

W. W. Smith & B. Mullikin, Jr.,

Door Spring.

N<sup>o</sup> 1,854.

Patented Nov. 13, 1840.

Fig: 1.

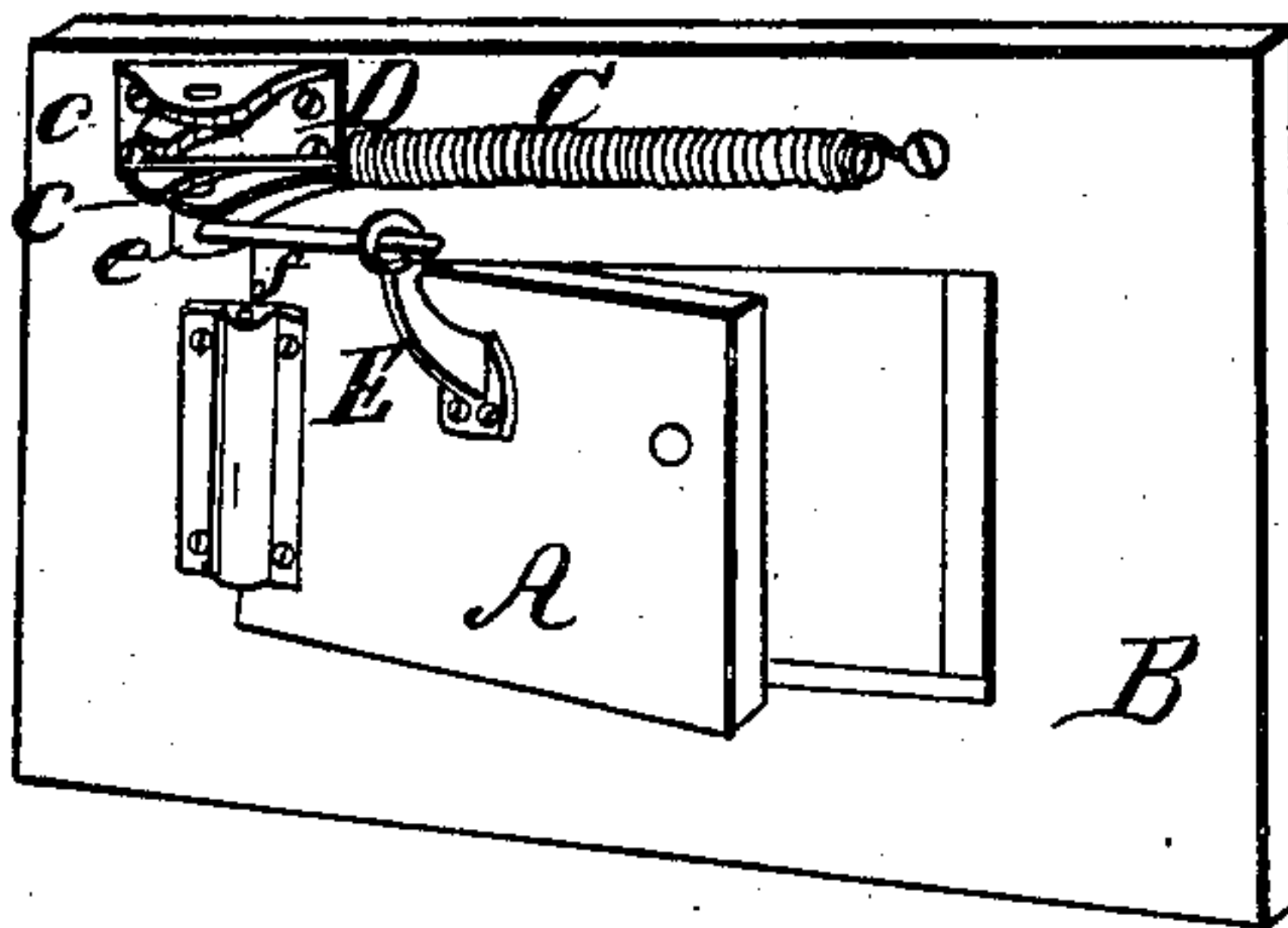


Fig: 2.

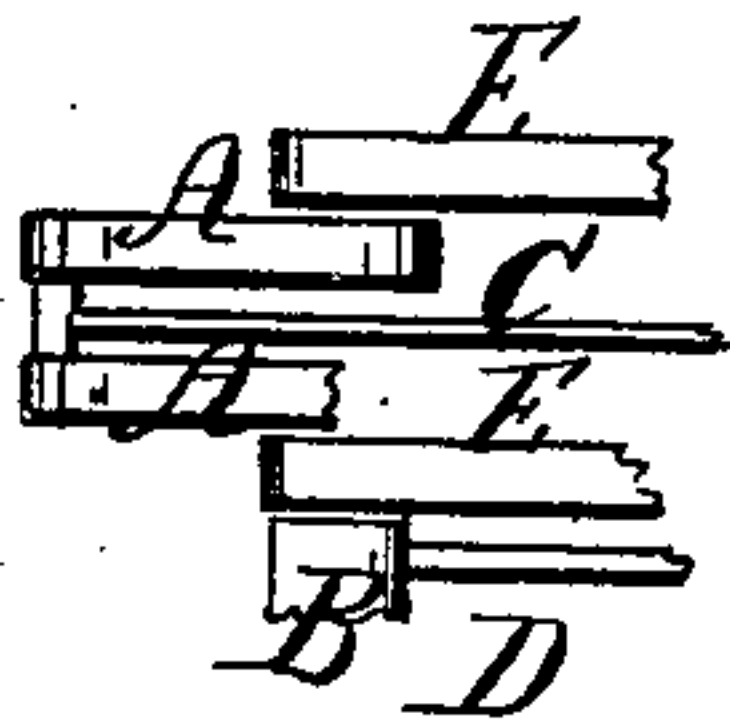
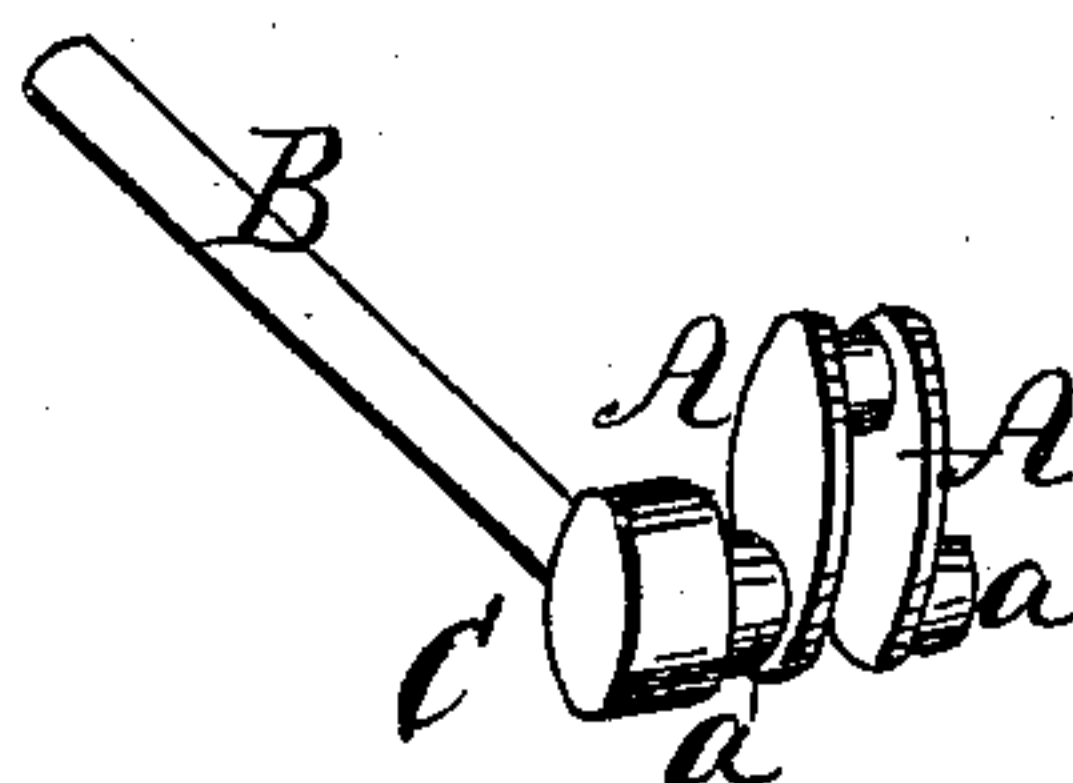


Fig: 3.



Witnesses;

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# UNITED STATES PATENT OFFICE.

WM. W. SMITH AND BENJAMIN MULLIKEN, JR., OF NEW YORK, N. Y.

## DOOR-SPRING.

Specification of Letters Patent No. 1,854, dated November 13, 1840.

*To all whom it may concern:*

Be it known that we, WILLIAM W. SMITH and BENJAMIN MULLIKEN, Jr., of the city, county, and State of New York, have invented a new and useful improvement—to wit, an apparatus for closing doors, gates, &c., and for retaining them open, which we hereby declare that the following is a full, clear, and accurate description of the construction and operation of the same, reference being had to the annexed drawings.

This improvement consists in the combined use and operation of a crank, a lever and a spring, acting conjointly in the following manner.

Figure 1 represents, collectively, the entire form and mode of application.

A represents the door or gate, partially open. B, the wall, partition, fence or other surface on which the door or gate is hung. D, a small plate of cast iron or other substance, of an oblong form, having two projecting flanges, one at top and one at bottom for the purpose of sustaining the crank, &c., in the manner to be specified; which plate is attached to the wall or other surface by wood screws. In each flange is a hole or notch to hold the pivots of the crank marked C C in this view and A A, as seen in profile in Fig. 2 and vertically in Fig. 3. C, a spiral spring, one end of which is attached to the wall partition or other surface, by a wood screw or otherwise; and the other end, by the wire of which the spring is composed or otherwise to the operating part of the crank, *e, e*.

*e, e*, is a downward projection or continuation of the pivot below the flange, and is of a cylindrical form, three fourths of an inch,

more or less in length and diameter. Through this cylindrical projection is a hole, in which is inserted one end of the lever marked *f*, the other end of which passes through the eye, upon the top of the arm E which is attached to the doors.

Fig. 2 shows the crank and flanges in profile A A, the crank; B, the cylindrical projection at the bottom of the lower pivot of the crank; C, the wire which connects the crank to the spring; E E, the two projecting flanges or bearings.

Fig. 3 shows a vertical view of the crank with its pivots and lever; A A the crank, *a a*, the pivots, B the lever, C the cylindrical projection.

When the door is closed, the crank stands nearly at right angles with the wall, partition or fence, and consequently, with the lever and also, with the door or gate. On opening the door or gate, the lever, being carried with it, the crank is of course turned back, and the spring is extended a sufficient distance to close the door by its reaction. But when opened past a right angle with the surface on which it hangs, the crank is then past the center of action, and has then a contrary effect, pressing the door back and retaining it open.

What we claim, and desire to secure by Letters Patent, as our invention is—

The combination of the spring, crank and lever, acting upon the arm attached to the door or gate, in the manner and for the purpose specified.

WM. W. SMITH.

BENJAMIN MULLIKEN, JR.

Witnesses:

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