

JAMES K. OTIS.

Improvement in Hinges.

No 126,647.

Patented May 14, 1872.

Fig: 1.

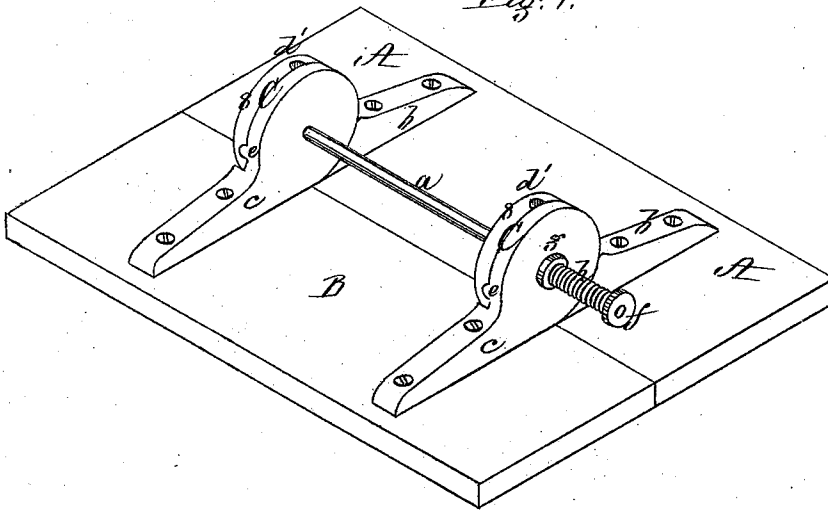
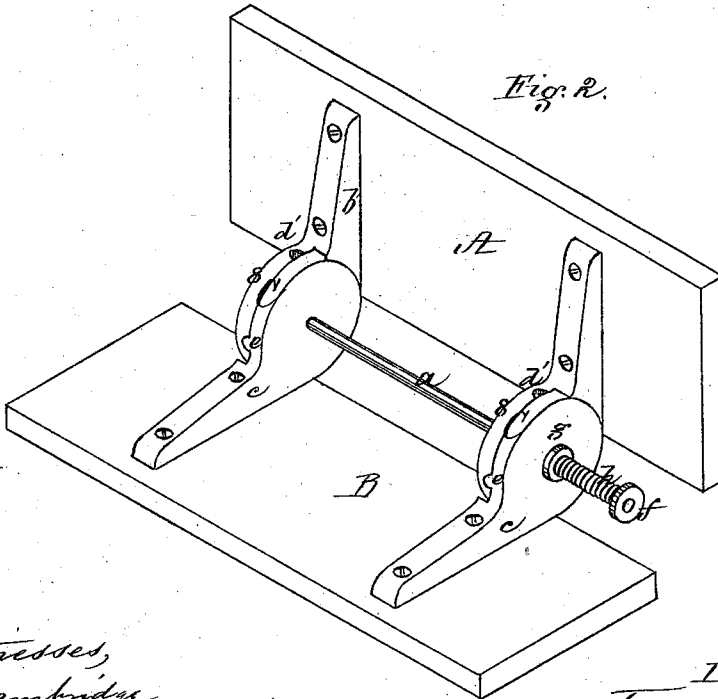


Fig. 2.



Witnesses,
W. J. Cambridge
M. J. Adams

*Inventor,
James W. Otis
Per his Attorneys
Teschmacher & Hearn*

JAMES K. OTIS.

2 Sheets--Sheet 2.

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Fig. 3.

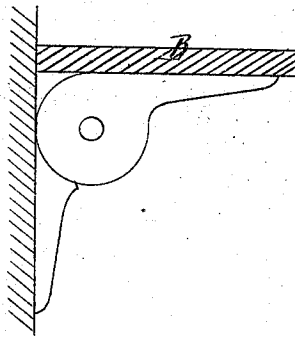


Fig. 4.

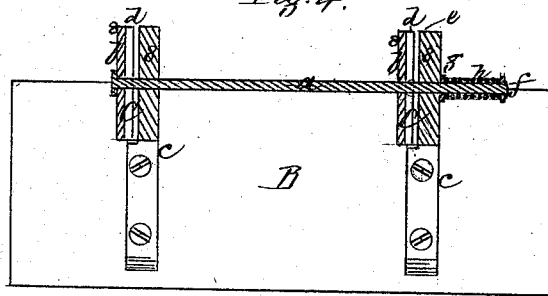


Fig. 5.

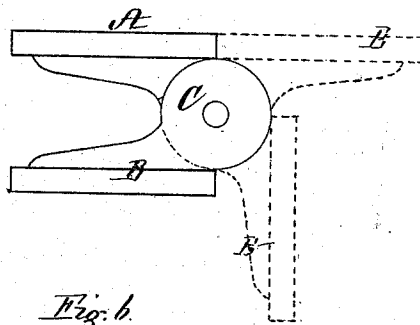


Fig. 6.

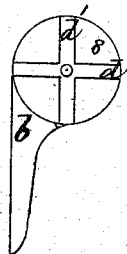
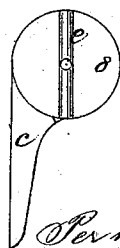


Fig. 7.



Witnesses,
W. J. Cambridge
Chas. S. Andrews

Inventor
James K. Otis,
Per his Attorneys,
Fischelbacher & Stearns.

UNITED STATES PATENT OFFICE.

JAMES K. OTIS, OF EAST CAMBRIDGE, ASSIGNOR TO HIMSELF AND FREDERICK W. NICHOLS, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN HINGES.

Specification forming part of Letters Patent No. 126,647, dated May 14, 1872.

To all whom it may concern:

Be it known that I, JAMES K. OTIS, of East Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Self-Supporting Hinges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view, representing my self-supporting hinge applied to the under side of a table and its auxiliary leaf, the parts being inverted, and the leaf being in the position it occupies when the table is extended. Fig. 2 is a perspective view, representing the leaf swung down into the position it occupies when not required for use, the parts also being inverted. Fig. 3 is a section, representing the application of my invention for supporting a shelf from the wall or side of a room; Fig. 4, a longitudinal horizontal section, to be referred to; Fig. 5, an end elevation, showing the leaf swung up under the table; Figs. 6 and 7 are elevations of the inside of the two portions of the hinge.

My invention consists in a self-supporting hinge, one portion of which is secured to the under side of a table, desk, or other article of furniture, or to the side of a room, and the other portion to an auxiliary leaf or shelf, to be raised when required for use; one portion of the hinge being provided with one or more projections fitting into one or more holes or recesses; one portion of the hinge being free to slide, on its pivot, out of contact, so as to unlock it from the other portion by compressing a spring, in order to admit of the leaf being swung up or down; the spring, on being released again, locking the sliding and stationary portions of the hinge together.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawing, A is intended to represent a portion of the top of a sewing-machine, desk, or table; and B, a portion of an auxiliary leaf, to be used when the former requires to be extended. C C are two hinges, connected together by and pivoted upon a rod, d,

passing centrally through the enlarged ends 8 of the two leaves or portions *b c* of the hinge. The portion *b* of each hinge is secured to the under side of the top A of the machine, desk, or table, and the portion *c* of each hinge is secured to the under side of the auxiliary leaf to form its extension. The face of the enlarged end 8 of each portion *b* on the side next to the other portion, *c*, is provided with two recesses, *d d'*, crossing each other diametrically, for the reception of a correspondingly-shaped projection, *e*, formed on the face of the enlarged end 8 of the other portion. The rod *a* extends out beyond one of the hinges C, and its outer end is provided with a head, *f*, between which and a washer, *g*, is placed a spiral spring, *h*, which surrounds the rod and keeps the sliding portions *c* in contact with the stationary portions *b*, the projection *e* of one portion fitting into one of the recesses *d d'* of the other portion, and locking the parts together.

When the leaf B is swung down in the position seen in Fig. 2, and it is desired to increase the surface of the top of the table, the leaf is pressed to one side in the direction of the axis of the rod, and against the resistance of the spring *h*, so as to separate the portions *b* from the portions *c*, (see Fig. 4,) and withdraw and unlock the projections *e* from the recesses *d*, when the leaf is free to be swung up into the position seen in Fig. 1; and on releasing the spring the portions *b c* are again brought together, and the projections *e* enter the recesses *d*, thus locking the portions *b c* securely in place, and affording a firm support for the leaf. If desired, the leaf may be swung entirely under the table, and locked in that position by the projections *e* entering the recesses *d'*, (see Fig. 5.)

The spring *h* may be placed between the two hinges C C, one end bearing against the inside of one of the portions *b* or *c*, and the other end of the spring against a pin passing through the rod, the portions *c* sliding, as before described, thereon. The end of the rod opposite that surrounded by the spring may be provided with a screw-thread, for the reception of a nut, by turning which the effective length of the rod may be shortened should the elasticity of the spring be impaired; and the nut

may be removed to withdraw the rod, in order to remove one spring and substitute another, if desired.

Instead of two hinges, one only may be employed, as for supporting a short or narrow leaf, shelf, or bracket, in which case a pin of suitable length would be used as a pivot, instead of the rod *a*, as described, a spring being used in connection therewith, to draw the sliding portion up to the stationary portion of the hinge.

It is evident that my improved hinge may be employed for connecting an auxiliary leaf to other articles than those above referred to, such as chairs, settees, &c., and also for supporting a shelf from the side or wall of a room for temporary use.

Claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

One or more self-supporting hinges, *C C*, consisting of the stationary and movable portions *b c*, provided with one or more projections, *e*, and one or more holes or recesses, *d d'*, in combination with the rod or pivot *a* and spring *h*, operating substantially in the manner and for the purpose set forth.

Witness my hand this 30th day of March, 1872.

JAS. K. OTIS.

In the presence of—

N. W. STEARNS,

W. J. CAMBRIDGE.