July 28, 1925. 1,547,674

T. H. NELSON

CASEMENT WINDOW STAY

Filed Nov. 5, 1923

Fig. 1

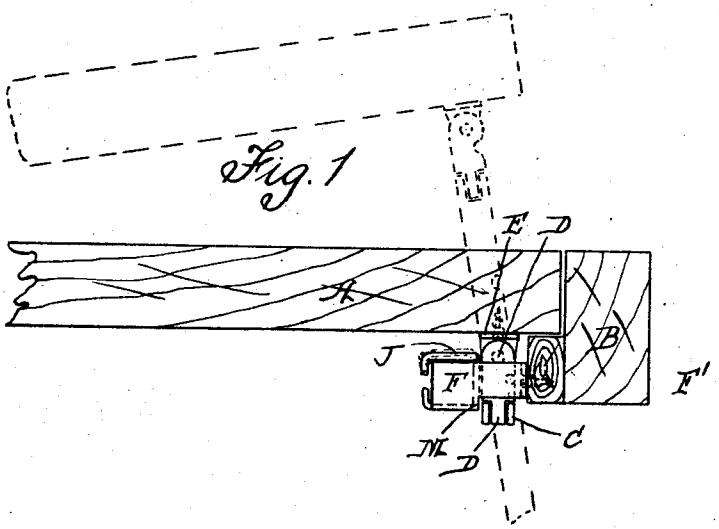


Fig. 2

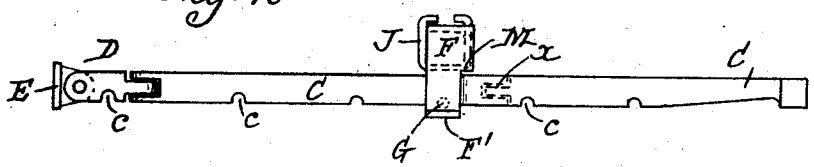


Fig. 3

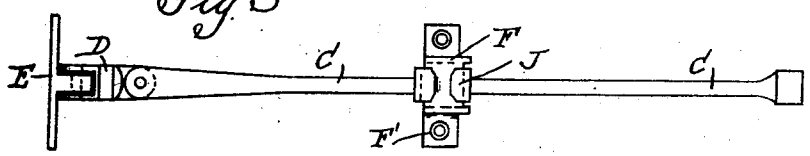


Fig. 4

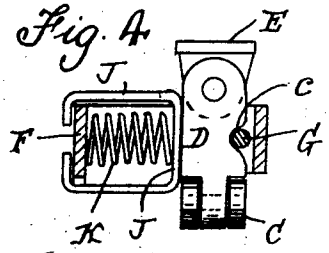
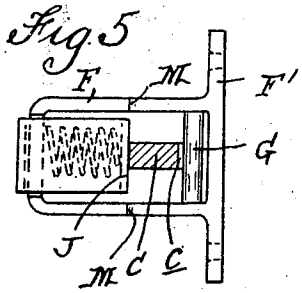


Fig. 5



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UNITED STATES PATENT OFFICE.

THOMAS HORATIO NELSON, OF WELLINGTON, NEW ZEALAND.

CASEMENT-WINDOW STAY.

Application filed November 5, 1923. Serial No. 672,928.

To all whom it may concern:

Be it known that I, THOMAS HORATIO NELSON, subject of the King of Great Britain, residing at Seatoun, Wellington, in the Dominion of New Zealand, have invented a new and useful Improved Casement-Window Stay, of which the following is a specification.

This invention relates to an improved construction of stay for use in holding casement and like hinged windows and fittings in a more or less open condition. The construction devised relates to that known class of device in which the stay is formed by a bar that is hinge jointed to the sash so that it may turn either up and down or may swing sideways and that is formed with notches on one edge, and is combined with a guide affixed to the window frame and through which the bar is adapted to slide freely. The guide is provided with a pin or tooth extending across the notched edge of the bar and adapted to fit into any one of the notches, and said guide also has a spring controlled presser frame bearing upon the other edge of the bar and forcing the notched edge against the said pin. The bar is freed to slide through the guide by pulling its end sideways against the spring presser frame and thereby freeing the notches from the pin and while thus pulled sideways, it is slid through the guide to the required position, when upon releasing it, the spring will press the bar across and cause the appropriate notch to engage the pin and hold the bar as desired.

The invention has been devised in order to provide improvements in such a form of stay whereby the general structure of the device is made of simple and efficient design, and more particularly by means of which provision is made whereby the sash frame in the closing thereof is drawn closely into its closed position and is at the same time securely locked in such position against any possibility of being accidentally opened from the inside and altogether against being opened from the outside.

This construction is illustrated in the accompanying drawings in which:—

Figure 1 is a plan view of the stay as fitted for use and showing it holding a sash in the closed and locked position.

Figure 2 is a plan, and

Figure 3 a side view, of the stay bar and its guide in their relative working positions.

Figure 4 is a sectional plan, on an enlarged scale, of the guide, showing the stay bar therein and in the locked position.

Figure 5 is a front elevation, also on an enlarged scale, of the guide showing the stay bar in cross section passing therethrough.

The appliance is adapted for fitting upon the sill of a frame for use with a sash hung upon either vertical or horizontal hinges within such frame, or it may be fitted upon a vertical side of the frame for use with a sash hung in either of such ways, but preferably on the side when being used with a sash hung upon vertical hinges. This is the manner in which it is shown fitted in Figure 1 of the drawings, A representing the sash frame and B the main frame of the window. The construction is also such that the appliance may be fitted to either a right or left hand sash, at will.

In carrying out the invention, a stay bar C of approved metal and of the required length, is provided. This bar is pivotally attached at one end to a short bar or block D in such a manner that it may turn up or down thereon as upon a hinge. The block D in turn is pivotally attached to a bearing plate E so that it may turn laterally thereon, and this plate is fastened by screws to the sash frame A. The stay bar is thus capable of swinging sideways or of turning up and down in relation to its attachment to the sash.

The inner edge of the bar C is made with notches *c* at approved intervals apart along its length.

Combined with the stay bar is a guide F that is fixed to project sideways in from

the window frame B and is secured to such frame by screws or the like passing through a bearing plate F' formed integral with the guide. This guide is made as an enclosed frame and it is positioned on the level of the stay bar connection with the sash frame so that such bar may slide horizontally in a longitudinal direction through the guide. The inner side of the space enclosed by the guide has a pin G fixed to extend vertically through the height of the guide, said pin being made of such a diameter that it may fit into any one of the notches *c* of the bar C.

Fitted into the outer part of the guide is a presser frame formed by a plate J that extends for a distance parallel with the edge of the bar C and has its ends carried out in parallel lines to pass one on each side of the outer end of the guide and then bent inwards on the outside towards one another. This presser plate, or frame, is thus capable of moving laterally in the guide but it is kept pressing against the bar C by means of the helical spring K disposed between it and the outer member of the guide. This spring is thus confined between the sides of the guide and the side extensions of the presser plate so that it always remains in position.

The pressure of the spring K will therefore serve to force the bar C laterally across with its notched edge hard against the pin G in order that the stay will lock at any notch placed opposite the pin. Thus in the operation of the stay, it may be freed from engagement with the pin by levering it to one side against the action of the presser plate and while being thus held, pushing it out or drawing it in through the guide to open or close the sash.

When the window is completely closed the short block or bar D will extend into the guide and as this is also formed with a notch it will lock upon the pin G. The bar C will then be free to turn down upon its pivotal attachment to the block so that it is out of the way. The bar also may be slid right through the guide to leave the sash free to open out and when thus freed from the guide, it will swing down against the sash, so that in each instance it is not left projecting in the way.

The manner in which the bar is connected to the sash and in addition also, the freedom of movement allowed the presser plate and the lateral movement of the bar in the guide, will compensate fully for the varying angles assumed by the bar as it moves in and out through the guide.

The turning of the bar downward will cause it to exert a leverage action on the guide to draw the sash A closely home.

Provision is made to lock the bar from moving sideways in the guide to free the sash, until the bar has been turned up to the straight position again. This consists in forming the guide on its top and bottom edges facing inwards with shoulders M thereon, in a position such that the bar C when turned down, as shown in Figures 1 and 4, will have its outer edge engaged by the shoulder of the member across which it is turned and thereby be prevented from moving laterally to free the pin G, so that the bar will be held locked in this position. To unlock the window it is only necessary to straighten the bar on its pivot.

The act of drawing the sash bar in through the guide and then releasing it so that it may drop on its hinge will serve by the mere weight of the bar to automatically pull the sash to its tight position and then to lock itself in such closed position.

This construction also allows for the sash being closed and locked by pressure from the outside, as if sufficient force is exerted upon it, the bar will run through the guide, the spring giving way, and will then drop down and lock in the manner described.

In some cases, and particularly with long bars, the bar may be formed with a one way hinge joint at about midway in its length, as shown by the dotted lines at *x* in Figure 2 of the drawings. This will allow for the inner half hanging vertically down when the stay is pushed outwards half way, or less.

It will readily be seen that the construction shown may be used either on its side, as shown in the drawings, or on the flat so that the stay will swing in a horizontal plane, and that when arranged on its side it may be used either for left or right hand sashes by merely reversing it to suit.

In some cases, as when the appliance is fitted to a fanlight and the guide is fixed on the sill, the bar may act by its own weight instead of being spring controlled.

I claim:

1. A stay for hinged window sashes and the like, comprising a bar connected at one end to the sash by pivot joints disposed to permit of the bar swinging laterally, or up and down, one edge of said bar being formed with notches at intervals in its length, a guide fixed to the window frame and through which the bar is passed, such guide being formed by a hollow frame made with a face plate portion on its inner side, a presser guide frame fitted in the outer part of the guide frame and adapted to move laterally therein, a spring in compression disposed between the outer end of the guide frame and the inner end of the presser frame, and a pin extending across between the guide frame sides at the inner part thereof.

2. A stay for hinged window sashes and the like, according to claim 1, wherein each of the sides of the guide frame is formed

with a shoulder on the one edge thereof and positioned at a distance from the inner end of the said frame corresponding with the width of the stay bar.

3. In a casement and like stay, a hinged stay bar attached to the sash, a guide attached to the frame and through which such bar slides and having means for engaging the bar, a hinge in the stay bar positioned to allow the bar to turn in against the guide side, and shoulders on such guide adapted to engage and hold the bar when thus turned in and prevent its lateral movement in the guide.

In testimony whereof, I affix my signature.

THOMAS HORATIO NELSON.