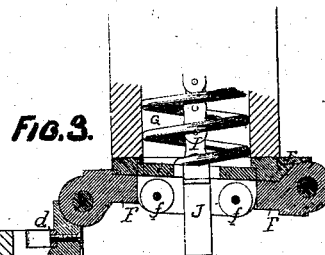
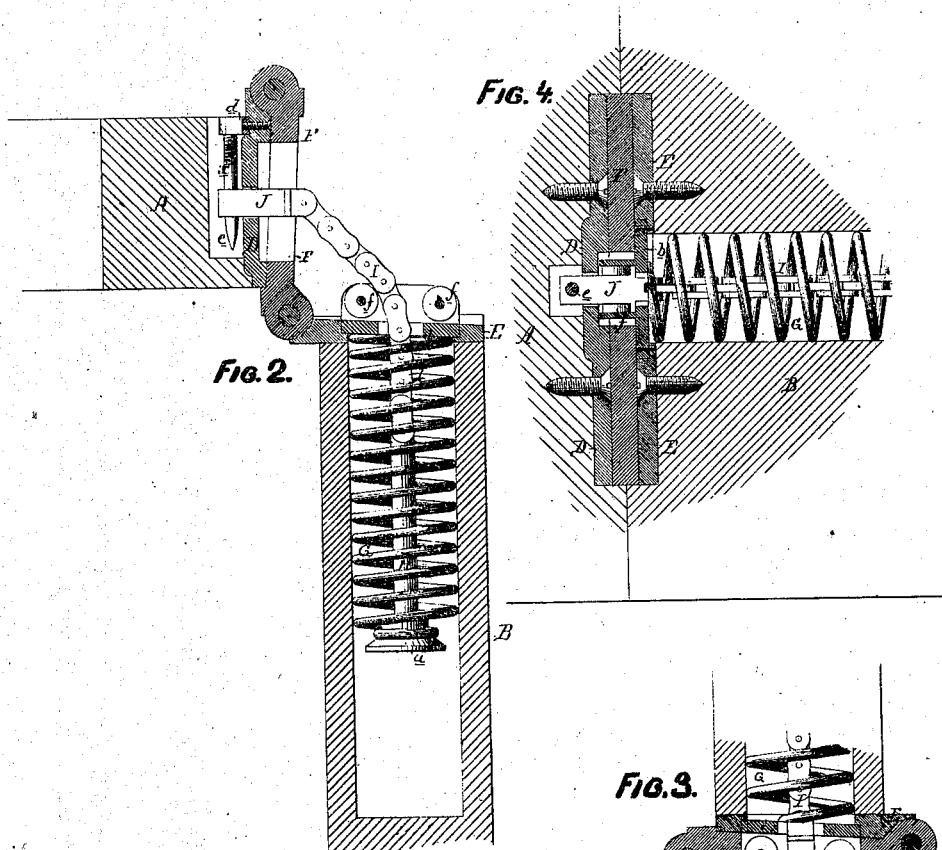
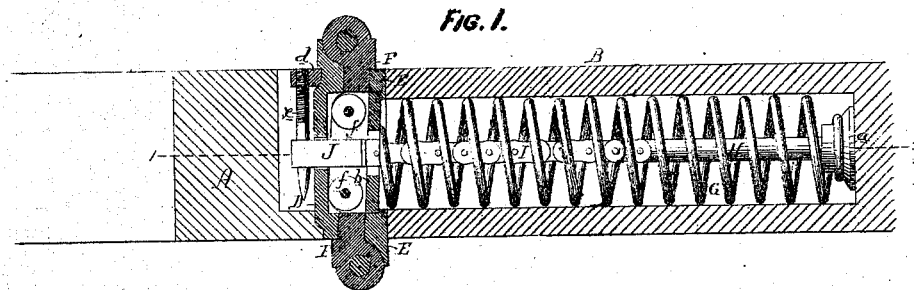


A. Rankin,
Door Spring.
No. 107,813. Patented Sept. 27. 1870.



WITNESSES { *Wm. A. Atter.*
Jno. B. Harding.

A. Rankin
by his attor.
Stroverman and son

United States Patent Office.

ANDREW RANKIN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 107,813, dated September 27, 1870.

IMPROVEMENT IN SPRING-HINGES FOR DOORS, &c.

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

I, ANDREW RANKIN, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Self-closing Doors, of which the following is a specification.

Nature and Object of the Invention.

My invention relates to a hinge having three leaves, so jointed as to open from either side, and with which a spring is combined, so as to close the hinge after it has been opened in either direction; and

My invention consists of a detachable plate, provided with rollers, and arranged on the hinge so that, by removing the same, access may be had to the spring.

The invention further consists in the combination of the above, and a bar connected to the chain, and secured to one of the leaves, so as to be detachable from the same.

Description of the Accompanying Drawing.

Figure 1 is a sectional plan of part of a door and door-frame, with my improvement;

Figure 2, the same, showing the door open;

Figure 3, the same, showing the spring disconnected from the frame; and

Figure 4, a vertical section of fig. 1, on the line 1-2.

General Description.

A represents part of a door-frame, and

B, part of a door, the two being connected together, in the present instance, by double hinges, each of which consists of a plate, D, secured to the frame, a plate, E, secured to the door, and an intermediate plate, F, hinged at one edge to the plate E, and at the opposite edge to the plate D.

In the edge of the door adjacent to the hinge is formed a chamber for receiving a spiral spring, G, and within the latter is a rod, H, connected by a chain to a short rod, J, a washer, a, at the end of the rod H, bearing against one end of the spring, while the opposite end of the latter bears against a detachable plate, b, attached to the plate E of the hinge, and carrying two rollers, f f, between which the chain I passes, and by which the said chain is guided.

The short rod J is arranged to project through an

opening in the plate D of the hinge, and to receive a pointed screw-pin, x, which passes through a projection, d, on the said plate, and is contained within a recess, e, in the door-frame A.

When this pin is in its place, it serves to so confine the chain to the door-frame that the door cannot be opened in either direction without compressing the spiral spring G, which renders the door self-closing.

On removing the screw-pin, however, the chain will be at liberty, and the spring will be rendered inoperative as a means of closing the door.

The advantages of my invention will be readily understood by those familiar with the hanging of ordinary self-closing doors, the springs and other attachments of which demand tedious manipulation in adjusting.

When the door has to be unhung, the pin x should be first withdrawn, when the spring ceases to be an obstacle in the way of unfastening the hinges, and, by removing the detachable plate b, the spring may be readily withdrawn for repairs or other purposes.

The advantages of rollers f f, for insuring the easy movement of the chain, need no explanation.

Although I have shown the detachable plate b and its rollers as applied to a double hinge, it will be evident that it is equally applicable to a single hinge.

It will also be evident that the spring I may be contained within a recess in the door-frame, in which case the chain must be connected by a pin, x, introduced into a recess in the door.

Claims.

1. The combination, with the chain I and spring G of the recessed plate E, its plate b carrying rollers f f, slotted plate F, and plate D, and its detachable bar J extending into the slotted plate F, as set forth.

2. The two rollers f f, arranged on a detachable plate adapted to the plate E of the hinge, as set forth.

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

ANDREW RANKIN.

Witnesses:

WM. A. STEEL,
HARRY SMITH.