No. 698,589. Patented Apr. 29, 1902.

E. VAN NOORDEN & H. C. SMITH.

SELF CLOSING WINDOW.

(Application filed Jan. 13, 1900.)

(No Model.)

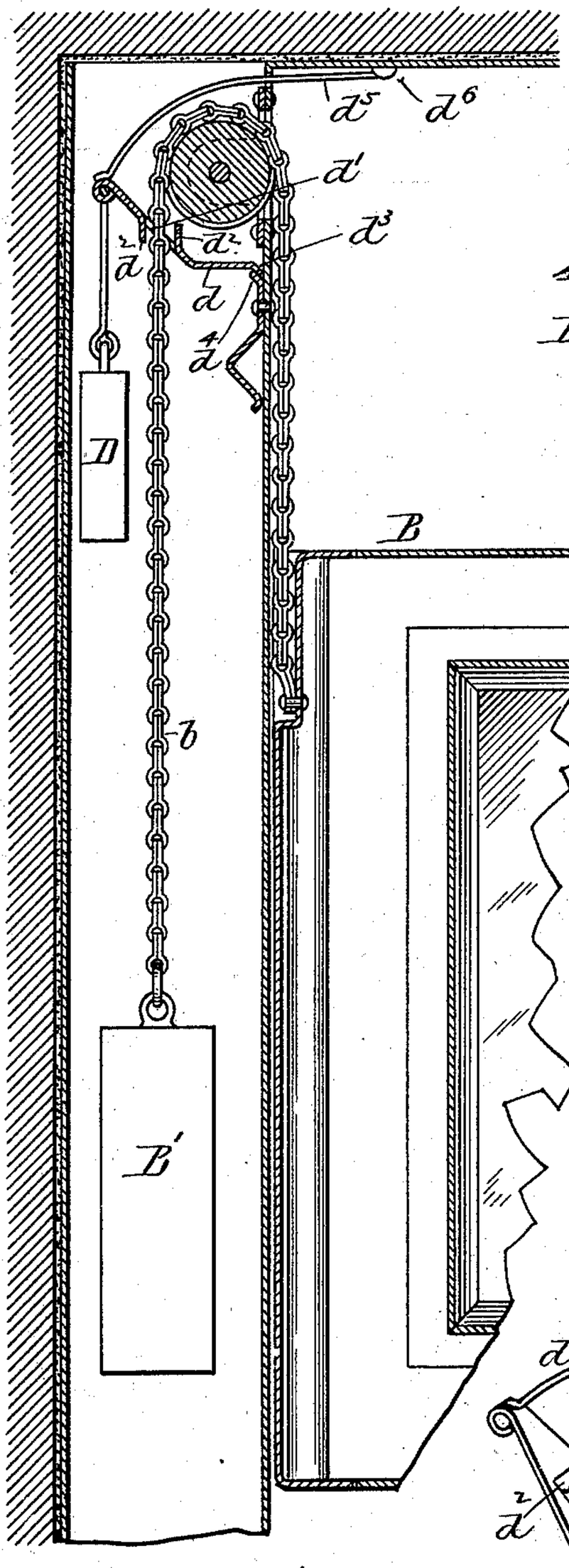

Fig. 1.

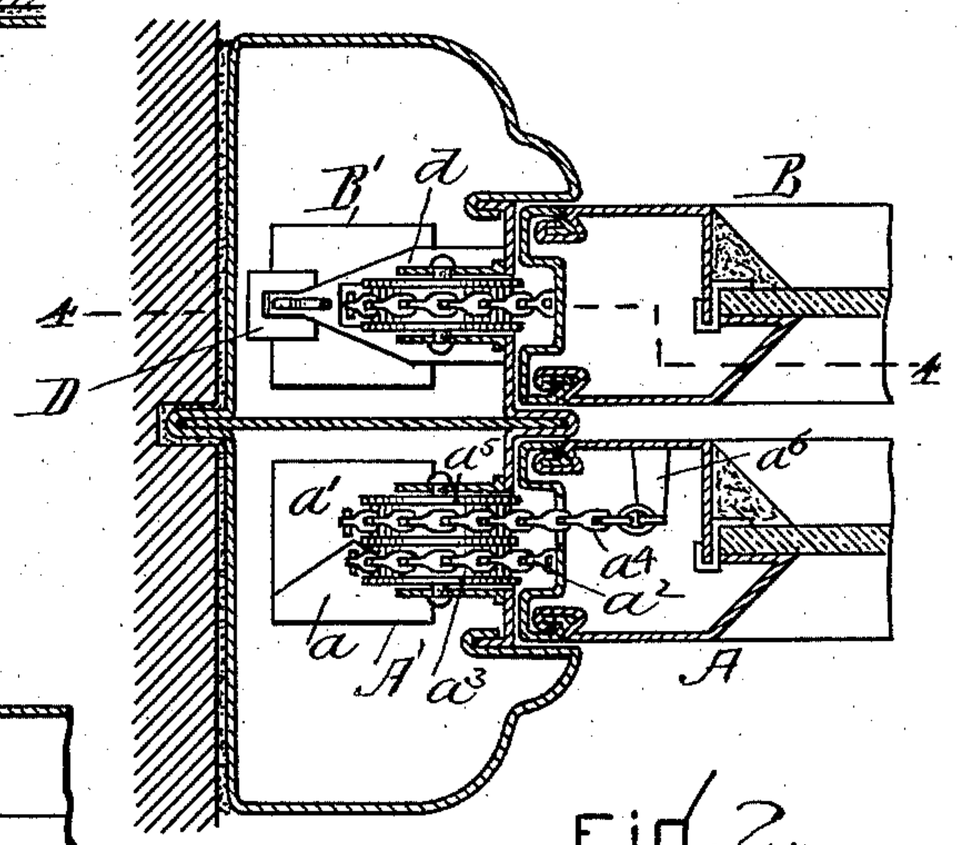

Fig. 2.

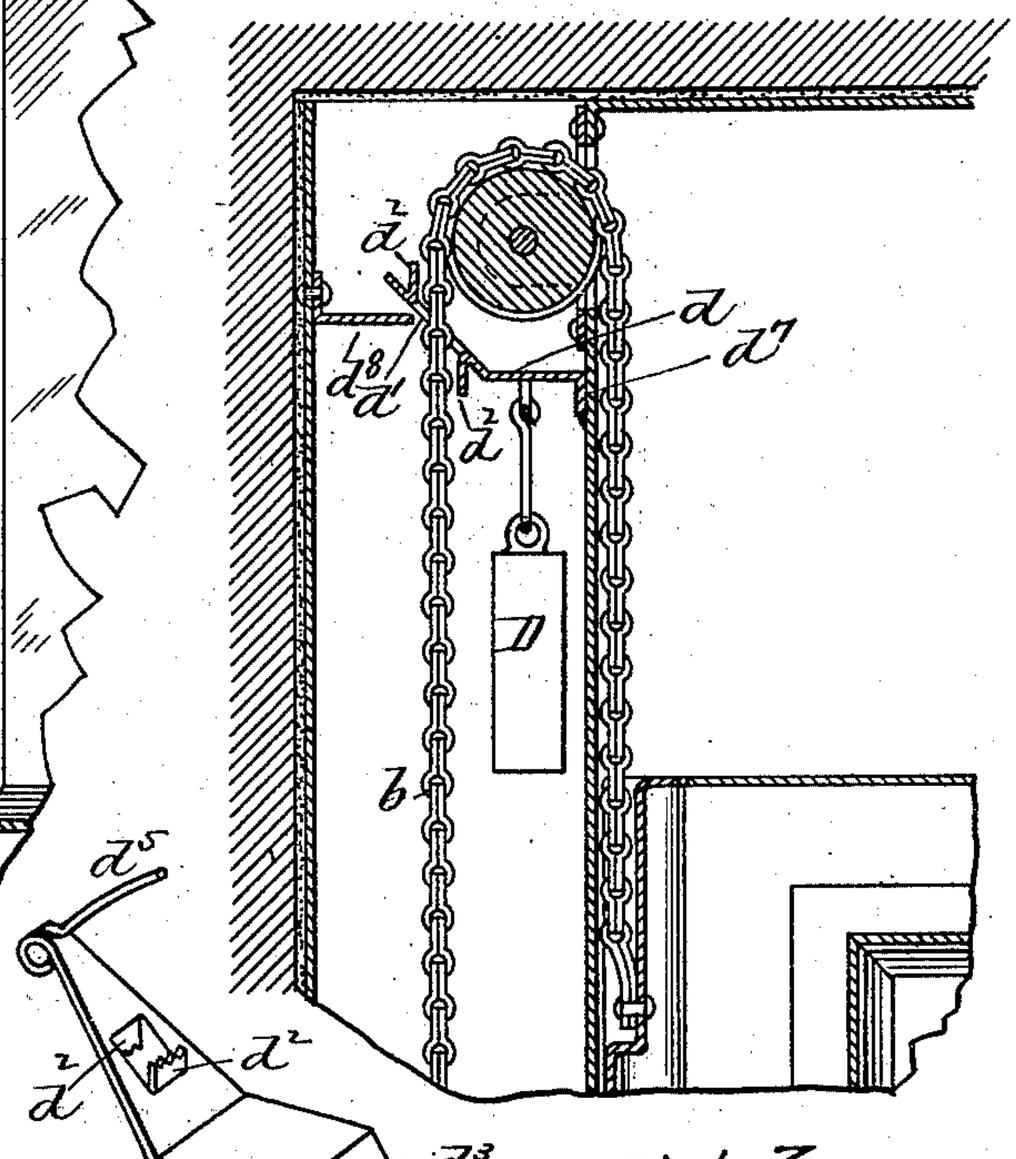

Fig. 3.

Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

EZEKIEL VAN NOORDEN AND HENRY C. SMITH, OF BOSTON, MASSACHUSETTS.

SELF-CLOSING WINDOW.

SPECIFICATION forming part of Letters Patent No. 698,589, dated April 29, 1902.

Application filed January 13, 1900. Serial No. 1,281. (No model.)

To all whom it may concern:

Be it known that we, EZEKIEL VAN NOORDEN and HENRY C. SMITH, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Self-Closing Windows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to windows having sashes movable vertically in a window-casing and hung and balanced by window-weights in an ordinary manner and which are adapted in the case of fire in the vicinity of the window to be automatically closed, if open, either by the automatic release of a portion of the balancing-weights of the lower sash, in order that the lower sash may then overbalance the weights and close downward, or in the case of the upper sash the release and addition to the balancing-weights thereof of auxiliary balancing-weights, whereby the sash, if open, is moved upward to close the window and is held closed.

In the drawings, Figure 1 is a view in vertical section and in elevation upon the dotted line 4 4 of Fig. 2. Fig. 2 is a view in horizontal section of one side of the window-casing with a portion of the window-frames and also in plan of the window-weights, sash-chains, chain-pulleys, and auxiliary weight-holding bracket. Fig. 3 is a view in vertical section and elevation representing a modification to which reference is hereinafter made. Fig. 4 is a view in perspective showing one of the detachable weight-holding brackets of Fig. 1.

The subject-matter of this invention was originally described in our application for Letters Patent filed October 20, 1899, Serial No. 734,208, where it is broadly claimed, and the present application covers a specific construction shown, but not claimed, in said application.

A represents the lower sash of the window, B the upper sash, and C the window-casing. These parts may be of wood or of metal. We have represented them as of metal. Each sash is adapted to be moved vertically by hand in the casing in the ordinary way of opening and closing windows, and each sash is hung by counterbalancing-weights and connecting-cords running over pulleys.

The lower sash A has its counterbalancing-weights A′ formed in two parts—namely, the parts a and the parts a'. Each section is connected with the sash-frame by an independent cord, which may be of metal or of fibrous material. The weights a are connected to the sash by the cords a^2, which run over the pulleys a^3, one only being shown. These cords or chains are permanently attached to the sash-frame and the weights. The weights a' are connected with the sash-frame by the cords a^4, which run over the pulleys a^5. The cords are united to the sash-frame by connections a^6, preferably of metal, which are united to the sash-frame by solder fusible at a relatively low temperature, and in case of fire near the window the weights a' will be released from the sash by the fusing of the solder, and if the sash is raised it will then automatically close and remain closed, as it will then overbalance the weights a. It will be understood that in ordinary use the weights $a\ a'$ together balance the sash A.

The upper sash B is balanced by the weights B′, which are connected with the sash by the cords b, which pass over pulleys b'. As the upper sash is closed by lifting, it is necessary in order to automatically close it that the weights should be made to overbalance the sash, and this result we obtain by means of supplemental weights, which are released in case of fire and which then combine with the ordinary balancing-weights B′.

In Figs. 1, 2, and 3 the auxiliary weights are lettered D and are represented as suspended from brackets d above the weights B′. The brackets are attached to the window-casing by fusible solder and have holes d' in them, through which the cords b run. The brackets may also be provided with devices whereby they become attached when released to the cords b, and they are represented as provided with points d^2 for this purpose, which serve to unite the auxiliary weights upon their release with the cords, or the

brackets may drop upon the cords until they come into contact with the weights B′, when the weights D will be combined with them and will assist in automatically closing the upper sash and holding it closed. One form of bracket is represented in Figs. 1 and 4 and another in Fig. 3. The form first referred to has a foot d^3, which rests on the fixed ledge d^4 and has extending from its outer end an arm d^5, which acts to suspend it and which is connected at d^6 by fusible solder with the window-casing outside the pocket. Upon the melting of the solder the bracket becomes unsupported at its outer end and detached from the ledge d^4 at its inner end and either engages the window cord or chain as the weight D drops by means of its points or engaging devices d^2 or the weight B′.

In Fig. 3 the bracket is represented as attached to the casing at d^7 by fusible solder and is supported at its outer end by a fixed support d^8. Upon the melting of the solder the bracket is released from the casing and from its support, and the weight falling the points or engaging devices of the bracket engage the cord or chain or the bracket engages the weight B′.

We have shown in the drawings one side only of the window-sashes and window-casing and one only of the weights. The other side of the window-sashes and casing and arrangement of weights and cords at said side are the same as above described. Only one overbalancing-weight, however, need be used.

Having thus fully described our invention, we claim and desire to secure by Letters Patent of the United States—

1. The combination of a window-casing, a window-sash movable in said casing, its balancing-weights, an auxiliary weight and a bracket supporting the auxiliary weight, detachably held at one end to a support and detachably secured at its other end by fusible solder, which weight upon the release of the bracket is adapted to coöperate with the balancing weight or weights of the sash to overbalance it or them and cause it or them to close the sash and hold the sash closed.

2. The combination of a window-casing, its balancing-weights, an auxiliary weight, and a bracket in the weight-pocket supporting the auxiliary weight, adapted to become released by undue heat and provided with means for engaging, when released, the cord or chain of a balancing-weight, as and for the purposes set forth.

3. The combination of the window-casing, the window, its balancing-weights contained in the pockets of the window-casing, an auxiliary weight in a pocket of the casing, and a bracket supporting the auxiliary weight, detachably held in the pocket by means extending without the pocket and there detachably held by fusible solder, as and for the purposes set forth.

4. The combination of a window-casing, a lower sash and an upper sash movable therein, balancing-weights contained in the pockets of the casing, cords or chains connecting said weights with the lower window-sash, means for releasing in case of undue heat in the vicinity of the sash one or more of said weights from said lower window-sash, whereby the window-sash may then overbalance the remaining weight or weights and, if raised, close automatically, balancing-weights contained in the pockets of the casing, cords or chains connecting said weights with the upper window-sash and an auxiliary weight or weights normally inactive, and detachably held by means destructible by undue heat, which weight or weights, when released, combine with the weights of the upper sash and serve with them to close said sash, if open, and to hold it closed.

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