

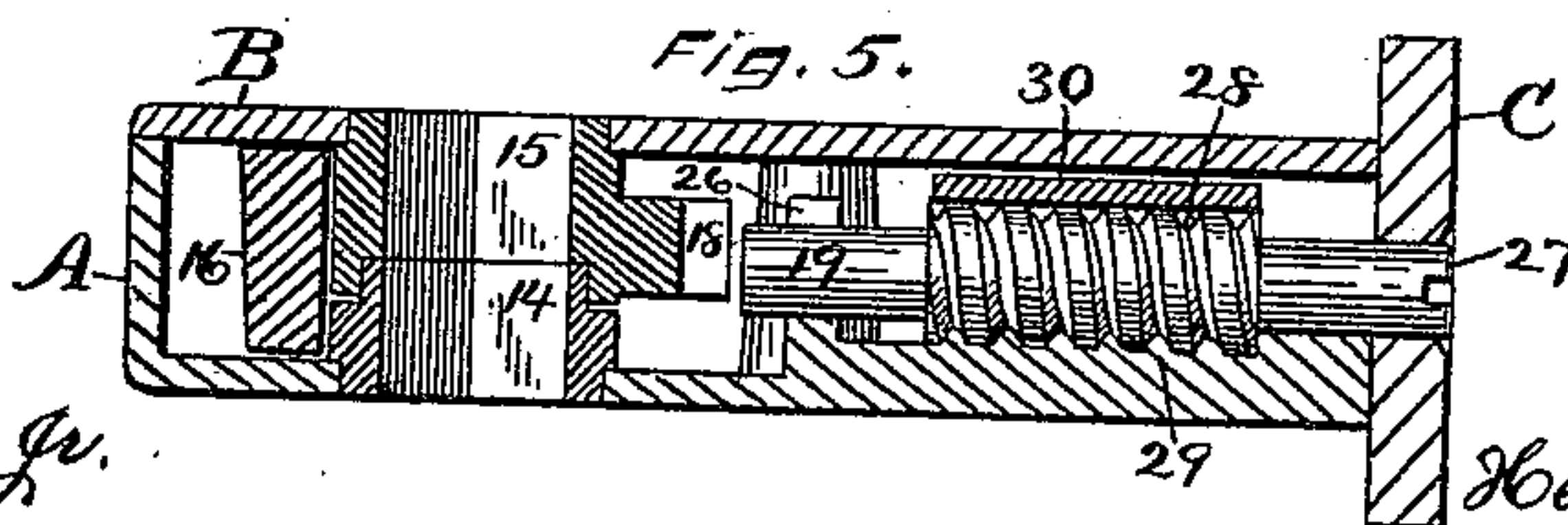
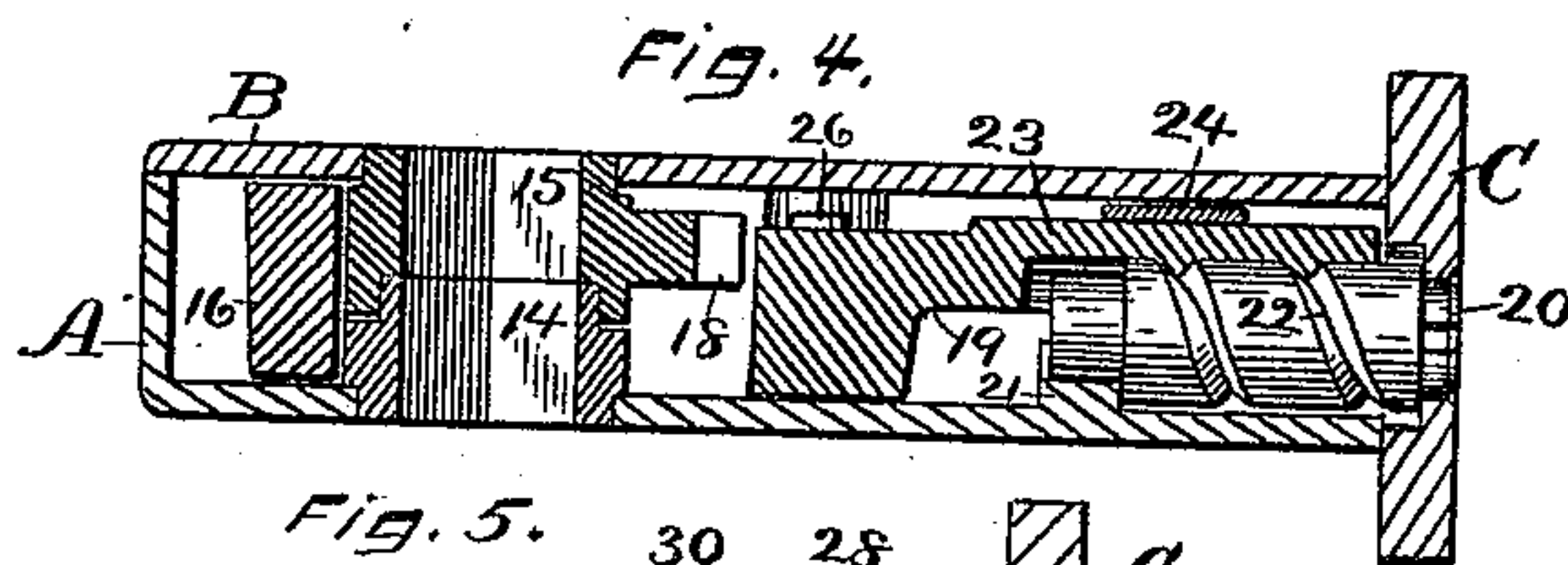
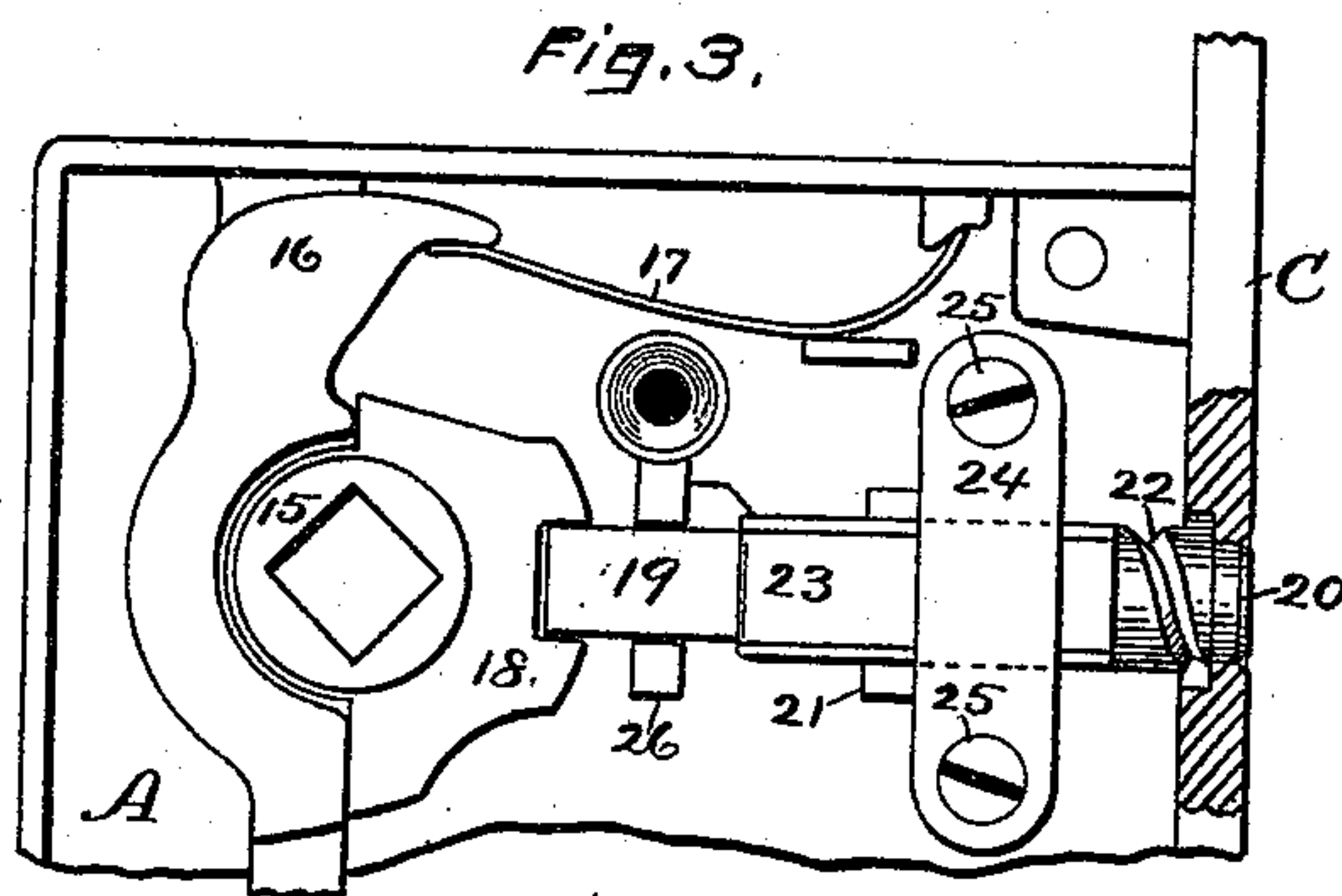
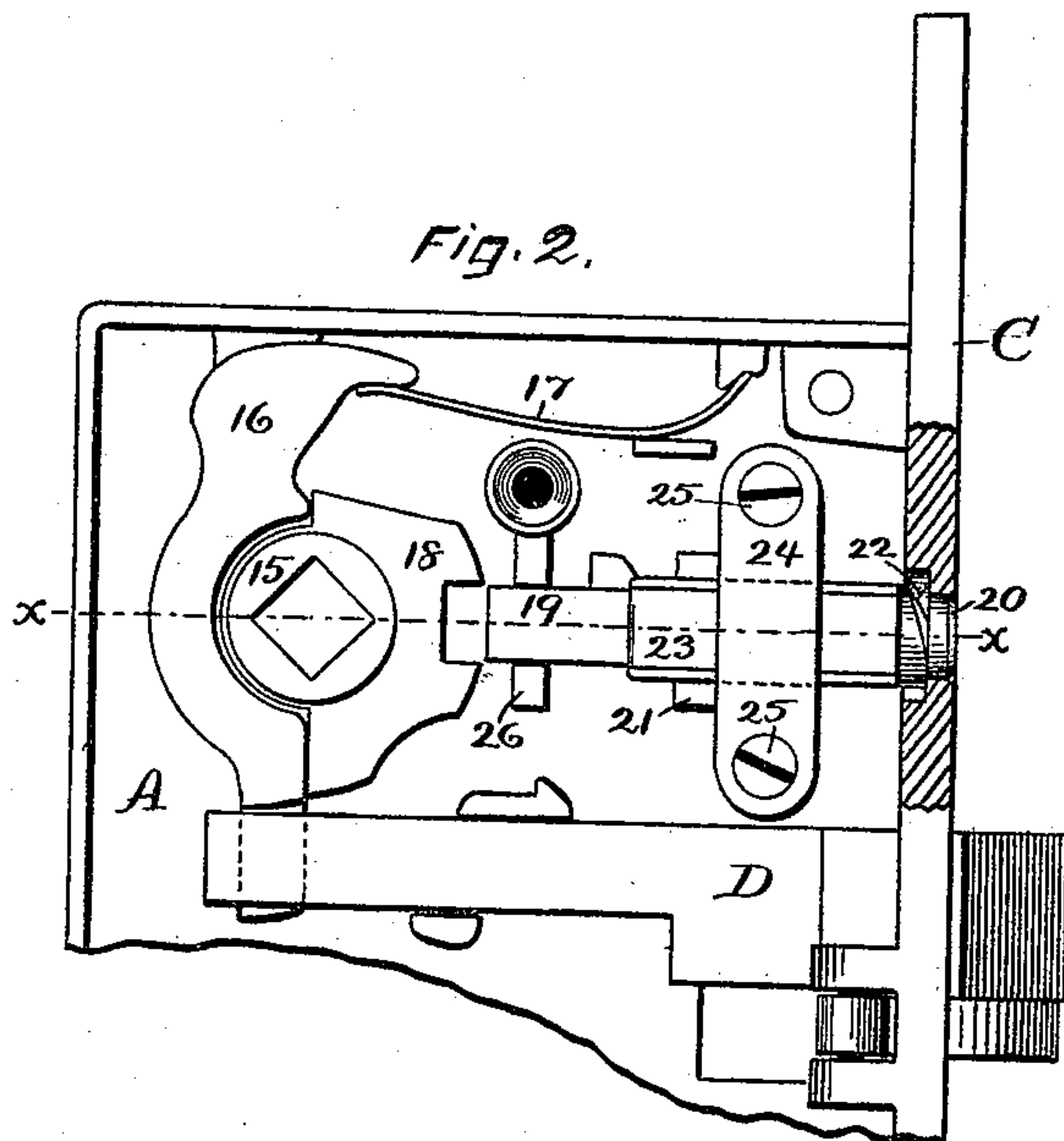
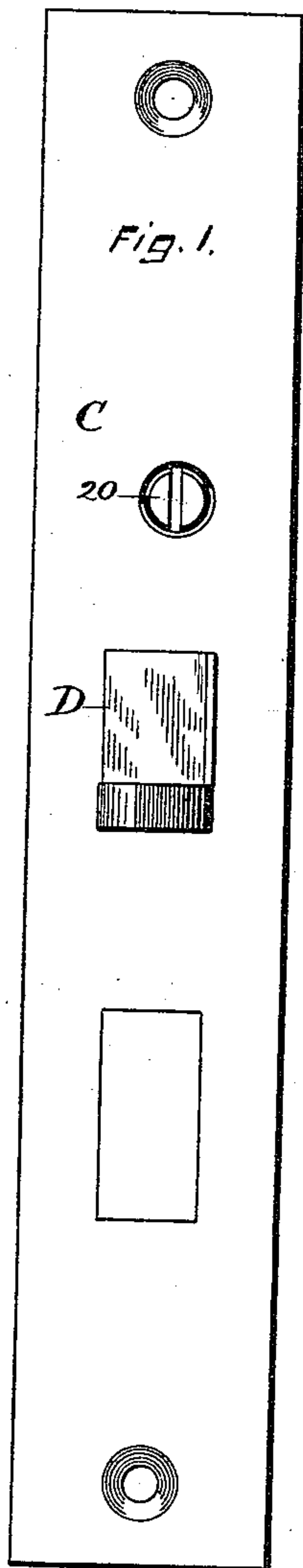
(No Model.)

H. E. RUSSELL, Jr.
LATCH.

2 Sheets—Sheet 1.

No. 450,339.

Patented Apr. 14, 1891.



WITNESSES.

John Edwards Jr.
W. H. Whiting

INVENTOR.

Henry E. Russell Jr.
By James Shepard Atty.

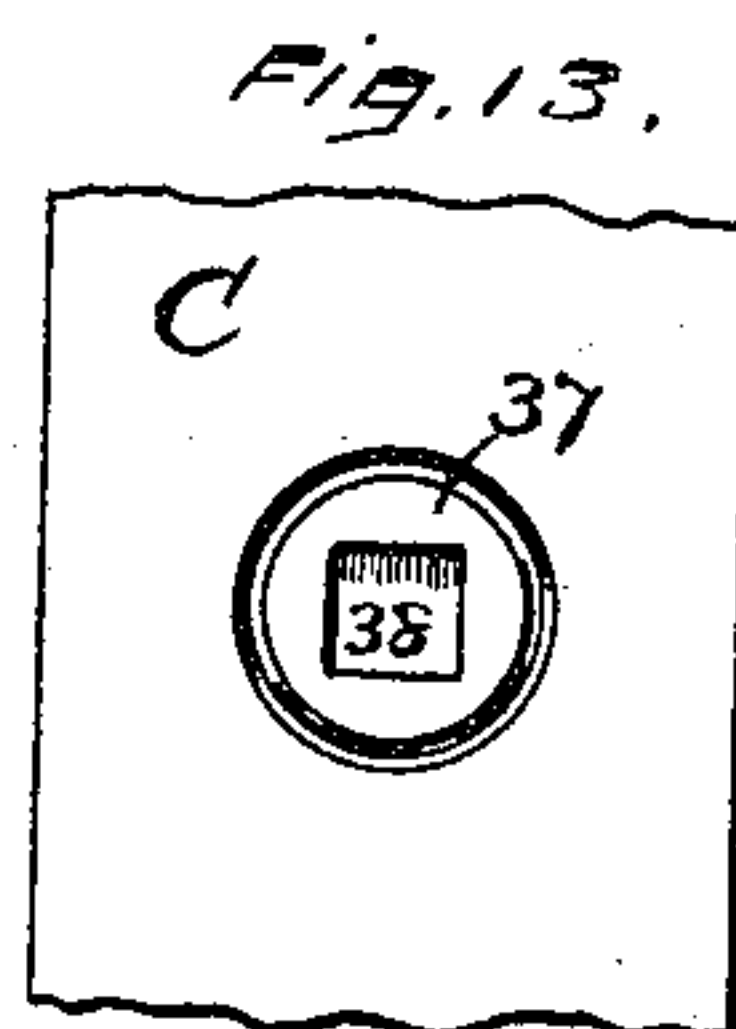
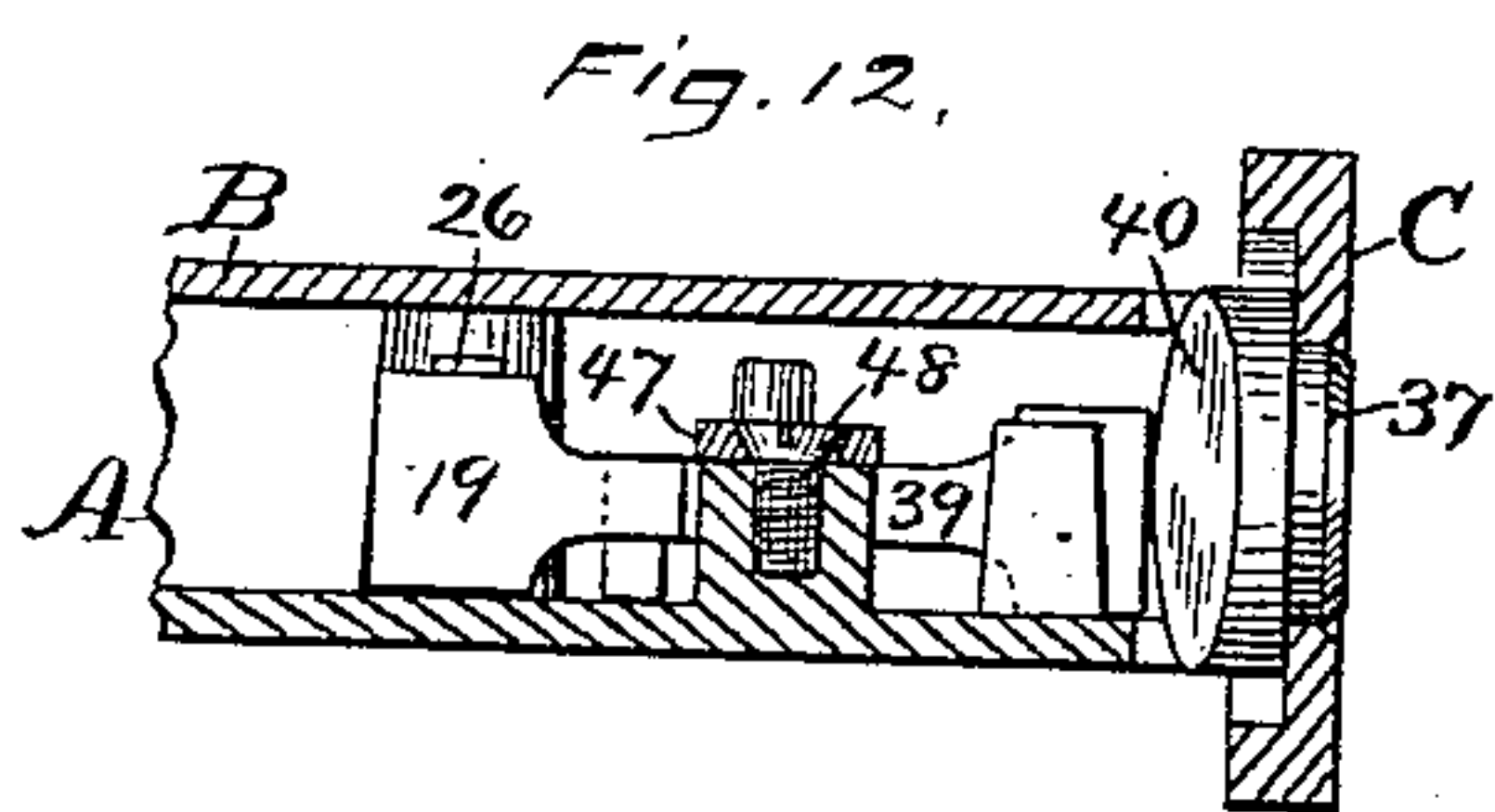
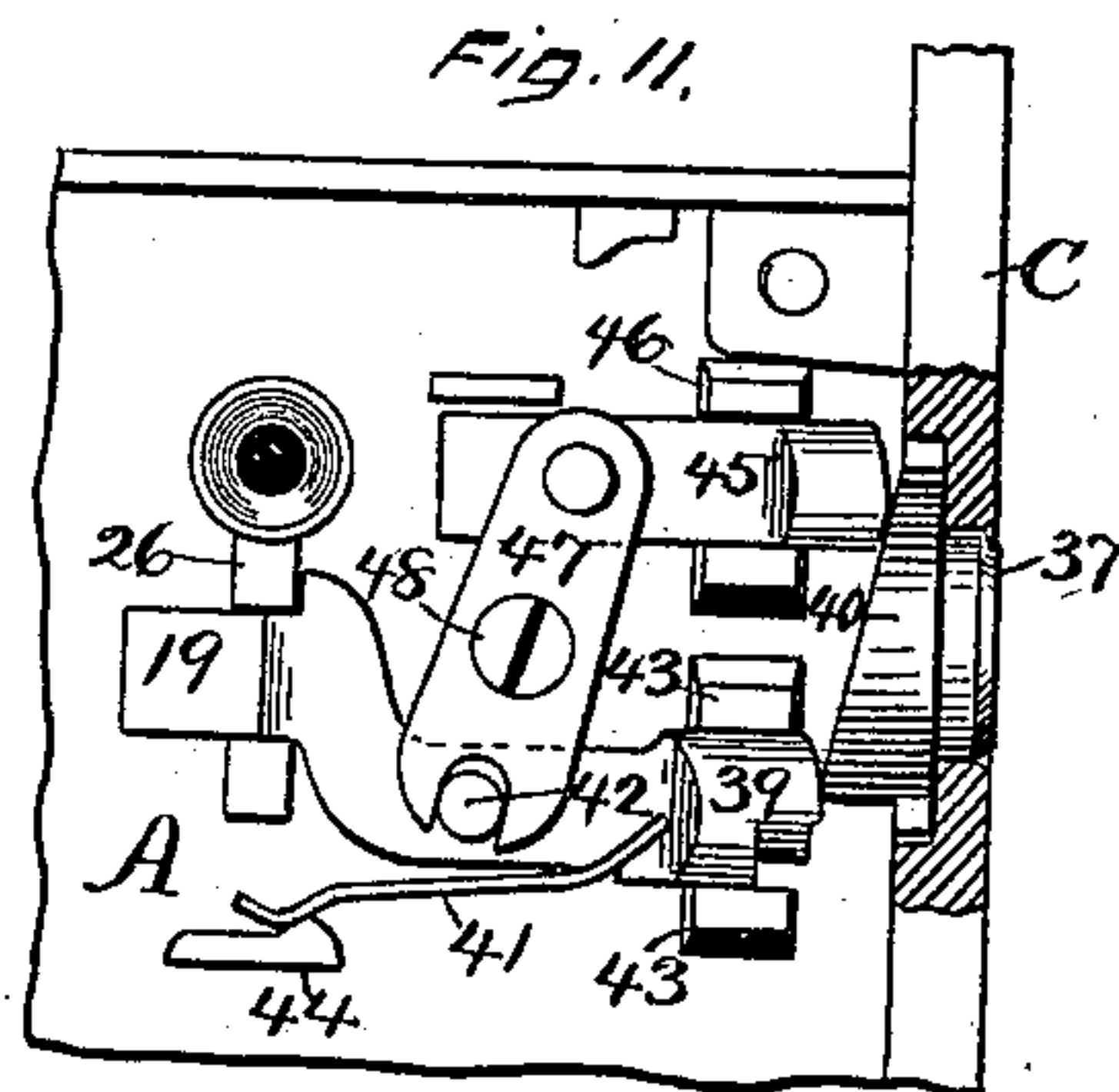
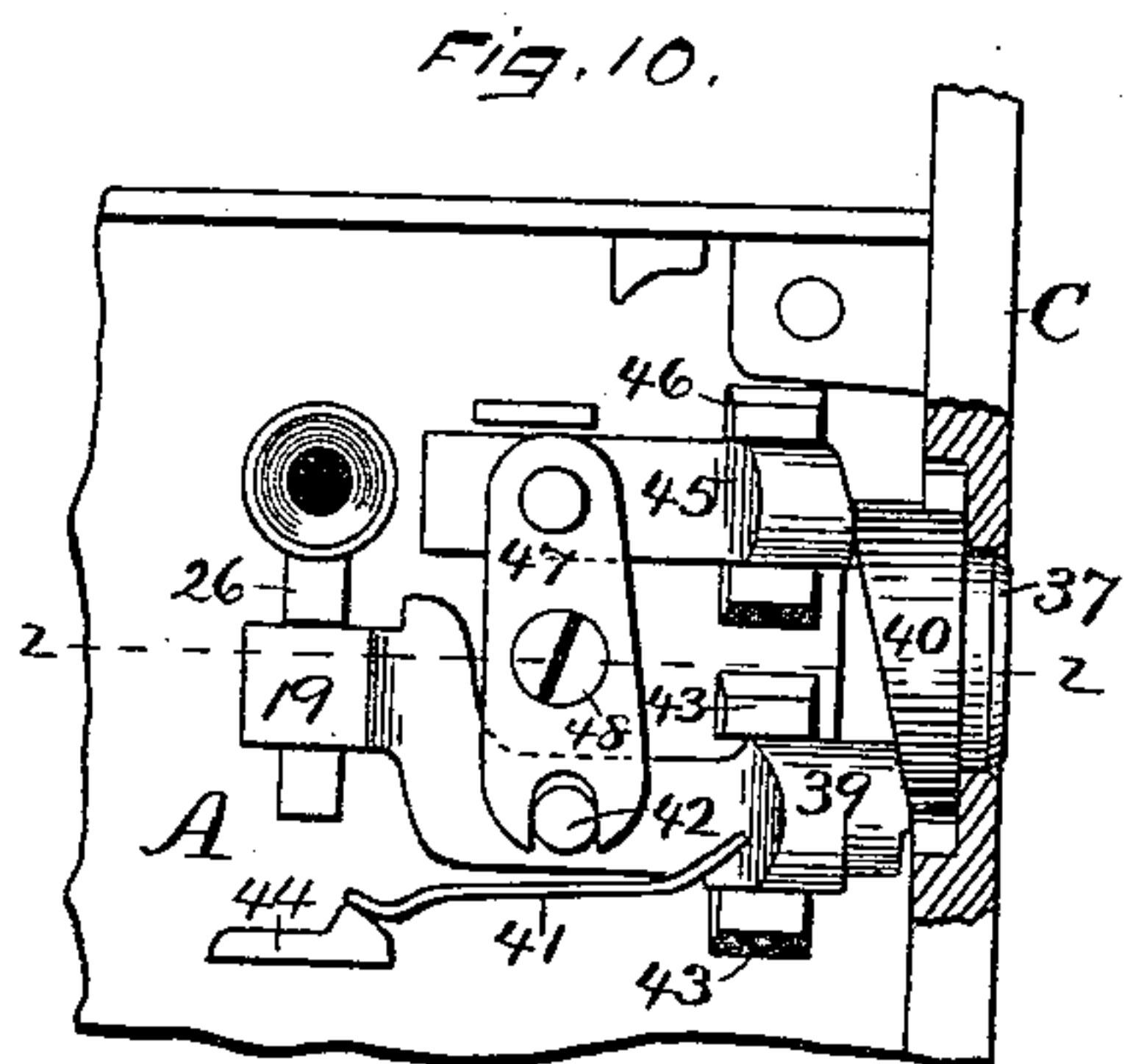
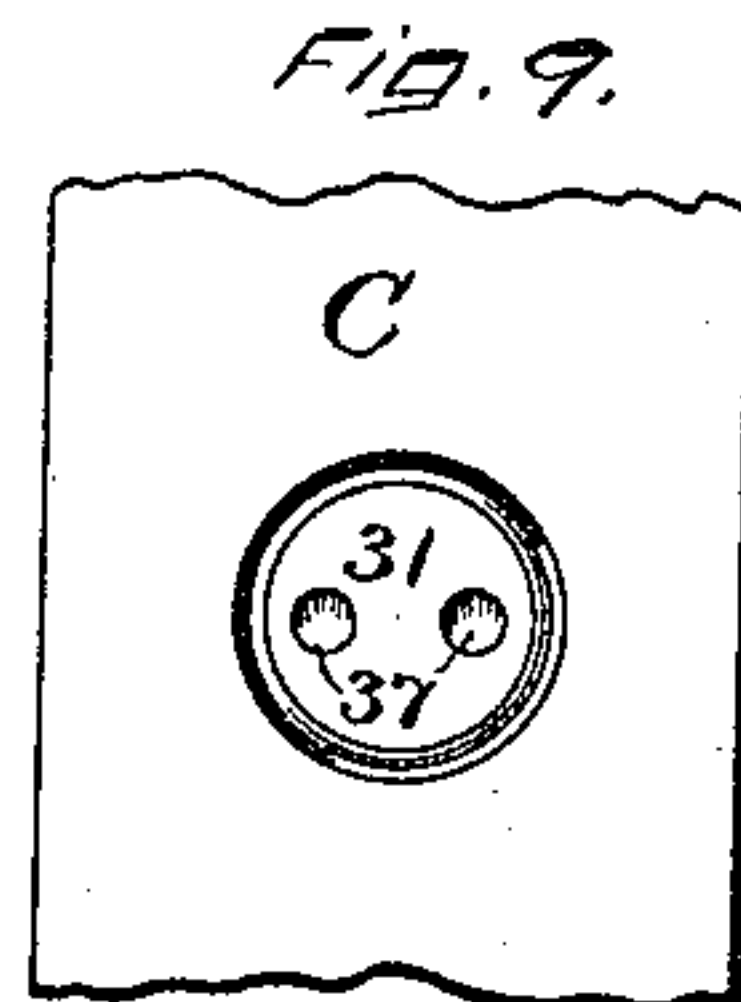
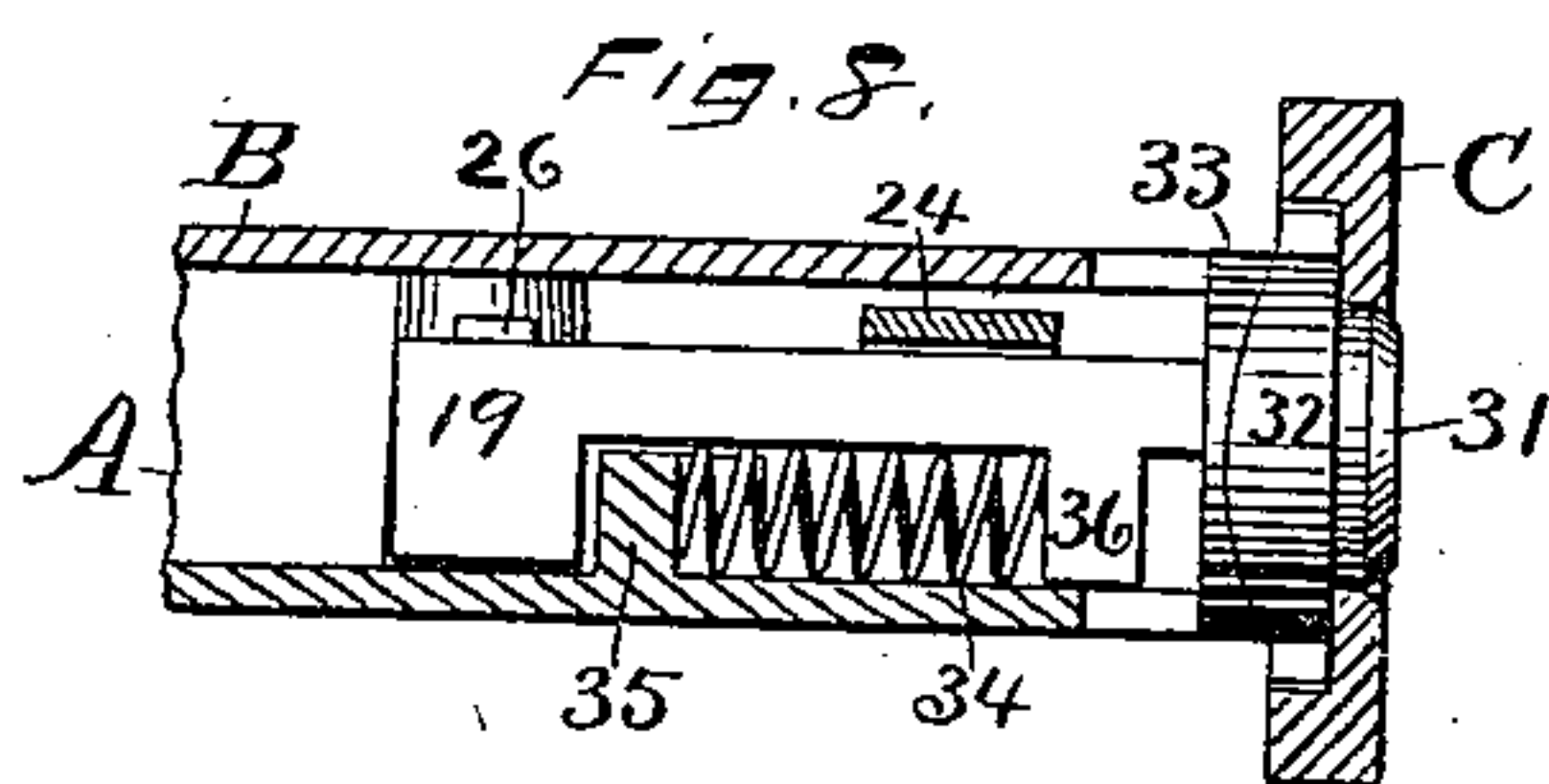
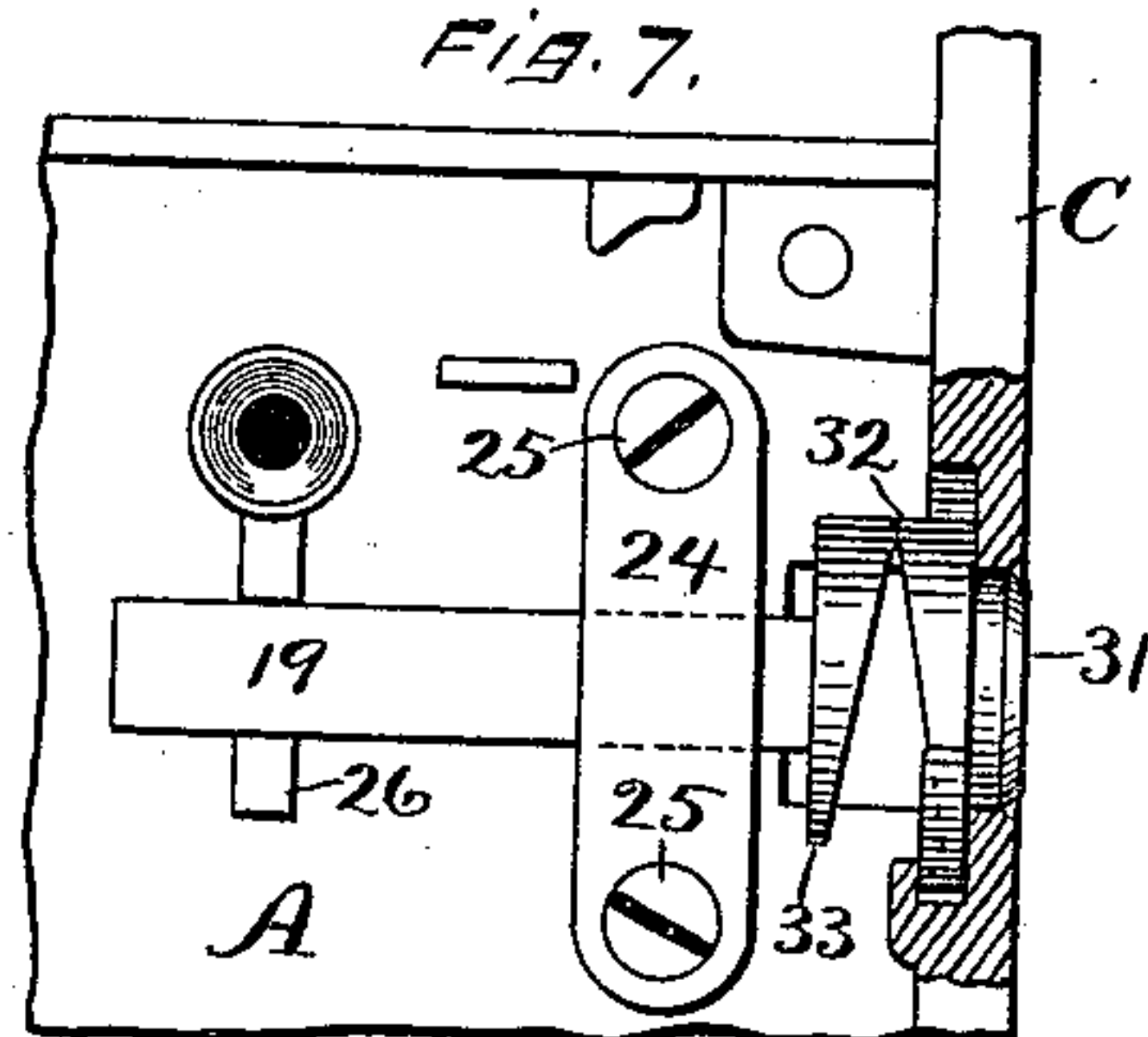
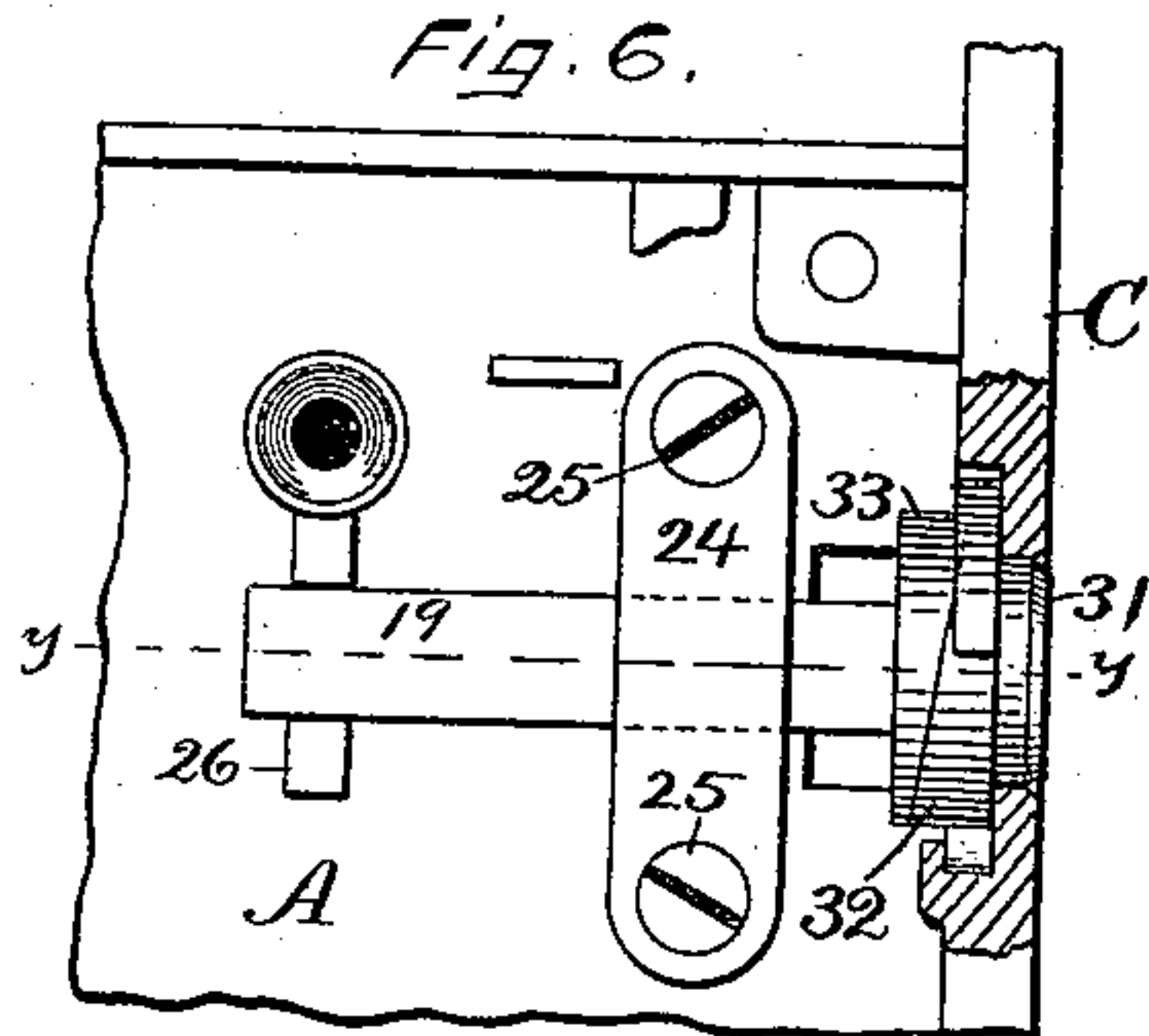
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H. E. RUSSELL, Jr.
LATCH.

2 Sheets—Sheet 2.

No. 450,339.

Patented Apr. 14, 1891.



WITNESSES.

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UNITED STATES PATENT OFFICE.

HENRY E. RUSSELL, JR., OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE
RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

LATCH.

SPECIFICATION forming part of Letters Patent No. 450,339, dated April 14, 1891.

Application filed November 10, 1890. Serial No. 370,851. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. RUSSELL, Jr., a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Night-Latches, of which the following is a specification.

My invention relates to improvements in night-latches; and the chief object of my improvement is to provide a stop for that part of the hub which is operated by the outside knob that will afford better protection than heretofore.

In the accompanying drawings, Figure 1 is a side elevation of my latch as combined with a lock, showing the face-plate side. Fig. 2 is a front elevation, partly in section, of my latch and upper portion of the case, the cap-plate being removed. Fig. 3 is a like view of a portion of the same with the stop engaging the latch-hub. Fig. 4 is a horizontal section, partly in plan view, the plane of section being indicated by the line $x x$ of Fig. 2. Fig. 5 is a like view of a modified form of my stop. Fig. 6 is a front elevation, partly in section, of a portion of the case and a modified form of stop for my latch. Fig. 7 is a like view of the same with the stop thrown into position for engagement with the hub. Fig. 8 is a horizontal section, partly in plan view, on line $y y$ of Fig. 6. Fig. 9 is a side elevation of the face-plate side of the same. Fig. 10 is a front elevation, partly in section, of a modified form of my stop. Fig. 11 is a like view of the same with the stop in position for engaging the latch. Fig. 12 is a horizontal section, partly in plan view, the plane of section being indicated by the line $z z$, Fig. 10; and Fig. 13 is a side elevation showing the face-plate side of the same.

A designates the case, B the cap-plate, and C the face-plate. Within the case is the divided hub consisting of the parts 14 and 15 to receive the two parts of the divided spindle on the respective sides of the door, the part 15 being designed to be operated from the outside knob. Both of these parts bear upon the lever 16, so that when either part is operated by turning the knob said lever will be oscillated to withdraw the latch-bolt

D, and when the knob is released it will be returned by the spring 17, all in a well-known form of latch, and for which any known form of latch with a two-part hub and spindle may be substituted therefor. As in ordinary latches of this class, the part of the hub to be operated from the outside of the door is provided with a notch 18 for being engaged by a stop-bolt 19. My improvement resides in operating this stop-bolt by means of a rotary device in the face-plate instead of a push-piece. In the preferred construction the rotary device 20 is mainly of cylindrical form with a journaled or reduced portion at each end, the outer end of which has its bearing in the face-plate C, as shown in Figs. 1, 2, 3, and 4, while the inner end has its bearing in a stud or elevation 21 on the case. The periphery of the middle portion of the rotary device is provided with a spiral groove or thread 22. The stop-bolt rests within a guide 26, formed on the case. A fractional nut 23, having threads to match said spiral groove, is formed as an integral part of the stop-bolt 19, and extends over the front side of the rotary device, where it is held by the strap 24, that is secured to the case by screws 25, thereby firmly holding the fractional nut in engagement with the rotary device, and also holding the rotary device and stop-bolt in their bearings. The outer end of said rotary device, which is within the face-plate, is slotted, squared, recessed, or otherwise fitted to receive a driver for rotating it when desired. As shown in Figs. 2 and 4, the stop-bolt is withdrawn from the notch 18 of the part 15 of the hub, so that the latch-bolt may be operated from either side of the door. By applying a driver consisting of any flat thin blade to the slot in the rotary device, it may be rotated, and, as it is held against longitudinal movement, it moves the half-nut and stop-bolt, forcing the latter into the notch 18 of the part 15 of the hub, as shown in Fig. 3, thereby locking that part of the hub and spindle from being turned by the outside knob. By turning the rotary device in the reverse direction the stop-bolt is withdrawn.

In Fig. 5 I have illustrated a rotary device 27 as formed integral with the stop-bolt 19, and, like that first described, it is mainly of cylindrical form, with a journal or reduced

portion at each end, the outer end of which has its bearing in the face-plate C. The rounded inner end which forms the stop-bolt has its bearing in the guide 26, formed on the case. The periphery of the middle portion is provided with a spiral groove 28, which fits a fractional nut 29, formed on the case, and a strap 30 holds the rotary device in place. The outer end of the rotary device is slotted or otherwise fitted to receive a driver. In said Fig. 5 the stop-bolt is illustrated as disengaged from the hub. By applying a driver to the slot in the rotary device it and the stop-bolt are moved endwise like a screw, and the latter engaged with the notch in the part 15 of the hub, to lock the same. It is withdrawn therefrom by turning the rotary device in the reverse direction.

In Figs. 6, 7, 8, and 9 the rotary device 31 is round and has a bearing in the face-plate C. Its inner face 32 is inclined or cam-shaped, as shown. The stop-bolt 19 is continued toward the face-plate, and at its outer end is a cam 33, of substantially the same form as that of the inner face 32 of the rotary device. Said stop-bolt is guided by the guide 26 at one end and by a guide under the strap 24 at the other. The body of said stop-bolt is recessed or cut away to receive the spring 34, one end of which spring bears against a stud 35 on the case, and the other against the lug 36, so as to have a constant tendency to force the cams into engagement and to withdraw the stop-bolt from the hub. The outer end of the rotary device is fitted for a forked driver by two holes 37, Fig. 9.

The stop-bolt in Figs. 6 and 8 is illustrated as withdrawn from the notch in the hub. By applying a driver and turning the rotary device the cams have their highest faces brought opposite each other, in doing which the cam 33 and stop-bolt 19 must necessarily be moved and forced into the proper position for engaging the notch in the part 15 of the hub, as shown in Fig. 7. By turning the rotary device 31 in the reverse direction the highest point of one cam is brought opposite the lowest point of the other cam, so that the stop-bolt is permitted to be withdrawn by the spring 34, as shown in Figs. 6 and 8.

In Figs. 10, 11, 12, and 13 I have shown a rotary device 37, similar to that shown in Figs. 6, 7, 8, and 9, excepting that it has a squared socket 38, Fig. 13, to receive a driver. The stop-bolt 19 has an offset body 39, the outer end of which is designed to engage the cam 40 of the rotary device 37. It is also provided with a friction-spring 41 and stud or pin 42.

It is guided at one end in the guide 26 and at the other end in guide 43. The friction-spring bears upon a lug 44 on the case. A slide 45 is arranged in a guide 46 by the side of the offset body 42, with its end designed to engage the face of the cam 40 at a point diametrically opposite its engagement with the end of said offset body. A lever or "walking-beam" 47, fulcrumed on a screw 48, connects the body of the stop-bolt and said slide 45, one end being pivotally connected and the other end slotted to receive the pin 42.

In Figs. 10 and 12 the stop-bolt is not in position to engage the notch in the hub. By applying a driver to the rotary device and turning it the highest point of the cam is brought against the outer end of the offset body 39 of the stop-bolt 19, thereby forcing said bolt endwise into the position for engaging the hub, as shown in Fig. 11. The friction-spring at the same time is carried over the highest point on the lug 44, so as to hold the parts against accidental displacement. By reversing the motion of the rotary device to bring the highest point of its cam against the end of the slide 45 said slide is pushed inwardly, and at the same time the connecting lever or walking-beam causes the stop-bolt to move outwardly, all as shown in Figs. 10 and 12, the spring 41 still being on the lug 44 to hold the parts against accidental displacement. A stop-bolt and slide, with connecting-lever or walking-beam, are not of my invention, excepting in combination with a rotary operating device.

I have shown three different forms of adapting the rotary devices to as many forms of drivers, either of which or other equivalent form may be used on either of my rotary devices. By the employment of a rotary device that requires the application of a driver for operating the stop-bolt it is less liable to be tampered with than in locks whose stops are operated by pushing with one's finger or thumb.

I claim as my invention—

In a latch, the combination of a two-part spindle and two-part hub, the outer part of said hub having the notch 18, the stop-bolt for engaging said notch, and a rotary device within the face-plate for operating said stop-bolt, substantially as described, and for the purpose specified.

HENRY E. RUSSELL, JR.

Witnesses:

M. S. WIARD,
THEO. E. SMITH.