

S. LUNDBERG.
 SPRING HINGE.
 APPLICATION FILED MAR. 1, 1911.

1,029,876.

Patented June 18, 1912.

Fig. 1.

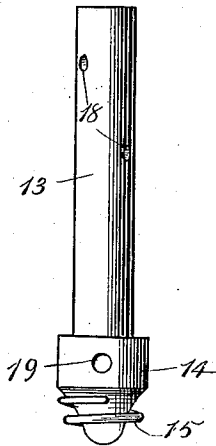


Fig. 2.

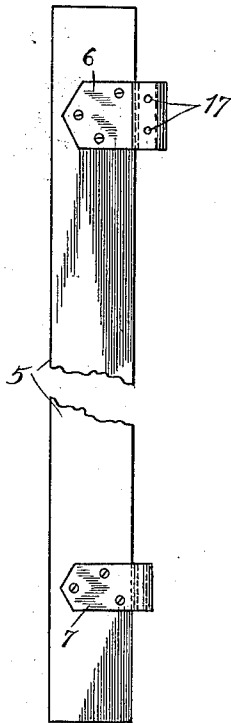


Fig. 3.

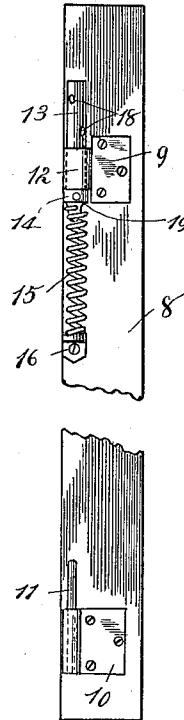
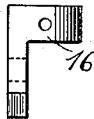


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

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SPRING-HINGE.

1,029,876.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SWAN LUNDBERG, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Spring-Hinges, of which the following is a specification.

My invention relates to door hinges and has particular reference to spring controlled hinges especially designed to be used on screen and storm doors and all similar closures.

The chief objects of the improvements which constitute the subject matter of this application for patent are to provide a simple, durable and efficient spring particularly adapted for use on screen and storm doors.

Another object of this invention is to provide a spring hinge of such design that the door may be easily removed by lifting it from its hinges and as readily replaced or another substituted, such dismounting and replacement of the doors being easily accomplished without the use of tools, other than a common nail or rod.

A further object which my device is designed to accomplish is to permit a ready adjustment of the spring so that its force may be varied to suit the requirements in any given case.

A great advantage is to be observed in the simplicity of the construction and the convenience with which the door may be disconnected from the spring so that the change from a screen to a storm door may be quickly and easily made by an unskilled person, the construction being such that the spring remains permanently attached to the door frame in the location in which it was first secured, so that it will always be available whatever may be the style of door to be hung.

I carry out my invention by providing a pair of separable hinges, the leaves secured to the door being provided with knuckles adapted to fit over pintles mounted in the cooperating hinge parts, so that the door can be lifted from its hinges without removing the latter, one of said pintles being loosely mounted and having a coiled spring connected therewith, means being provided for operatively connecting the loose pintle with the corresponding hinge member mounted on the door.

I have shown my improved spring hinge in the accompanying drawing, which forms

a part of this application, the construction and manner of using the device being illustrated in the following views:—

Figure 1 is a side elevation of the pintle to which the operating spring is attached; Fig. 2 is a side view of the hinge rail of a door showing the detachable halves of a pair of hinges affixed thereto; Fig. 3 is a similar view of the hinge jamb of a door frame with the cooperating hinge parts secured in proper position to receive the cooperating members mounted upon the door, and Fig. 4 is a side elevation of the bracket supporting the lower end of the spring.

Referring to the details of the drawing, the numeral 5 indicates the hinge rail of a door to which are attached hinge leaves 6, 7, for the upper and lower hinges respectively. The door jamb 8 is shown in Fig. 3, having secured thereto pintle bearing hinge members 9, 10, corresponding, respectively, with the halves 6 and 7. The lower member has a fixed pintle 11, adapted to fit the knuckle of the hinge leaf 7 mounted on the door. The knuckle 12 of the upper member 9 on the door jamb is bored to receive a comparatively heavy pintle 13 which has a turning fit in said knuckle 12. This pintle is provided with a head 14 to which is securely attached the upper end of a suitable coiled operating spring 15. The lower end of this spring is secured to a bracket 16, which is firmly fastened to the door jamb in such a position that the axis of the spring and pintle will coincide.

The knuckle of the hinge part 6 is bored to receive the pintle 13, and is provided with holes 17, similar holes 18 being provided in the pintle which are so located as to be brought into accurate registration with the holes 17 by turning the pintle upon its axis when the cooperating hinge parts are assembled. This is readily accomplished by inserting the end of a wire nail or any similar article in a hole 19, formed in the head 14 of the pintle and the holes 18 in the body of the pintle 13 are arranged at different angles circumferentially, so that the adjustment may be varied as required. The purpose of this arrangement as will be readily seen, is to permit of controlling the force of the operating spring 15, the latter being held under tension, when properly adjusted, by inserting a pin or small nail (not shown) through the holes 17, 18, which are brought into registration as previously stated.

While I have shown a single spring hinge, it will be obvious that two such hinges may be employed when the circumstances require a greater force than will be afforded by one spring alone.

It is the design of this arrangement of hinges to allow all the hinge parts to remain in position upon the door and frame members after having been secured thereto so that it will only be necessary to lift one door from its hinges and substitute another upon which bears duplicates of the hinge leaves, 6 and 7.

The manner of assembling the hinge parts will be readily understood by reference to the drawing, and when secured in position the door is hung by engaging the knuckles of the leaves 6 and 7 with their respective pintles. The spring 15 is then given the desired tension by means of a rod or nail inserted in the hole 19 in the pintle head and the pintle and knuckle locked together by inserting a pin or small nail in alining holes 17 and 18, as previously described. To remove the door it is only necessary to rotate the pintle 13 sufficiently to free the nail engaging the holes 17 and 18 so that it may be withdrawn after which the door may be lifted from its hinges.

Having thus described my invention, what I claim as new, is:—

1. In a spring hinge, a fixed leaf adapted to be secured to a suitable support, and hav-

ing a cylindrical knuckle, a pintle rotatably mounted in said knuckle, a coil-spring having one end connected with said pintle, and the opposite end secured to said support, a swinging leaf having a knuckle adapted to register with and be supported by the knuckle of the fixed leaf, and means adjustably connecting said pintle with the knuckle of the swinging leaf, whereby the tension of the spring may be increased or diminished.

2. In a spring hinge, a fixed leaf adapted to be secured to a door frame, and having a cylindrical knuckle, a pintle rotatably mounted in said knuckle having radial holes and having a portion extending below the knuckle, a coil-spring having one end connected with said extended portion of the pintle, and the other end secured to the support, a movable leaf adapted to be secured to a swinging closure said leaf having a cylindrical knuckle adapted to rest upon and register with said first named knuckle, and having holes adapted to register with the holes in said pintle, and means engaging said holes to adjustably connect said knuckle, and pintle whereby the tension of the spring may be increased or diminished.

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

SWAN LUNDBERG.

Witnesses:

H. DE LOS HIGMAN,
CHAS. F. BASSETT.