

(No Model.)

M. REDLINGER.
SPRING HINGE.

No. 447,844.

Patented Mar. 10, 1891.

Fig. 1.

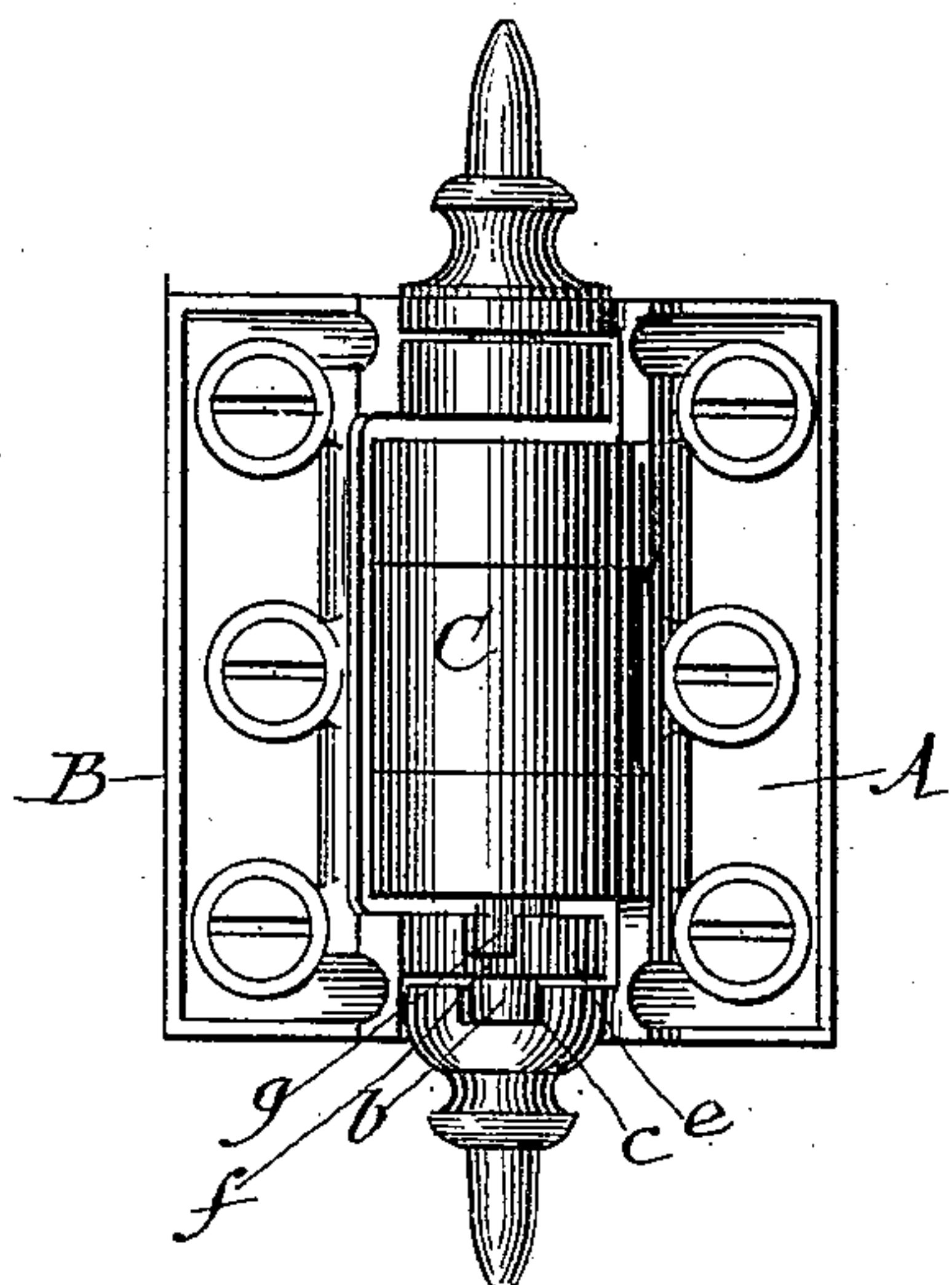


Fig. 2.

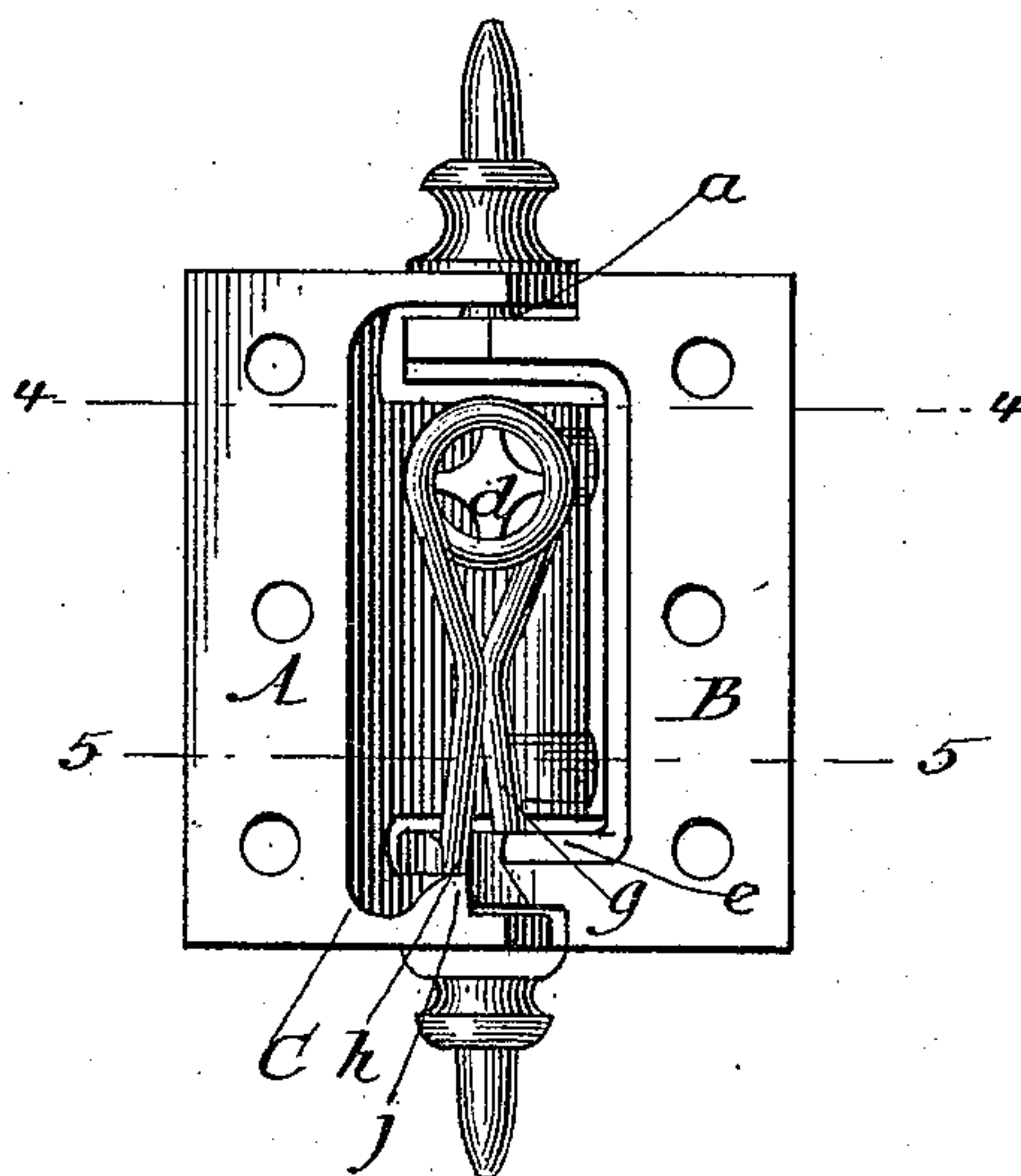


Fig. 3.

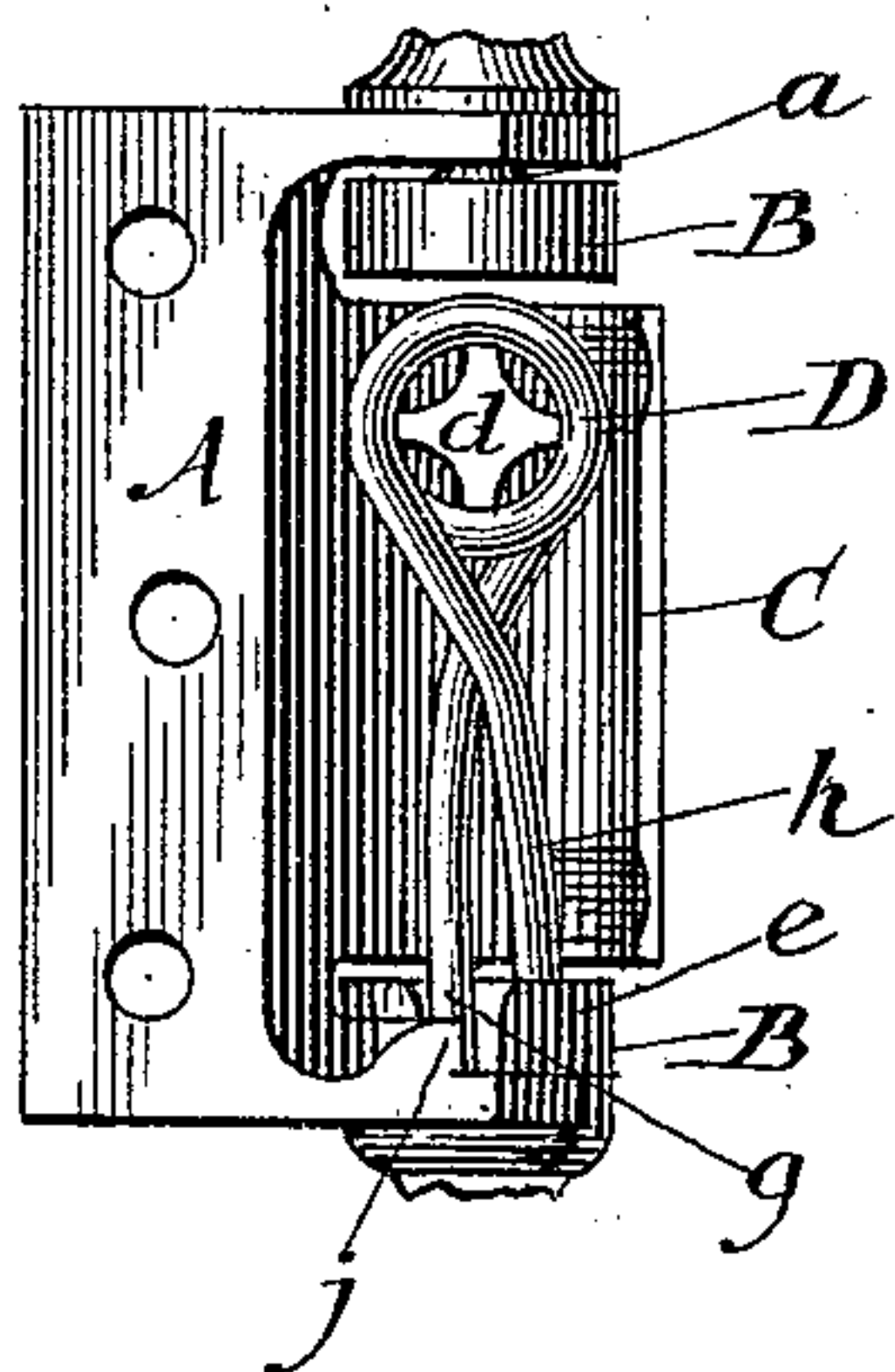


Fig. 4.

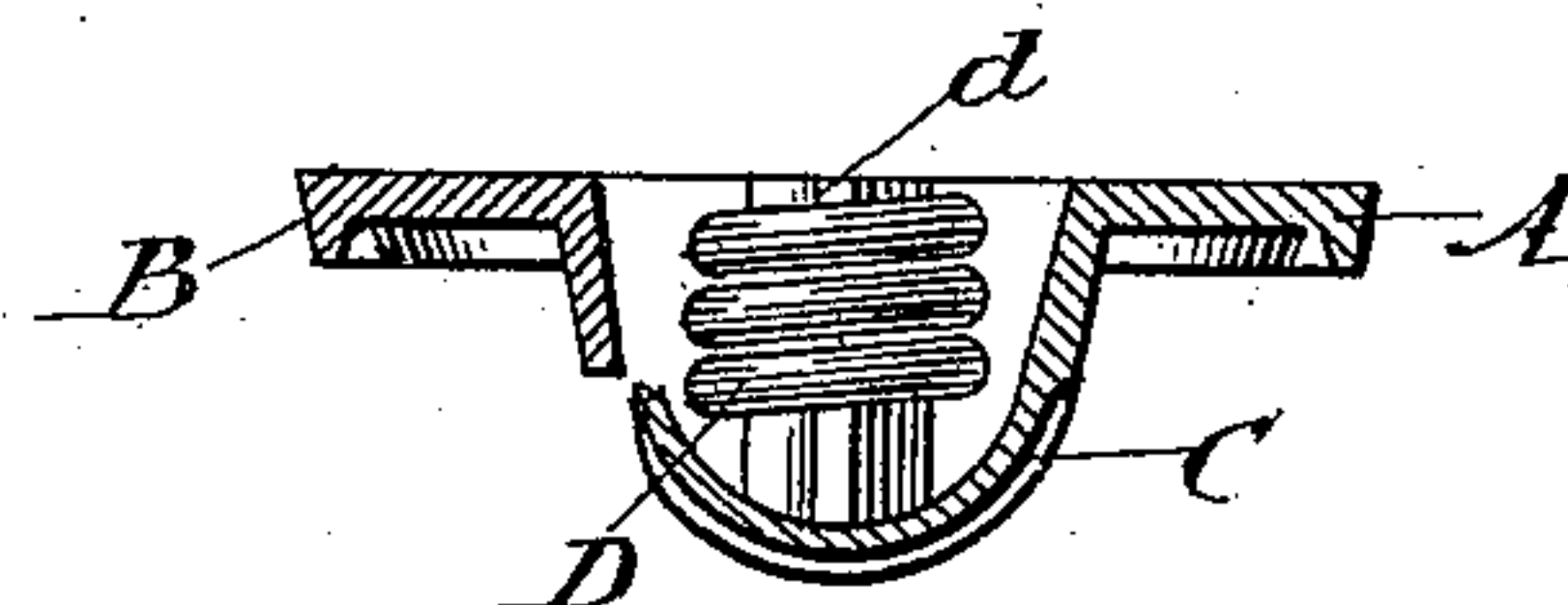
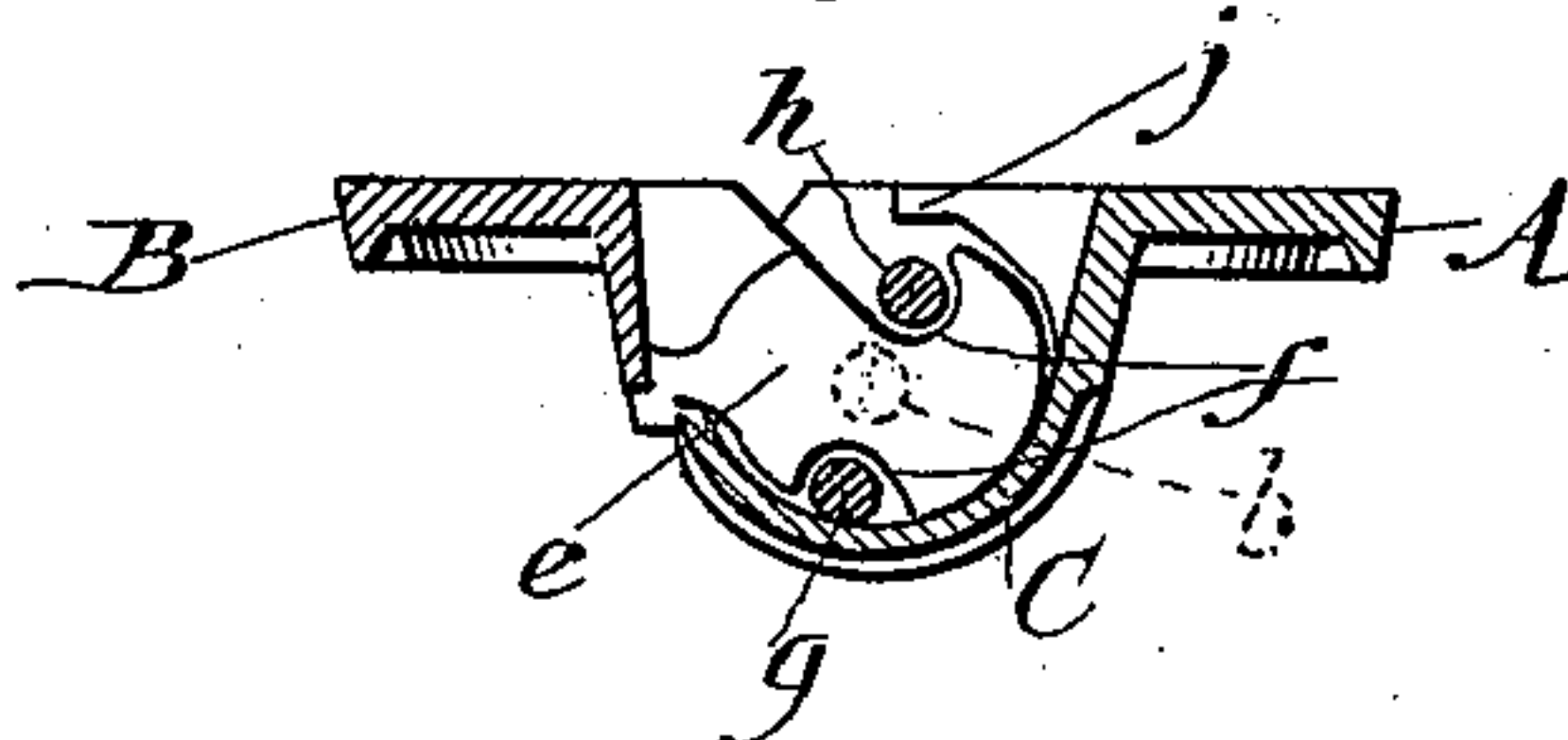


Fig. 5.



Witnesses:

John L. Jackson.
Arthur F. Burrand

Inventor:

Michael Redlinger
by Bond Adams & Jones
Attys.

UNITED STATES PATENT OFFICE.

MICHAEL REDLINGER, OF FREEPORT, ILLINOIS, ASSIGNOR TO CHARLES MORGAN, ALBERT BAUMGARTEN, AND EDGAR H. MORGAN, ALL OF SAME PLACE.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 447,844, dated March 10, 1891.

Application filed October 4, 1890. Serial No. 367,119. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL REDLINGER, residing at Freeport, in the county of Stephenson and State of Illinois, and a citizen of the United States, have invented certain new and useful Improvements in Spring-Hinges, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation. Fig. 2 is a rear elevation showing the position occupied by the parts when the door is closed. Fig. 3 is a similar view showing the position occupied by the parts when the door is open. Fig. 4 is a cross-section on line 4 4 of Fig. 2, and Fig. 5 is a cross-section on line 5 5 of Fig. 2.

This invention relates to spring-hinges. Heretofore spring-hinges have been of such construction that the action of the spring has increased the friction in the bearings of the hinge.

The leading object of my invention is to provide an improved spring-hinge in which the action of the spring will be such that it will not increase the friction in the bearings.

Further objects of my invention are to improve and simplify the construction of spring-hinges.

I accomplish these objects as illustrated in the drawings, and as hereinafter described.

That which I claim as new will be pointed out in the claims.

In the drawings, A represents one leaf of the hinge, and B represents the other leaf. These leaves A and B are adapted to be attached to the door and door-post, as usual. The leaf B is provided with a journal *a* at one end, adapted to enter a recess or bearing in the leaf A, and with a journal *b* at its other end, adapted to enter a recess or bearing in the opposite end of the leaf A. The leaf A is provided with a groove *c*, as shown in Fig. 1, to permit the insertion of the journal *b* into its bearing or recess. The leaf A is provided with a hood or casing C, which is semi-cylindrical, as shown in Figs. 4 and 5. On a pin or lug *d*, secured to or cast integral with the hood C, is mounted a spring D. This spring D is preferably made in the form

best shown in Figs. 2 and 3, and the pin *d* is preferably arranged in the position shown; but the position of the pin *d* and the form of the spring may be varied. One of the ears *e* of the leaf B is provided with two recesses *f*, which are diametrically opposite to the journal *b*, as indicated in Fig. 5. One end *g* of the spring D rests in one recess *f*, while the other end *h* rests in the other recess when the parts are in their normal position.

The two leaves A and B are put together by inserting the journal *a* in its bearing and then inserting the journal *b* in its bearing by passing it through the groove *c*. The end *g* of the spring D is then inserted in its recess *f*, and the body of the spring D is placed on the pin *d*. The end *h* of the spring D is then sprung into place in its recess *f*. The end *g* of the spring D by entering its recess *f* beneath the hood C, as shown in Fig. 1, prevents the leaf B from being separated from the leaf A while the spring D is in place. When the door is closed, the parts occupy the position shown in Fig. 2. When the door is open, the ends *g h* of the spring D are twisted to bring them into the position shown in Fig. 3. Both ends *g h* of the spring D act to cause the leaves A and B to turn on the journals *a b*. The ends *g h* acting on opposite sides of the journal *b*, the tendency of one to increase the friction of the journal in its bearing counteracts the like tendency of the other, and thereby prevents increased friction from the bearing of the spring against one of the leaves.

The hinge above described is a so-called "double-acting spring"—that is, from the dead-center it acts to open wider or to close the door. By mounting the body of the spring upon one leaf and attaching both ends of the spring to the other leaf both ends of the spring are caused to act and thereby reduce the space at which the leaves in opening or closing are at a dead-center. A further advantage of the above construction is that the spring does not lose all of its tension, so that it will hold the door closed.

The leaf A is provided with a lip *j*, as best shown in Fig. 5, which prevents the end *h* of

the spring F from being thrown out from its recess *f* when the parts are in the position shown in Fig. 5.

It will thus be seen that my spring-hinge is 5 exceedingly simple in construction, that the hood C covers and conceals the spring, that the two leaves are so joined when the spring is in position that they cannot come apart, and that the spring acts without increasing 10 the friction in the bearings of the hinge-journals.

It will be observed that in my improved construction the pivot at one end of the hinge-leaves is free from spring-pressure of any 15 kind, and that both extremities of the spring are connected to one end of a hinge-leaf at opposite sides of the pivot at such end. By this construction the end portions of the spring counteract each other in their tendency 20 to produce friction at the hinge-pivot, and consequently the hinge-pivot at this end of the spring is not subject to friction caused by spring-pressure.

What I claim as new, and desire to secure 25 by Letters Patent, is—

1. A spring-hinge consisting of two leaves pivotally connected together, and a spring

mounted upon one leaf and having both of its extremities attached to one and the same end of the other leaf at opposite sides of the 30 hinge-pivot at such end to reduce friction, substantially as described.

2. In a spring-hinge, the combination of two leaves A B, hinged together, one of said leaves having an ear *e*, provided with recesses 35 *f* on opposite sides of the hinge-journal and the other leaf having a pin *d*, of a spring D, mounted upon the pin *d* and having its ends inserted in the recesses *f*, substantially as and for the purpose specified. 40

3. A spring-hinge consisting of two pivotally-connected leaves, one having a hood C and a slot *c* and the other having an ear *e*, provided with recesses *f*, a spring D, mounted 45 upon one of the leaves and having its two extremities secured in the recesses of the other leaf, and the lip projection *j*, serving to retain one end of the spring in its recess and prevent the separation of the hinge-leaves, substantially as described.

MICHAEL REDLINGER.

Witnesses:

FRANK LOOS,
PHIL. SHRENKLER.