

WINDOW.

APPLICATION FILED JUNE 11, 1912.

1,045,492.

Patented Nov. 26, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

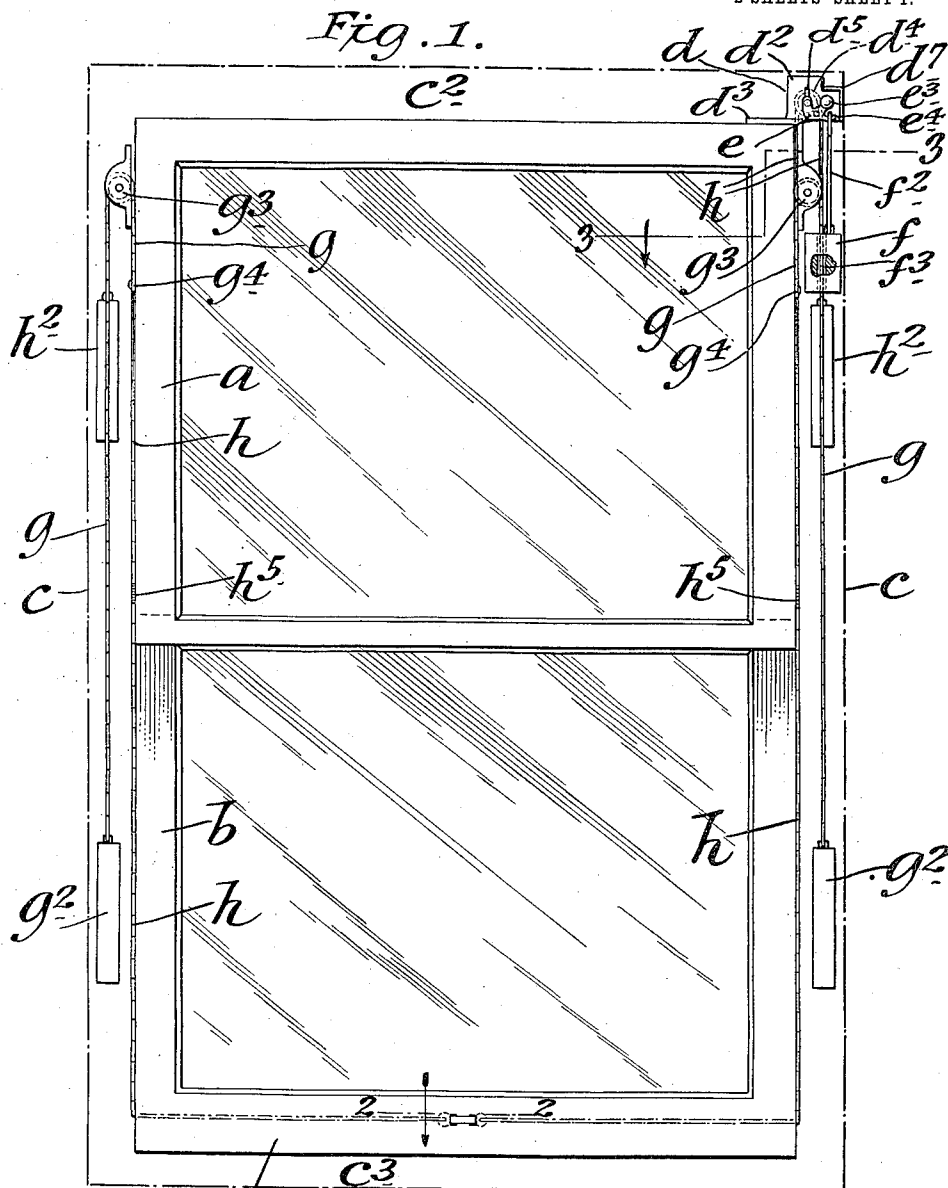
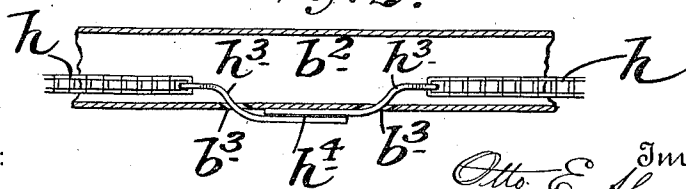


Fig. 2.



Witnesses:

AR Appleman
S Andrews

53
Inventor,
Otto E. Almen
By his Attorneys
Edgar & Co.

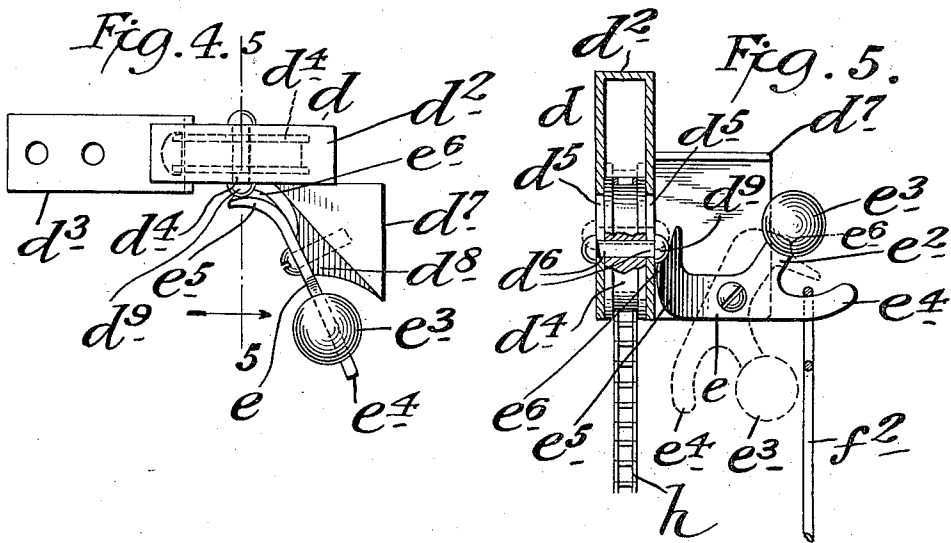
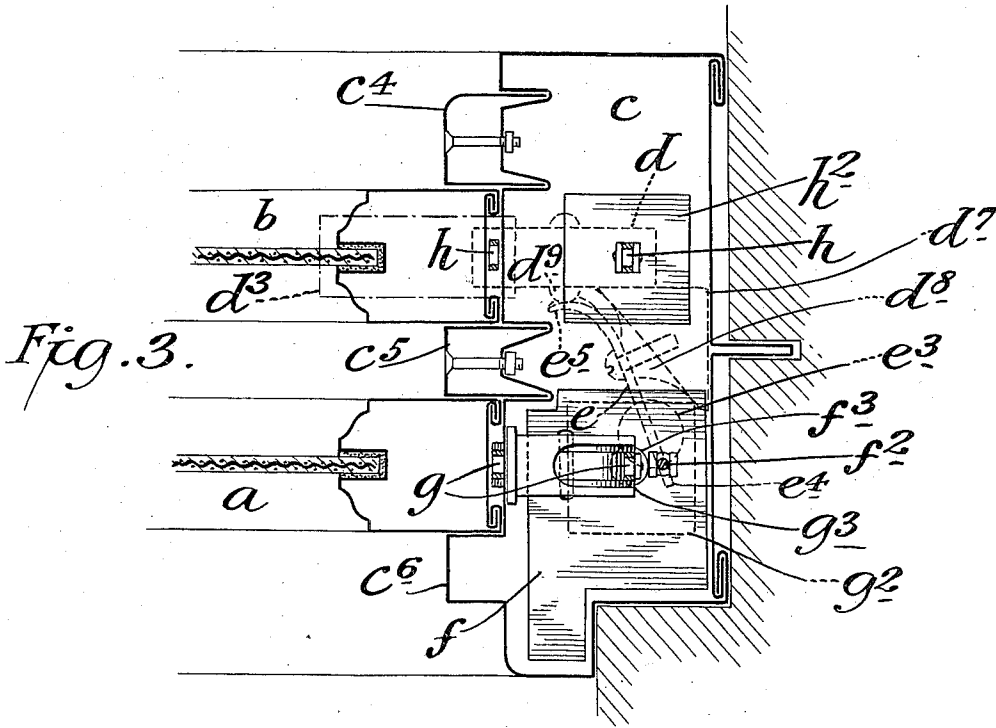
O. E. ALMÉN.
WINDOW.

APPLICATION FILED JUNE 11, 1912.

Patented Nov. 26, 1912.

2 SHEETS-SHEET 2.

1,045,492.



Witnesses:
A. R. Appleman
S. Andrews

Inventor
Otto E. Almén
By his Attorneys
Edgar & Galt

UNITED STATES PATENT OFFICE.

OTTO E. ALMÉN, OF NEW YORK, N. Y.

WINDOW.

1,045,492.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed June 11, 1912. Serial No. 702,940.

To all whom it may concern:

Be it known that I, OTTO E. ALMÉN, a subject of the King of Sweden, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Windows, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to windows for houses or buildings of other kinds and classes, and particularly to fire-proof windows, or windows of fire-proof houses or other buildings, and the object thereof is to provide windows of this class or windows of buildings of this class with means for automatically closing the sashes in case of fire on the outside of the building so as to prevent the ignition or the burning of the building, or the material therein, by fire passing in through an open window, or windows.

The invention is fully disclosed in the following specification of which the accompanying drawing forms a part, in which the separate parts of my invention are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is an outside view of a window provided with my improvement, the sashes and other attachments being shown in full lines and the frame of the window being indicated in dotted lines; Fig. 2 a partial horizontal section on the line 2—2 of the bottom part of the lower sash, and on an enlarged scale; Fig. 3 a transverse sectional view on the line 3—3 of Fig. 1 and on an enlarged scale; Fig. 4 a plan view of a tripping attachment forming part of my invention and which in practice, and with the construction shown, is secured to the upper right hand corner of the upper sash, when viewed as shown in Fig. 1, and Fig. 5 a partial section on the line 5—5 of Fig. 4.

In the drawing forming part of this specification, reference being made to Fig. 1, I have shown at *a* the upper sash of a window and at *b* the lower sash, and I have also indicated, in dotted lines, the window frame, said frame comprising side members *c* and a

top member *c*² and a bottom member *c*³ and one of the side members is shown in transverse section in Fig. 3, and said frame is composed entirely of sheet metal, in the form of construction shown, as are also the sashes *a* and *b*, both the frame and sashes being of the usual standard form in fire-proof structures of this class, and the side members of the frame are provided with the usual inner bead strips *c*⁴, the central bead strips *c*⁵ and the outer bead strips *c*⁶, said bead strips forming the usual vertical spaces in the sides of the frame, and in which the sashes *a* and *b* are vertically movable.

In the practice of my invention I provide a tripper attachment *d* which is secured, in the form of construction shown, in the upper right hand corner of the frame, when viewed as shown in Fig. 1, and in the same vertical plane as the bottom sash, and said attachment comprises a housing *d*² provided with an L-shaped plate *d*³ by which it is secured in position and in which is mounted a roller *d*⁴ which is vertically movable in said housing, the sides of the housing being provided with vertical slots *d*⁵ through which the trunnion *d*⁶ of the roller passes.

The housing *d*² of the tripping attachment is provided with an outwardly directed support *d*⁷ which is preferably triangular and box-shaped in form and the outer side of which, in the form of construction shown, bears on the side *c* of the frame, and this support is provided with a boss *d*⁸ to which is pivoted a trip lever *e* the outer end of which is provided with an outwardly directed arm *e*² provided with a weight *e*³ and below said arm with a hook *e*⁴, and the inner end of which is provided with a curved head *e*⁵ the back of which is provided with a shoulder *e*⁶ which operates in connection with and beneath the adjacent head *d*⁶ of the trunnion of the roller *d*⁴, and with this construction the operation of the lever *e*, hereinafter described, will raise said roller in the housing *d*².

In practice a vertically movable weight *f* is suspended from the hook *e*⁴ by means of a wire-cord or similar device *f*², and the weight *f* is provided with a vertical bore or passage *f*³. The upper or top sash *a* is pro-

vided with counterbalance weights suspended by chains g which are passed around rollers g^3 secured in the sides of the frame near the top thereof in the usual manner, and said chains are secured to the sides of the sashes g^4 , and in this operation one of said chains is passed through the weight f , as shown in Fig. 1.

The bottom sash b is provided with counterbalance weights h^2 suspended by chains h one of which is passed around the roller d^4 and the other over a roller, similar to the roller g^3 , at the opposite side of the frame and directly over the bottom sash, and these chains h are carried downwardly along the sides of the bottom sash and are passed through the bottom b^2 of said sash, and are provided with fusible link members h^3 which are passed outwardly through the bottom part b^2 of the bottom sash, as shown in Fig. 2, and connected, as shown at h^4 , by fusible material adapted to melt or fuse at a predetermined temperature, and the outer wall of the bottom b^2 of the bottom sash is provided with large apertures b^3 through which the fusible link members h^3 may be easily passed in either direction. The chains h are also preferably provided approximately midway thereof with other fusible links h^5 , and these link devices may be multiplied if desired, and may be placed in any desired position.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawing and the following statement thereof. Suppose the top sash a to be partially lowered and the bottom sash b to be partially raised and a fire should occur adjoining the building or adjacent thereto. If the heat became great enough to fuse the link members h^3 or any other fusible link members with which the chains h may be provided, the weights h^2 would drop by gravity and the bottom sash would drop by gravity into the closed position, and at the same time, the weight of the bottom sash being removed from the roller d^4 , the weighted trip lever e will operate to raise said roller until the shoulder e^6 thereof forces the head d^9 of the trunnion of said roller, and said lever will drop into the position shown, in dotted lines in Fig. 5, and the weight f will be released and will fall on the corresponding counterbalance weight f , and said top sash will be raised into the closed position. If the top sash only should be open, the operation would be the same, the fusion of the link members h^3 and h^5 serving to release the weight f which would at once drop onto the corresponding weight g^2 and close said top sash; and if the bottom sash only were raised the fusion of the link members h^3 or h^5 would allow said sash to drop into its

closed position and the weight f would also drop onto the weight g^3 but would produce no result as the top sash would already be in a closed position.

In the accompanying drawing I have shown the tripping device d applied only in one upper corner of the frame, but it will be understood that one of these devices may be used in both top corners of the frame, if desired, in which event the weight f would also be duplicated.

Although I have shown and described my improvement as applied to fire-proof window frames and sashes of standard construction, my invention is not limited to any particular construction of the window frame and sashes and any suitable devices or constructions of this kind may be employed, and other flexible devices may be substituted for the counterbalance chains h and g , and various other changes in and modifications of the details of the construction herein shown and described may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

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

1. In a window sash closing apparatus of the class described, a tripping attachment adapted to be secured in an upper corner of a window frame and comprising a housing, a vertically movable roller mounted therein, a support connected with said housing, and a lever pivoted to said support and provided at one end with a weighted arm and a hook device, and the opposite end of which is adapted to operate to raise said roller.

2. In a window sash closing apparatus of the class described, a tripping attachment adapted to be secured in an upper corner of a window frame and comprising a housing, a vertically movable roller mounted therein, a support connected with said housing, and a lever pivoted to said support and provided at one end with a weighted arm and a hook device, and the opposite end of which is adapted to operate to raise said roller, said hook device being provided with a loosely suspended weight having a vertical bore or passage.

3. An apparatus for closing vertically movable window sashes, comprising counterbalance chains and weights connected with the upper sash, counterbalance chains and weights connected with the lower sash and provided with fusible members, a tripping device secured at the top of the window frame and provided with a vertically movable roller over which one of the counterbalance chains of the lower sash is passed, a

weighted tripping lever operating to raise said roller and a weight detachably suspended from said tripping lever and through which the corresponding counterbalance chain of the lower sash is loosely passed and provided with a weight.

In testimony that I claim the foregoing

as my invention I have signed my name in presence of the subscribing witnesses this 8th day of June 1912.

OTTO E. ALMÉN.

Witnesses:

C. MULREANY,
S. ANDREWS.

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