

W. F. Kells,

Door Spring.

No. 108268.

Patented Oct. 11. 1870.

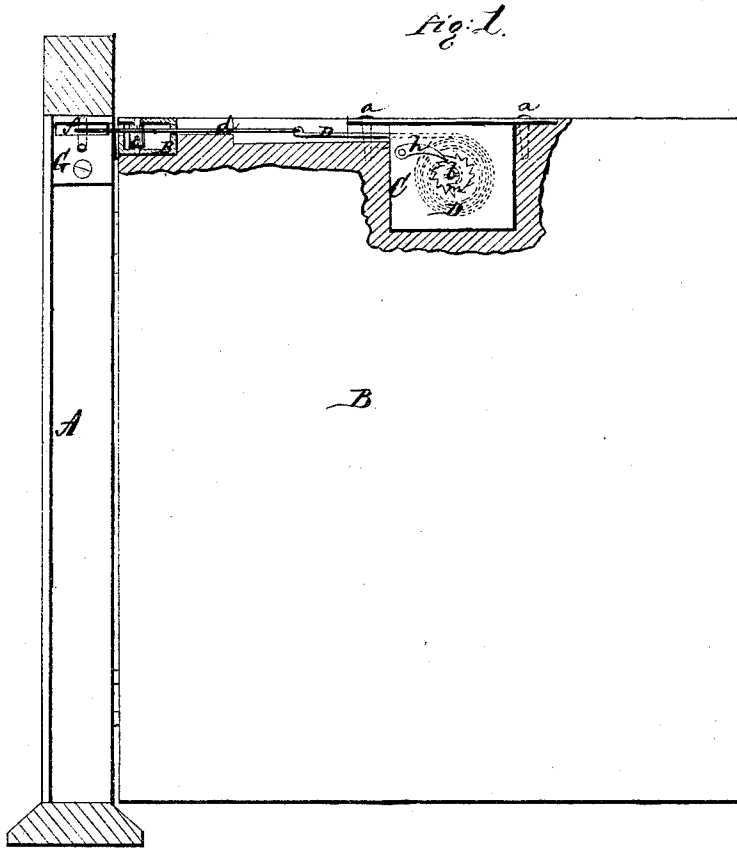


Fig. 2. Fig. 3.

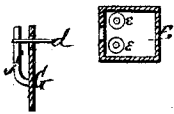


Fig. 4.



Witnesses:

C. L. Over  
W. F. Kells

Inventor.

Wm. F. Kells,  
per Alexander Mason

Atty

# United States Patent Office.

WILLIAM F. KELLS, OF SAN FRANCISCO, CALIFORNIA.

Letters Patent No. 108,268, dated October 11, 1870.

## IMPROVEMENT IN DOOR-SPRINGS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, WILLIAM F. KELLS, of San Francisco, in the county of San Francisco and in the State of California, have invented certain new and useful Improvements in Door-Springs; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a door-spring, with its several attachments for automatically closing a door, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of the door, part in section, showing the spring and its attachments; and

Figures 2, 3, and 4 are detached views of the spring and its attachments.

A represents the door-frame, and

B, the door, to which my door-spring is attached.

In the upper edge of the door B is made a recess, for the insertion of a metallic box, C, the upper plate of which extends beyond the ends of the box, and is secured flush with the edge of the door by means of two screws, *a a*, one at each end.

Through the center of the box C passes a shaft, *b*, to which the inner end of a coil spring, D, is secured. This spring is wound around the shaft by means that will be presently described, and the other end passes through an opening formed in the end of the box toward the inner edge of the door, and moves in a groove formed in the upper edge.

The outer end of the spring D is slotted, as shown in fig 4, so as to pass on both sides of the screw *a* at that end of the box C, and to allow the spring to be moved either way.

At the outer end of the spring D is attached a chain or wire, *d*, which passes between two friction-rollers *e e*.

These rollers are placed in a metallic box, E, inserted in the inner upper corner of the door, and said box has an opening at each end for the chain or wire *d* to pass through.

The other end of this chain or wire is hooked or otherwise attached to a pin, *f*, secured on the inner side of a slotted plate, G, in a recess on the door-frame, the chain or wire passing through the slot in said plate.

The spring D is wound up on the shaft *b*, by turning said shaft by means of a key, or other convenient means, and a pawl, *h*, pivoted on the side of the box C, engages with a ratchet-wheel, *m*, on the shaft *b*, thus holding the spring at the desired tension.

When the door is opened the coils of the spring contract, and by the expansion of said coils the door is closed again.

If the spring, by use, should become weaker, it can readily be wound tighter around its shaft, which will at once remedy the defect.

Having thus fully described my invention,

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

The combination of the box C, spring D, shaft *b*, ratchet-wheel *m*, pawl *h*, chain or wire *d*, box E, rollers *e e*, plate G, and pin *f*, all constructed as described, and arranged to operate substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 28th day of September, 1870.

WILLIAM F. KELLS.

Witnesses:

A. N. MARR,

J. E. HUTCHINSON.