

UNITED STATES PATENT OFFICE.

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SCREEN-DOOR CATCH.

1,008,098.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RUDOLPH G. WINTER, of Milwaukee, Wisconsin, have invented a Screen-Door Catch, of which the following is a specification.

This invention relates to devices used for catching and holding a swinging door in its closed position to prevent it from slamming or being swung open by the wind. Such devices are especially adaptable to screen-doors which are closed by a spring, but are also applicable to various other kinds of doors, which are operated under like conditions.

Screen doors are made of very light construction so that they are easily swayed by the wind, and unless kept closed, they fail of their function in keeping out insects. On the other hand, it is undesirable to have a regular latch, which requires manipulation in order to open the door. Moreover, the noise of slamming caused by the door being shut by a spring is objectionable.

To this end my invention consists in providing a simple, cheap and effective device which will catch and hold the door as it swings to, and also cushion it and thus prevent it from slamming; while at the same time permitting it to be readily opened by a push or pull. Such devices must necessarily be made very cheaply in order to be marketable, and it is therefore a principal object of my invention to produce an effective device so cheap that it can be readily marketed in large quantities.

The device consists in general of two pieces, ordinarily metal stampings, made in the same shape and pattern, and having each a pair of cam-ears which interlock with those of the other; one of said devices being fastened to the door, and the other to the door-frame, in mutually engaging position, and one of said pieces being fixed and the other pivoted.

To enable my invention to be exactly understood, I have illustrated in the accompanying drawings the most improved form thereof, and herein—

Figure 1 is a plan-section through a door and a portion of its frame showing my device *in situ*; Fig. 2 is a front elevation of the device in the closed position; Fig. 3 is a horizontal median section, looking down, on the plane 3—4, with the device in half-open or half-shut position; Fig. 4 is a horizontal median section on the same plane,

looking up, and with the device in the open or releasing position; and Fig. 5 is a front elevation of the device in the same position.

The reference letters refer each to the same part in each figure of the drawings.

For convenience of reference the door is designated A and the frame B, and the two pieces or leaves of my apparatus C and D, the same being attached to the door and frame respectively. As aforesaid, one of these leaves is fixed and the other pivoted, and to fix ideas, I have shown that upon the door, C, as fixed thereto by means of the three screws *e*, *f* and *g*; while the leaf D upon the frame is pivoted upon the screw *h* in the center. The leaf C has a pair of cam-ears *c'* and *c''*, one forwardly and the other backwardly inclined, as shown; and the leaf D a like pair of cam-ears *d'* and *d''*, which are opposite to and cooperate with the ears *c'*, *c''* respectively. The pivoted leaf D, for greater smoothness of action, preferably turns between the fixed plate I and a washer O under the head of the screw *h*. The plate I is fastened by means of the screw *h* and a second screw *j*, this last screw serving also the function of an abutment and regulator for a friction-spring K, which may be formed of a piece of spring wire, and has its lower end set in a socket *i'* formed by pressing up a bight upon the piece I. The free end of the spring K presses against a circular edge, *d''* at the back of the leaf D, and thereby produces the requisite friction to cushion the door when closing and prevent it from being opened by light pressure or by the wind, in the manner which will be presently described. It will be observed that the screw *j* is a flat-head screw, and the conical lower side of its head can be used to regulate the pressure of the spring K, by turning said screw in or out. As an additional, though not essential, precaution against slamming, I provide upon the leaf C a small middle ear *c'''*, which is perforated to receive a rubber pad or cushion M which acts as a stop. As the leaf D is stamped and pressed from the same dies as the member C, a similar ear *d'''* and screw-holes *d'''* are shown thereupon, although they serve no useful purpose.

The action of the catch is as follows: When in the closed position, Fig. 2, a push from the inside or a pull upon the handle N from the outside of the door causes the device to release, because the cam-ear *c'*

pressing against the cam-ear d' forces it back, thus turning the leaf D into the dotted-line position, the lower ear d^2 advancing as the ear c^2 recedes, as shown in Fig. 3.

6 When entirely released the leaves stand in the respective positions shown in Figs. 4 and 5, in which they are now ready to close again. As the door is thrown to by the spring, or otherwise closed, the ear c^2 now

10 strikes against the ear d^2 , the ear d' being out of the way of the ear c' , and as the closing motion proceeds, turns the leaf D back to its original position, the ear d' advancing in front of the receding face of the

15 ear c' . The friction of this movement, which is produced by the spring K, and to some degree by the rubbing of the leaf D upon the plate I, checks the movement of the door, so that by the time the door is

20 completely closed the movement is completely checked, and if any residual movement remains, it is taken up by the cushion M, and such friction in like manner prevents the device from opening except in the

25 positive manner already stated.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa.

40 2. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa; and a spring acting against the pivoted leaf and adapted to produce friction in the movement thereof.

3. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted to the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa; a spring acting against the pivoted leaf and adapted to produce friction in the movement thereof; and means for

regulating the friction produced by said spring.

4. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa, and a resilient cushion carried by one leaf and adapted to act as a cushion-stop for the door.

5. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa, a wire spring pressing against said pivoted ear, and a screw the under surface of whose head is conical and forms a variable abutment for said spring.

6. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa; said pivoted-leaf having a circular edge concentric with the pivot, and a friction-spring consisting of a resilient bar having one end fixed and the other end abutting against said friction edge.

7. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa, said pivoted-leaf having a circular edge concentric with the pivot; a friction-spring consisting of a resilient bar having one end fixed and the other end abutting against said friction edge, and a screw lying at one side of said bar, the under side of whose head is conical and presses against said bar acting as an abutment, whereby the frictional pressure of said bar may be varied by an angular movement of said screw.

8. A device of the class described comprising a pair of leaves, one of which is adapted to be attached to the door and the other to the door-frame opposite, and one of said leaves being fixed and the other pivoted in the middle; each of said leaves having a pair of ears, one forwardly and the other backwardly inclined, the forwardly inclined ear of one leaf cooperating with the backwardly inclined ear of the other leaf and vice versa; said pivoted-leaf having a circular edge concentric with the pivot, a friction-spring consisting of a resilient bar having one end fixed and the other end abutting against said friction edge, a third ear on the leaf, which is attached to the door, projecting beyond the edge of the door, and a resilient cushion carried by said ear and adapted to abut against the edge of the door-frame in the closed position of the door.

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

RUDOLPH G. WINTER.

Witnesses:

F. M. MALLON,
GEORGE W. COLLES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."