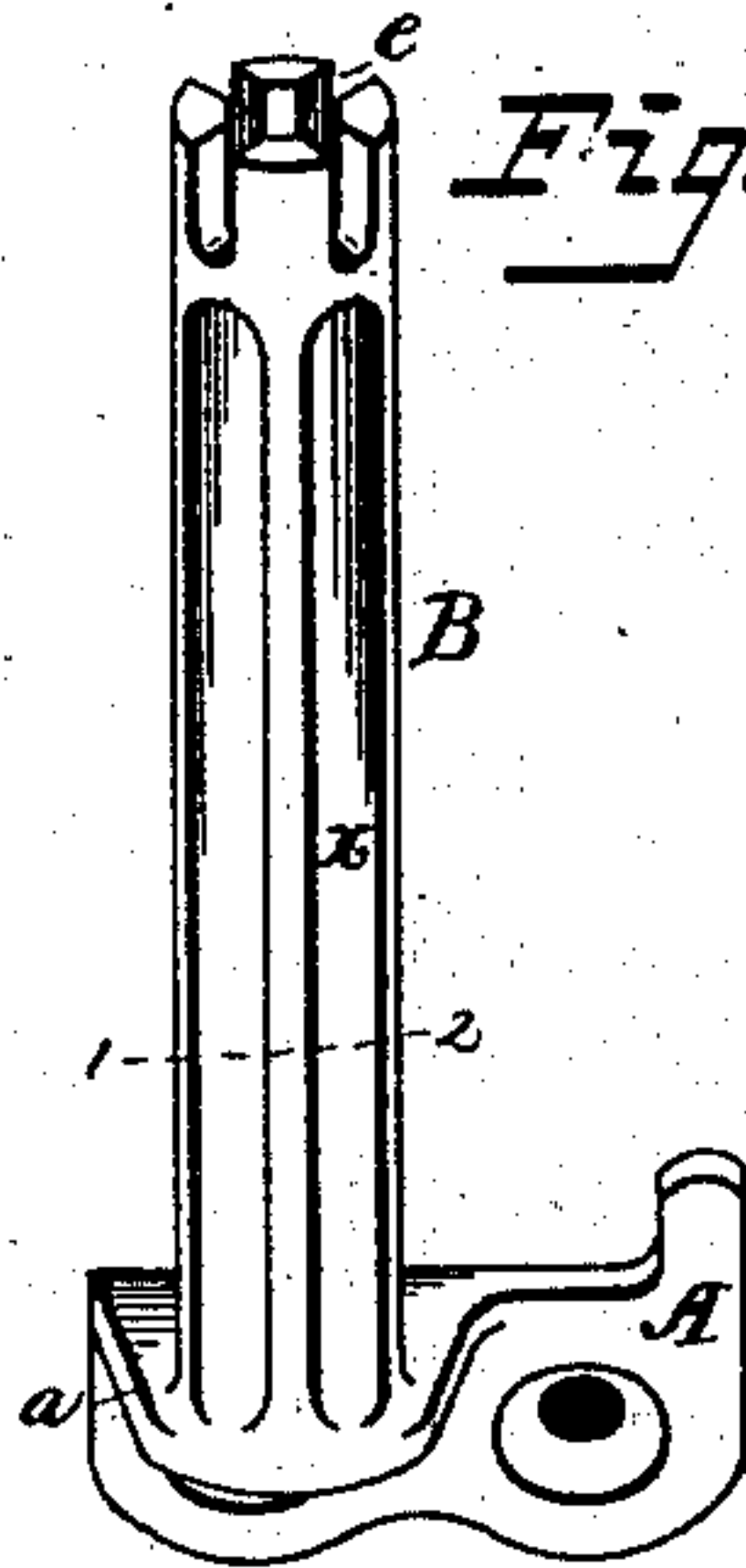


Fig. 4.

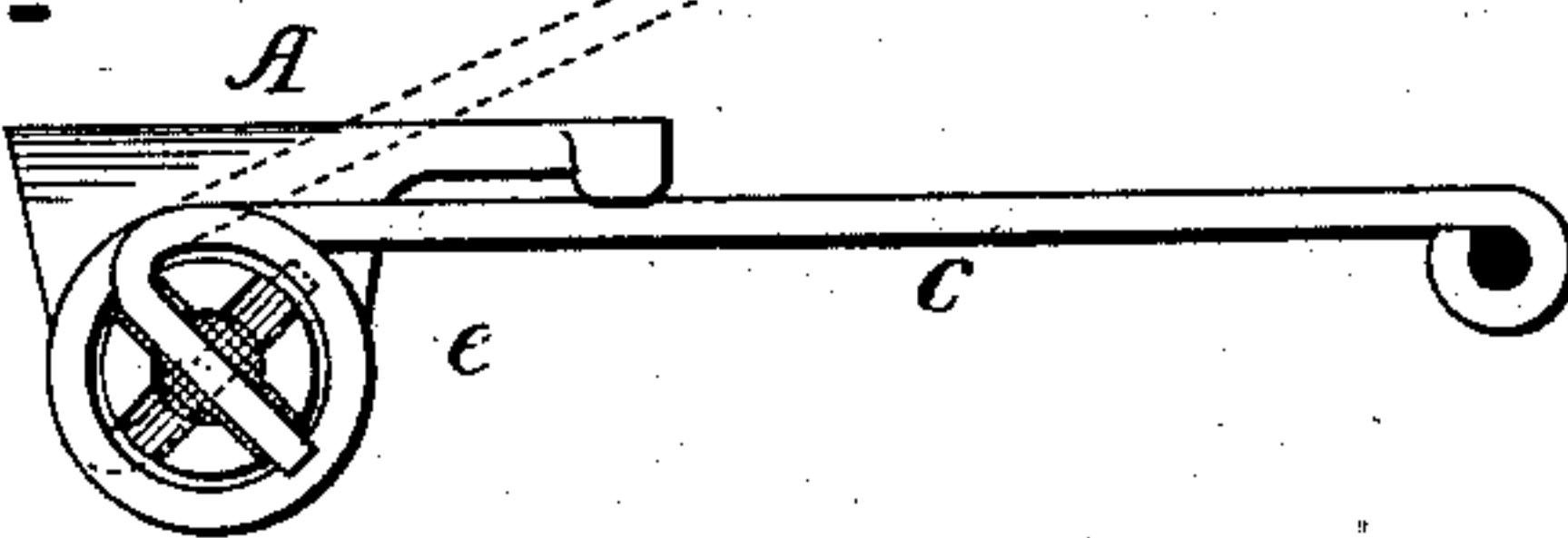


Fig. 6.



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UNITED STATES PATENT OFFICE.

SALEM T. LAMB, OF NEW ALBANY, INDIANA.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 315,302, dated April 7, 1885.

Application filed May 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, SALEM T. LAMB, a citizen of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented certain new and useful Improvements in Door-Springs, of which the following is a specification.

My invention is an improved door-spring, constructed, as fully described hereinafter, so as to reduce the cost of manufacture, secure increased durability, facilitate adjustment, and so as to act effectively upon the door whatever may be the position of the latter.

In the drawings, Figure 1 is a sectional plan of a door and frame illustrating my improved door-spring and its application to a door. Fig. 2 is a perspective view of the door-spring. Fig. 3 is a side-view, the hood removed. Fig. 4 is a plan of Fig. 3. Fig. 5 is a perspective view of the bracket and pillar. Fig. 6 is a section on the line 1 2, Fig. 5. Fig. 7 is a perspective view of the hood detached.

The spring-support consists of a plate or bracket, A, of any suitable construction, and a pillar, B, extending vertically upward from a projection or lug, *a*, upon the bracket, and provided at the upper end with intersecting grooves *e*. The spring C is a spiral spring, the upper end of which is bent inward to form a central cross-bar, *b*, adapted to fit in the grooves *e*, and the lower end of which is prolonged to form an arm, *c*, having an eye, *i*, at the outer end. The spring C is placed upon the pillar B, with the cross-bar *b* in one of the grooves *e*, and the bracket A is fastened either to the door-frame or in any other suitable position, and the arm *c* is connected to an eye, *f*, upon the door by means of a connecting-rod, *d*, coupled with the eye *i*, as shown in Fig. 1. As thus arranged the opening of the door will carry the parts to the position shown in dotted lines, Fig. 1, the spring being coiled upon the pillar B as the arm *c* is carried around the latter, and the power thus stored up acting to carry back the arm and close the door when the latter is released. The arm *c* and connecting-rod *d* are relatively so proportioned that when the door is fully opened the end of the arm *c* will project beyond the open face of the door, in which case there will always be sufficient leverage to insure an effective action

of the spring upon the door and the prompt closing of the latter.

To insure the closing of the door to its full extent and its retention under spring-pressure, it is necessary to coil the spring to a certain extent, so that it will tend to carry back the arm *c* when the door is fully shut. This may be effected without any adjusting apparatus by so placing the cross-bar *b* in such one of the grooves *e* that the bar *c* will project to a greater or less extent across the back of the bracket A, as shown in dotted lines, Fig. 4, so that the spring must be coiled in order to bring the arm to the position shown in Figs. 1, 2, and 4, to connect it to the door.

In order that the tendency of the arm to recover its position may not interfere with application of the device to the door-frame, I provide the bracket A with a lip, *s*, so arranged that after the arm has been brought to a position parallel to the back of the bracket it may be slipped down in front of the lip which holds it in place, as shown in Figs. 3 and 4. After the bracket has been secured to the frame the arm is connected by the rod *d* to the door, as shown in Fig. 1.

It will be seen that by setting the cross-bar *b* in one or the other of the grooves and carrying the arm *c* around the pillar for a part of a revolution or one or more entire revolutions the spring may be compressed to any desired extent, thus enabling me to apply any required amount of spring-power to close the door without the use of the ordinary adjusting appliances, which are apt to get out of order, and are sometimes difficult to manipulate. Where the spring is applied to a cylindrical post or pillar, there is apt to be considerable wear upon one part or the other, and the accumulation of dust or dirt between the spring and pillar clogs the spring and interferes with its action. To avoid these objections, I construct the pillar with a series of webs, *t*, Figs. 5 and 6, which hold the spring central with the axis of the pillar, but form channels *x*, through which any dust may escape, while the limited bearings at the edges of the webs do not materially wear the springs.

Where the device is to be used for gates or in other exposed positions, I prevent the spring from becoming clogged by covering it

with a hood, I, consisting of a thin metal cylindrical case closed at the upper end; and in order to secure this hood in place without interfering with the action of the spring, I form
 5 a slot, *y*, near the lower edge, adapted for the passage of the arm *c* and slit the hood between the slot and the lower edge, so that the lip portion *u* may be bent outward to permit
 10 the arm *c* to be introduced into the slot, and may be then bent into the position shown in Fig. 7, thereby securely locking the hood upon the spring.

I prefer to form the rod *d* with a terminal hook adapted to the eye *f*, so that by unhook-
 15 ing the rod from the eye the door may be left free from the action of the spring.

It will be apparent that the spring and its support may be applied to the door or gate and the arm *c* be connected to the frame.

20 I claim—

1. The combination, in a door-spring, of a bracket supporting a pillar slotted at its upper end, and a coiled spring bent at the upper end to form a cross-piece adapted to the slots
 25 in the pillar and extended at the lower end to form an arm projecting radially from the pillar, substantially as set forth.

2. The bracket provided with a pillar slotted at its upper end and with a lip, *s*, in combination with a spring coiled around the pillar
 30 provided with a cross-bar at its upper end and with an arm at the lower end, substantially as specified.

3. The bracket provided with a pillar supporting a coiled spring, from which extends an
 35 arm, *c*, and a lip, *s*, upon the bracket, arranged substantially as set forth.

4. The combination, with the bracket provided with a pillar supporting a spring having a radially-projecting arm, of a covering-
 40 hood having a slot, *y*, and slit *a*, for the purpose specified.

5. The bracket provided with a pillar adapted to support the coiled spring C, the said pillar having webs *t* and channels *x*, for the
 45 purpose set forth.

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

SALEM T. LAMB.

Witnesses:

CHARLES E. FOSTER,
 L. C. YOUNG.