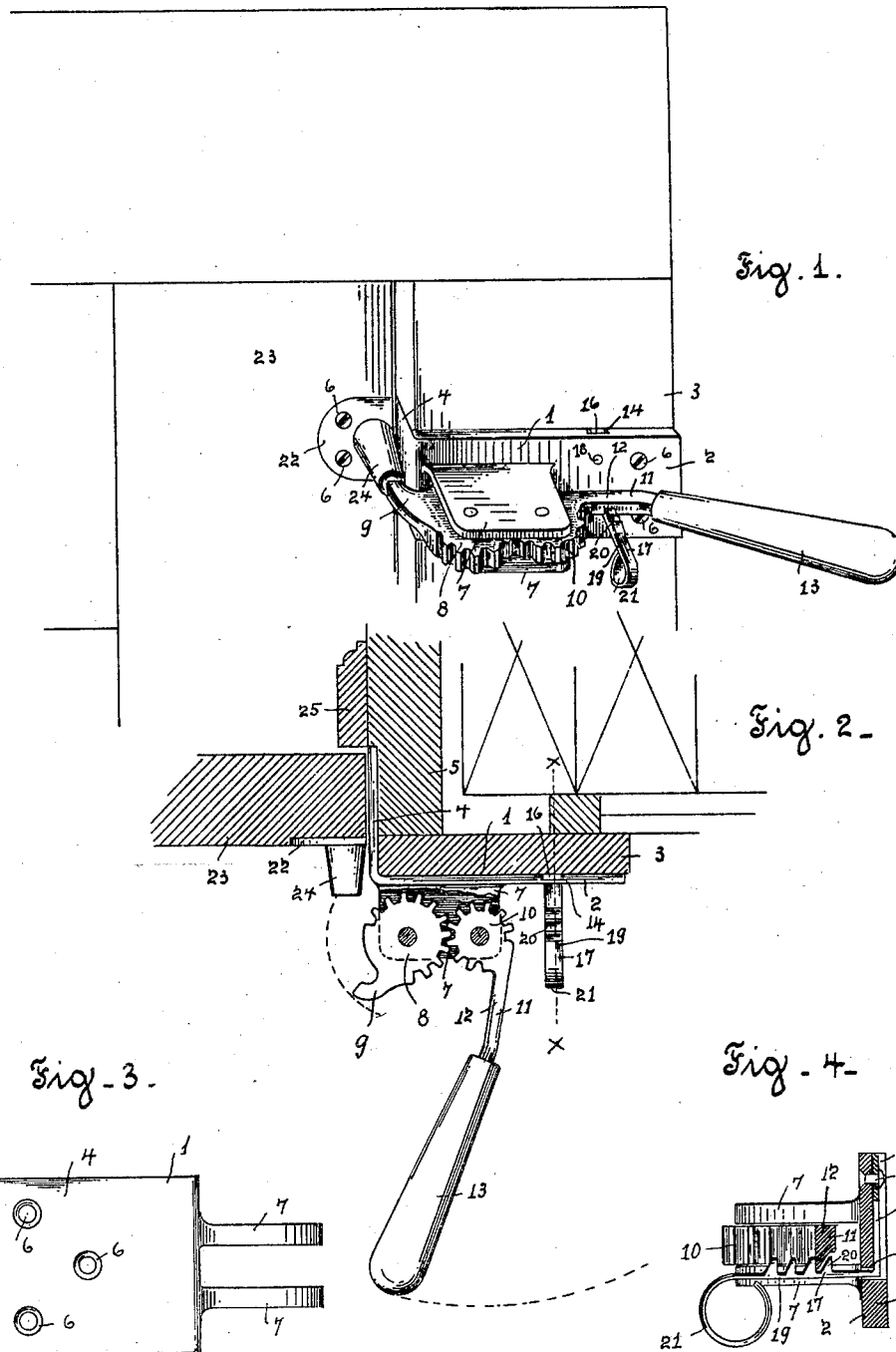


No. 676,779.

Patented June 18, 1901.

F. R. STAHL.
DOOR LATCH AND STRAIGHTENER.
(Application filed Mar. 9, 1901.)

(No Model.)



Witnesses—
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UNITED STATES PATENT OFFICE.

FRANK R. STAHL, OF TOLEDO, OHIO.

DOOR LATCH AND STRAIGHTENER.

SPECIFICATION forming part of Letters Patent No. 676,779, dated June 18, 1901.

Application filed March 9, 1901. Serial No. 50,432. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. STAHL, a citizen of the United States, residing at No. 659 Norwood avenue, Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Improvement in Door Latches and Straighteners, of which the following is a specification.

My invention relates to a door-straightener, 10 which is also adapted for an inside lock.

All outer doors, however well constructed, by reason of their being exposed to damp air without and warm dry air within become more or less warped inward. By reason of the lock 15 being located below the center line of the door this warping mainly occurs at the top, thereby leaving openings for drafts of air and causing imperfect fitting of the door against its stop.

The object of my invention is to provide a device for overcoming and preventing the warping of doors that is readily applied and operated and that is also adapted to serve as a safety-lock for the door that can only be 25 unlocked from the inside.

With this object in view my invention consists, essentially, of a plate adapted to be secured to a door-casing and having a coacting cam and lever fulcrumed thereto, a plate 30 adapted to be secured to the door-stile and provided with a projecting boss adapted to be engaged by the cam, and a spring-catch secured to the casing-plate adapted to hold the lever in progressive positions when moved to 35 press the cam on the boss.

A preferred embodiment of my invention is hereinafter fully set forth and described, and illustrated in the drawings, in which—

Figure 1 is an isometric view showing the 40 device attached to a door-casing and door in position to compress and lock the door. Fig. 2 is a top plan view of my invention with the upper lug of the casing-plate broken away and showing the lever and cam in position to 45 release the door and the door and door-frame in section. Fig. 3 is an end view of the casing-plate; and Fig. 4 is a cross-section through the casing-plate on line *xx* of Fig. 2, showing an end elevation of the spring-catch as 50 secured thereto.

In the drawings, 1 designates an angled casing-plate having a side 2 for attachment

to the casing 3 of the door and a shorter side 4 for attachment to the door-jamb 5, each side being provided with countersunk screw- 55 orifices 6 for such attachment. In attaching plate 1 side 3 is let in flush with the face of the jamb.

Side 2 of plate 1 is provided with a pair of lugs 7, projecting outwardly at right angles 60 therefrom and lengthwise thereof in parallel position, and housed between the lugs and suitably journaled therein the toothed cam-wheel 8, having an integral curved arm or cam 9 projecting beyond its periphery, and 65 a toothed lever-wheel 10, intermeshing with the cam-wheel 8 and provided with a lever-arm 11, projecting tangentially from its periphery, having the middle arm portion 12 beveled at its lower edge on the side nearest 70 to the plate 1 and its outer portion angled and provided with a handle 13.

Side 2 is provided with a recess 14, which extends from the top toward the bottom edge of the plate 1, and at the bottom of the recess 75 there is provided a slot 15, through which the angled end 16 of a spring-catch 17 is inserted and secured to the plate 1 by means of countersunk rivets 18, and its free end 19 is provided with a plurality of ratchet-teeth 20, 80 adapted to engage the beveled edge of the middle arm 12 of the lever when moved toward plate 1, causing the catch to yield as the lever 11 passes each tooth and to spring back and prevent its return. For releasing the le- 85 ver there is formed on the free end of the catch a ring 21 or other suitable handle.

22 designates a door-plate, also provided with countersunk screw-orifices 6 for attaching it to the door-stile 23, to which it is se- 90 cured in alinement with plate 1 and is provided with a boss 24, projecting in the line of the movement of the compressing-arm 9. The length of the boss is preferably made equal to the thickness of the door-casing. In at- 95 taching plate 22 it is also preferably let in flush with the face of the door-stile. Thus constructed and attached by moving the lever 11 from the position shown in Fig. 2 to that shown in Fig. 1 the arm 9 is moved to con- 100 tact with the boss 24 and is pressed thereon by the lever, and the door is thereby forced against its stop 25 and is held in that position by the spring-catch, and in such position the

device operates as an inside lock for the door. It is obvious that by pulling the spring-catch downward by its ring 21 the lever will be released and that the door may then be opened in the usual manner, the movement of the door causing a reversal of the positions of the cam and lever to that shown in Fig. 2.

When the device is applied to a warped door, the door may be gradually straightened without injury to the door by increasing from day to day the throw of the lever until the door easily abuts its stop. When applied to a new door, it will prevent any warping of the door.

Having thus fully described my invention, what I claim to be new, and desire to secure by Letters Patent, is—

1. A door latch and straightener, comprising a plate adapted to be secured to a door-casing and having a coacting cam and lever fulcrumed thereto, a plate adapted to be secured to the door-stile and provided with a projecting boss adapted to be engaged by the cam, and a spring-catch secured to the casing-plate, adapted to hold the lever in progressive positions when moved to press the cam on the boss.

2. In a door latch and straightener, the combination of an angle-plate adapted to be se-

cured to the casing and jamb of a door-frame, having fulcrumed thereto an intermeshing cam and lever, a plate adapted to be secured to the door-stile, and provided with a boss adapted to be engaged by the cam, and a catch secured to the casing adapted to engage the lever and retain it in position to press the cam on the boss.

3. In a door latch and straightener, the combination of an angle-plate adapted to be secured to the casing and jamb of a door-frame, and having lugs lengthwise of and projecting at right angles from the outer casing side of the angle-plate, an intermeshing cam and lever fulcrumed in the lugs, a plate for the door, adapted to be secured to the stile of the door and provided with a boss adapted to be engaged by the cam, a ratchet-toothed spring-catch, secured to the angle-plate and adapted to automatically engage and retain the lever in progressive positions of its movement to press the cam on the boss, and means to release the catch.

In witness whereof I have hereunto set my hand this 6th day of March, A. D. 1901.

FRANK R. STAHL.

Witnesses:

IRVING E. MACOMBER,
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