

(Model.)

C. B. CLARK.

DOOR SPRING.

No. 252,188.

Patented Jan. 10, 1882.

Fig. 1.

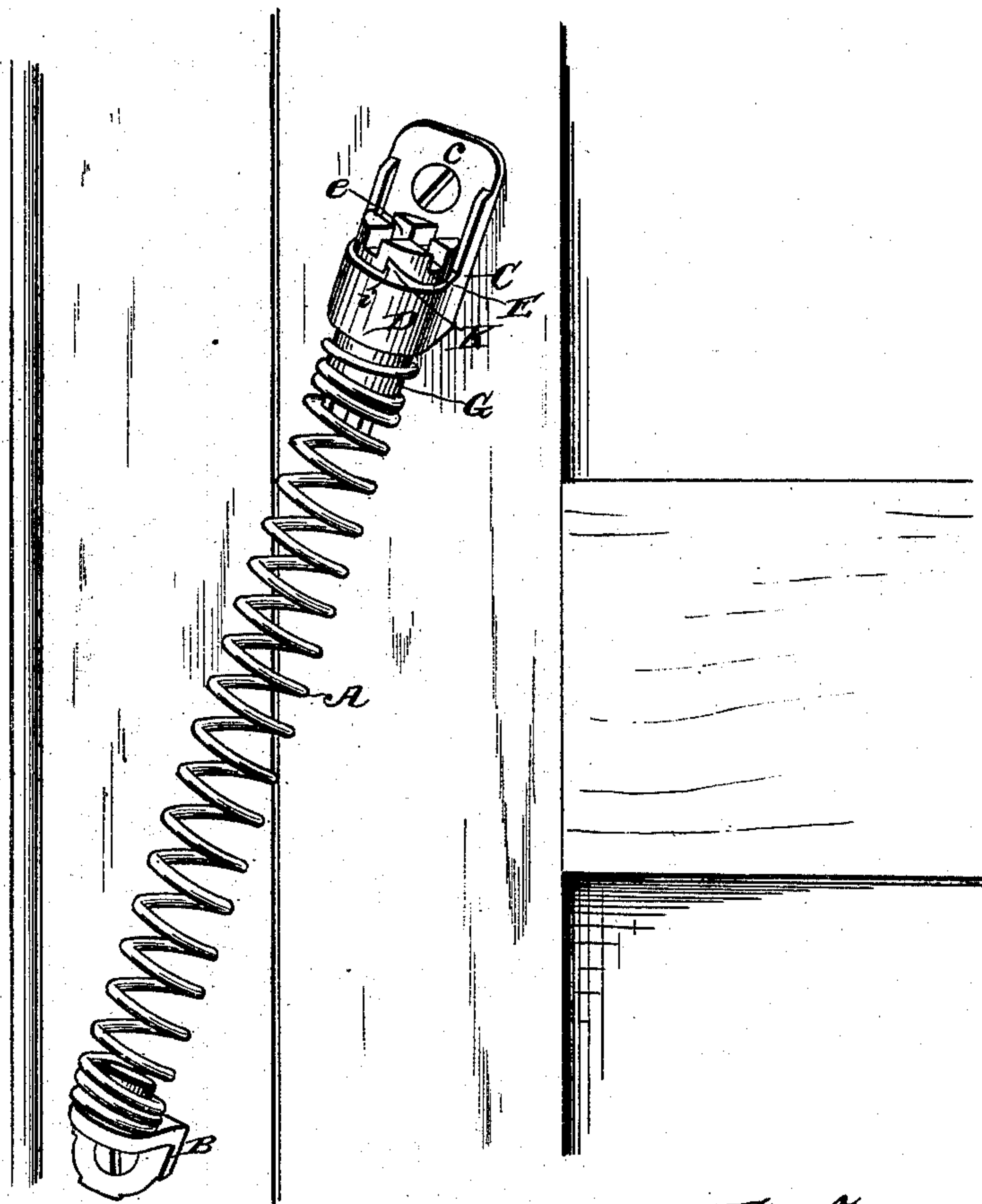


Fig. 2.

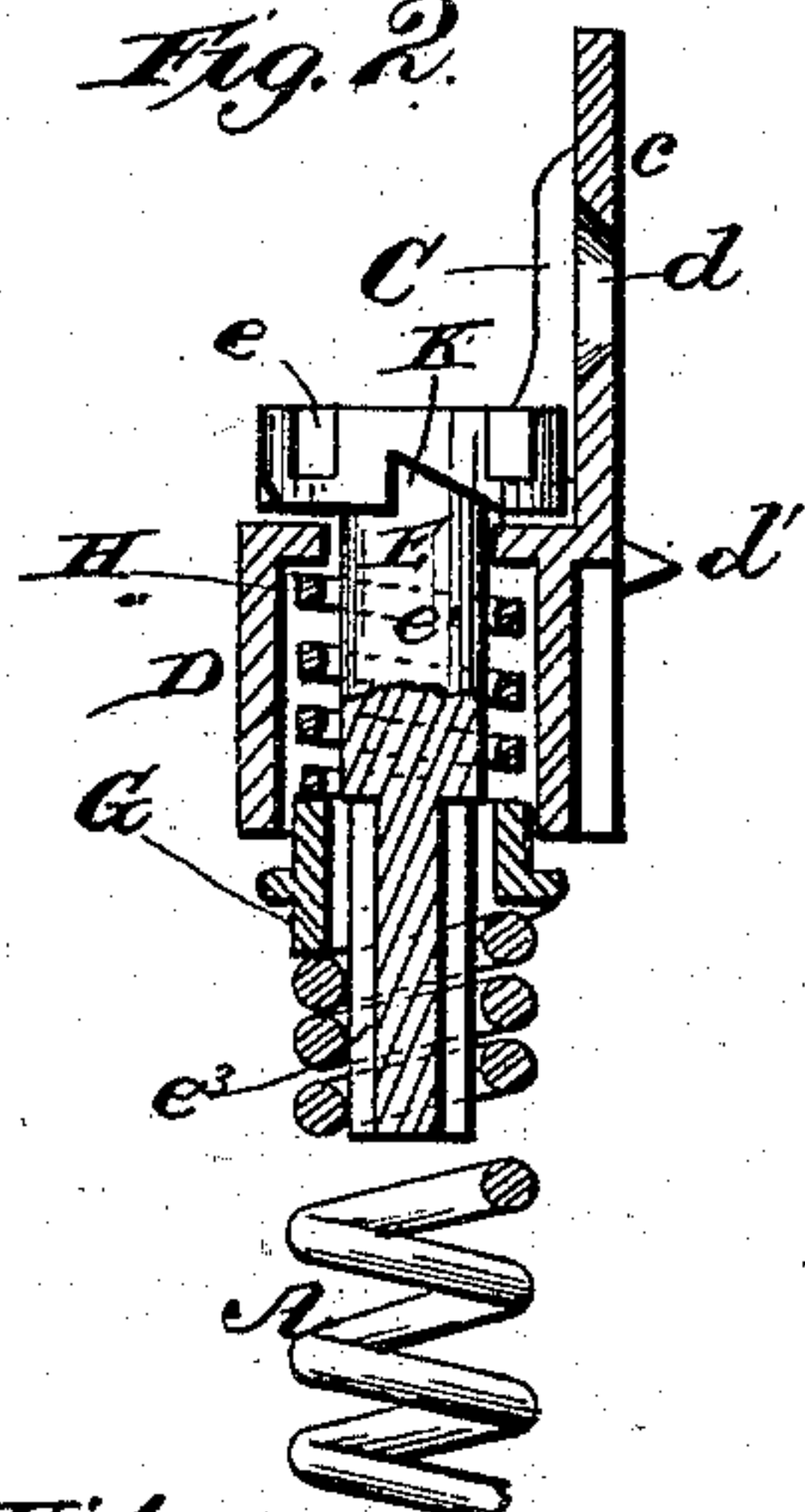


Fig. 3.

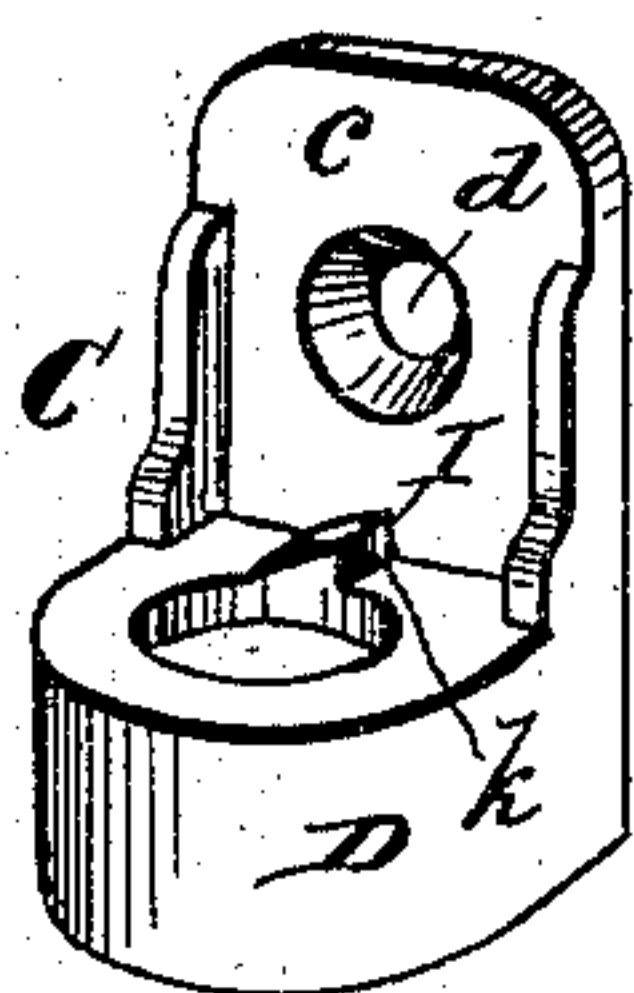


Fig. 5.

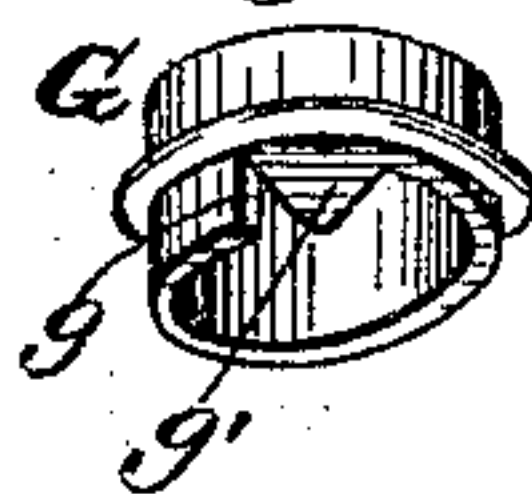
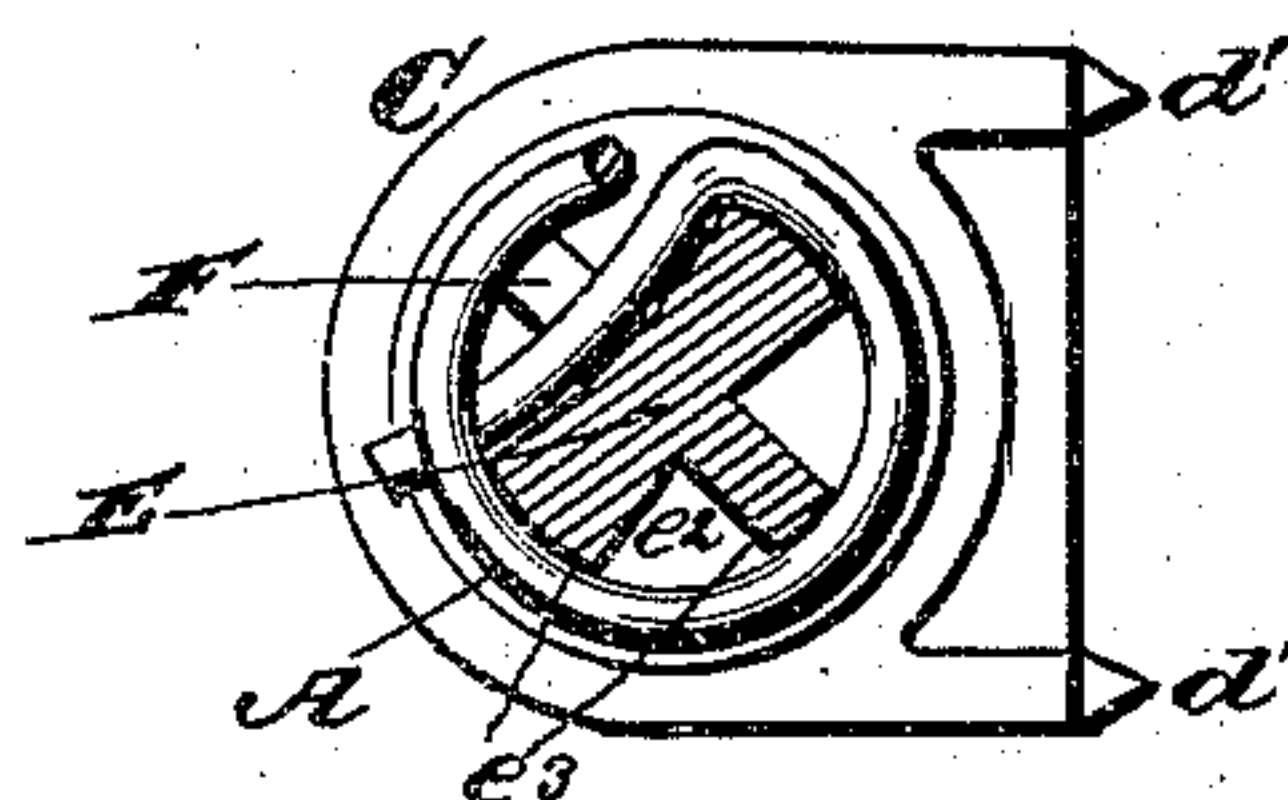


Fig. 6.



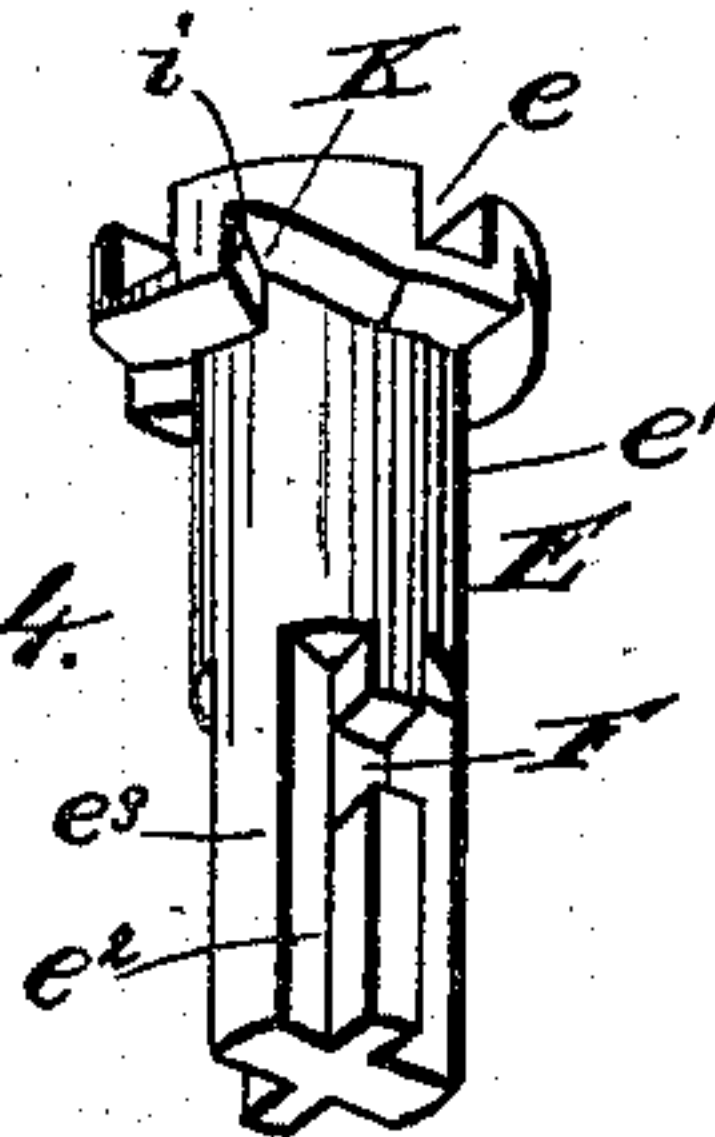
Fig. 7.



Witnesses

Robert Emmett
J. A. Rutherford

Fig. 4.



Inventor:
Charles B. Clark.

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Atty.

UNITED STATES PATENT OFFICE.

CHARLES B. CLARK, OF DETROIT, MICHIGAN.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 252,188, dated January 10, 1882.

Application filed August 3, 1881. (Model.)

To all whom it may concern:

Be it known that I, CHARLES B. CLARK, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Door-Springs, of which the following is a specification.

This invention relates to an improvement in that class of door-springs in which a coiled spring is connected at its lower end with a bracket secured to the door-frame, and at its upper end connected with a bracket secured to the door proper.

The object of the improvement is to provide novel and effective means for adjusting the tension of the spring. This object I attain by means of the devices hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 shows the spring applied to a door. Fig. 2 is a section through the upper bracket, and also shows the pin and its adjuncts. Fig. 3 is a perspective view of the upper bracket. Fig. 4 is a like view of the pin. Fig. 5 represents the collar that is adapted to fit upon the pin. Fig. 6 shows the coiled spring, which is adapted to be arranged within the bracket; and Fig. 7 is a section taken through the pin, and illustrates the way in which the main coiled spring is secured thereto.

A indicates the spiral coil-spring, secured at its lower end to a lug upon the bracket or casting B, which is adapted to be secured by means of a screw to the door-frame.

C indicates a casting or bracket, consisting of a bed-plate, *c*, which will lie flat against the door, and an annular socket or body, D, extending laterally from said bed-plate. This plate is formed with a hole, *d*, through which a screw will be passed for the purpose of screwing the same to a door, and it is further provided with spurs *d'* *d'*, which penetrate the wood of the door and aid in preventing the bracket from being displaced. A pin, E, which passes through the body D of this bracket, has its head formed with the cross channels *e*, in which a key or other suitable implement can be inserted for the purpose of turning said pin in order to tighten up the spring which is connected with the lower end of the pin. This pin has a cylindrical portion, *e'*, which, when the pin is in

place, will be within the hole that is formed through the body of the bracket, while the lower portion of the pin, that extends below the bracket, is provided with four V-shaped or other angular-shaped channels, *e*², so as to provide the longitudinal ribs *e*³, in one of which is formed a recess, F, as illustrated in Fig. 4. The upper end of the coil surrounds this ribbed portion of the pin, and the end of the wire of the coil is pressed down into said recess, so that it will lie flat against the sides of two of these ribs, and thereby be prevented from turning or being disconnected from the pin. A collar, G, is fitted upon the pin above the end of the coiled spring, the lower end of said collar being cut so as to form a shoulder, *g*, against which the extremity of the wire of the coiled spring will lie when the parts are in position. This collar is provided with an internal lug, *g'*, which fits in one of the channels between two ribs, so that the collar will be prevented from turning independently of the pin. Within the body of the upper bracket is arranged a short coiled spring, H, the upper end of which abuts against a flange at the upper end of the opening formed through the bracket, while the collar G fits against the lower end of the said spring. The bracket is formed with a tooth or cam-projection, I, at the side of the upper end of the opening through which the pin passes, and the head of the said pin is formed on its under side with a series of notches, K, adapted to receive the cam-projection, the latter having an inclined face and the notches being formed to correspond with the shape of the same. Now, by turning the pin its notched head will ride over the cam-projection on the bracket, and as the inclines of its notches pass over the same the pin will be raised, and thereby raise the collar against the spring within the body of the bracket. As soon, however, as the incline of a notch has passed the cam-projection the spring will force down the collar and pin and cause the cam-projection to be received in the deepest portion of a notch. The action of the coiled spring between the two brackets is similar to that of like springs employed in connection with doors or gates, said springs being held in rigid connection at its ends with the lower bracket and with the pin. The backward rotation of the pin is prevented by the abutting of the vertical

5 wall *i* of the notch against the vertical wall $\frac{1}{2}$ of the cam-projection, whereby, when the spring becomes weakened by constant use, it can be readily tightened up and maintained in such tightened condition.

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

10 The combination, with the coiled door-spring, of the upper bracket, formed with a cam-projection and having an annular chamber containing a coiled spring, the pin having longitudinal ribs and channels, and also having

notches formed in the under side of its head, and the collar fitted upon the ribbed and channeled portion of the pin, substantially as described. 15

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES B. CLARK.

Witnesses:

E. J. CLARK,

ROBT. A. LIGGETT.