

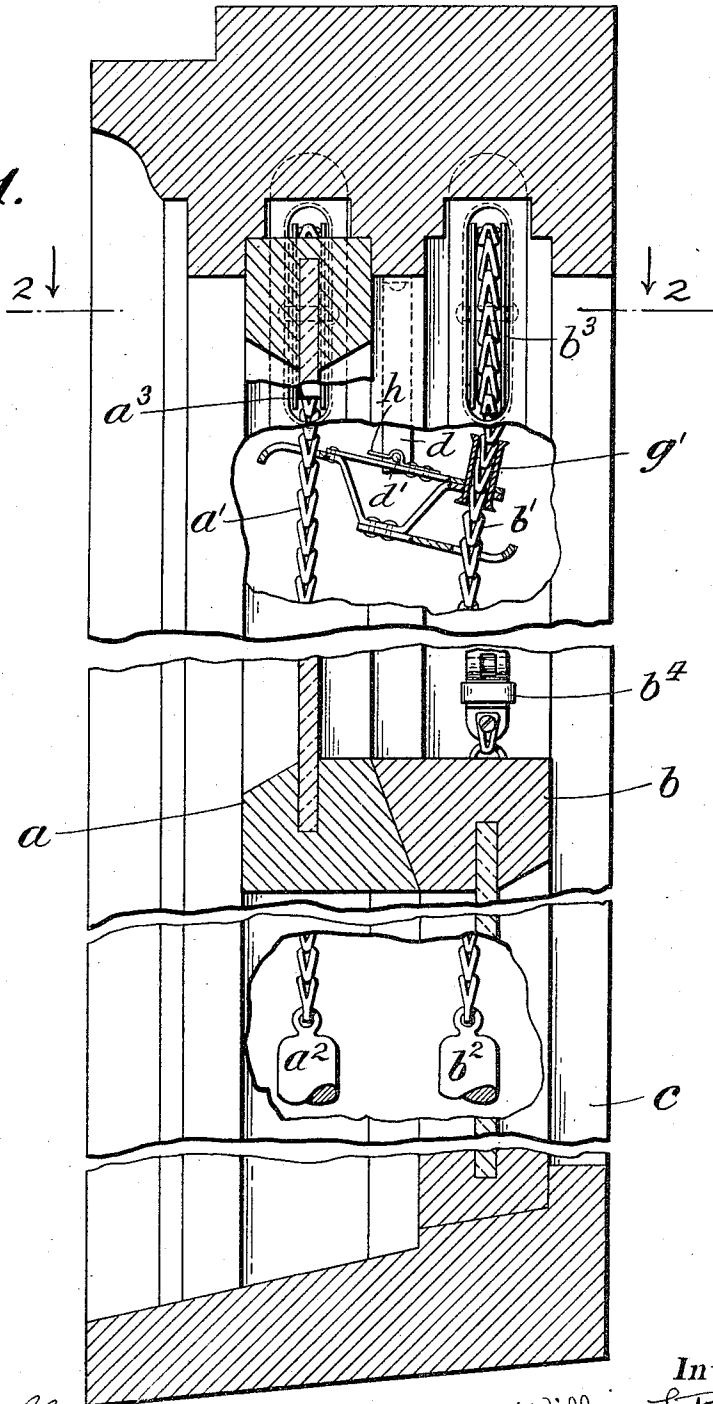
W. L. BROWN.
CLOSING DEVICE FOR WINDOW SASHES.
APPLICATION FILED MAY 6, 1912.

1,052,885.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



Attest:

Edgeworth Green
Worthington Campbell

by

Inventor:

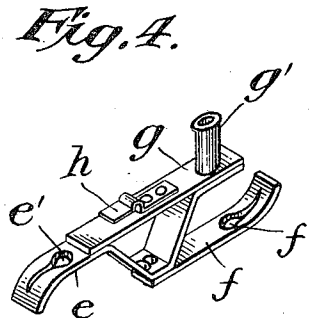
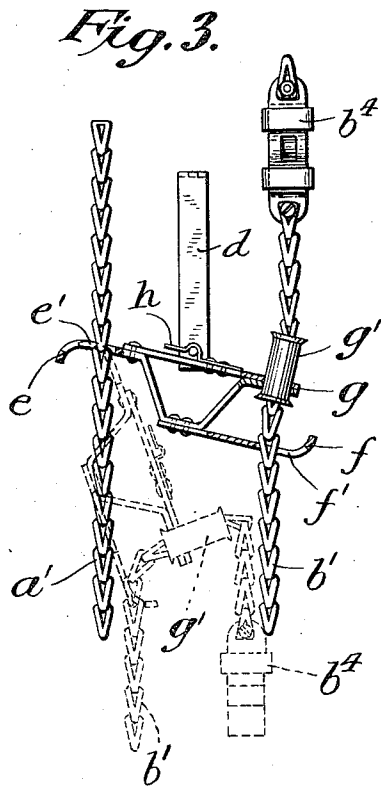
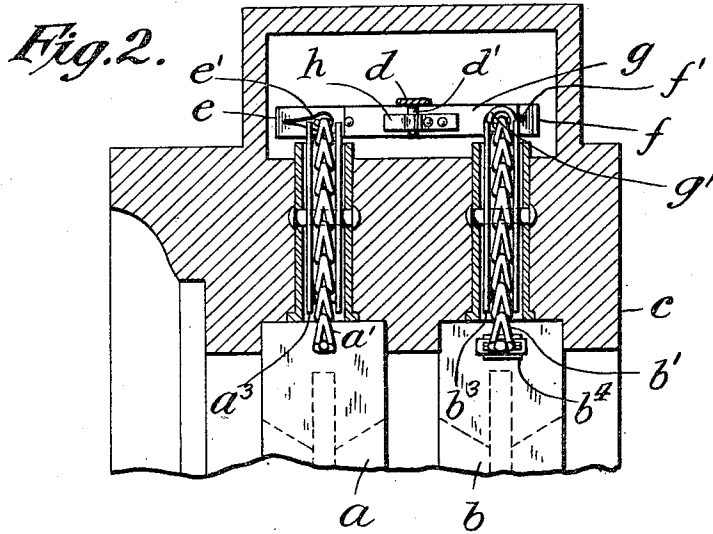
William L. Brown
Redding & Greeley
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM L. BROWN, OF NEW ROCHELLE, NEW YORK, ASSIGNOR TO S. H. POMEROY,
OF NEW ROCHELLE, NEW YORK.

CLOSING DEVICE FOR WINDOW-SASHES.

1,052,885.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed May 6, 1912. Serial No. 695,462.

To all whom it may concern:

Be it known that I, WILLIAM L. BROWN, a citizen of the United States, residing in New Rochelle, county of Westchester, State of New York, have invented certain new and useful Improvements in Closing Devices for Window-Sashes, of which the following is a specification, reference being had to the accompanying drawings, which form a part hereof.

This invention relates to devices for automatically closing or permitting the closing of windows in case of an abnormal rise in temperature in the vicinity of the window. More particularly, it relates to devices adapted to be used in connection with separate counterweights for the upper and lower sashes and set in operation by suitable heat-responsive devices to connect operatively the counterweight of the lower sash to the upper sash to close the same, the lower sash being released simultaneously and permitted to drop to closed position by gravity.

The object of the invention is to provide a clutch or coupling which may be readily applied to windows in which the sashes have separate counterweights and is of simple and inexpensive construction and certain in its operation.

The invention will be more particularly described with reference to the accompanying drawings, in which—

Figure 1 is a fragmentary sectional view of a window frame with its accompanying sashes provided with the present invention. Fig. 2 is a sectional view taken on the plane indicated by the line 2—2 in Fig. 1 looking in the direction of the arrows. Fig. 3 is a detail view, showing the relation of the sash chains and clutch device or coupling. Fig. 4 is a view in perspective of the clutch device or coupling.

This invention is of the same general type as that shown and described in application Serial No. 692,204, filed on April 20, 1912, by the applicant, in that a clutch device or coupling is employed having keyhole slots, through which the sash chains normally run freely, but in the restricted portions of which the chains engage upon the parting of one of the chains, to connect the counterweight of the lower sash directly to the upper sash. In the present case, however, the clutch is in-

tended for use particularly in connection with sashes which have independent counterweights and chains, whereas in the application above referred to, a similar device is to be used with a single counterweight for both sashes.

Referring now to Fig. 1, it will be apparent that the upper sash *a* and the lower sash *b* of usual construction are slidable vertically in a suitable frame *c* and are provided respectively with a sash cord *a'* carrying a weight *a²* and a sash cord *b¹* carrying a weight *b²*. These sash chains may extend over suitable pulleys *a³* and *b³* mounted in the usual manner in the head of the casing of the frame *c* and may be attached to their respective sashes in the usual manner. A heat-responsive device *b⁴* of any desired form is placed in the chain *b¹* of the lower sash *b* at any convenient point but preferably between the clutch and the sash. Within the casing and between the pulleys *a³* and *b³* is attached to the frame *c* a bracket *d*, carrying adjacent its lower end and at right angles thereto a stud *d'* preferably cylindrical in form. By this relation of parts the stud *d'* is disposed in a substantially horizontal plane for the purpose to be hereinafter described. The clutch device is normally removably supported on this stud *d'*. The clutch herein illustrated comprises an arm *e* having a keyhole slot *e'* through which the upper sash chain *a'* renders, an oppositely extending arm having a keyhole slot *f'* to receive the chain *b'* of the lower sash, and a third arm *g*, carrying a guide sleeve *g'* through which the chain *b'* of the lower sash also renders. This guide sleeve is not co-axial with the enlarged portion of the keyhole slot *f'* but is so disposed with respect thereto that the tension of the chain *b'* will normally hold the clutch in a position substantially at right angles with respect to the sash chains.

Substantially midway between the chains *a'* and *b'* a spring clip is secured to the clutch which detachably engages the stud *d'* and is adapted to be disengaged automatically from the stud *d'* by relative movement of the two. This clip may be of any suitable form, being herein illustrated as a spring strip *h* having a bend to embrace partially the stud *d'*. One end of said strip is se-

cured to the clutch in any suitable manner, while the other end is relatively movable upon application of sufficient pressure, whereby the stud d' is released.

5 In normal operation, the tension of the chain b' in the guide sleeve g' and the keyhole slot f' maintains the clutch in the position shown in Fig. 1 with respect to the sash chains without, however, interfering with
10 free rendering of the chains through the enlarged portions of the respective keyhole slots. When the chain b parts by reason of the action of the heat on the fusible member b^4 the angularity of the clutch with respect
15 to the chains instantly increases by reason of the overweighting of one end and the chains are engaged by the restricted portions of their respective keyhole slots. At this stage of the operation, the counterweight
20 b^2 is connected to the clutch member while the latter is supported by the stud d' . The pull of said weight is sufficient to pull the clutch downward from the stud d' , the spring clip yielding to the pull. The clutch
25 is thus disengaged from its support and the weight b^2 of the lower sash is transferred to the chain a' of the upper sash, thereby moving the same to closed position. It will be understood that immediately upon operation
30 of the heat-responsive device the lower sash b is relieved from the action of its counterweight b^2 and therefore drops to closed position by gravity.

What I claim is:

35 1. The combination of two sashes, separate counterweights therefor, means to connect the weights operatively to the respective sashes, heat-responsive means for releasing the entire weight from one of the
40 sashes and means mounted detachably in the casing of the window frame for connecting said weight to the other sash to move the same.

45 2. The combination of two sashes, separate counterweights therefor, sash connections to said counterweights, heat-responsive means for releasing the weight from one of the sashes and means for transferring
50 said weight to the other sash, said means comprising a member having apertures through which all of said connections reeve and with which the connections engage upon the operation of the heat-responsive means.

55 3. The combination of two sashes, separate counterweights therefor, sash connections to said counterweights, heat-responsive means for releasing the weight from one of the sashes and means mounted in
60 the casing of the window frame between the sash connections for connecting said weight to the other sash to move the same, said means comprising a support and a clutch member mounted detachably on said support,
65 adapted to engage the sash connec-

tions and normally held in inoperative position by the tension of said connections.

4. The combination of upper and lower sashes, separate counterweights therefor, flexible connections having their ends connected to the sashes and to their respective
70 weights, heat-responsive means for releasing the connection from the lower sash, a clutch adapted to engage the sash connections and a support for said clutch within
75 the window casing, the clutch being normally held by the tension of the flexible connection of the lower sash in inoperative position and adapted, when said connection is released from said sash to engage said
80 connection and to be released from its support and to clutch the connection of the upper sash and connect the lower counterweight thereto.

5. The combination of upper and lower
85 sashes, counterweights therefor, flexible connections between the respective counterweights and the sashes, heat-responsive means for releasing the weight from the lower sash and means to connect the last
90 named weight to the upper sash to move the same, said means comprising a member having apertures through which the vertical portions of the flexible connections reeve
95 and a guide carried thereby to receive the flexible connection of the lower sash and to cooperate with the aperture through which said last named connection passes to hold
100 said member normally in position substantially at right angles to said connections, a support for said member mounted in the casing and a spring clip to hold said member detachably on said support.

6. The combination of upper and lower
105 sashes, counterweights therefor, flexible connections between the respective counterweights and the sashes, heat-responsive means for releasing the weight from the lower sash and means to connect the last
110 named weight to the upper sash to move the same, said means comprising a member having keyhole slots through the enlarged portions of which the flexible connections normally reeve freely and with the restricted
115 portions of which said connections engage when the lower sash is released from its connection whereby the lower counterweight is connected to the upper sash.

7. The combination of upper and lower
120 sashes, counterweights therefor, flexible connections between the respective counterweights and the sashes, heat-responsive means for releasing the weight from the lower sash and means to connect the last
125 named weight to the upper sash to move the same, said means comprising a clutch member having keyhole slots through which the vertical portions of the flexible connection reeve, and a support for said clutch
130 member within the window casing, the

clutch member being normally held by the
tension of the flexible connection of the
lower sash in inoperative position and
adapted when said connection is released
5 from said sash to have the restricted por-
tions of its keyhole slots engaged firmly
by said connection and to be released from
its support and to clutch the connection of

the upper sash and connect the lower coun-
terweight thereto.

This specification signed and witnessed
this 3rd day of May A. D. 1912.

WILLIAM L. BROWN.

Signed in the presence of—

EDW. M. STEPHENS,
LORING WASHBURN.

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