

(Model.)

L. M. DEVORE.

SPRING HINGE.

No. 396,989.

Patented Jan. 29, 1889.

Fig. 1

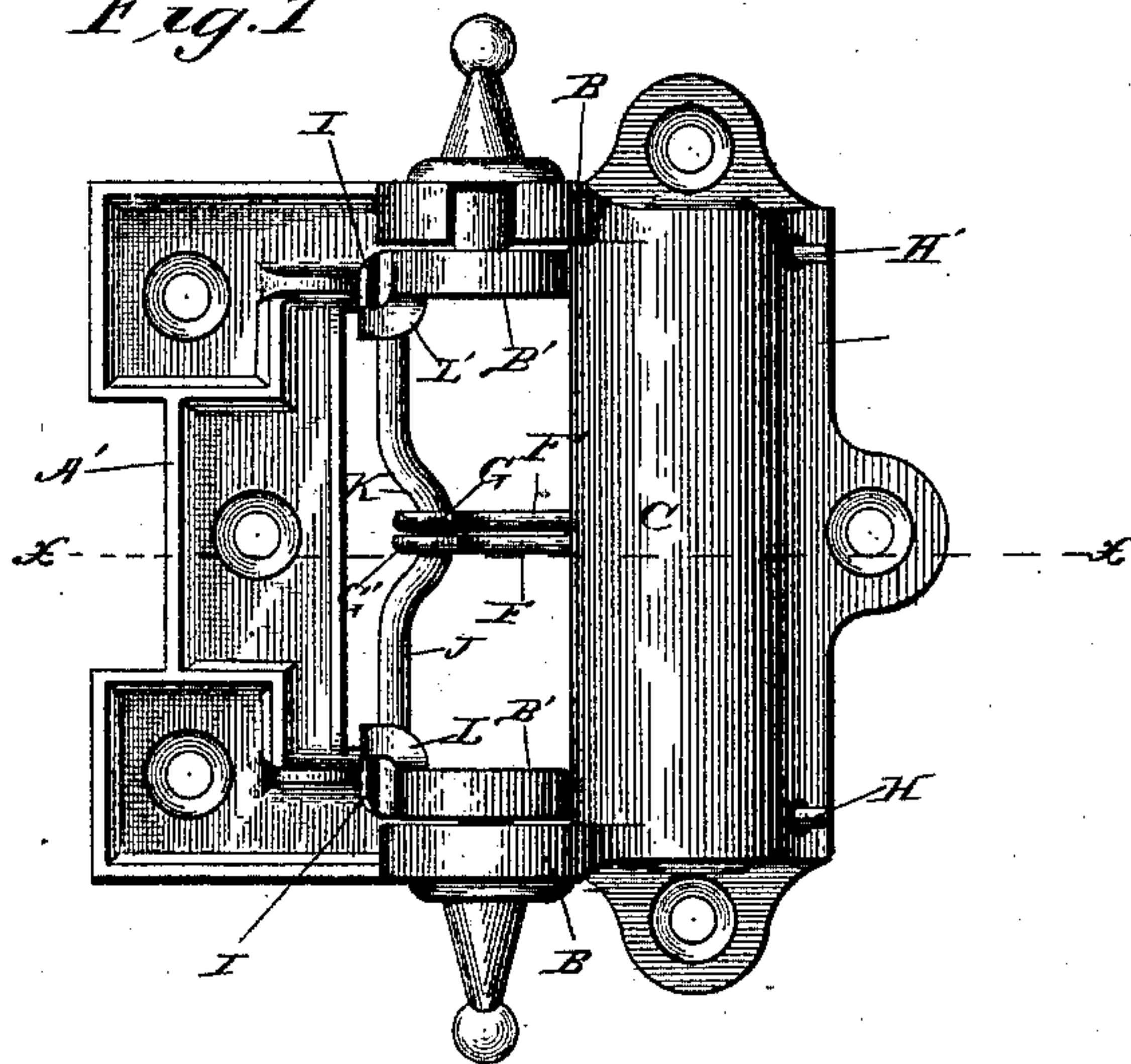


Fig. 2

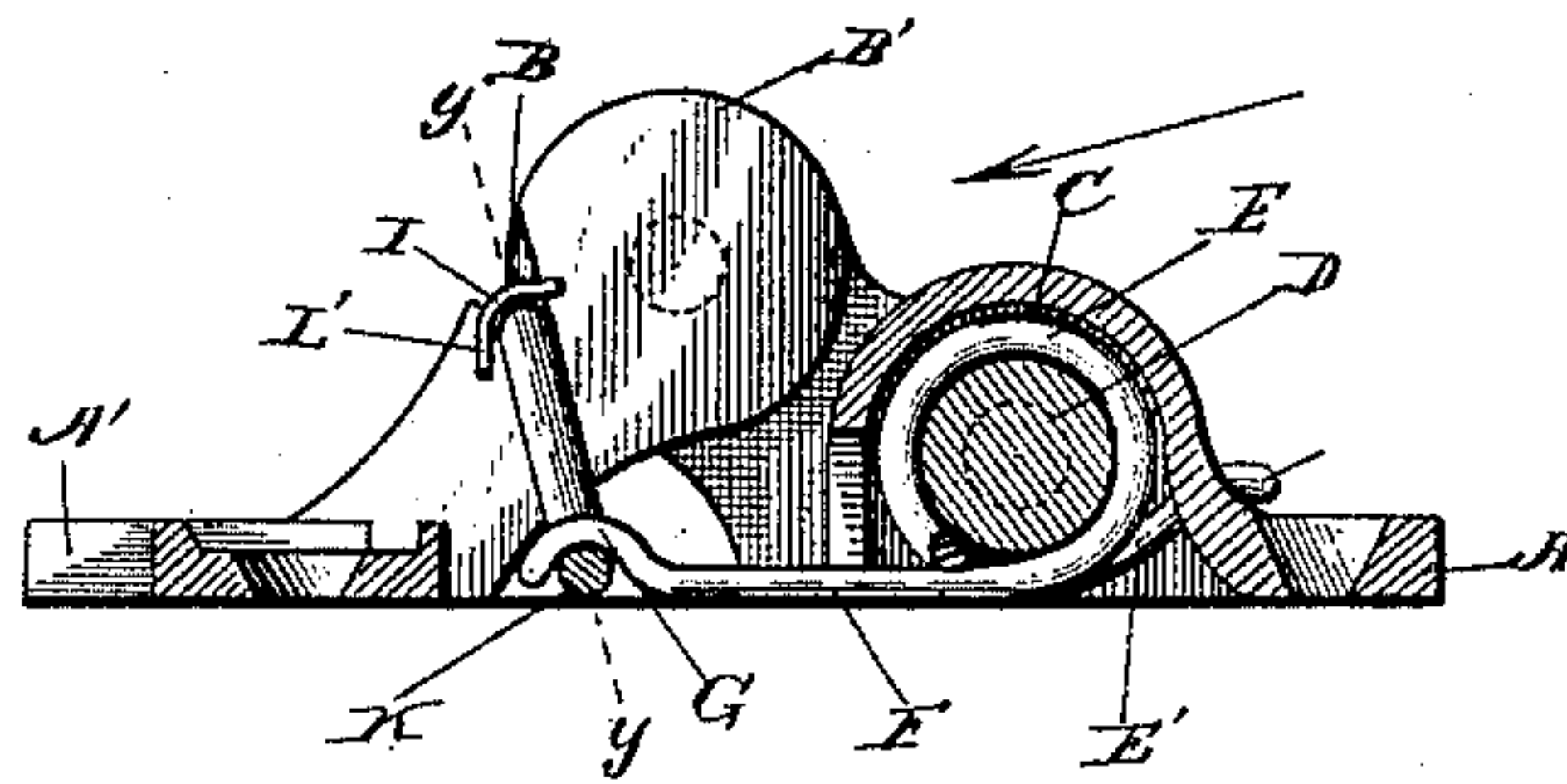
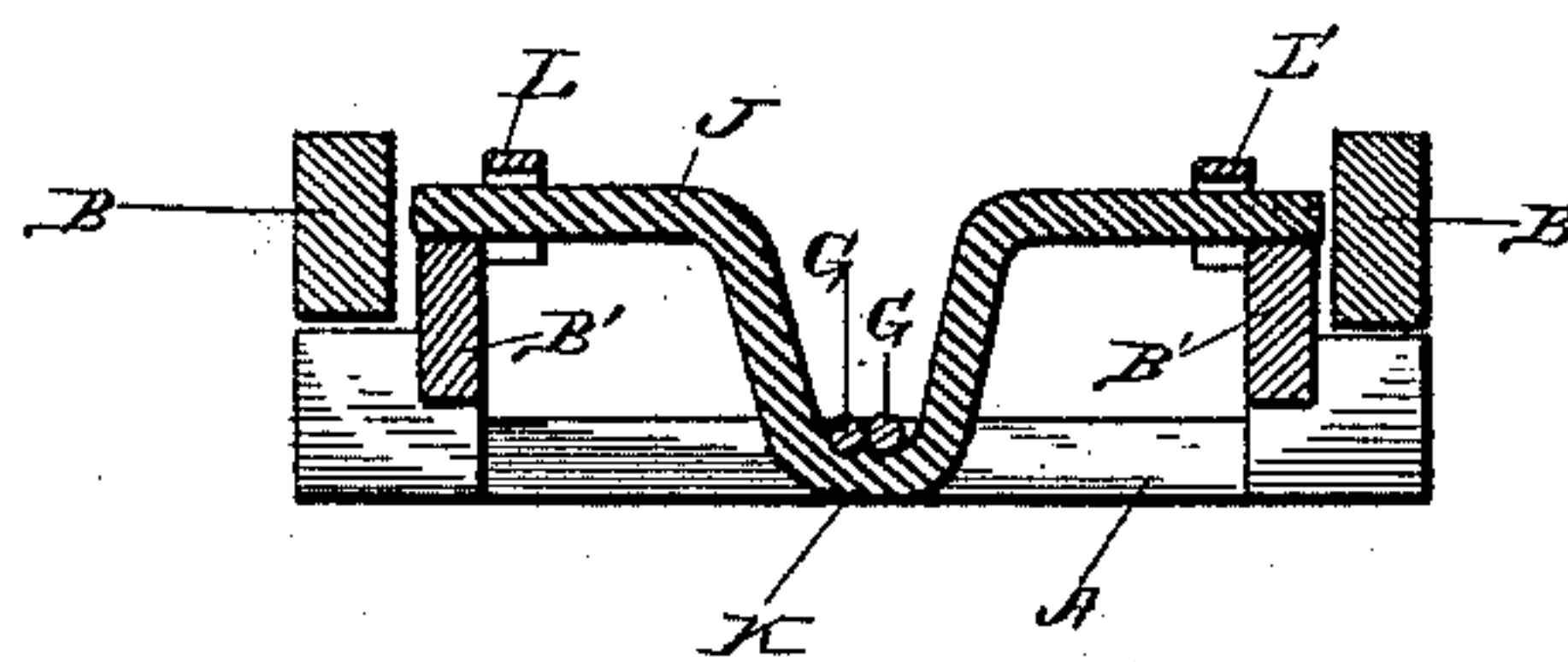


Fig. 3



Witnesses,

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UNITED STATES PATENT OFFICE.

LEVI M. DEVORE, OF FREEPORT, ILLINOIS, ASSIGNOR TO THE STOVER
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SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 396,989, dated January 29, 1889.

Application filed October 26, 1888. Serial No. 289,181. (Model.)

To all whom it may concern:

Be it known that I, LEVI M. DEVORE, a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Spring-Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in spring-hinges, the object being to secure such construction as will accomplish the same general results with a less number of parts than have heretofore been found necessary in similar hinges, and at the same time will lessen the cost of these parts.

In the accompanying drawings, to which this specification refers, Figure 1 is a plan of the complete hinge. Fig. 2 is a section on the line $x x$, Fig. 1. Fig. 3 is an oblique section through the whole hinge on the line $y y$, Fig. 2.

In the drawings, A A' are two hinge-leaves provided, respectively, with ears B B' B', connected in pairs at each end of the hinge by suitable pintles. The central portion of the leaf A is raised to form a partial cylinder, C, having closed ends. Within this cylinder, which is open below, is mounted a spring-armor, D, and upon this are coiled two springs, E E', whose inner ends, F F', project horizontally toward the opposite leaf and are provided, respectively, with slight hooks G G'. Their outer ends, H H', rest in suitable apertures in the leaf. Thus far the hinge presents no novelty herein claimed.

The ears B' B' are provided with notches I I upon their outer edges, and in these lies a swinging rod, J, having at its middle a crank-like bend or offset, K, which is engaged by the hooked ends G G' of the springs. The ends of the rod are retained in the notches by loops L L', formed integrally with the ears B' B' and lying entirely within their inner faces, so that with the notches they form a complete bearing whose halves are not in the same plane. The notches are of such depth that the ends of the cranked rod falls within the circumference of the ears B B, which thus prevent longitudinal displacement. If, however, the width of the bend be equal to the width of

the two ends of the spring, the latter, when engaging the bend, tends to keep the rod in place.

In putting the hinge together the rod is first passed longitudinally into one of its bearings and carried far enough to permit the other end to be brought into line, when by sliding in a contrary direction it is brought fully into position. The other leaf is then connected to the first with its spring in position, and the ends of the spring are caused to engage the crank K.

Evidently the two ends G G' of the springs may be connected, or, in other words, the two springs may be formed from the two branches of a loop of wire, or one of the springs may be omitted entirely, without in the least changing the novel features of the hinge, since the springs being hidden the sole office of the second spring is to add strength or force in action. Now, when the hinge is closed, the leaves are drawn together below the axis of rotation of the leaves, and the tendency is to keep the hinge closed; but as the hinge is forced open the cranked rod rotates in its bearings and the line of strain crosses the axis and the leaves are drawn together upon the opposite side, and the hinge is thus held open. In all positions the ends of the rod are held in place by the loops L L', which are placed out of the plane of the remainder of the rod-bearing in order that the casting may be done without cores. It is quite practicable to carry the notches I I only partly across the edges of the ears, relying on the end wall thus remaining to prevent the longitudinal movement of the rod; but I prefer to carry them entirely across and to rely upon the ears of the opposite leaf, as set forth.

What I claim is—

1. In a spring-hinge, the combination, with two suitably-connected leaves, of a rod revolvably mounted upon one of said leaves and provided with an offset or crank, and a spring mounted upon the other leaf at one side of the hinge-axis and having its free end extending toward the opposite leaf and engaging said offset or crank, substantially as set forth.

2. The combination, with the leaf A, having at each end an ear, B, of the leaf A', having ears B', falling between the ears B and forming with them a pair of ears at each end of

the hinge, the spring mounted upon one of
said leaves at one side of the hinge-axis and
having its free end projecting toward the other
leaf, the notches in the ears B' B', the rod J,
5 resting in said notches and having the crank-
like offset K, engaged by said spring end, and
the loops L L', retaining the rod in position,
substantially as set forth.

In testimony whereof I have signed this
specification in the presence of two subscrib- 10
ing witnesses.

LEVI M. DEVORE.

Witnesses:

MICHAEL STORKOPF,
WM. B. THOMAS.