

(No Model.)

N. LINSLEY.
SPRING HINGE.

No. 422,952.

Patented Mar. 11, 1890.

Fig. 1.

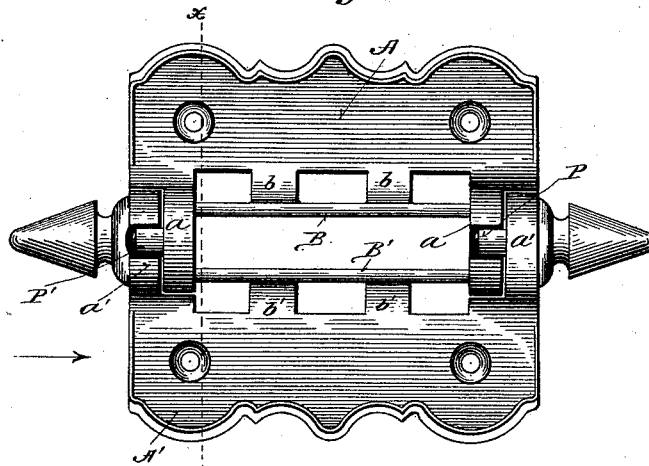


Fig. 2.

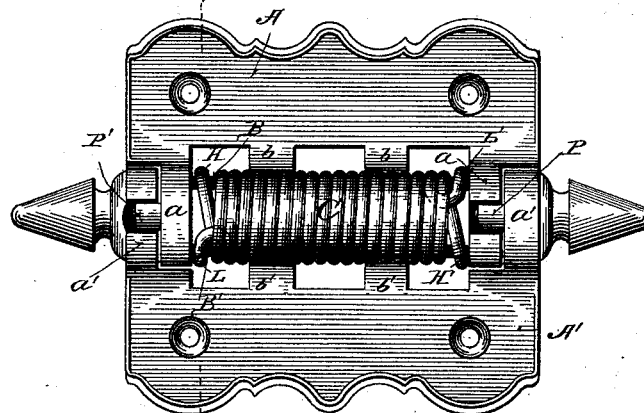
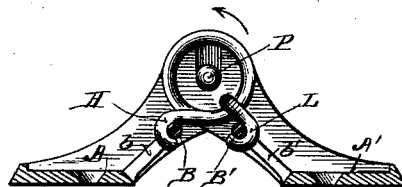


Fig. 3.



Witnesses

H. S. Rohrer.
Geo. W. Coughaver.

Inventor

Newton Linsley
by *Wm. H. Brown*
Attorney.

UNITED STATES PATENT OFFICE.

NEWTON LINSLEY, OF FREEPORT, ILLINOIS, ASSIGNOR TO THE FREEPORT
HARDWARE MANUFACTURING COMPANY, OF SAME PLACE.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 422,952, dated March 11, 1890.

Application filed January 28, 1889. Serial No. 297,668. (No model.)

To all whom it may concern:

Be it known that I, NEWTON LINSLEY, 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 of that class in which the spring operates to close the door when opened to any point within a given angle, but tends to draw it open when opened beyond that point, the point at which the operation of the spring reverses being called the "dead-point" of the hinge.

The invention is fully described and explained in this specification, and shown in the accompanying drawings, in which—

Figure 1 is a plan of the leaves of a hinge in operative connection with each other, the spring being omitted. Fig. 2 is a similar view of a complete hinge, including the spring. Fig. 3 is a transverse section through the line X X, Figs. 1 and 2, the view being in the direction indicated by the arrow in Fig. 1.

In the views, A A' are two leaves of suitable form provided at their ends with ears *a a'*, connected by suitable short pintles P P', the ears so connected forming knuckle-joints separated by a considerable space adapted to receive the spring. The two leaves are provided with integrally-formed pins or rods B B', which may be braced or strengthened by bars or webs *b b'*, and which serve as points for the pivotal connection of a spring with the leaves. The pintles P P', which connect the ears *a a'*, are considerably above the plane of the leaves A A', and the pins or rods B B' are between the axial line of the pintles and the plane of the leaves, so that when the hinge is attached to the face of a door and casing, as is customary with surface-butts of this class, the pins B B' are between the pintle-line of the hinge and the surface of the door and casing, to which the hinge is attached. The construction of these leaves

with their pins B B' is substantially the same as that of the corresponding parts of the hinge shown in the patent of Robert H. Wiles, No. 274,161, or of the hinge shown in the patent of H. P. Kochsmeier, No. 282,993.

In the space between the knuckle-joints at the ends of the hinge is placed a coiled or spiral spring C, whose axis is approximately coincident with the pintle-line of the hinge. The ends of the spring are formed into hooks H H', which engage, respectively, the rods B B' of the leaves A A', the points of engagement of the two hooks being at the opposite ends of the hinge. The spring is inserted when under considerable torsional strain, and this strain tends to draw the pins B B' together, and at the same time tends to throw the ends of the coil out of line, the direction in which each end of the coil tends to move with reference to the corresponding hook being indicated by the arrow in Fig. 3. In order to overcome this tendency and hold the ends of the coil in line, each of the end coils is connected by means of a short link with the rod or pin opposite that with which the hook at the end of the coil engages. Thus the hook H engages with the rod B, and the link L, which connects the corresponding end coil with the opposite leaf of the hinge, engages the rod B', and at the other end of the hinge the hook H' engages the rod B', and the corresponding link L' engages the rod B.

I am aware that it is not broadly new in a hinge of this class to connect the spring at each end of the hinge with one leaf by means of a projecting hook and with the other leaf by means of a connecting-link, as this is the invention set forth in the Kochsmeier patent, already referred to; but in the Kochsmeier patent the end coil of the spring fits upon a supporting button or washer and the link is suitably pivoted to the washer or button at its center, while in the hinge shown and described herein each of the links is pivoted at its outer end to the rod or pin on the leaf, while its inner end is hooked directly to the wire of the end coil of the spring, the button or washer being dispensed with entirely. This change effects a considerable saving of labor

and material in the construction of the hinge without lessening its efficiency, and it is therefore quite a valuable improvement.

5 The operation of the hinge is precisely the same as that of the Kochsmeier hinge, already referred to, the force of the spring being exerted at all times to draw together the two pins B B', and thus to close the hinge so long as it is not open beyond a certain limit and
10 to throw it open when it is open beyond that limit. The operation of hinges of this class being well known, no detailed description or illustration thereof is thought to be necessary.

15 As the hinge is opened and closed the inner end of the link slides a short distance upon the wire with which it engages; but the smooth finish of wire used in hinges of this class prevents any serious friction of the
20 parts. If desired, however, the inner end of the link may be provided with a small roller resting against the inner surface of the wire of the coil.

The links may be formed of any desired
25 material; but I prefer to make them of wire,

each link being formed with a hook at each end, and the two hooks being in planes approximately at right angles to each other.

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

In a hinge of the class described, the combination, with two leaves of suitable form, of a torsionally-operating spiral spring, each end of which is connected with one leaf by a
35 projecting hook and with the other leaf by a short link, whose outer end engages a point upon the leaf, while its inner end engages directly with the wire of the spring, the points of connection of the hooks and links with the
40 leaves being between the pintle-line of the hinge and the surface of the door-casing, to which the hinge may be attached.

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

NEWTON LINSLEY.

Witnesses:

CHARLES E. FORRY,
R. H. WILES.