(No Model.)

W. W. JACKSON.

DOOR SPRING.

No. 294,785. Patented Mar. 11, 1884.

Fig. 1

Fig. 4

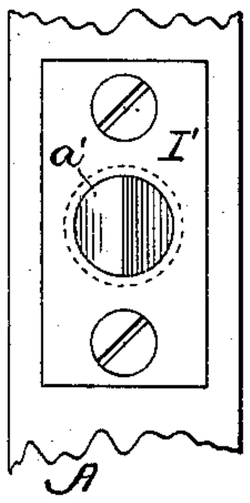


Fig. 2

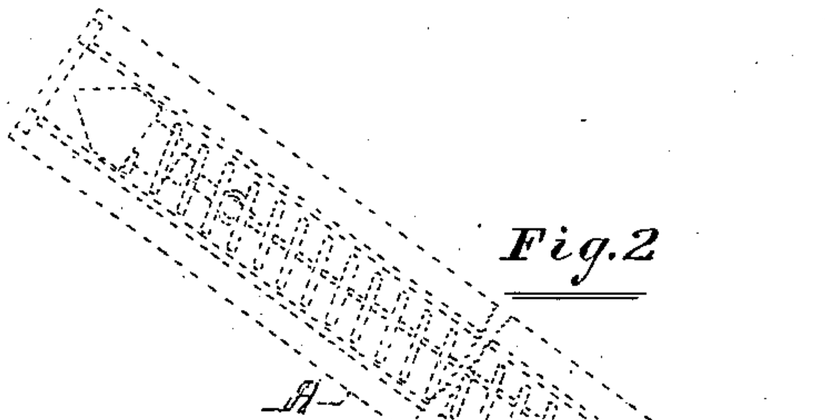


Fig. 5

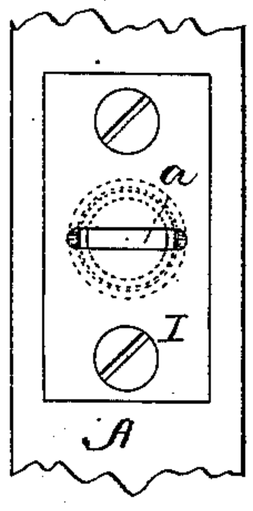
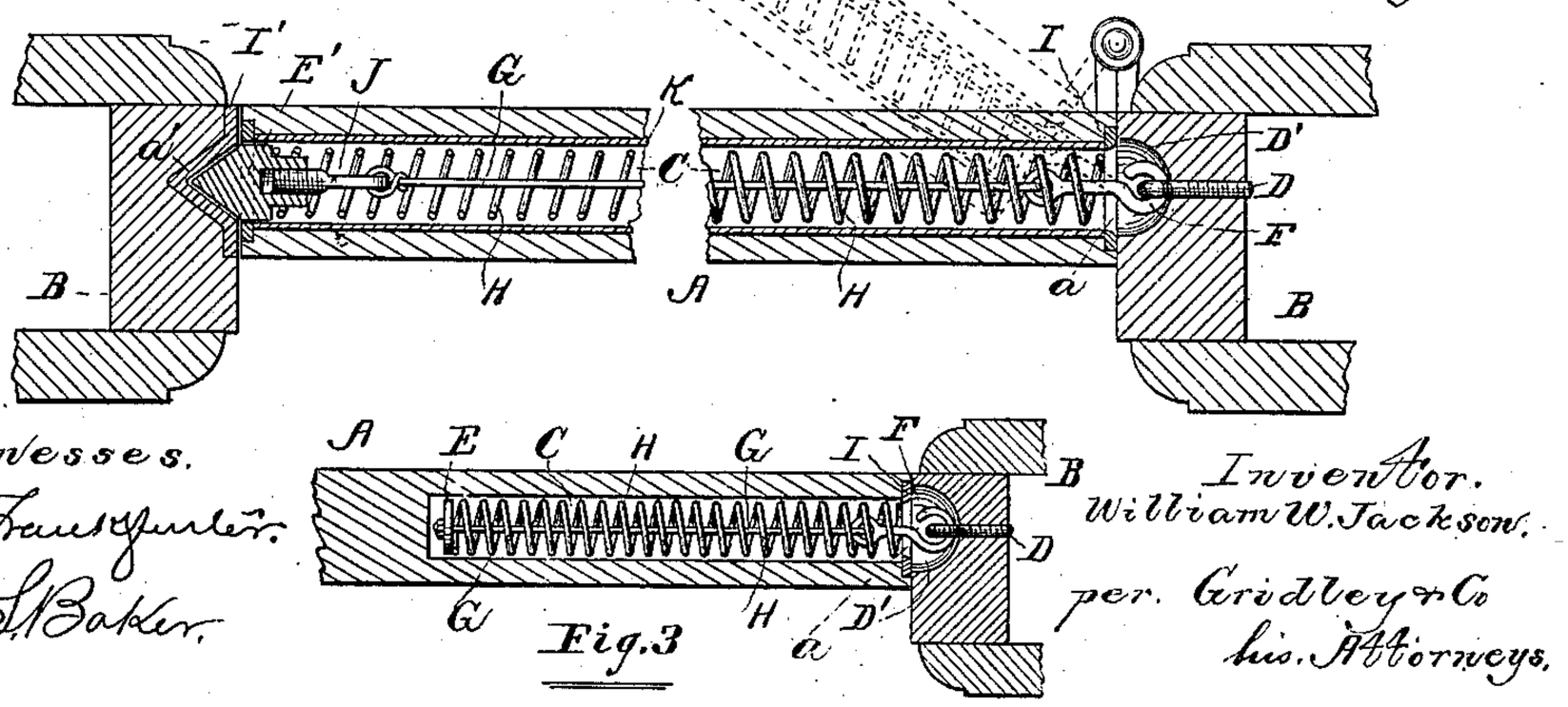


Fig. 3



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM W. JACKSON, OF CHICAGO, ILLINOIS.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 294,785, dated March 11, 1884.

Application filed July 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. JACKSON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Door-Springs, of which the following, in connection with the accompanying drawings, is a specification.

In the drawings, Figure 1 is a perspective representation of an open door provided with a door-spring embodying my invention. Fig. 2 is a horizontal section of the door and its frame or casing, taken at an elevation so as to show the construction of the spring or door-closer. Fig. 3 is a like representation, showing the spring or closer when not extending entirely through the door. Fig. 4 is a face view of a plate, which I apply to the door-casing when employing a spring or closer extending entirely through the door, and Fig. 5 is a plate which I apply to the rear edge of the door.

Like letters of reference indicate like parts.

My principal purpose is to construct an automatic door-closer in such a manner that it may be applied to the door so as to be invisible; and to that end my invention consists in certain novel features of construction which I employ for that purpose, and which are hereinafter set forth in my claim.

A represents the door, and B the door-frame or casing.

C is a mortise or bore extending horizontally through the door from its rear or hinged edge toward its free or outer vertical edge. In some instances I may deem it preferable to have this mortise or bore extend entirely through the door, as indicated in Fig. 2, and in others only partly through, as indicated in Fig. 3; but in both cases the principal feature of my invention is employed as will hereinafter more fully appear.

D is a screw or pin inserted into that part of the door-case to which the door-hinges are applied, and the outer end of this screw or pin has an eye to receive a hook, as will hereinafter more fully appear. D′ is a depression or pocket about the outer end of the screw or pin D.

E is a disk adapted to move freely in the bore C.

F is a hook hooked into the eye of the screw or pin D, and connected to the disk E by means of a cord or small wire, G.

H is an open spiral spring.

I is a plate applied to the inner or hinged edge of the door, and having therein a horizontal slot, *a*. The plate I is located at the inner end of the mortise C, and the hook F passes through the slot *a*. The spring H is arranged in the mortise C, surrounds the cord or wire G, and bears at one end against the plate I, and at the other against the disk E, the force of the said spring being exerted in such a manner as to hold the disk E yieldingly at such a distance from the plate F as the cord or wire G will permit, all of which will be perceived on reference to Fig. 3. The force of the spring H is such as to hold the door yieldingly in its closed position, but not such as to prevent it being opened with facility by one wishing to pass through the doorway.

It will be perceived, on reference to Fig. 1, where the door is shown in its open position, that the act of opening the door compresses the spring upon itself, and that as soon as the door is released the pressure of the spring upon the plate I, while the spring is assuming its normal position, will close the door automatically. This result will also follow when the additional features of construction shown in Fig. 2, and which I will now proceed to describe, are employed. In Fig. 2 E′ performs the function of the disk E, but is located in a mortise or bore extending entirely through the door. This part E′ also performs the function of a yielding catch or stop. I construct and arrange it so that it will project from the edge of the door into a plate, I′, in which is a beveled or V-shaped socket, *a*′, adapted to receive the projecting end of the part E′, which is correspondingly beveled, as is clearly indicated in Fig. 2.

In order that the part E′ may be adjusted properly with relation to the edge of the door, I run it upon a screw, J, to which I attach one end of the cord G, as shown in Fig. 2. After applying the parts shown in Fig. 2, the part E′ may be set with facility with relation to the edge of the door by turning the said part in one or the other direction upon the screw-threaded part J.

It will be perceived that the operation of

the parts shown in Fig. 2 are the same as those shown in Fig. 3, with the exception that the catch E′ will aid in retaining the door in its closed position, but will not materially prevent it from being opened and closed, as the catch will be withdrawn or begin to move from the socket *a′* as the door begins to open. The catch and its socket being beveled in the manner shown and described, operates as a yielding instead of as a positive catch.

A metallic bushing or lining, K, may or may not be employed, as may be deemed best.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the door having therein a mortise, C, extending entirely through it from one of its vertical edges to the other, the said door being provided on its hinged edge with the slotted plate I, located at one end of the said mortise, the hook F, projecting through the slot in the said plate, and connected by means of a cord or wire, G, to a sliding head, E′, having a beveled outer end projecting from the free edge of the door, and arranged in the said mortise, the spring H, arranged between the said plate and the plate I, the fixed screw or pin D, adapted and arranged to receive or engage the hook F, the V-plate I′, and the door-frame, substantially as and for the purposes specified.

WILLIAM W. JACKSON.

Witnesses:
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