(No Model.)

O. E. WOODBURY.

SPRING HINGE.

No. 544,339. Patented Aug. 13, 1895.

Fig. 1.

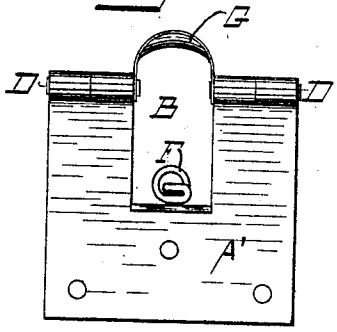


Fig. 2.

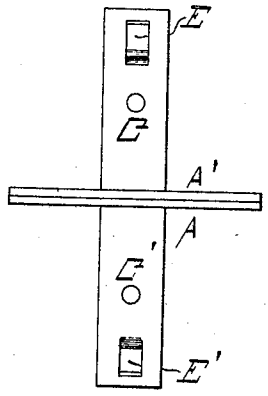
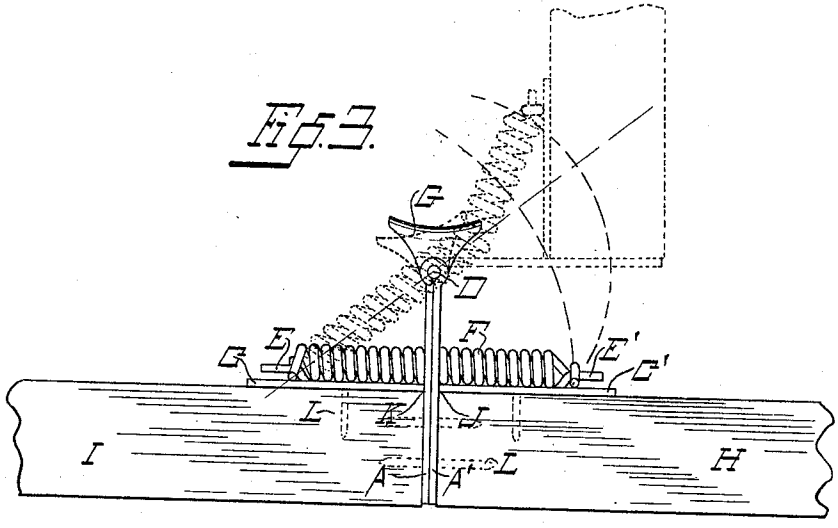


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ORSON E. WOODBURY, OF MADISON, WISCONSIN, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO EDWARD A. HARDY, OF SAME PLACE, AND WILLIAM H. HARDY, JR., AND CLARENCE F. HARDY, OF WAUKESHA, WISCONSIN.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 544,339, dated August 13, 1895.

Application filed February 18, 1895. Serial No. 538,772. (No model.)

To all whom it may concern:

Be it known that I, ORSON E. WOODBURY, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented new and useful Improvements in Spring-Hinges, of which the following is a specification.

My invention relates to improvements in spring-hinges.

The object of my invention is to provide a spring-controlled hinge which will hold the door open at a given point and close it from all other points, as hereinafter explained.

In the following description reference is had to the accompanying drawings, in which—

Figure I is a side view of my hinge when folded, showing the bearing-yoke against which the hinge-controlling spring is adapted to engage. Fig. II is a view of the outer edge of the hinge when folded together, showing the spring-supporting arms. Fig. III is a top view showing the position of my hinge attached to the door, with dotted lines indicating the position of the spring when the door is open.

Like parts are identified by the same reference-letters throughout the several views.

A A′ are leaves of my hinge. One edge of each leaf is provided with a recess B, formed by cutting into the leaf on parallel lines and bending the metal between the cuts outward at right angles to the plane of the leaf to form the laterally-projecting arms C C′ of the two leaves respectively. The remaining portions of the recessed edges are bent into a cylindrical form adapted to the reception of the pintles D and are cut out so that the cylindrical portions of the two leaves will interlock, as shown in Fig. I. A strip cut from the ends of the arms C C′ is bent upward to form the spring-retaining hooks E E′, and the actuating-spring F is located on the arms C C′, extending through the recess of the two leaves and attached at each end to the hooks E E′, respectively.

G is a yoke arched over the recess B and preferably connected pivotally with the pintles D, though it may be rigidly attached to one of the leaves if so desired, or a single pintle may be used, being arched across the recess in the place of the yoke.

The hinge is attached as shown in Fig. III, being secured to the door H and jamb I in the angles J and K formed by the leaves A A′ and the laterally-projecting arms C C′. The securing-screws L may be inserted through both the leaves and the arms, thus making the attachment of the hinge firm and durable. It will be observed that the pintle is, thus located away from the door and that as the door is opened the arc described by the hook E′ of the arm C′, which is attached to the door, is of a smaller circle than that which would be described by the spring if it were rotated upon one end at its normal tension, as shown by the arc-line X X in Fig. III. The effect of opening the door is therefore to compel the end of the spring which is attached to the hook E′ to follow the arc *t t* of the small circle, which first distends the spring and then allows it to recoil as the lines *t t* and *x x* first separate from and then approach each other. It is thus seen that when the spring coincides with the radial line *y y* it is drawn to its greatest tension in a straight line, but its force is exerted directly across the hinge or pivotal support on which the door swings, being thus at "center" and drawing the door in either direction. If the door is opened beyond this point the tension of the spring tends to hold or draw it open until the spring is brought to bear upon the yoke G, when the tension again increases with the bending of the spring and again tends to close the door.

In operation the door is ordinarily not opened far enough to bring the hinge to its center; but if it is desired to leave it temporarily open it is opened till the spring touches the yoke, in which position it tends to remain. Then when it is desired to close the door a light outward push will bend the spring over the yoke and the recoil of the spring then closes the door.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A spring hinge, consisting of the combination of the hinged leaves provided with a recess in their interlocking edges and having arms projecting laterally from the plane thereof, the yoke arched over said recess and connected at each end with the pintles or with one of the leaves, and the actuating spring extending through the recess and connected at each end with the arms, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

ORSON E. WOODBURY.

Witnesses:
C. E. PARISH,
C. C. THAYER.