(No Model.)

F. W. HOEFER.

SPRING HINGE.

No. 501,786. Patented July 18, 1893.

Fig. 1.

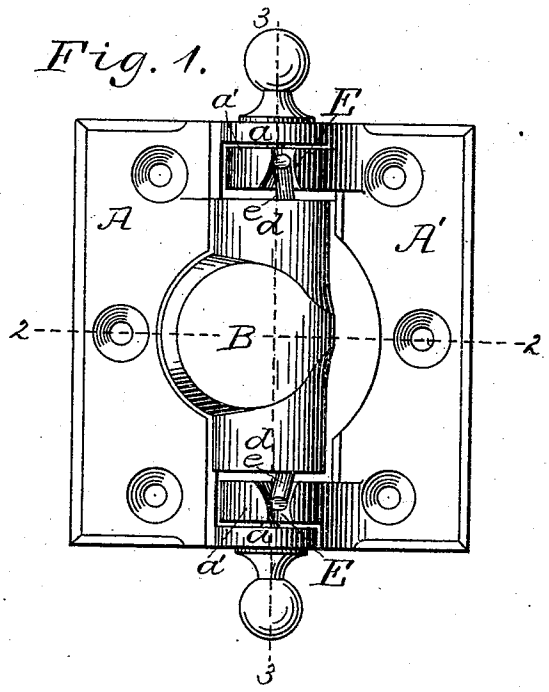


Fig. 3.

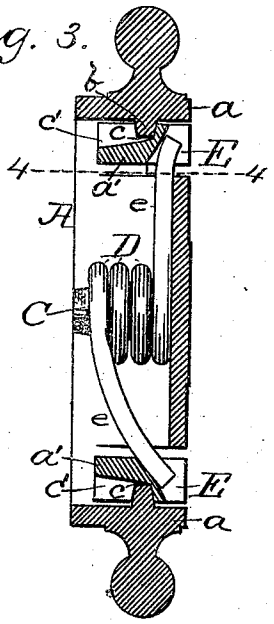


Fig. 2.

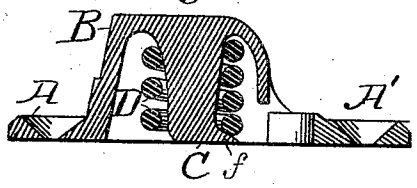


Fig. 4.

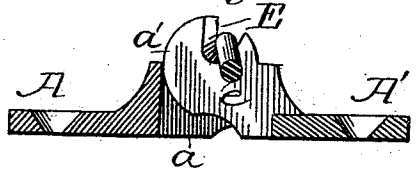


Fig. 5.

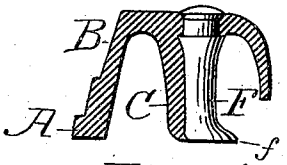
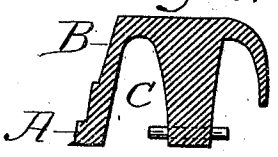


Fig. 6.



Witnesses:
Sue Carney
Timothy Stubbins

Inventor:
Fredrick William Hoefer,
By Frank D. Thomason,
Atty.

UNITED STATES PATENT OFFICE.

FREDERICK WM. HOEFER, OF FREEPORT, ILLINOIS.

SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 501,786, dated July 18, 1893.

Application filed August 1, 1891. Serial No. 401,380. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK WM. HOEFER, of Freeport, Stephenson county, Illinois, have invented certain new and useful Improvements in Spring-Hinges, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is to improve and simplify the spring hinge for which I applied for Letters Patent of the United States on the 31st day of July, 1890, Serial No. 360,484; substantially as hereinafter fully described, and as illustrated in the drawings, in which—

Figure 1, shows a plan view of my invention. Fig. 2, is a transverse section therethrough, taken on dotted line 2, 2, Fig. 1. Fig. 3, shows a longitudinal central section taken on dotted line 3, 3, Fig. 1. Fig. 4, shows a transverse section taken on dotted line 4, 4, Fig. 3, and Figs. 5 and 6 show modified forms of the stud for retaining the spring.

In the drawings A and A′ represent the two leaves or screw-plates of the hinge, which, while they may be of any suitable design, are, preferably, rectangular. These plates are connected by suitable lugs, which are so located and arranged with reference to each other, that the lugs *a′* of plate A′, come between and lap against the inner surface of the lugs *a*, *a*, of the plate A. These lugs are connected by pivotal studs *b*, *b*, projecting inward from the lugs *a* into suitable bearings *c*, *c*, in the outer faces of lugs *a′*, which latter have channels *c′*, *c′*, made therein from their under edge so as to make a passage leading thereto for said pivotal studs.

Preferably cast integral with plate A and projecting centrally from the inner edge of the same, is a dome or hood B, which, preferably, has longitudinal, semi-cylindrical wings *d*, *d*, projecting in opposite directions therefrom to within a distance of lugs *a*, corresponding to the thickness of lugs *a′*, of the other plate, which occupy the space thus left, and thereby give the hinge the appearance of having a continuous cylindrical knuckle extending in alignment with the pivotal center from one end of the hinge to the other. If desired the hood may be given such shape as to avoid having a distinctive shape, and may possess a cylindrical shape like said wings so as not to be distinguishable therefrom. This hood B has a stud C projecting downward from the under surface of its roof at right angles to the plane of the screw-plate A. This stud has placed upon it a spiral-spring D consisting, preferably, of not more than two or three coils, and has its ends *e*, *e*, terminate so that they extend tangentially in opposite directions parallel to the pivotal center of the hinge. Each end *e* of spring D extends to and enters a recess E made in the outer edge of lugs *a′*, of plate A′, which are so located as to be on that side of the pivotal center of the hinge nearest the plate A′. The pressure exerted by this spring is such, therefore, as to keep the screw-plates on the same plane, or parallel to each other. Stud C is provided on its free end with a toe *f* which projects laterally therefrom in a direction opposite to plate A. This toe is for the purpose of preventing the spring from slipping off the stud. It may be made part of a separate piece F as shown in Fig. 5, and may rest in a grooved seat made longitudinally in the outer face of said stud with reference thereto, with its upper end extending up through a suitable opening in the roof of said hood, and swaged on the outside so as to retain it in place. However, instead of providing this toe, which is the cheapest and simplest under the circumstances, I could make the stud slightly longer and pass a pin or key laterally through the same to prevent the spring slipping off. The pressure of the ends of said spring are toward plate A′. Thus when the plates are on the same parallel plane, the tendency of the spring is to keep them in such position; when the plates have been moved to a position about at right angles to each other the spring will be in a contracted condition, and its efforts to return to its normal status will cause the plates to close together in positions parallel to each other. In moving the plates in the opposite direction this same contraction and expansion of spring D causes the plates to act just the reverse of the operation just described.

It is apparent that instead of stud C, upon which spring D is secured, depending from the under surface of the roof of hood B said stud could project outward from plate A it-

self, and the hood be dispensed with. I prefer the use of this hood, however.

What I claim as new is—

The combination with the screw-plates of a hinge, one of which has a stud projecting at right angles to and intersected by the pivotal center of the hinge which is provided with a laterally projecting toe, of a coil-spring coiled upon said stud, having its ends extending parallel to the pivotal center of the hinge, and suitably connected to the other plate, as set forth.

FREDERICK WM. HOEFER.

Witnesses:
D. B. BREED,
W. P. PUTNAM.