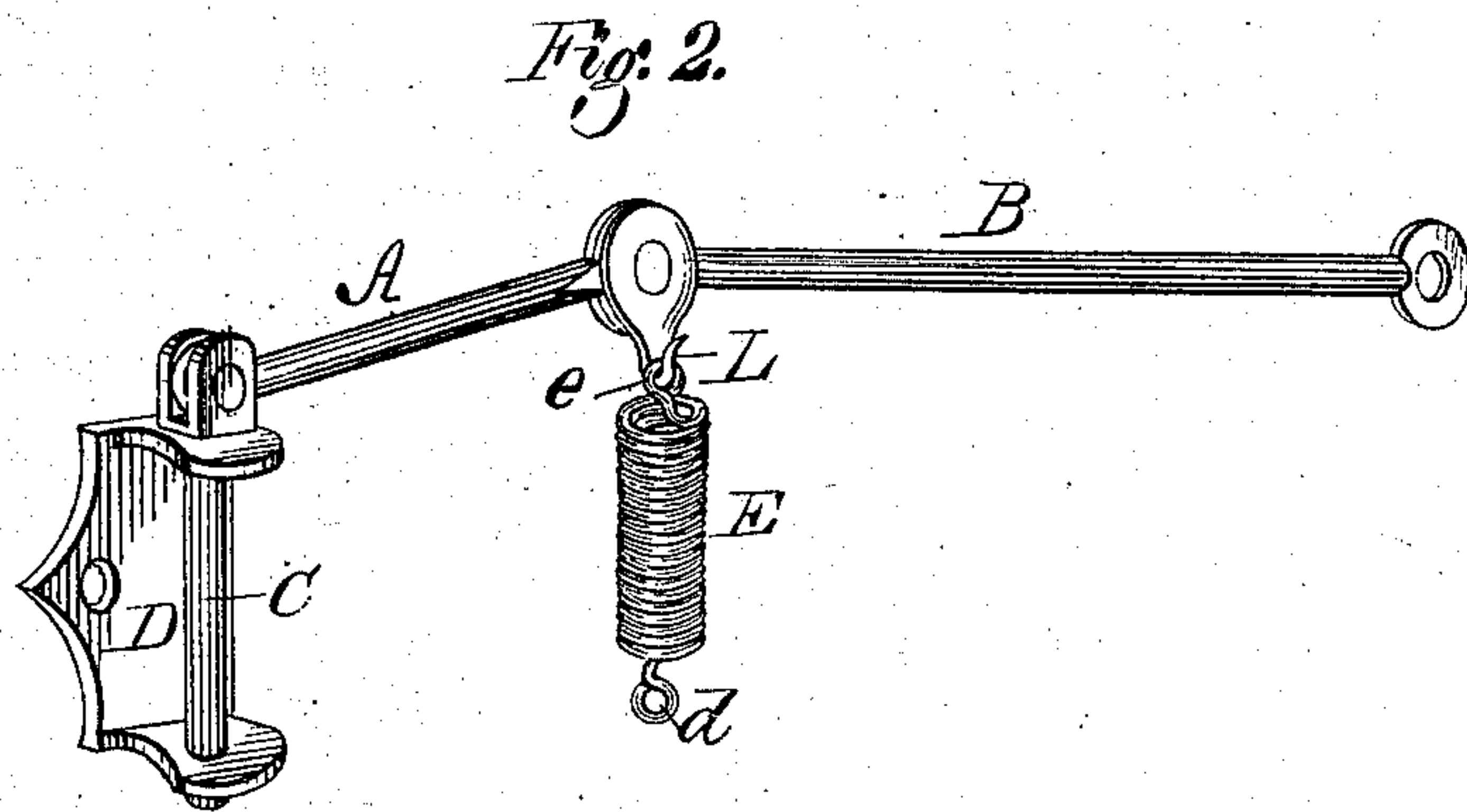
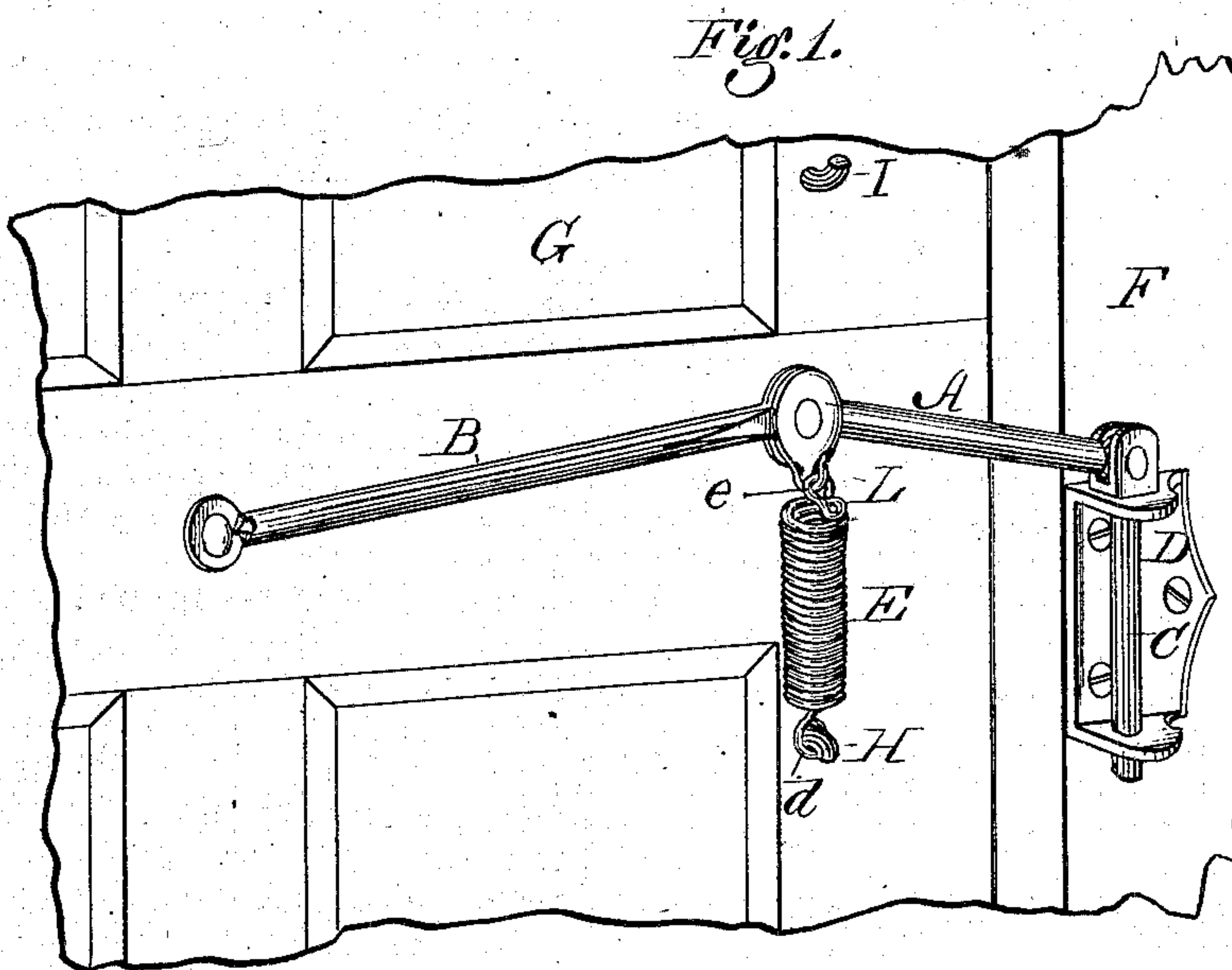


J. B. COTTOM.
Door-Springs.

No. 158,833.

Patented Jan. 19, 1875.



Witnesses:
Hill. H. Dodge.
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UNITED STATES PATENT OFFICE.

JAMES B. COTTOM, OF DAYTON, OHIO.

IMPROVEMENT IN DOOR-SPRINGS.

Specification forming part of Letters Patent No. **158,833**, dated January 19, 1875; application filed December 19, 1874.

To all whom it may concern:

Be it known that I, JAMES B. COTTOM, of Dayton, in the county of Montgomery and State of Ohio, have invented certain Improvements in Door-Springs for Holding Doors Shut or Open, of which the following is a specification:

My invention consists in the peculiar construction of a reversible or right-and-left-hand door-spring, consisting of a toggle-lever provided with a novel support at one end, and operated by means of a spiral spring, as hereafter fully explained.

Figure 1 represents a perspective view of my device applied to a left-hand door, and Fig. 2 a perspective view of the device adjusted for application to a right-hand door.

The device consists essentially of two arms or rods, A and B, having their ends pivoted together, and a spiral spring, E, connected to them at the joint or point of union, as shown. The arm A is pivoted, at its outer free end, in the upper end of a vertical pin, C, which is mounted in ears or studs on a plate, D, which is provided with holes to receive fastening-screws. The free end of the arm B is flattened, and provided with a hole to receive a fastening stud or screw. The pivot which unites the two arms is provided with a flat head or plate, having a hook, L, on one edge, and is arranged to turn freely, so that the hook may be brought on either side of the arms. The joint is so constructed that the arms may be bent out of line in either direction, as desired. The spring is provided at one end with a loop, e, to engage over the hook D, and at the other end with a loop, d, to receive a fastening-screw or staple.

When the device is to be applied to a left-hand door the parts are adjusted as shown in Fig. 1, the plate D screwed to the door-frame, the joint raised above the vertical line, the end of the arm B secured to the door, and the spring drawn downward, and its lower end secured to the door by a stud or screw, H, as shown. When thus arranged, it will be seen that the spring, tending to straighten the lever and draw the arms down in line with each other, causes them to force the door shut. As the door opens the two ends of the arms are brought nearer together, causing the lever to

bow or bend upward at the middle, and thereby strain the spring.

It will be observed that as the door approaches a closed position, so that the lever acts with less advantage thereon, the lever straightens out and exerts an increased force or power.

When the device is to be applied to a right-hand door it is turned end for end and the other side up, the lever bowed or bent in the opposite direction, the hook and spring turned around on the opposite side, and, lastly, the rod C turned over and the plate D turned end for end thereon, so that the parts are in the positions shown in Fig. 2. The device is then applied to the door, as in the first instance.

By providing two or more of the pins or studs H at different heights the tension of the spring may be varied, and more or less force applied to the door, as circumstances require; and by unhooking the spring the door may be relieved from pressure.

When it is desired to have the device hold the door open instead of shut, a stud, I, is secured to the door above the lever, and the spring turned upward and hooked thereon, in order to hold the lever in a bent position.

My device is simple, cheap, and strong; noiseless in its operation; unobjectionable in appearance; and capable of ready attachment, and of such adjustment that it will exert any desired force to close the door, or that it will hold the door open, or that it will not act at all.

It is obvious that, in constructing the device, the head and hook at the joint may be omitted and the spring hooked on the end of the pivot-pin; and also that the form of the plate D and rod C may be modified.

When the device is intended for use on very heavy doors two levers may be used, one above the other, and bent apart or away from each other at the middle, and a single spring arranged between them, with one end connected to each, so that it will tend to straighten them both. When used on doors which are liable to sag down the spring should be placed near the bottom, as it will then assist in holding the door up in position.

The device is applicable, of course, to gates as well as to doors.

What I claim as my invention is—

1. The reversible door-spring, consisting of the jointed rods A and B, reversible pin C, and spring E, constructed and operating substantially as described.

2. In combination with the jointed rods A and B, the reversible hook L and reversible

pin C, with its bracket D, all constructed to operate as and for the purpose set forth.

JAMES B. COTTOM.

Witnesses:

PHIL. T. DODGE,
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