D. MacVICAR & C. A. MAGAW.

AUTOMATIC WINDOW CLOSING DEVICE.

APPLICATION FILED AUG. 1, 1907.

Patented Dec. 29, 1908.

908,020.

Fig. 1.

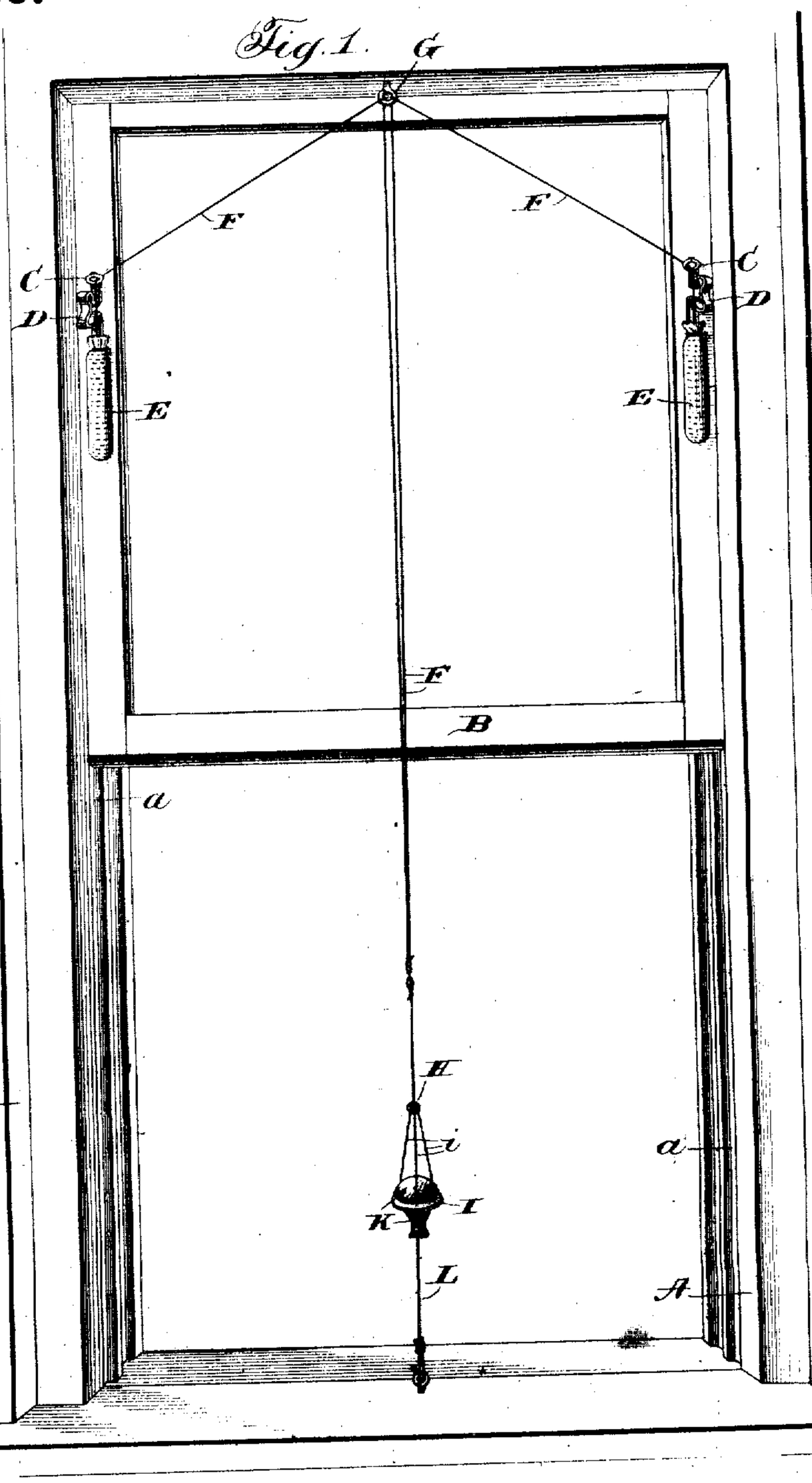


Fig. 2.

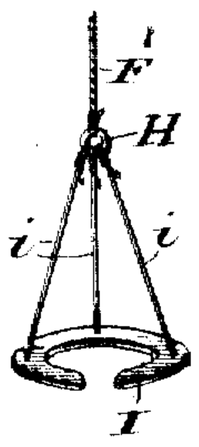


Fig. 3.

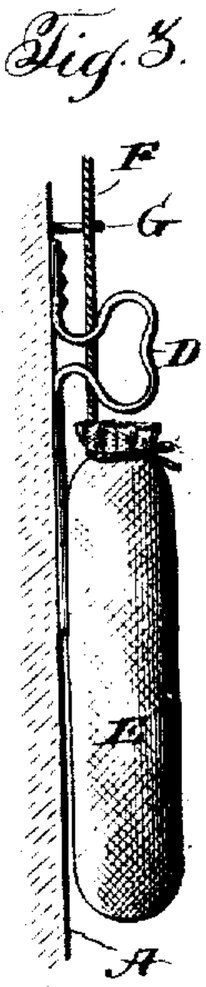
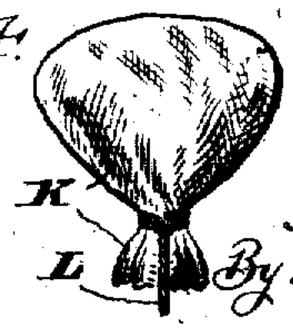


Fig. 4.



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UNITED STATES PATENT OFFICE.

DANA MacVICAR AND CHARLES A. MAGAW, OF TOPEKA, KANSAS.

AUTOMATIC WINDOW-CLOSING DEVICE.

No. 908,020. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed August 1, 1907. Serial No. 386,581.

To all whom it may concern:

Be it known that we, DANA MACVICAR and CHARLES A. MAGAW, citizens of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Automatic Window-Closing Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates to a window or sash attachment, and though susceptible of a variety of adaptations is more particularly designed for use in connection with a vertically movable sash, and has for its object the provision of instrumentalities for causing the window or sash, previously opened, to automatically drop or close at the desired time.

More particularly, the invention relates to an attachment of the character stated which is set into operation or actuated under the influence of moisture, as caused by a rain storm or the like.

The invention also includes means for normally holding the window or sash in opened position, and means for imparting a slight jar to the window or sash when released by said holding means, so as to obviate frictional contact of the sash with the guide groove or window frame.

The invention also comprises novel details of structure and arrangement of parts more particularly to be pointed out hereinafter.

A preferable embodiment of the invention is illustrated in the accompanying drawings, forming a part hereof.

Referring to said drawings, Figure 1 represents a front elevation of a window frame and sash, partly in section, with our attachment applied thereto, and Figs. 2, 3 and 4 are detail views of parts of the attachment removed.

Again referring to the drawings, wherein like reference characters designate corresponding parts throughout the several views, A designates a window frame of any of the ordinary constructions, and having guide grooves *a*. Slidably mounted in the guide grooves of the frame, is a window or sash B having mounted upon its opposite sides, preferably intermediate its ends, rings C, of any desired construction. D represents a strap formed of leather or the like secured at one end to the side of the sash, preferably to the ring C, and at its opposite end to a weight E conveniently formed of a sack filled with shot, although any of the usual forms of weight may be utilized. Also secured to said weight at its connection with said strap, is a rope, cord, or chain F which passes through the ring C, and thence through a guide ring G secured to the top of the window frame, the free end of the cord being connected in a manner about to be described to the said frame. The cord F when thus connected normally holds the window in a raised or elevated position.

The free ends of the cords F are connected to one another and to a hook or other attaching device H which is adapted to carry a locking member comprising a ring I and ties *i* connected to the ring at separated points and to said hook H. The ring I is cut away at one side for the insertion of a coöperating locking member K preferably comprising a bulb of suitable material adapted to be reduced in size when acted upon by moisture as from a rain storm. L is a tie member secured to said bulb K at one end and at its opposite end to the bottom of the window frame A. As before suggested, the bulb K interlocks with the ring I and when acted upon by moisture will reduce in size thus automatically releasing itself from the interlocking engagement with said ring.

It will be observed upon reference to Figs. 1 and 2, that when the cord F is in position to hold the window in elevated position, the weights E are elevated nearly into contact with the ring C, the straps D being flexible and adapted to buckle for this purpose. It follows that when the cords F are released by the locking device, the weights will instantly drop for a distance governed by the length of the straps D, thus causing an initial jar to the sash which will release any friction which may exist between the sash and frame. The sash now acting under the influence of said weights E will fall to its closed position.

While we do not wish to be limited to the particular construction of bulb K, yet we have found it advantageous to construct the same of a ball of effervescent substance, such as effervescent salt, wrapped in thin cloth or gauze, the margins of which are brought together in such a manner that a neck is formed to which the tie L is secured.

While it is within the contemplation of the invention to use a bulb K of any desired construction having the result sought, yet we have found a gauze bag filled with granular

effervescing salts to be particularly advantageous and successful, and while we do not wish to be limited to any particular granular effervescent salt, we preferably employ granular effervescent sodium phosphate which material has been used with good results, but as before stated there are a number of chemicals or salts that might be placed in the gauze bag which would produce the desired result when coming in contact with water, as for instance the following compound, in granular form, viz: tar-taric acid, 4 oz., pulverized alum, 8 oz., sodium bi-carbonate, 12 oz. Or a mixture of tar-taric acid and sodium bi-carbonate or a mixture of alum and sodium bi-carbonate.

The operation from the above description is obvious.

What we claim is:

1. The combination of a window frame, a sash slidably mounted therein, means tending to normally close the sash and locking means for holding the window open, said locking means comprising members fitted one within the other and secured respectively to the frame and sash, one of said members adapted to be reduced in size and thereby released under the influence of moisture.

2. In an attachment of the character described, means for normally holding a sash in open position comprising a contractible bulb and a ring sleeved thereon, one of which is adapted to be connected with the sash and the other with the sash frame, the said ring and bulb adapted to be automatically released from one another, by external influence.

3. An attachment for window sashes and the like, including holding means comprising a bulb formed of effervescent substance, and a ring sleeved on the bulb, one of said parts being adapted to be secured to a window frame and the other adapted to be secured to the sash, the said parts being so arranged that when the bulb is acted upon by moisture the ring will automatically be released therefrom and allow the sash to be closed.

4. A window closing device comprising a weight carried by the window, a holding and releasing means for the weight, comprising a bulb adapted to be reduced in size when operated upon by moisture, a cord secured to the weight and carrying a ring sleeved upon said bulb and normally held thereby, and holding means for the bulb.

5. An attachment for window sashes comprising means secured thereto for closing the window when released, and means for normally holding the window open comprising a bulb adapted to be secured to the frame and constructed to contract when acted upon by moisture and a cord operatively connected to the sash and having connection with said bulb and adapted to be released by the contraction of said bulb.

6. In combination, a frame, a movable sash, a bulb adapted to be reduced in size under the influence of moisture, a support for the bulb, means for causing the closing of the sash when released and means for normally holding the sash open comprising a cord secured at one end to the sash and passing through a guide on the frame, said guide, and means for connecting the free end of the cord to said bulb whereby it is released upon the bulb being reduced in size.

7. An attachment for sliding sashes comprising a weight secured thereto causing the lowering of the sash when released, a guide ring adapted to be secured to the top of the window frame, means for normally holding the sash in elevated position comprising an elongated cord adapted to be secured to the sides of the sash and to pass through said guide ring, and a locking device for said cord comprising a bulb adapted to be secured to the bottom of the window frame and having an engagement with said cord releasable by the action of moisture upon said bulb.

8. An attachment for window sashes comprising means for normally holding the sash open including a gas generating mass susceptible to the action of moisture and adapted to be connected with the sash and frame whereby when the gas is generated the sash will be released and closing means therefor comprising a weight secured respectively to said sash and holding means.

9. In a window closing device, and in combination with the window, means acting under the influence of moisture for releasing the same, comprising a sash closing element and a controlling gas generating mass therefor susceptible to the action of moisture to vary the size thereof to release and permit automatic closing of the window.

10. A window closing device comprising a member adapted to be secured to a window frame and a member adapted to be secured to the window, the said members being fitted one to the other to constitute an interlocking connection, one of said members comprising a gas generating mass susceptible to the action of moisture to vary the size thereof and thereby release its coöperating member and permit the closing of the window.

In testimony whereof we affix our signatures in presence of two witnesses:

DANA MacVICAR.
CHARLES A. MAGAW.

Witnesses:
JENNIE LEE McCLENAHAN,
GEO. P. HAYDEN.