

(No Model.)

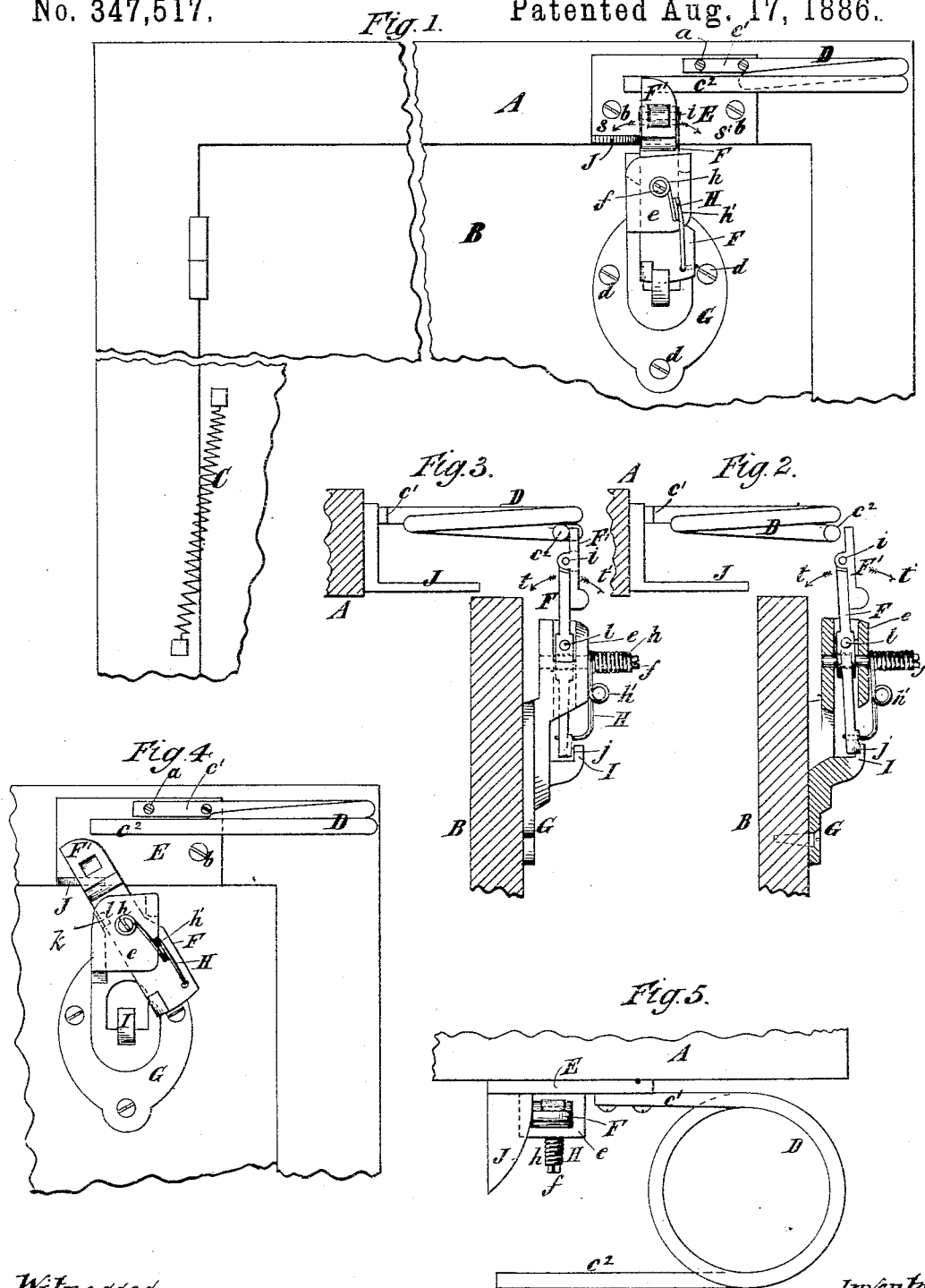
F. SAUNDERS, Dec'd.

A. C. SAUNDERS, E. H. BROWN & G. C. THOMAS, Executors.

DOOR CHECK.

No. 347,517.

Patented Aug. 17, 1886.



Witnesses
Edward C. Roche
Georadman

Inventor
Frank Saunders,
by his attorneys
Hibbard & Brown.

UNITED STATES PATENT OFFICE.

FRANK SAUNDERS, OF BROOKLYN, NEW YORK; ARTHUR C. SAUNDERS, EDWIN H. BROWN, AND GEORGE 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. 347,517, dated August 17, 1886.

Application filed June 20, 1884. Serial No. 135,493. (No model.)

To all whom it may concern:

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

The object of my improvement is to produce a door-check which will prevent the noisy slamming of doors, gates, and like articles.

In the accompanying drawings, Figure 1 is a face view of a door and door-casing having combined with them a door-check embodying my improvement. Fig. 2 is an edge view of the door-check, showing the parts in one position and partly in section, and portions of the door and door-casing. Fig. 3 is a view similar to Fig. 2, but showing the parts of the check in a different position. Fig. 4 is a view similar to Fig. 1, but showing the parts of the check in another position; and Fig. 5 is a top view of the check.

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

A designates a door-casing of ordinary construction.

B designates a door hinged at one edge, as usual. The door may have any desirable catch and lock.

C designates a spring for closing the door. I have shown a portion of the door and door-casing broken away or removed to save space.

D designates a spring, which, as here shown, consists of a wire formed into a coil, *e*, at the middle, and having its ends *e'* and *e''* bent in the same direction. One end, *e'*, is shown as fastened by rivets or screws *a* to a plate, E, preferably made of metal. This plate may be fastened by screws *b*, or analogous devices, to the door-casing. The other end, *e''*, of the spring occupies a position at a considerable distance from the plate E and door-casing.

F designates a lever, preferably made of metal, fulcrumed to a plate, G, which may be fastened by screws *d*, or analogous devices, to the door. Preferably the plate E will be fastened to the upper part of the door-casing, and then the plate G will be fastened to the upper part of the door, and in such position that

the lever F will project above the door and be capable of acting against the end *e''* of the spring D. Should the spring D be provided with any appurtenance adapted to be struck by the lever F in closing the door, instead of striking the lever itself, such an appurtenance would in effect be the spring itself and within the meaning of the term "spring," as I here employ it. The lever F is fulcrumed to the plate G in such manner that it may be swung or oscillated laterally—I mean in a plane approximately parallel with the face of the door, as indicated by the arrows *s* and *s'*, and also so that it may be swung or oscillated toward and from the plane of the face of the door, as indicated by the arrows *t* and *t'*. I will describe particularly the manner in which said lever is fulcrumed in the present example of my invention. The upper part of the plate G is provided with a sort of pocket, *e*, through which the lever F extends. A pin, *f*, extends through the pocket *e* and through a hole in the lever after the latter has been introduced into the pocket. The pin *f* may be riveted into the pocket of the plate G. The hole in the lever F which fits on the pin *f* is slightly larger than the pin *f*. The portion of the lever F which fits in the pocket *e* may be advantageously made somewhat thicker than the portions of the lever which extend beyond the pocket *e*, and longitudinally rounded. The lever F can swing or oscillate laterally on the pin *f* as a center, and, owing to the difference in size between the pin *f* and the hole of the lever through which the said pin passes, the lever can also swing or oscillate toward and from the plane of the face of the door.

H designates a spring, whereby the lever F will be oscillated laterally in the direction indicated by the arrow *s*. As shown, this spring consists of a wire fastened at one end to the pin *f*, provided with coils *h*, surrounding the pin *f*, and fastened at the other end to the lever F. This spring H, as here shown, has also a coil, *h'*, at a point between the pin *f* and the place where the end of the spring is fastened to the lever F. The coil *h'* of the spring H oscillates or swings the lever F in the direction indicated by the arrow *t*.

Instead of employing a single spring for oscillating the lever F in the directions indicated by the arrows *s t*, I may employ two separate springs for effecting these motions. The lower part of the lever F has a spur or rib, *j*, extending from its face. This is adapted to engage with a catch, I, here shown as formed integral with the plate G. At the upper end of the lever F is a section, F', hinged at *i* and weighted at the lower end, so as to normally maintain a position parallel with the main portion of the lever. The lever F constitutes a tappet. From the plate E extends an arm, J. One edge of this arm is inclined or rounded.

I will now explain the operation of the parts described. To do this I will assume that the door has been opened and is swinging toward the door-casing. When the section F' of the lever F comes in contact with the end *c*² of the spring D, the motion of the door will be arrested. Immediately on making contact with the end *c*² of the spring, the lever F will be oscillated in the direction indicated by the arrow *t*. When the lever is thus oscillated, its spur or rib *j* will become disengaged from the catch I.

In arresting the motion of the door the end *c*² of the spring is bent slightly toward the door-casing. After the force of the door has been expended the end *c*² of the spring resumes its normal position, and thereby imparts such a motion to the door away from the door-casing that the door acquires a momentum sufficient to cause it to carry the lever F somewhat beyond the end *c*² of the spring. The instant that the lever F is thus freed from the end *c*² of the spring, the lever will be automatically oscillated laterally by the spring H in the direction indicated by the arrow *s*, the spur or rib *j* having previously been disengaged from the catch I. After the lever has been oscillated, as described, the door again moves forward under the influence of the spring C. Owing to the lateral oscillation of the lever, it can now pass by the end *c*² of the spring D. The door will thus have become arrested and allowed to close with little or no noise. After the lever has moved past the end *c*² of the spring D it comes in contact with the arm J, and it is thus oscillated laterally in the direction indicated by the arrow *s'*, and the spur or rib *j* will be engaged with the catch I. Next

time the door is opened the section F' of the lever F will be brought into contact with the end *c*² of the spring D. It will then swing over to permit it to pass under the said end *c*² of the spring D. This section F' can only yield when the door is being opened. After having passed the spring D the section F' will resume its normal position. Preferably a buffer consisting of a piece of india-rubber or like material, *k*, will be used to prevent any noise occurring when the lever F is oscillated laterally by the spring H. A piece of india-rubber or like material, *l*, may be used to obviate or lessen the noise produced when the lever F acts on the spring D. By the word "door" I mean to include a gate or any similar device for closing an aperture.

I do not wish to be restricted to the particular construction shown, as many of the features and details may be varied.

I regard my invention as consisting in the combination of a door actuated by a spring in closing; a tappet on the door capable of rocking backward and of moving in another direction; a catch normally holding the tappet, a spring on the door-casing with which the tappet will come in contact in closing the door, whereby the door will be checked and the tappet rocked backwardly, another spring for moving the tappet out of the way of the checking-spring after the tappet has been rocked backward, and a device for resetting the tappet.

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

The combination of a door, a spring connected to the door and door-casing for closing the door, a tappet on the door supported so as to be capable of rocking backward and also moving in another direction, a catch normally engaging and holding the tappet, a spring on the door-casing with which the tappet will come in contact when the door closes, and by which the movement of the door will be checked and the tappet rocked backward, another spring for moving the tappet out of the way of the checking-spring after the tappet has been rocked backward, and a device for resetting the tappet, substantially as specified.

FRANK SAUNDERS.

Witnesses:

T. J. KEANE,
WILLIAM G. LIPSEY.