

(Model.)

I. F. FIELD.  
DOOR SPRING.

No. 438,802.

Patented Oct. 21, 1890.

Fig. 1.

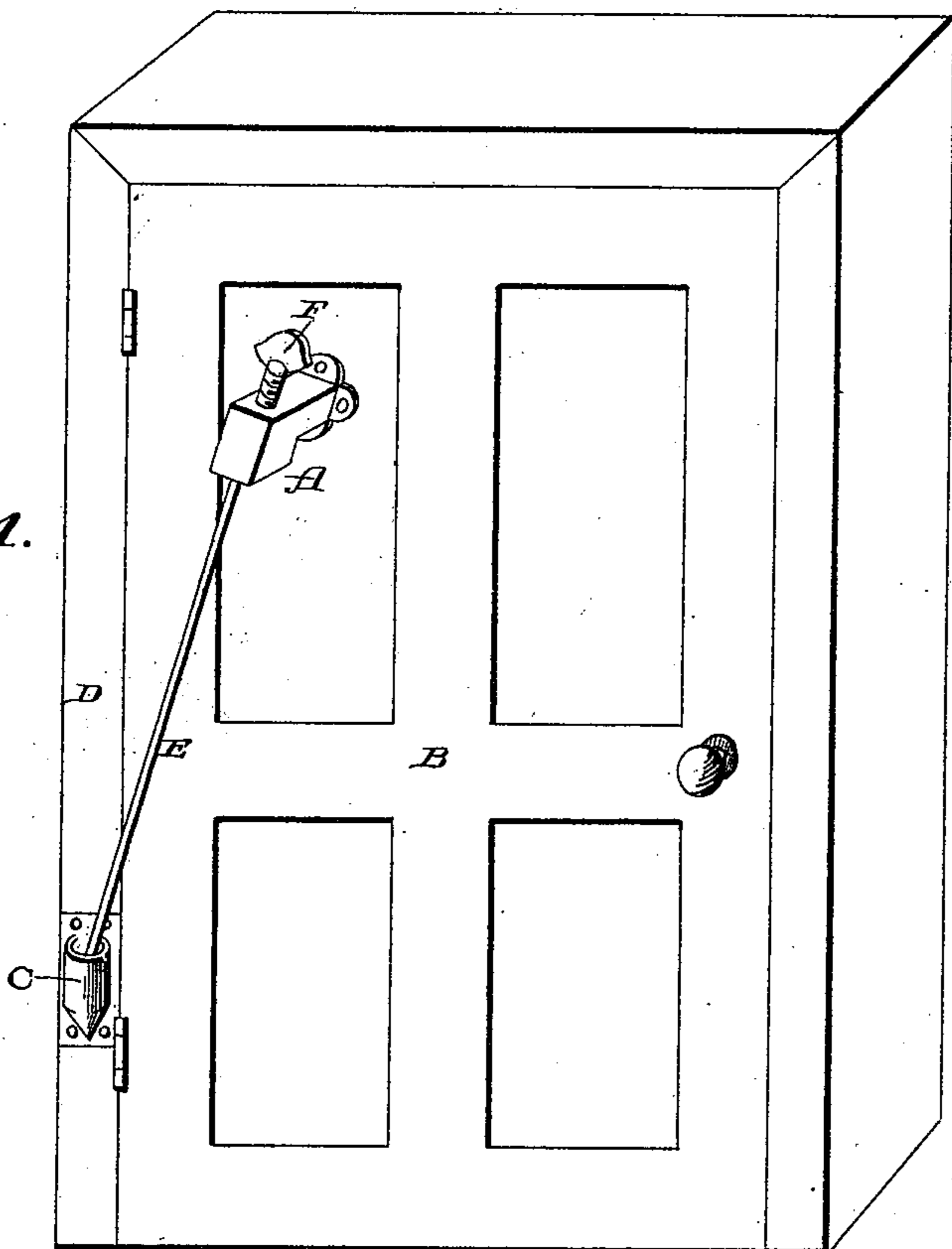


Fig. 2.

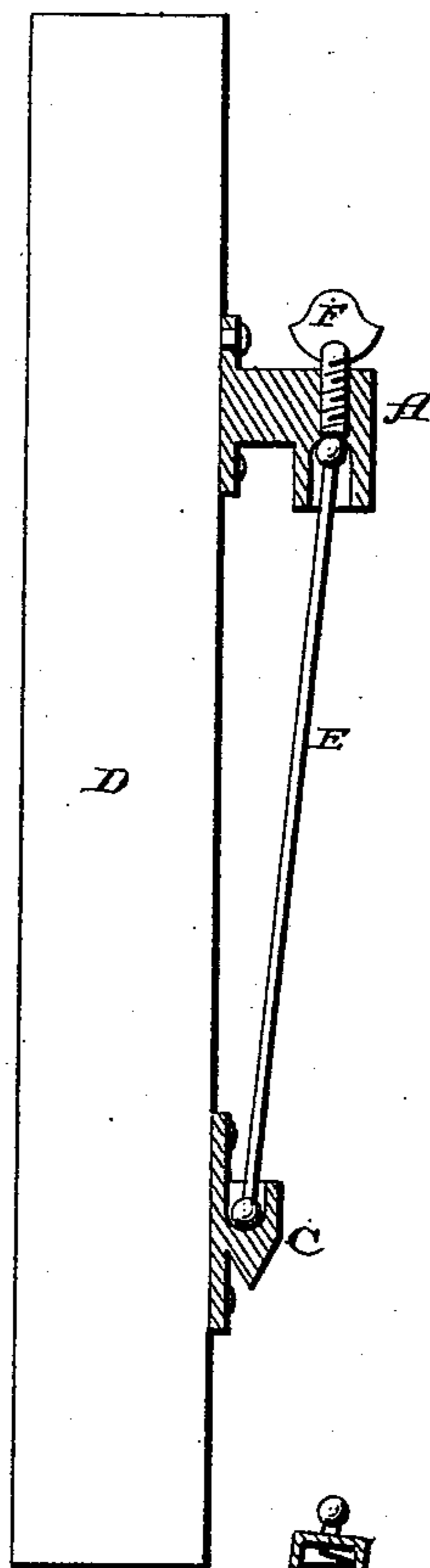


Fig. 3.

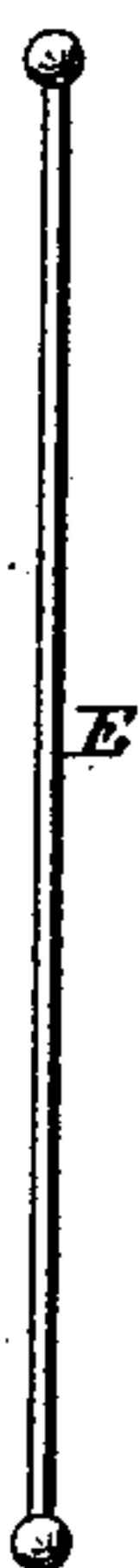


Fig. 4.

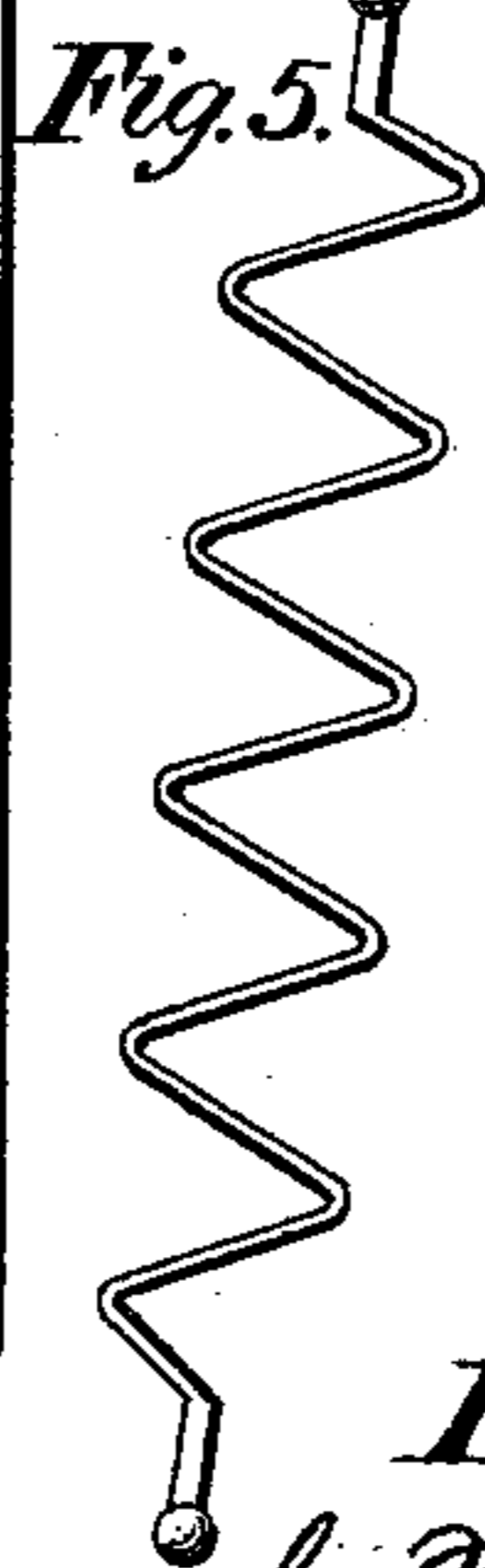
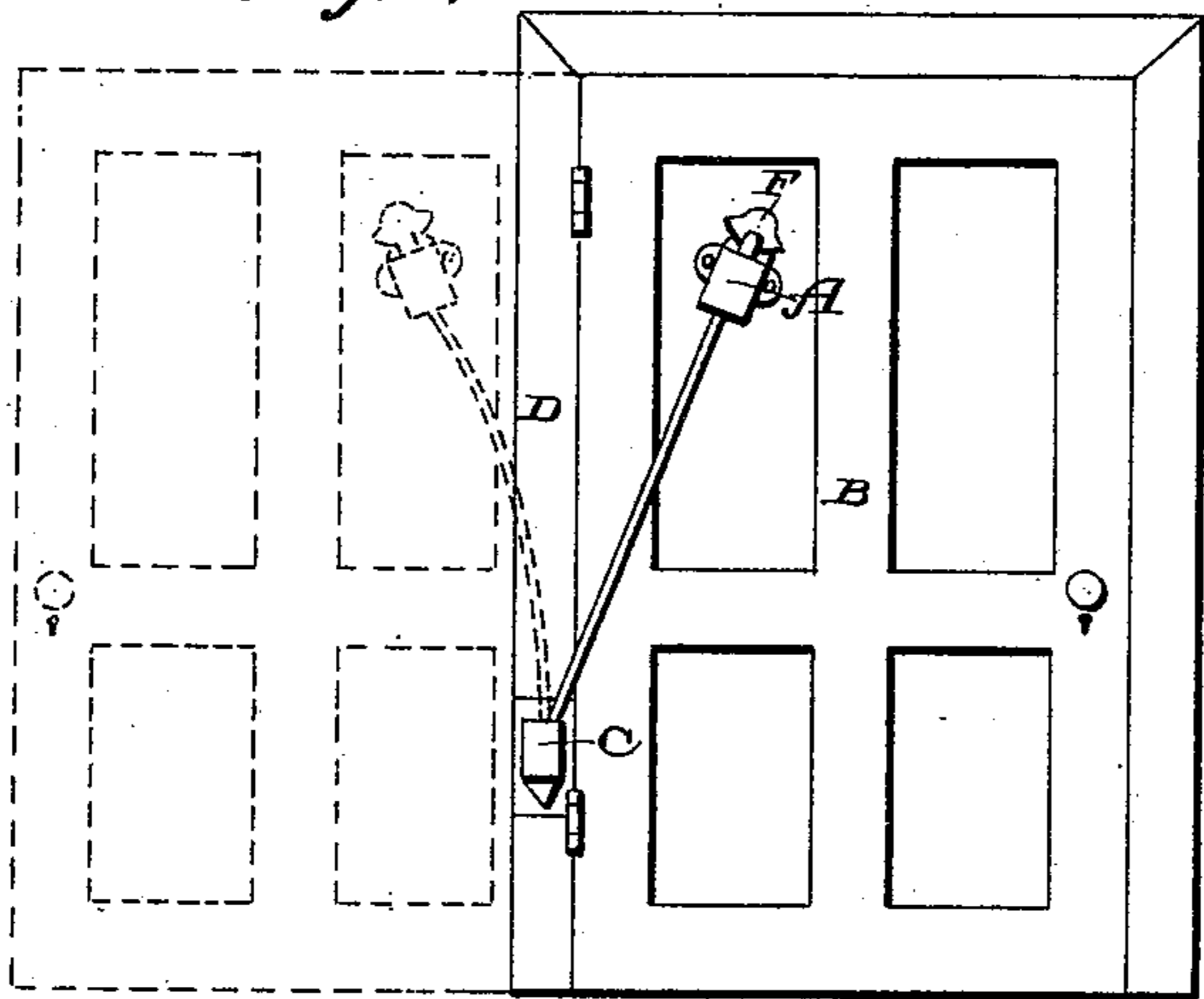
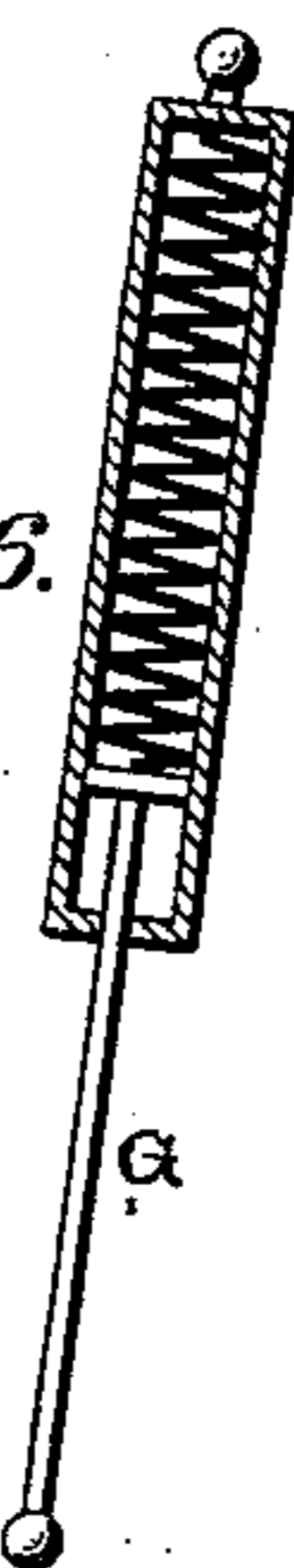


Fig. 6.



Witnesses:

E. P. Allen,  
B. Brocken,

Inventor:

I. F. Field,  
per J. A. Lehmann,  
Atty.

# UNITED STATES PATENT OFFICE.

ISAAC FIRMEN FIELD, OF SANDY LAKE, PENNSYLVANIA.

## DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 438,802, dated October 21, 1890.

Application filed October 7, 1887. Serial No. 251,784. (Model.)

*To all whom it may concern:*

Be it known that I, ISAAC FIRMEN FIELD, a citizen of the United States of America, residing at Sandy Lake, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Door and Gate Springs, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in door and gate springs; and it consists in the combination of a door having a socket, a socket placed on the frame beyond the pivotal point of the door, and a spring-rod having its ends placed loosely in the said sockets, as will be fully described hereinafter, and pointed out in the claims.

The object of my invention is to provide a simple door or gate spring which will hold the gate or door closed and open, and which enables the tension of the spring to be regulated at will.

Figure 1 is a perspective of a door, showing my invention attached thereto. Fig. 2 is an edge view of the same, the sockets being shown in section. Fig. 3 is a detached view of the spring. Fig. 4 is a side elevation showing the position of the spring in solid lines when the door is closed and its position in dotted lines when open. Figs. 5 and 6 are modifications of the spring.

A socket A is secured to the door B any desired distance inside of its hinge or pivotal point, and a socket C to the door-frame D just outside of the hinge. Having its ends placed loosely in these sockets is a spring-rod E, which is preferably provided with a ball upon each end, as shown, and passing through the socket A is a set-screw F, which bears upon the upper end of the spring-rod E, and by means of which the tension of said rod is regulated. The sockets A C are sufficiently large to allow the ends of the spring-rod to freely revolve therein as the door is opened and closed.

In Fig. 5 I show a zigzag spring instead of a straight one, and in Fig. 6 a tube carrying a spiral spring, against which one end of the rod E is made to bear. This construction allows a stiff rod G to be used. However, I do not limit myself to any particular con-

struction of the spring-rod, for this may be varied at will without departing from the spirit of my invention.

The operation of my invention is as follows: The sockets A C being placed, respectively, inside and outside of the pivotal point of the door, when it is opened it brings the socket A nearer the socket C, which shortens the distance between the two sockets, and thus causes the rod to bulge to the right and by its tension force the door shut. As the door is carried on around into the position shown by dotted lines in Fig. 4, the spring travels around in a circle, the ends turning freely in the sockets. When it passes a point which brings the two sockets and the pivotal point of the door in a line, the spring assumes the position shown by dotted lines in Fig. 4, and its tension then holds the door open, as will be readily understood. By means of this construction a simple spring for doors and gates is provided, and one which will hold the door both closed and open.

While I here show the socket upon the top of the door and the socket upon the frame at its bottom, it will be readily seen that this may be reversed and the operation remain the same.

Having thus described my invention, I claim—

1. The combination, with a door and frame, of sockets secured thereto outside and inside of the pivotal point of the door, respectively, and a spring rod or bar having its ends placed loosely therein, whereby the door is held closed and open, substantially as described.

2. The combination, with a door and frame, of sockets secured thereto, respectively, and a diagonal laterally-flexible spring-rod having its ends placed loosely therein, substantially as specified.

3. The combination, with a door and frame, of sockets secured thereto, respectively, a spring-rod having its ends placed loosely therein, and a set-screw in one of the sockets which bears upon the end of the rod for regulating its tension, substantially as set forth.

ISAAC FIRMEN FIELD.

Witnesses:

ANDREW GEORGE,  
JOSEPH ELBERT ELLIS.