No. 755,923. PATENTED MAR. 29, 1904.

T. O'SHAUGHNESSY.

LATCH.

APPLICATION FILED JULY 29, 1903.

NO MODEL.

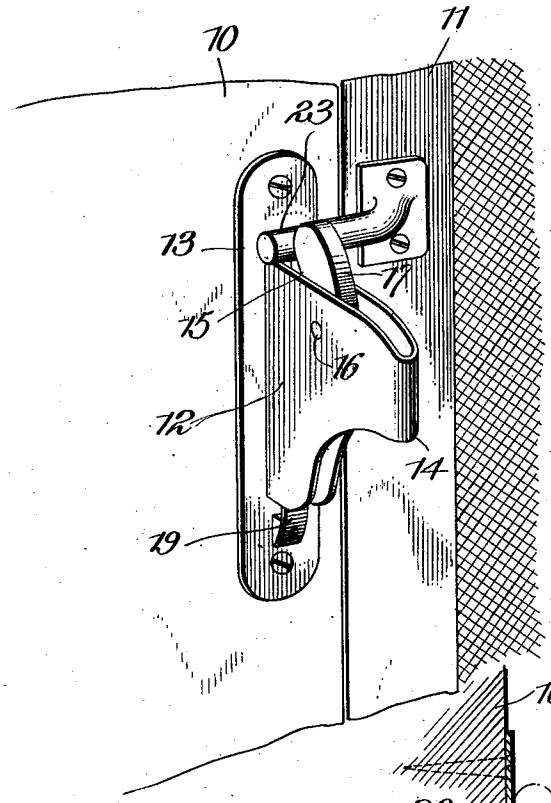


Fig. 1.

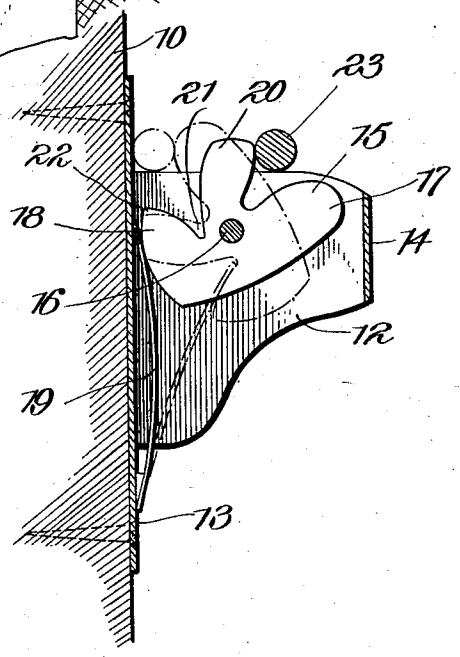


Fig. 2.

Witnesses
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No. 755,923. Patented March 29, 1904.

UNITED STATES PATENT OFFICE.

THOMAS O'SHAUGHNESSY, OF SAN JOSE, CALIFORNIA.

LATCH.

SPECIFICATION forming part of Letters Patent No. 755,923, dated March 29, 1904.

Application filed July 29, 1903. Serial No. 167,481. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O'SHAUGHNESSY, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented a new and useful Screen-Door Latch, of which the following is a specification.

This invention relates to fasteners for screen-doors and for similar structures, and has for its object to provide automatically-operating means whereby screen-doors and other closures of this character will be held yieldably closed with sufficient force to resist the reverse action of wind or air currents, but which will yield to a force sufficient to overcome the resistance of the holding means.

The invention consists in certain novel features of construction, as hereinafter shown and described, and specified in the claim.

In the drawings illustrative of the invention, in which corresponding parts are denoted by like designating characters, Figure 1 is a sectional elevation of the device with the trip-latch in its withdrawn position. Fig. 2 is a similar view with the trip-latch in its projected position.

The improved device is designed more particularly for use upon screen-doors and other similar structures having spring-hinges to hold them yieldably closed, but which may be employed upon any door or other closure to which it is adapted, and I do not, therefore, wish to be limited in the use of the device to any specific form of structure, but reserve the right to its use in connection with any form of structure to which it is adapted.

In the illustrative drawings, 10 represents a portion of a casing or frame adjacent to the doorway-opening, and 11 a portion of the free or swinging side of the door-frame.

The improved device consists of a casing or shell 12, having a base 13 by which it is secured to the casing, the shell being open at the top and closed at the outer end, as at 14, as represented. The shell 12 will preferably be formed of a sheet-metal plate folded together, with parallel sides, and riveted by its ends to the base 13, leaving the top and bottom open, as shown. Said shell or casing is also provided at its upper edge with a downward curve or sloping portion 12^a, the special purpose of which will be hereinafter made apparent. Within the shell 12 a latch member 15 is intermediately pivoted at 16, with the outer end 17 resting when in its withdrawn position against the inner side of the end 14 and the "heel" end 18 preferably rounded and engaged by a spring 19, as shown. Extending upwardly from the latch member 15 is a trip-arm 20, the latter so disposed that when the operative end 17 is withdrawn into the shell the arm will be projected, as in Fig. 1, and when the operative end is projected the portion 20 will be withdrawn, as in Fig. 2. Between the heel end 18 and the arm 20 a recess 21 is formed in the latch member, into which the free end of the spring will enter when the latch member is projected, as shown in Fig. 2.

Attached to the door 11 and projecting therefrom is a pin 23, adapted to pass over the upper side of the shell 12 and engage the arm 20 as the door is closed, with the effect of tripping the latch member and throwing the end 17 upward into the rear of the pin and at the same time depressing the heel end until the spring enters the recess 21, which thereafter exerts its force to maintain the latch member in yieldable engagement with the pin and correspondingly hold the door yieldably closed.

It will be observed that the shell or casing 12, which is attached to the door-casing, forms a support for the pin 23, which latter is attached to the door, and that consequently the latter is prevented from sagging. It will also be seen that the slight sag to which light structures of this kind are very liable will not interfere with the engagement of the pin 23 with the latching device, owing to the fact that the shell or casing 12 is curved at its engaging end, as shown at 12^a, which will at all times readily permit the engaging pin to pass onto the upper edge of the casing and into engagement with the latching device.

The heel end of the latch member, it will be observed, is in a relatively long curve substantially concentric to the pin 16, so that the spring bears with substantially equal force upon all points of its surface, so that the arm 20 will encounter a substantially uniform frictional resistance until the point 22 passes the spring and

permits it to enter the recess 21. By this means the resistance to the closing of the door is uniform and will not increase as the door approaches its "seat," which is the case with springs as ordinarily arranged. This is an important advantage and adds materially to the value and efficiency of the device and also materially decreases the force necessary to operate the door.

The pin 23 may be attached in any desired manner, but will preferably be provided with a laterally-extended plate by which it may be secured by screws to the door.

The device will preferably be located at the upper part of the door to be above the heads of the persons passing through.

By this simple arrangement screen-doors and similar structures will be held closed with sufficient firmness to resist the reverse air-currents, which have a tendency to swing them partially open against the force of the springs in the hinges and requiring the employment of larger and heavier springs than would be required to merely close the door automatically. Doors of this character located at points where strong reverse air-currents occur frequently require such heavy springs that the slamming and jarring resulting from the impact of their closing causes much annoyance and is very objectionable; but with the simple attachment herewith shown the closing-springs need only be strong enough to close the door, and in cases where the doors can be hung to close by gravity the closing-springs may be dispensed with, as the resistance of the latch member is so slight, owing to the curved heel surface 18, as above described.

The device may be employed upon any size of door and may be manufactured of any suitable material.

Having thus described the invention, what I claim is—

In a device of the class described, a casing having a base-plate attached to a door-frame, said casing having spaced side members and a downwardly-curved upper edge, a latch member pivotally mounted between the walls of the casing and comprising a heel member having a concentrically-curved upper edge, an outer arm and a trip-arm disposed between said heel and outer member and separated therefrom by recesses, and a spring secured to the base-plate, bearing against the concentrically-curved heel member and adapted to engage the recess between the latter and the trip-arm of the latch member, in combination with a pin secured to and extending from a door adapted to slidingly engage the upper edge of the casing and to engage between the trip and the outer member of the latch.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS O'SHAUGHNESSY.

Witnesses:
CHAS. A. SAWYER,
RALPH G. STICH.