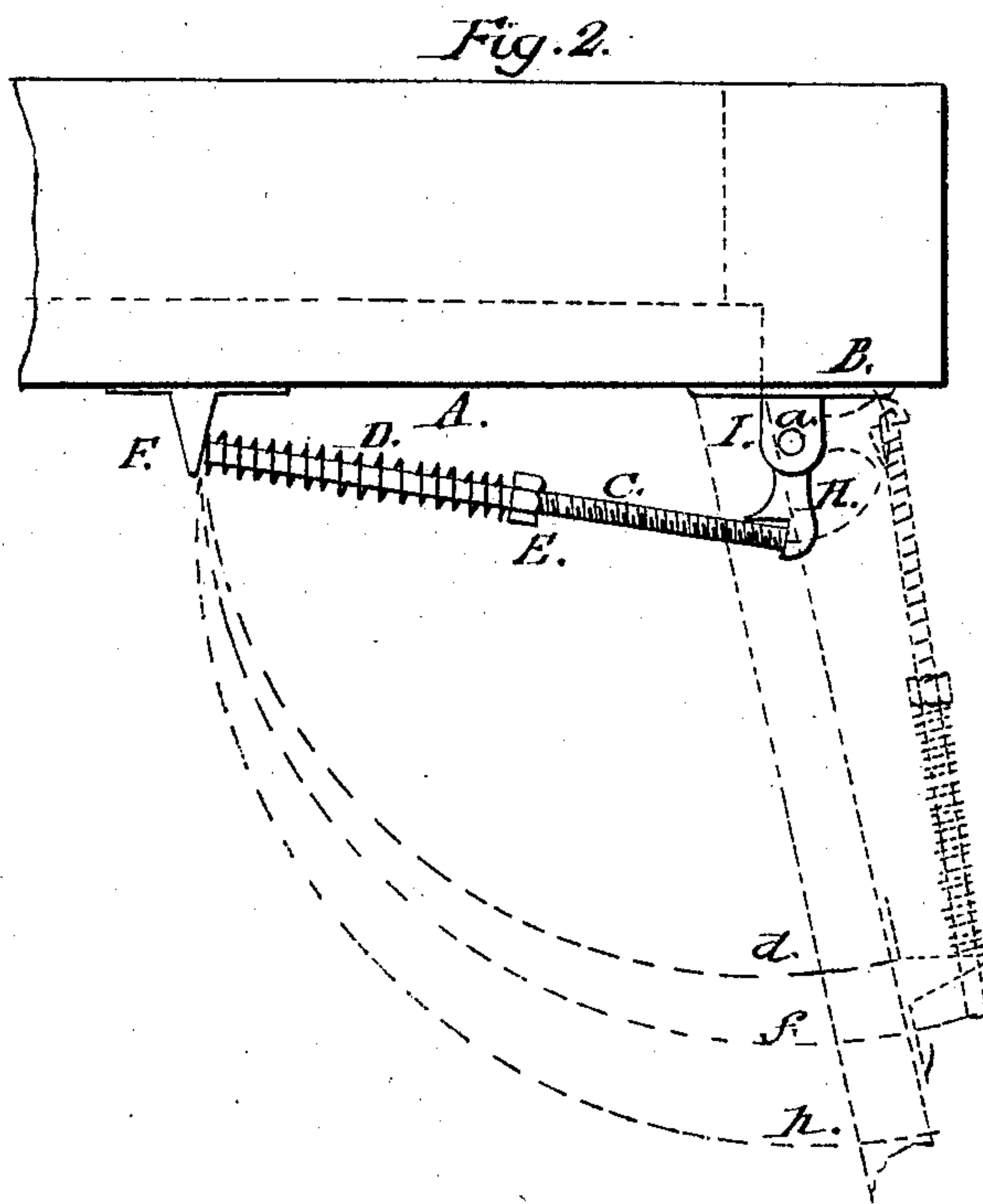
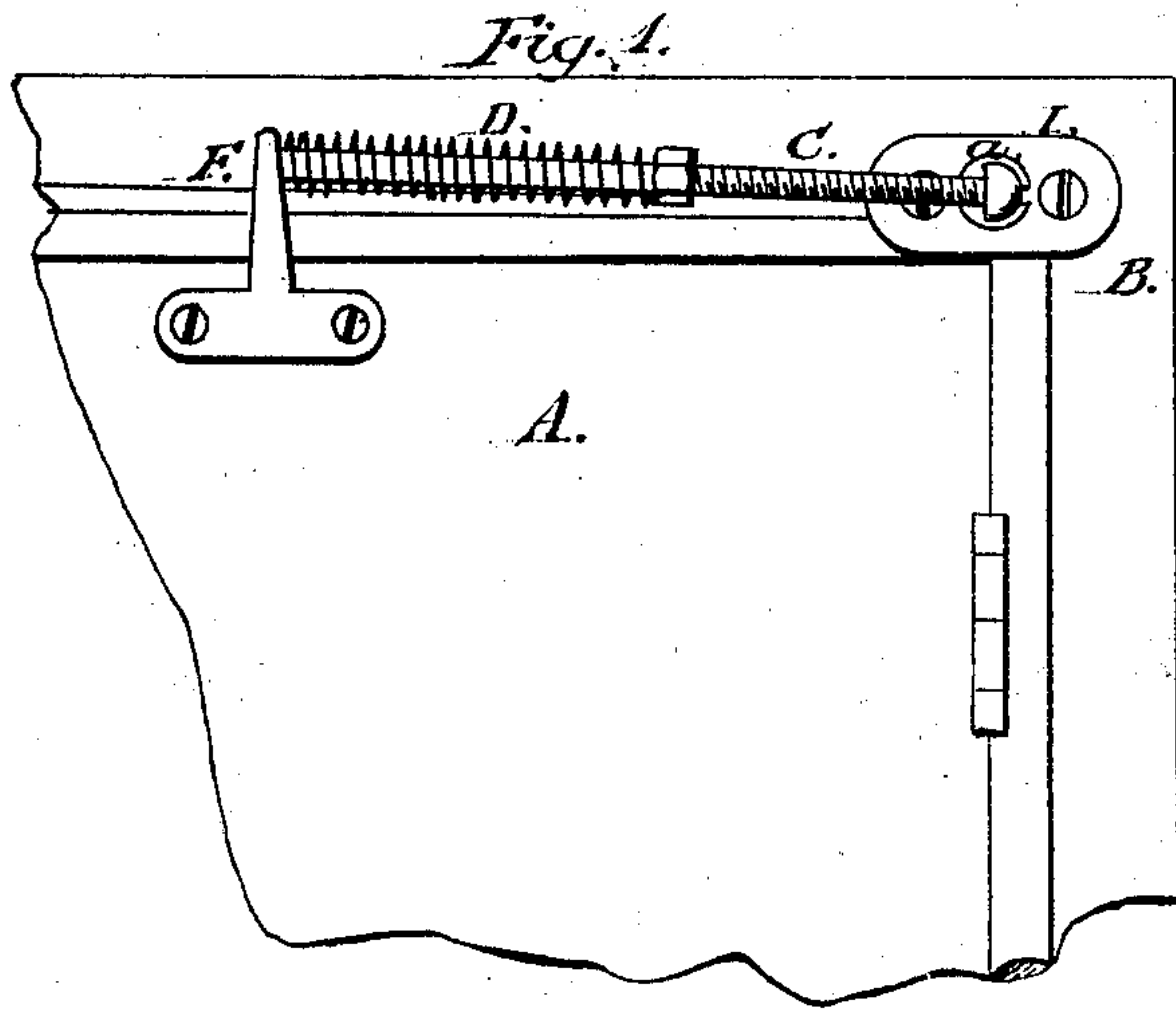


F. S. Willcox,
Door Spring.

No. 86,482,

Patented Feb. 2. 1869.



Witnesses:
J. A. Thummes
A. J. Tibbitts

Inventor:
F. S. Willcox.
Wm. E. Earle.
Attorney.

United States Patent Office.

F. S. WILLCOX, OF BRIDGEPORT, CONNECTICUT.

Letters Patent No. 86,482, dated February 2, 1869.

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, F. S. WILLCOX, of Bridgeport, in the county of Fairfield, and State of Connecticut, have invented a new Improvement in Door-Spring; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of the spring as attached to the door, and in .

Figure 2, a top view, showing the door open, in red.

This invention relates to an improvement in springs for closing doors; and consists in the arrangement of a rod, upon which a spiral spring is placed, one end of the said rod resting in a seat on the door, the other, in an arm pivoted to an arm which extends from the jamb, so that while the opening of the door contracts the spring less than it would were it not attached to the pivoted arm, such attachment increases the force of the spring as the door closes.

In order to the clear understanding of my invention, I will fully describe the same as illustrated in the accompanying drawings.

A is the door.

B, the jamb.

C, a metallic rod, upon which is placed a spiral spring, adjusted by a nut, E. One end of the said rod rests in a seat, F, fixed to the door, but so as to pass freely therethrough, the spring bearing upon the said arm, the other end, in an arm, H, pivoted at *a* in an arm, I, fixed to the jamb of the door, the said pivot being at a short distance from the jamb, and so that

the arm will swing around to the position denoted in red, fig. 2; therefore the arm F attached to the door, will, when the door is open, passing upon the line *d*, come to the position denoted in red.

The rod C turning, with the arm H, upon the pivot *a*, passes through the arm F, and upon the line *f*, to the position denoted in red.

It will be noticed that were the rod C pivoted into the arm H, and the arm H rigid, that is, one piece with the arm I, the rod C would have turned in the line *h*, and thus have contracted the spring to a distance equal to the distance between the lines *h* and *d*, and yet the force of the spring would have been no greater in closing, as it arrived toward the closed position, and the force of the spring to close the door when in the position denoted in red, would have been nothing, but, on the contrary, would serve to hold open the door, whereas, by pivoting the arm H, the bearing of the rod is carried back as the door opens, so that the spring is compressed only by so much as the difference between the lines *f* and *d*, and by being so carried back in that position, exerts a force to close the door, which force increases until the door is entirely closed.

Having thus fully described my invention,

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

The combination of the rod C, jointed arm H I, spring D, and arm F, all arranged and operating in the manner described.

F. S. WILLCOX.

Witnesses:

ALONZO SCRANTON,
CHAS. K. WILCOX.