D. W. HOUSLEY.

Spring-Hinge.

No. 208,242. Patented Sept. 24, 1878.

Fig.1

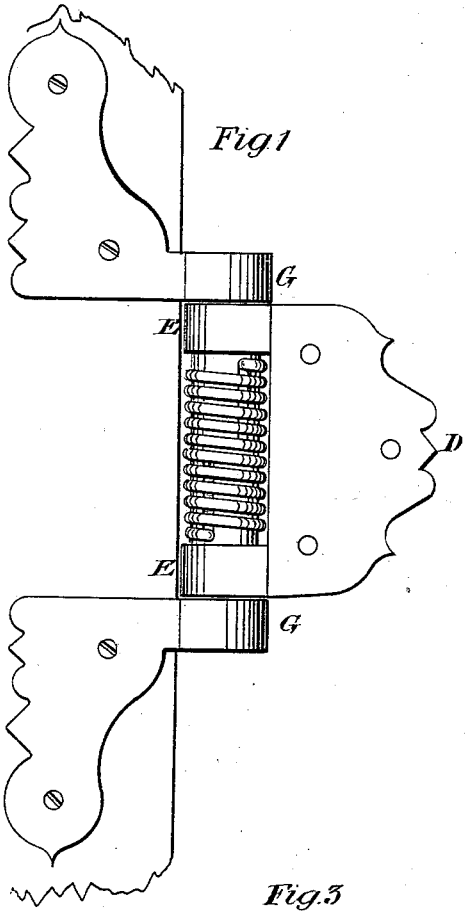


Fig.2

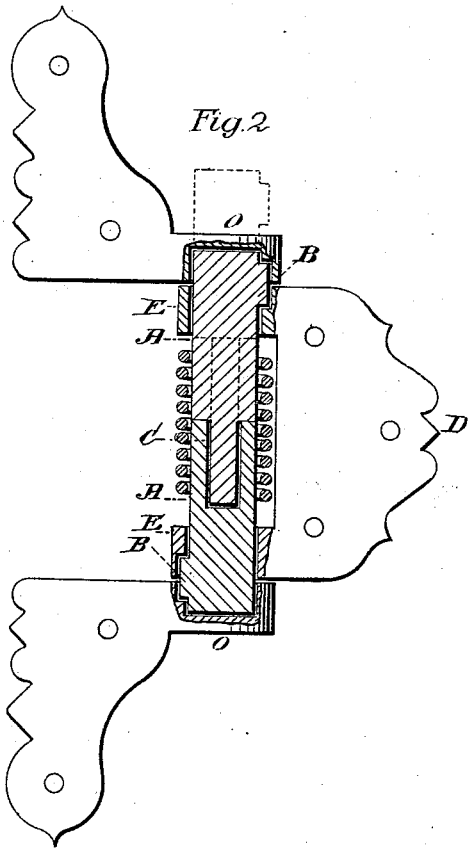


Fig.3

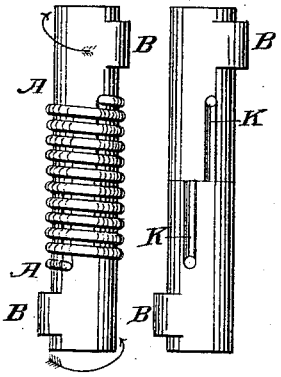
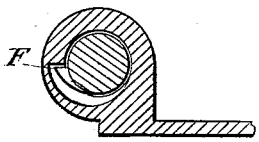


Fig.4.



Attest

J. K. Wyscarver

Geo. P. Harrington

Inventor.

Daniel W. Housley

UNITED STATES PATENT OFFICE.

DANIEL W. HOUSLEY, OF GROVE CITY, ILLINOIS.

IMPROVEMENT IN SPRING-HINGES.

Specification forming part of Letters Patent No. **208,242**, dated September 24, 1878; application filed May 18, 1878.

To all whom it may concern:

Be it known that I, DANIEL W. HOUSLEY, of Grove City, in the county of Christian and State of Illinois, have invented a new and useful Improvement in Spring-Hinges, of which the following is a specification:

The invention relates to spring-hinges for the use of screen-doors, gates, and other doors where springs are used.

Heretofore screen-doors, gates, &c., have been kept closed by means of springs, rubber straps, weights, &c., which worked independently of the regular hinge.

The object of my invention is to provide a hinge that will act as the regular door-hinge, and at the same time act as a spring, keeping the door closed all the time, and yet admit of opening either way, (in or out.)

In the accompanying drawings similar letters of reference indicate like parts.

Figure 1 is a side view of my hinge as it appears when attached to the door and door-frame. Fig. 2 is a central sectional view, showing the working parts of my hinge. Fig. 3 is a side view of the spring and rollers detached, showing the manner in which the springs are fastened to the rollers and the lugs on the rollers. Fig. 4 is a horizontal view of the eyes of the hinge, showing the manner in which the lugs on the rollers catch in the eyes of the hinge.

My invention consists of two rollers, A A, provided with tight lugs B B and slots K K, said rollers working one in the other, as shown in Fig. 2 of the drawing at C. Around the rollers A A is a spiral spring, fastened to the rollers, in the manner as shown in Fig. 3, by means of a small hole at the outer end of the slots K K. The advantage of the slots in the rollers is obvious, for by removing either one of the eyes G one can draw out one of the rollers, without unhooking the spring, until the lug B on it comes clear of the notch F in the eye of the hinge, as shown by the dotted lines in Fig. 2, representing the upper roller as it appears while tightening the spring.

Referring to the drawings, D is a representation of a butt-hinge, made in any well-known way for fastening it to the door or gate. It is provided with two eyes, E E, the inside of each eye having a round hole for the rollers A A to pass through, while the outer surface of each eye is cast with a notch, F, for the lugs B B on the rollers A A, as shown in Fig. 4. The hinge is further provided with two separate eyes, G G, made with any well-known fastening for securing them to the door or gate post. Said eyes are constructed in the same manner as the eyes of the hinge-piece D, with the exception of the notches F, which are shown in Fig. 4. These notches are on the inside of the eyes G G, just opposite the notches on the outside of the eyes of the hinge-piece D; and with a further exception—the round part of the holes in the eyes G G does not go quite through, as is shown in Fig. 2 of the drawings at O.

The parts thus constructed and combined and put together and secured to the door or gate, as shown in Fig. 1, form a very substantial spring-hinge.

When the door is opened in the direction indicated by the dart, as shown at the top of Fig. 3, the lug B on the upper roller, A, comes in contact with the notch F on the inside of upper eye, E, of the hinge-piece D, thereby turning said upper roller in the same direction with the door, (and as the roller and spring rotate in the same direction, all friction and wear on the spring are avoided,) while the lower roller is held securely by its lug B coming in contact with the notch F in the lower eye-piece, G, (which is secured to the door-post.) By this means the spring is compressed, and in expanding again (when the door is released) it throws the door back again to the point from which it started, (which is exactly on center.)

When the door is opened in the opposite direction the same thing occurs by the lug B on the lower roller A coming in contact with the notch F on the inside of the lower eye, E, of the hinge-piece D, while the lug B on the upper roller A comes in contact with the notch F in the lower part of the upper eye, G, which holds the said upper roller securely, while the lower roller rotates in the same direction with the door, thereby compressing the spring again, so that when the door is released it is thrown back again to center.

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

1. The combination of a spiral spring with two rollers, A A, provided with lugs B B and slots K K, substantially as described, and for the purpose set forth.

2. The combination of a spiral spring and rollers, A A, lugs B B, and slots K K, with four eyes, E E and G G, provided with internal notches F F F F, substantially as herein set forth.

D. W. HOUSLEY.

Witnesses:

J. K. THYSCARUR,

GEO. P. HARRINGTON.