No. 865,835. PATENTED SEPT. 10, 1907.

J. W. WATKINS.

SAFETY CATCH FOR PIVOTED CLOSURES.

APPLICATION FILED MAR. 23, 1907.

FIG. I.

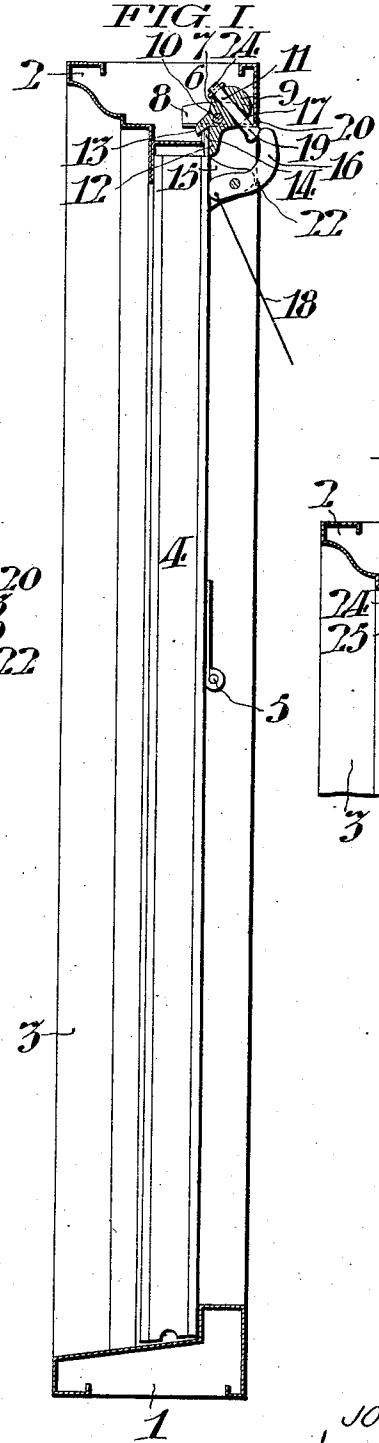


FIG. II.

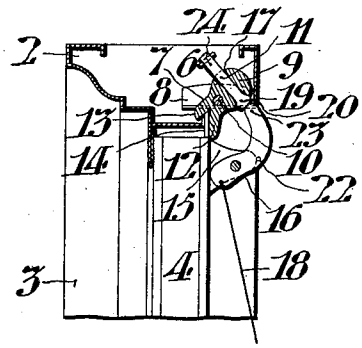
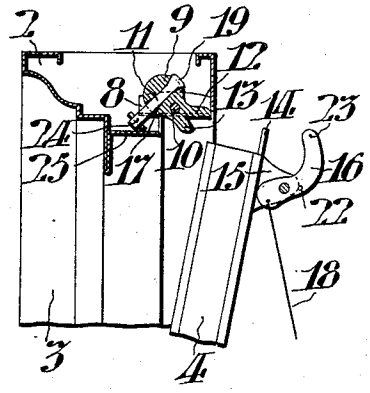


FIG. III.



WITNESSES:

John C. Bergner.

Wm. J. Sperl.

INVENTOR:

JOHN W. WATKINS,

by his Attorneys

Fulwey & Paul

UNITED STATES PATENT OFFICE.

JOHN W. WATKINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO DAVID LUPTON'S SONS COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SAFETY-CATCH FOR PIVOTED CLOSURES.

No. 865,835. Specification of Letters Patent. Patented Sept. 10, 1907.

Application filed March 23, 1907. Serial No. 364,033.

To all whom it may concern:

Be it known that I, JOHN W. WATKINS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Catches for Pivoted Closures, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to safety catches for pivoted closures, and has for its object the provision of a catch whereby the closures will be automatically locked in closed position when it is shut, and prevented from rebounding.

My invention is shown as applied to a horizontally pivoted window sash. Usually such window sashes are pivoted above the center and are kept open by means of a chain provided with a fusible link and secured at some convenient point on the window frame. When it is desired to close the window, the chain is detached from its securing point on the frame; or, if the temperature near the window rises above a predetermined limit the link melts, and under the influence of gravity the sash tends to assume a vertical position. As the sash strikes the frame it rebounds and flies open again unless held by a catch or closed manually.

It is the purpose of my present invention to provide a catch which will automatically secure a closure in its closed position, and prevent it from rebounding. In its present embodiment it comprises a tumbler pivoted so as to be in unstable equilibrium, except in its two extreme positions, and having two arms arranged to be engaged by some portion of the window sash. This tumbler is provided with an enlarged portion which falls to one side or the other, of the vertical, depending upon which of its arms is engaged by the sash. This construction is positive in its action and obviates the use of springs, which are liable to become distorted and render a catch of this type ineffective to respond quickly and hold the sash shut the first time it assumes the closed position. In the enlarged portion a bolt is slidably mounted to move freely to lock the sash.

In the accompanying drawings, Figure I, is a view partly in section of a sheet metal window frame and pivoted sash locked in closed position. Fig. II, is a sectional view showing the catch for the sash about to be released so that it may be opened. Fig. III, shows the sash in open position and also the position assumed by the catch.

In said figures:—1, is the sill, 2, is the head, and 3, the jamb of a sheet metal window frame. The sash 4, is pivoted slightly above its center to the jambs 3, at the point 5. Located in the head of the window frame is the catch 6, for holding the sash in closed position, as shown clearly in Fig. I. The catch comprises a sheet metal frame 8, secured to the head 2, and is formed of a tumbler 7, pivoted at 10, so as to be in unstable equilibrium in the frame 8. Said tumbler comprises an elongated block having an irregular cross section consisting of a substantially circular portion 9, and two diverging portions 12, and 13, constituting a V-shaped jaw. Passing through the enlarged end or boss 9, of the tumbler is an over-shot bolt 11, and said enlarged end is provided at some convenient point with a hole 17, tapered from the outside toward the center from each side, which enables the bolt 11, to slide freely therein.

The end of the tumbler opposite to that occupied by the bolt is formed in the shape of a V-shaped jaw having the arms 12, and 13, which engage the rabbet 14, on the upper end of the window sash 4. Pivotally mounted in brackets 15, at the upper end of the sash 4, is a lever 16. To this lever is attached a chain 18, by which the over-shot bolt 11, may be thrust through the hole in the tumbler 9, as shown in Fig. II, to release the catch and also allow the window sash to be pulled open. The sash is held open by means of the chain 18, which is secured to some convenient portion of the window frame. The head 2, of the window frame is cut-away to allow the bolt 11, and jaw 12, to swing about the pivot 10, during the operation of the device. The lower end of the bolt 11, is provided with an enlarged portion 19, which engages under the lip 20, formed on the head 2, by cutting away the material to allow the parts of the catch to move. The lever 16, is provided with a pin 22, which acts as a stop and engages the bracket 15, when the chain 18, is pulled downwardly and thereby limits the upward movement of the upper end of the lever 16.

The operation of the device is as follows: When it is desired to open the window, the chain 18, is pulled downwardly thereby moving the end 23, of the lever 16, upwardly against the end 19, of the over-shot bolt 11, and forcing this bolt from the position shown in Fig. I, to that shown in Fig. II. The bolt 11, being removed from engagement with the lip 20, of the head 2, the window sash may now be swung outwardly and the catch will assume the position shown in Fig. III.

From the construction above set forth, it will be readily seen that the tumbler 7, is pivoted so as to be in unstable equilibrium, and when the arm 12, is engaged by the rabbet 14, and swung toward the right, the center of gravity of the tumbler is moved past the vertical and said tumbler and bolt 11, quickly assume the position shown in Fig. III. The inner end 24, of the bolt 11, rests upon the portion 25, of the window frame head 2, and maintains the tumbler 7, in such a position that the arm 13, may be engaged by the rabbet 14, upon the closing movement of the sash. The window may now be retained in open position by tying the chain 18, to a suitable support.

To close the window the chain 18, is released and

the sash, being pivoted above its center, tends to assume the vertical. The rabbet 14, of the sash strikes the arm 13, of the V-shaped jaw, thereby causing the tumbler 7, to rotate and the over-shot bolt 11, slides into the position shown in Fig. I, engaging with the lip 20, of the head 2. The sash is thereby locked in position and prevented from re-opening as is so often the case with structures of this character. Furthermore, it will be noted that the greater the speed with which the sash is closed, the greater the momentum of the tumbler 7, to oppose the rebound of said sash, since the more rapid the motion which is imparted to the tumbler by the impact of the sash 4, against the arm 13, the quicker the end 9, passes the vertical, and the arm 12, is brought behind the rabbet 14, to oppose the rebound.

As the rabbet 14, strikes the arm 13, during the closing movement of the sash, the tumbler acts as a cushion to receive the impact of the blow and lessen the rebounding tendency of the sash, while at the same time the arm 12, moves behind the rabbet and opposes the rebound.

Having thus described my invention, I claim:

1. In a catch for a pivoted closure, the combination of a pivoted tumbler; an overshot bolt mounted to slide in said tumbler; and means for moving said bolt to release the catch.

2. In a catch for a window sash, the combination of a frame; a tumbler pivoted to said frame, said tumbler comprising an enlarged boss and a V shaped jaw; and an overshot bolt slidably mounted in said boss.

3. The combination with a horizontal pivoted window sash; of a catch mounted in the window frame, said catch comprising a pivoted tumbler provided with an overshot bolt and a V shaped jaw, whereby said sash is automatically secured in closed position.

4. In a catch for a pivoted closure, the combination of a frame; a tumbler pivoted in said frame to be in unstable equilibrium; a bolt slidably mounted in said tumbler; and means on said tumbler adapted to be engaged by a portion of the closure.

5. In a catch for a pivoted closure, the combination of a frame; a tumbler pivoted in said frame and comprising a boss and a pair of arms forming a V-shaped jaw, said boss and jaw being on opposite sides of the pivotal point, said boss being provided with a hole passing diametrically therethrough and tapering from the outer ends thereof toward the center; and a bolt adapted to slide freely through said hole.

6. A catch for a window sash, comprising a tumbler pivotally mounted to be in unstable equilibrium and provided with means for engaging a window sash and a window frame to lock the sash in closed position; in combination with means on the sash for releasing the catch.

7. A catch for a window sash comprising an elongated pivoted block of irregular cross section constituting a tumbler; and an overshot bolt slidably mounted in said block; in combination with means for forcing said tumbler into either of two positions; and means for engaging said bolt to lock the sash in closed position.

8. A catch for a pivoted closure comprising a pivoted tumbler; means whereby the completion of the closure throws the tumbler to one extremity of its play; and means whereby the rebound of the closure is opposed by the momentum thus imparted to the tumbler, in combination with a releasable catch for holding the tumbler in position to oppose the rebound.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this twenty-second day of March, 1907.

JOHN W. WATKINS.

Witnesses:
JAMES H. BELL,
WILLIAM J. SPERL.