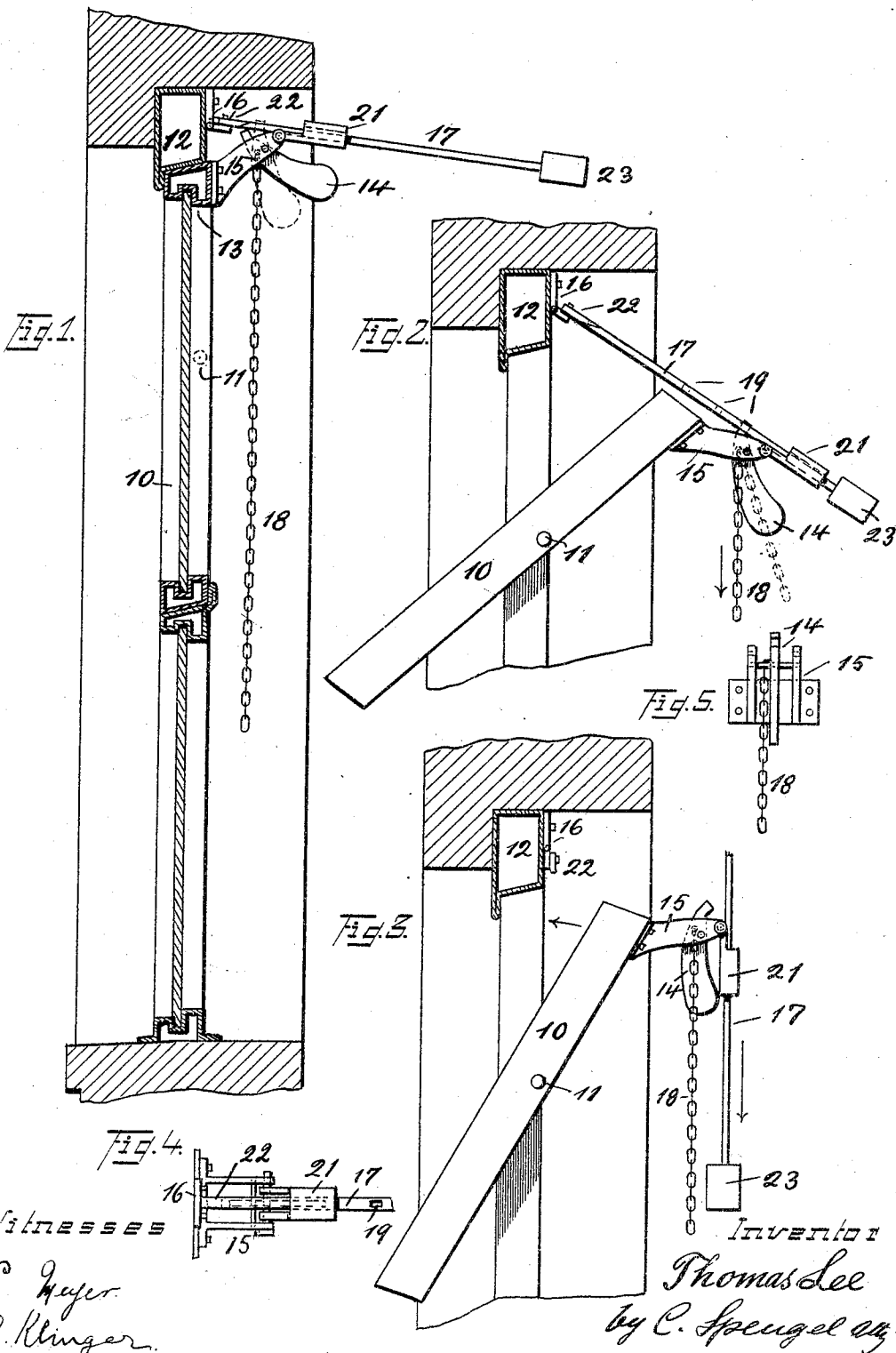


T. LEE.
AUTOMATIC WINDOW CLOSURE.
APPLICATION FILED MAR. 16, 1905.



UNITED STATES PATENT OFFICE.

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AUTOMATIC WINDOW-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 791,036, dated May 30, 1905.

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To all whom it may concern:

Be it known that I, THOMAS LEE, a citizen of the United States, residing at Home City, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Automatic Window-Closures; and I do declare the following to be a clear, full, and exact description thereof, attention being called to the accompanying drawings, with the reference characters marked thereon, which form also a part of this specification.

This invention relates to certain new and useful improvements in means whereby the closure of a window may be automatically effected by the heat generated from a fire where it is desirable that it be done at such time to prevent further spread of a fire. Such devices are generally used in connection with fire-resisting windows—that is, such windows as consist of metallic casings and sash-frames, usually filled with wire-glass.

The object is to close them automatically upon the occurrence of a fire, since otherwise—that is, when remaining open—they would be useless in their function to resist or retard the spread of a fire.

The invention is obviously not confined to such a closure or to a closure constructed as above outlined.

The invention is shown as applied to a swinging—that is, pivotally-supported—window or sash; and it consists of the means and their construction hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 shows in vertical section a window constructed with sheet-metal sashes and casings, the upper sash being pivotally supported and provided with the device of my invention. Fig. 2, in parts of a similar view, the sash, however, being not in section, shows this latter held open by the device of my invention. Fig. 3, in a similar view, shows how the device operates in case of fire for the purpose of automatically closing the window. Fig. 4, in a top view of the device, and Fig. 5, in a front elevation, show those parts of my device which are attached to the sash.

In the drawings, 10 shows the upper sash

of the window pivotally supported at 11 in the window-frame, the connection being at the sides of the sash and between the upper and lower rail thereof. The arrangement is such that that part of the sash below its pivot is heavier than the part above, so that normally the sash would close automatically against the upper part 12 of the window-frame. This normal tendency to close may be obtained by weighting the lower part of the sash or by placing the pivotal connection above the center thereof. On the upper rail 13 of the swinging sash there is pivotally supported a locking-dog 14, the support being most conveniently, by a bracket 15, attached to said rail. To the upper part 12 of the window-frame there is pivotally connected by a hinge 16 a locking-bar 17, its location being such that normally it lies on top of bracket 15 and against the upper end of the locking-dog. This latter is so arranged as to its shape and location of the pivot that that part below its pivot is heavier, so that its upper end remains normally in contact with the under side of the locking-bar and seeks constantly contact therewith. When now by means of a pull-chain 18 on said dog the sash is swung open, the upper end of this locking-dog will slide along the under side of the locking-bar, the two remaining constantly in contact, the bar following the dog because of its hinge connection and by reason of its weight. When the upper end of the dog arrives below an opening 19 in said bar, of which openings there may be one or more, said bar will drop and engage said dog. Action on the pull-chain is simultaneously terminated, permitting the upper end of said dog to rise and fully pass into such opening. The sash is now held open, as shown in Fig. 2. To release the sash for closing, a short pull is given at chain 18 in a vertical direction to draw the upper end of the dog out of the opening it occupies, after which, while the dog is so held out, the window is permitted to swing into its closing position, as shown in Fig. 1. By providing another opening in bar 17, similar to openings 19, to permit the locking-dog to again engage the bar, as shown in dotted lines at this point, these parts may also serve to lock the window

in its closed position. This is, however, not essential, and other means may be used for this purpose.

To insure permanent alinement of bar and dog, it is preferable to provide guiding means, which is done in shape of a guide 21, through which bar 17 passes, and which guide is hingedly attached to bracket 15, so that it may follow and adjust itself to the motion of the bar and prevent interference with the free sliding movement thereof, whereby it follows the dog.

Automatic closure of the window in the open position shown in Fig. 2 is effected by having a part of bar 17 of a material which is susceptible to destruction by heat at a certain temperature, such part (shown at 22) being preferably located as high as possible, thus being quickest affected by the heat of a fire, which naturally would pass through the open part of the window. In detail this destructible part may consist of a piece of fusible metal attached to one of the wings of hinge 16 and to the end of bar 17. It may of course be also at any other part of the bar provided it is so located as to be within the open part of the sash when the same is in the position shown in Fig. 2, or the entire bar or hinge 16 might be of fusible metal. If now by reason of heat this connection is destroyed, it is clear that the function of bar 17 as one of the complementary means for holding the window open is eliminated, and thus the latter drops at once into its closed position. To prevent all possible interference by this bar after its disconnection and to obtain quick action, its lower end is weighted, as shown at 23, so that this end will drop at once, causing the bar to tilt and slide down in guide 21, which by reason of its hinged connection adjusts itself to the motion of said bar. Notches in the latter would of course be the equivalent of the openings shown.

Having described my invention, I claim as new—

1. In means to be used in connection with a pivotally-supported window or analogous structure, for the purpose of holding the same in a certain position within its frame, the combination of complementary locking members consisting of a bar and a dog, each pivotally supported, one being attached to the window and the other to the frame surrounding the same, perforations in said bar adapted to be occupied by the dog when the parts are in operative position and means for manipulation.

2. In means to be used in connection with a pivotally-supported window or analogous structure, for the purpose of holding the same in a certain position within its frame, the combination of complementary locking members consisting of a bar and a dog each piv-

otally supported, one being attached to the window and the other to the frame surrounding the same, and adapted to engage each other when in operative position, a portion of said bar being of a material susceptible to destruction by heat and means for manipulation of the device.

3. In means to be used in connection with a pivotally-supported window or analogous structure, for the purpose of holding the same in a certain position within its frame, the combination of a locking-bar pivotally attached to a stationary object, a locking-dog pivotally attached to the window and adapted to engage the locking-bar, guiding means to hold them in position with reference to each other for engagement and means to effect or terminate such engagement.

4. In means to be used in connection with a pivotally-supported window or analogous structure, for the purpose of holding the same in a certain position within its frame, the combination of a locking-bar pivotally attached to a stationary object and being in part constructed of a material susceptible to destruction by heat, a locking-dog pivotally attached to the window, guiding means to hold them in position with reference to each other for engagement and means to effect or terminate such engagement.

5. In means to be used in connection with a pivotally-supported window or analogous structure, for the purpose of holding the same in a certain position within its frame, the combination of a locking-bar pivotally attached to the window-frame, a locking-dog carried by the window, a bracket whereby it is pivotally supported, a guide for the locking-bar hingedly attached to the bracket mentioned and whereby the locking-bar is held to the window in a manner to be capable of engagement by the locking-dog in all positions.

6. In means to be used in connection with a pivotally-supported window or analogous structure, for the purpose of holding the same in a certain position within its frame, the combination of a locking-bar pivotally attached to the window-frame and being in part constructed of a material susceptible to destruction by heat, a locking-dog carried by the window, a bracket whereby it is pivotally supported, a guide for the locking-bar hingedly attached to the bracket mentioned and whereby the locking-bar is held to the window in a manner to be capable of engagement by the locking-dog in all positions.

In testimony whereof I hereunto set my signature in the presence of two witnesses.

THOMAS LEE.

Witnesses:

C. SPENGEL,
C. MEYER.