

(No Model.)

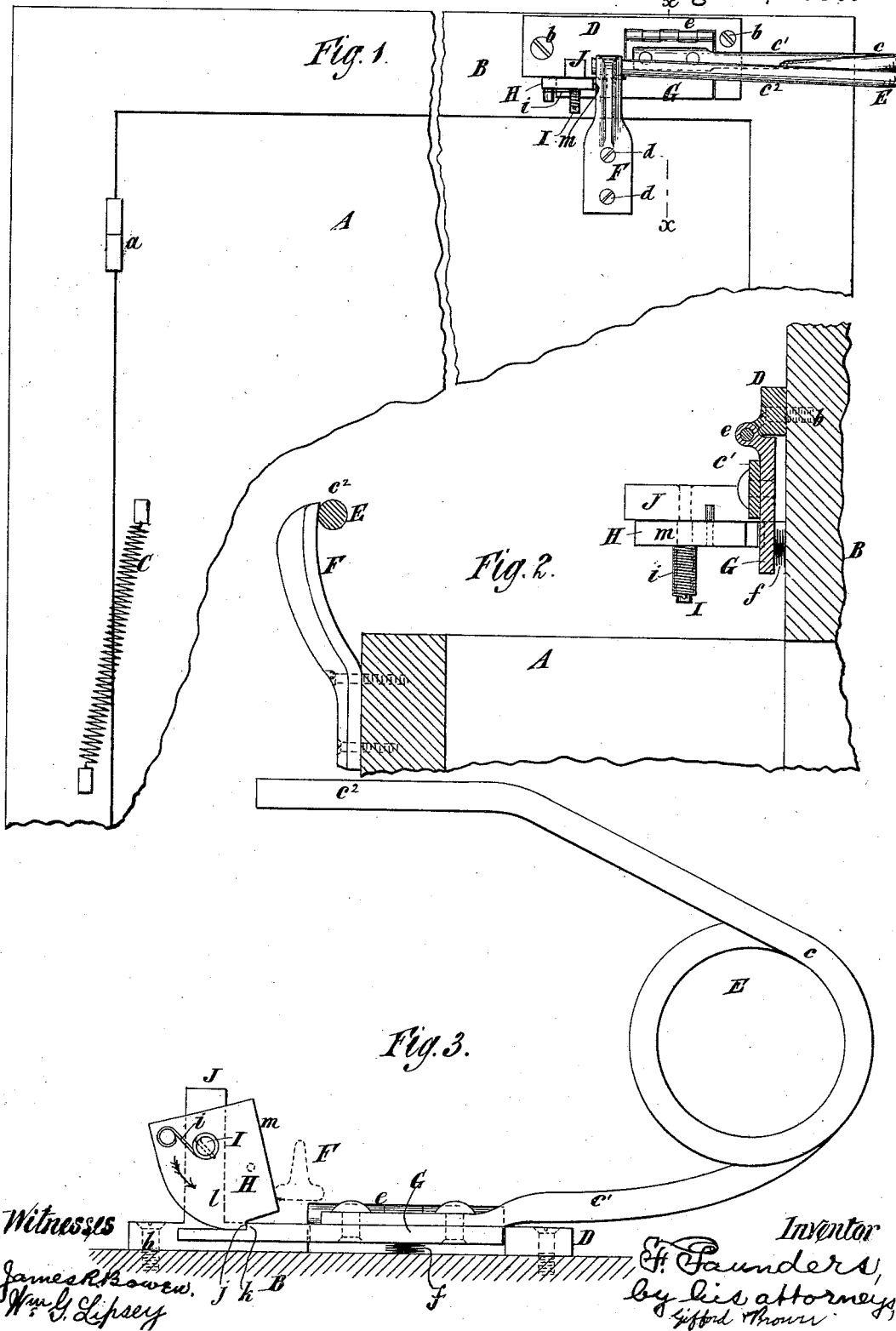
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DOOR CHECK.

No. 347,518.

Patented Aug. 17, 1886.



UNITED STATES PATENT OFFICE.

FRANK SAUNDERS, OF BROOKLYN, N. Y.; ARTHUR C. SAUNDERS, EDWIN H. BROWN, AND GEO. C. THOMAS, EXECUTORS OF SAID FRANK SAUNDERS, DECEASED, ASSIGNORS TO CHARLES H. SHAW, OF SAME PLACE.

DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 347,518, dated August 17, 1886.

Application filed May 12, 1884. Renewed March 22, 1886. Serial No. 196,126. (No model.)

To all whom it may concern:

Be it known that I, FRANK SAUNDERS, of Brooklyn, in Kings county and State of New York, have invented a certain new and useful
5 Improvement in Door-Checks, of which the following is a specification.

The object of my improvement is to produce a door-check of simple and cheap construction, whereby slamming of a door may
10 be prevented. By the term "door" I mean to refer not only to an article which is commonly designated a "door," but to a gate, and in fact to all analogous articles.

In the accompanying drawings, Figure 1 is
15 a face view of a portion of a door, the frame in conjunction with which it operates, a spring for closing it, and a check embodying my improvement. Certain portions of the door and the frame are broken away or removed in this
20 view to save space. Fig. 2 is a transverse section of the check taken at the plane of the dotted line *x x*, Fig. 1; and Fig. 3 is a bottom view of the same.

Similar letters of reference designate corresponding parts in all the figures.

A designates the door, and B designates the door-frame. Both these parts may be of any desired construction. The door is connected,
30 by any approved style of hinges *a*, to one of the jambs of the door-frame. It may be fastened, when closed, by any latch, and may, if desirable, have a lock combined with it.

C designates a spring which is employed to close the door after it has been opened. It
35 may be of any desired type. One end, as here shown, is connected to the door and the other end to that jamb of the door-frame to which the door is connected by the hinges *a*.

D designates the base-piece of the check. It
40 consists of a plate of metal or other appropriate material, and, as here shown, it is secured by screws *b*, or other means, to that side of the lintel of the door-frame toward which the door moves in closing.

E designates a spring which checks the motion of the door in closing. This spring, in the present example of my invention, consists of a piece of stout wire bent into a coil, *c*, and having the ends extended in the same direction,
50 so as to form two limbs, *c'* *c''*. The limb

c' of the spring is fastened to the base-piece D, so that the whole spring can rock transversely to the length of its limbs—in the present instance up and down. The other limb, *c''*, of the spring is normally obtruded in the
55 path through which travels a tappet, F, attached to the upper portion of the door by screws *d*, or equivalent devices. When, however, the spring is rocked upward, its limb *c''* will be moved beyond the path traveled by the
60 tappet F, and hence cannot then interfere with the movement of the door. The means whereby the rocking of the spring will be effected will be described presently. Before entering
upon this description I shall explain the manner in which the spring is secured to the base-
65 piece so that it shall be capable of rocking. While I do not wish to confine myself to any particular way of connecting the spring to the base-piece, I have found it convenient to do this
70 in the manner shown—namely, by securing the limb *c'* of the spring, by rivets or like means, to a leaf, G, which is made of metal or other suitable material, and hinged at the upper edge to the base-piece, as shown at *e*. Between this
75 leaf G and the base-piece or door-frame a spring, *f*, is interposed. The spring *f* may be of helical form, and may be held in place either by attaching it to the base-piece, to the leaf, or to both these parts. Preferably the spring
80 *f* is coiled at one end loosely around a projection, and enters a recess at the other end. The tendency of this spring *f* is to swing the leaf G outward, so as to cause the spring E to
85 be rocked upward.

H is a detent, whereby the spring E, when rocked into its normal position, will be maintained there for a certain time. This detent is shown as consisting of an approximately
90 segment-shaped piece of metal, or other suitable material, mounted upon a stud, I, so that it may rock thereon. The stud I is shown as extending from a post, J, which projects from the base-piece. The detent and its supporting-
stud are so arranged that the detent shall be
95 free to oscillate or turn in a plane which is transverse to the plane in which the leaf G swings. This detent is provided with a tooth, *j*, which is capable of engaging with a tooth or
shoulder, *k*, on the leaf G. A spring, *i*, is
100

coiled around the stud I. At one end it is fastened to this stud and at the other end to the detent. It oscillates the detent in the direction indicated by the arrow *l*, so as to cause its tooth *j* to be moved beyond the tooth *k* of the leaf G whenever it becomes disengaged therefrom. The rounded edge of the detent is eccentric to the stud I. Owing to this eccentricity, whenever the detent is oscillated by the spring *i*, the leaf G may be impelled outward by the spring *f*, so as to rock the spring E upward.

The detent H and the tappet F must be arranged in such relative positions that the tappet, after passing the limb *c'* of the spring E, shall impinge against the face *m* of the detent. The further movement of the tappet will then oscillate the detent, so that it will force back the leaf G and rock the spring E downward, and so that the tooth *j* of the detent will engage with the tooth *k* of the leaf. When the detent and leaf are thus engaged, the spring E will be held in its normal position.

I will now describe the operation of my check, assuming the spring E to be in its normal position. The door is opened. In this movement of the door the tappet F will slip easily past the limb *c'* of the spring E, because its side which will then strike this limb of the spring is rounded or sloped off to admit of such action. When the door is let go and is closed by the action of the spring C, the tappet F strikes the limb *c'* of the spring E. The motion of the door is thus arrested, and the leaf G is swung back against the resistance of the spring *f* far enough to disengage its tooth *k* from the tooth *j* of the detent. The detent is then oscillated by the spring *i*, so as to bring that portion of its rounded face which is the nearest to the stud I opposite the leaf G. The leaf G is then swung outward, and the spring E is rocked upward. Thus the spring E and the detent H are caused to operate automatically to vary their positions in one direction. After the contact of the tappet F with the limb *c'* of the spring E occurs the door slightly rebounds, thus affording an oppor-

tunity for the operations of the leaf G, the detent H, and the spring E, which I have just described. As soon as the force with which the door rebounds has been neutralized, the door again moves toward the door-frame. Owing, however, to the upward rocking of the spring E, the tappet will then pass under the limb *c'* of the said spring E and shut into the door-frame. This second movement of the door toward the door-frame will occur with little force, and hence but little noise will be made by the door in shutting. In this second movement of the door toward the door-frame the tappet F comes in contact with the detent H, and by its continued movement rocks the detent, so as to cause the leaf G to be swung backward, and to effect the engagement of the tooth *j* of the detent with the tooth *k* of the said leaf. The spring E will have been rocked downward to its normal position by this movement of the leaf G. It will thus have been set, so as to be ready for a repetition of the operation which I have described.

I do not wish to be confined to using the check on the lintel of the door-frame. It may be arranged on one of the jambs, and the tappet placed in a corresponding position on the door.

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

The combination, for use with a door, of a spring for checking the movement of the door in closing, and supported so that it can be moved into either of two positions, a detent for retaining the spring in one position, and a tappet carried by the door and adapted to strike the spring during the movement of the door in closing, and move it so as to disengage the detent from the spring to allow the spring to move into its other position, subsequently to pass the spring, and ultimately to reset the spring and detent, substantially as specified.

FRANK SAUNDERS.

Witnesses:

EDWARD T. ROCHE,
T. J. KEANE.