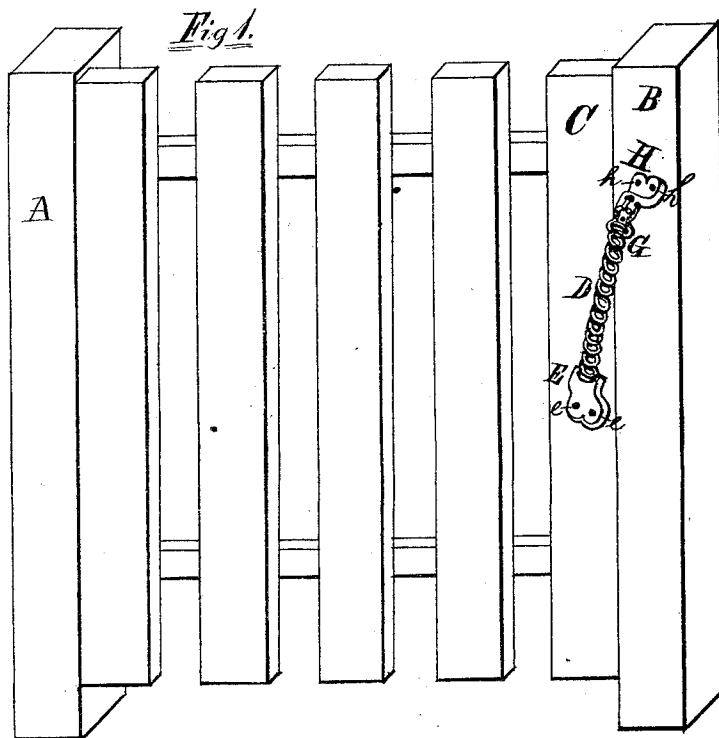
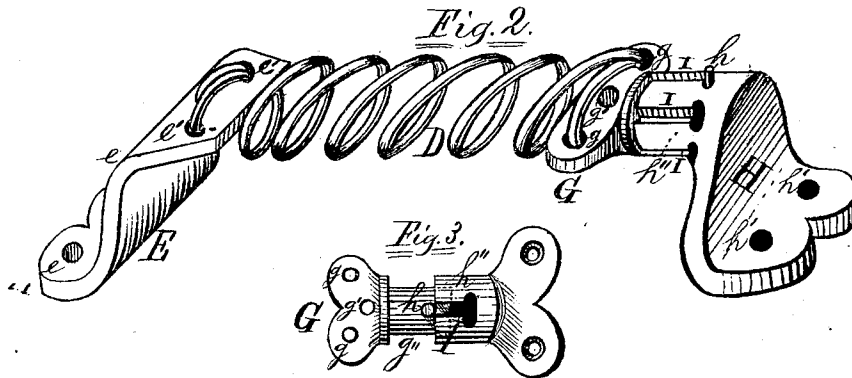


Improvement in Door-Springs.

Patented May 2, 1871.



Witnesses:—
 Platt, R. Richards.
 D. Dudley,

Inventor,
Loren R. Witherell,

by W. B. Richards ^{and} A. M. Callum,
his attys.

UNITED STATES PATENT OFFICE.

LOREN R. WITHERELL, OF GALESBURG, ILLINOIS, ASSIGNOR TO DAVIS A. DUDLEY AND EDWARD D. DUDLEY, OF SAME PLACE.

IMPROVEMENT IN DOOR-SPRINGS.

Specification forming part of Letters Patent No. 114,379, dated May 2, 1871.

To all whom it may concern :

Be it known that I, LOREN R. WITHERELL, of Galesburg, in the county of Knox and State of Illinois, have invented certain Improvements in Door and Gate Springs, of which the following is a specification :

The nature of my invention relates to improvements in springs for opening or closing doors and gates ; and the invention consists in the construction of metallic plates for securing a spiral spring in working position, in such manner that all spring-pins, screws, &c., for attachment of the working plates to each other are dispensed with, and an effectual and cheap device produced, which may be readily and easily attached to or detached from the door without the use of any instrument except a simple light rod or nail, all as hereinafter fully described.

Figure 1 is a perspective view of a gate with my invention attached. Fig. 2 is a perspective view of the device alone. Fig. 3 is a detached view of the attaching-plates.

A is the latch-post of a gate; B, the hinge-post; C, the side rail of the gate next to the hinge-post. D is a spiral spring. E is a metal plate, with two holes, *e e*, through which screws may be inserted for the purpose of securing it to the hinge-post B, and two holes, *e' e'*, through which one end of the spring may be turned, for the purpose of holding the plate securely thereto. G is a metal plate, provided with three holes, *g g g'*, through two of which the other end of the spring D is passed for the purpose of securing the plate thereto, the other being used for purposes hereinafter described.

The outer end of plate G is formed into a cylindrical projection, *g''*, and this projection *g''* is provided with two short studs, *h h*, on opposite sides thereof. H is a metallic plate with two holes, *h' h'*, through which screws may be inserted for the purpose of securing it to the side rail C, or to the hinge-post B.

This plate H is provided with a hollow cylindrical projection, *h''*, into which the cylinder *g''* is inserted, slots I I I I being cut in the sides of cylinder *h''* for the passage of the studs *h h*. The interior ends of the slots I are enlarged a little sidewise, so that if the cylinder *g''* is turned slightly when inserted, the studs *h h* will engage therein and prevent its being withdrawn.

The operation of my invention is as follows: The plate E is attached to the side rail C, the plate H being attached to the hinge-post B. A small rod now being inserted in the hole *g'* in the plate G, it may be used as a lever to turn the plate G, so as to tighten up the spring D, when the cylinder *g''* may be inserted into the hollow cylinder *h''*, where it will be securely held by the studs *h h* engaging with the enlarged parts of the slots I.

By turning the spring on a strain opposite to its spiral twist it may be used to open doors or gates.

By using the plates G and H at both ends of the spring the spring may be readily and quickly removed whenever desired, and may as readily again be attached when required, no separate parts, such as pins or screws, being requisite to attach it, and liable to misplacement and loss when not in use.

Fig. 3 shows the distance necessary to withdraw the cylinder *g''* from the socket *h''* in order to rotate it—that is, until the studs *h* are just free of the end of the cylinder *h''*.

I claim as my invention—

The plates G and H, when constructed, as described, with cylindrical projections *g''* and *h''* and studs *h h*, and combined with the spring D and plate E, substantially as described, and for the purpose specified.

LOREN R. WITHERELL.

Witnesses :

PLATT R. RICHARDS,
G. A. MARSH.