

No. 779,801.

PATENTED JAN. 10, 1905.

C. D. PRUDEN.
SELF CLOSING SASH FOR WINDOWS.

APPLICATION FILED JUNE 27, 1904.

2 SHEETS—SHEET 1.

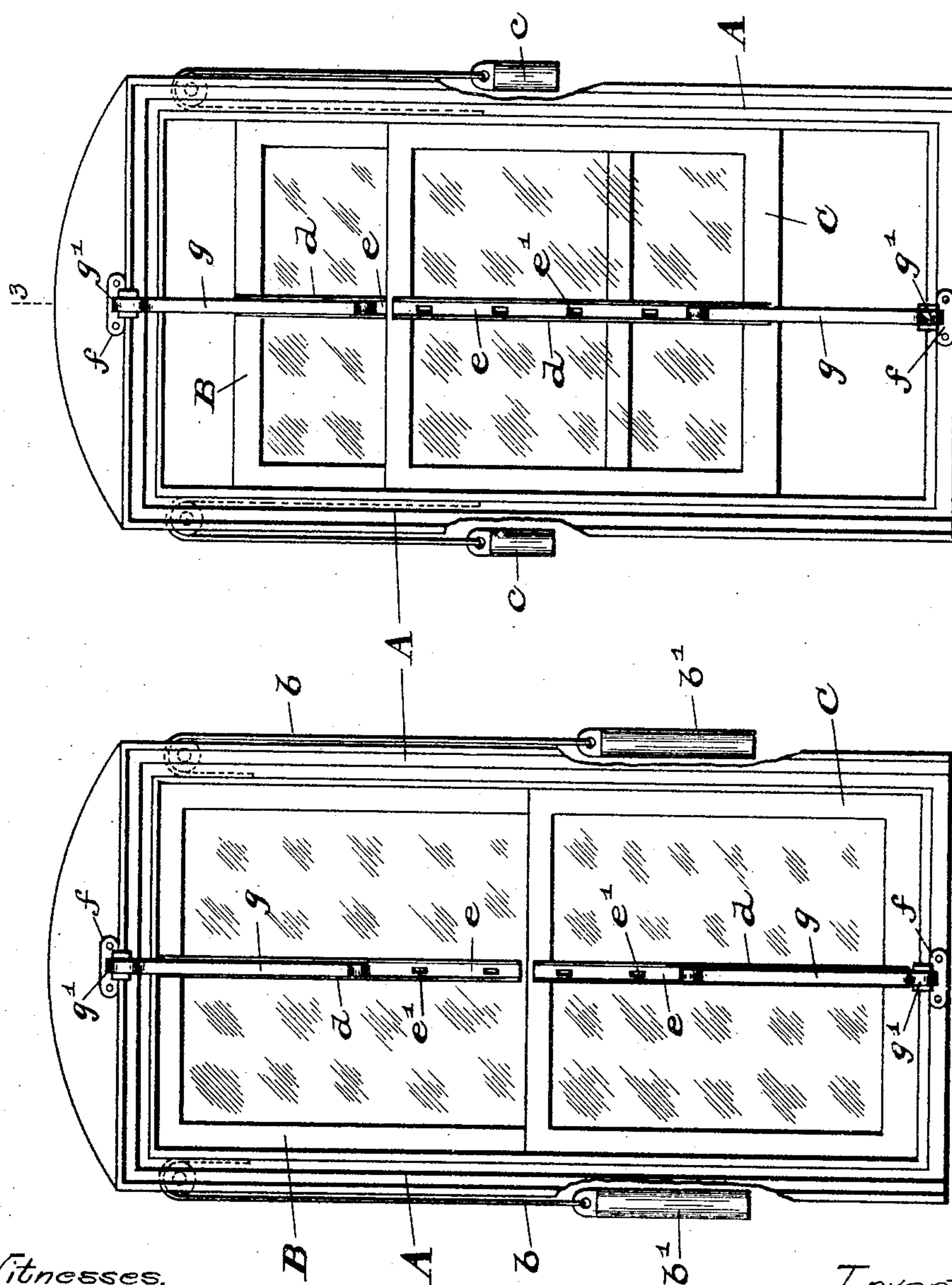


Fig. 2.

Fig. 1.

Witnesses.

J. C. Sirich Jr.

J. Ferdinand Vogt.

Inventor.

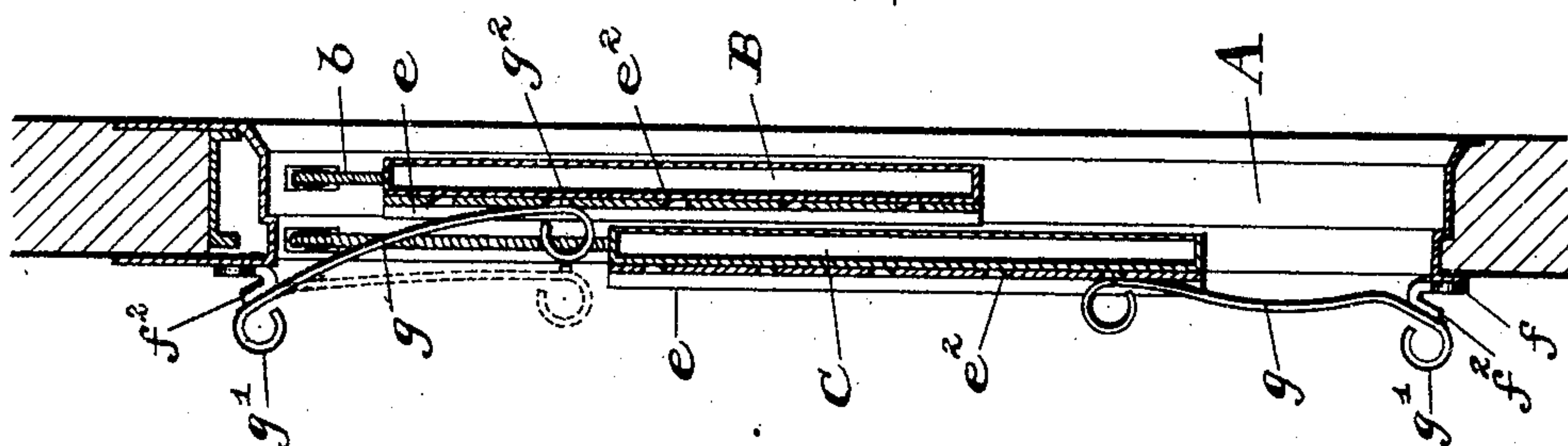
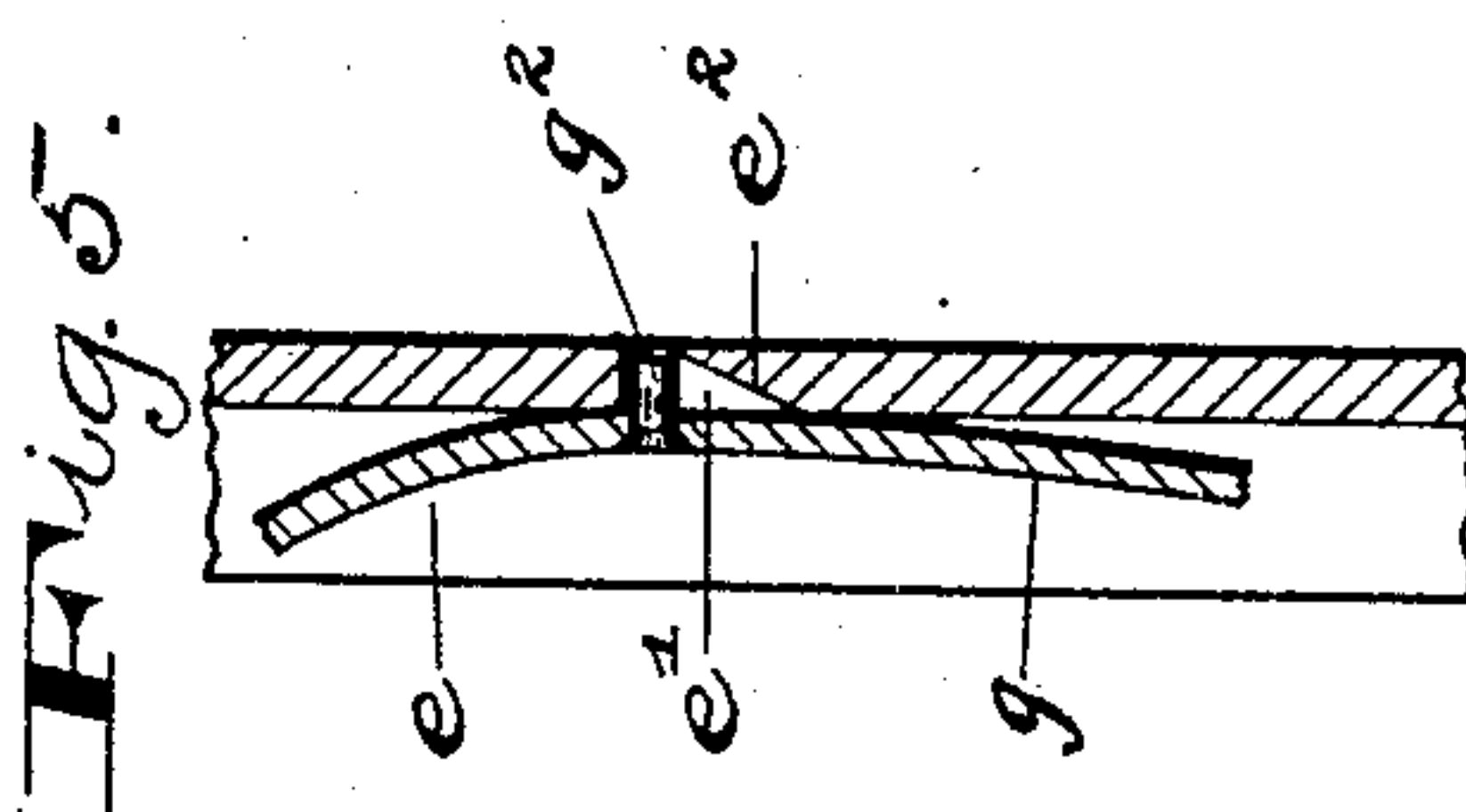
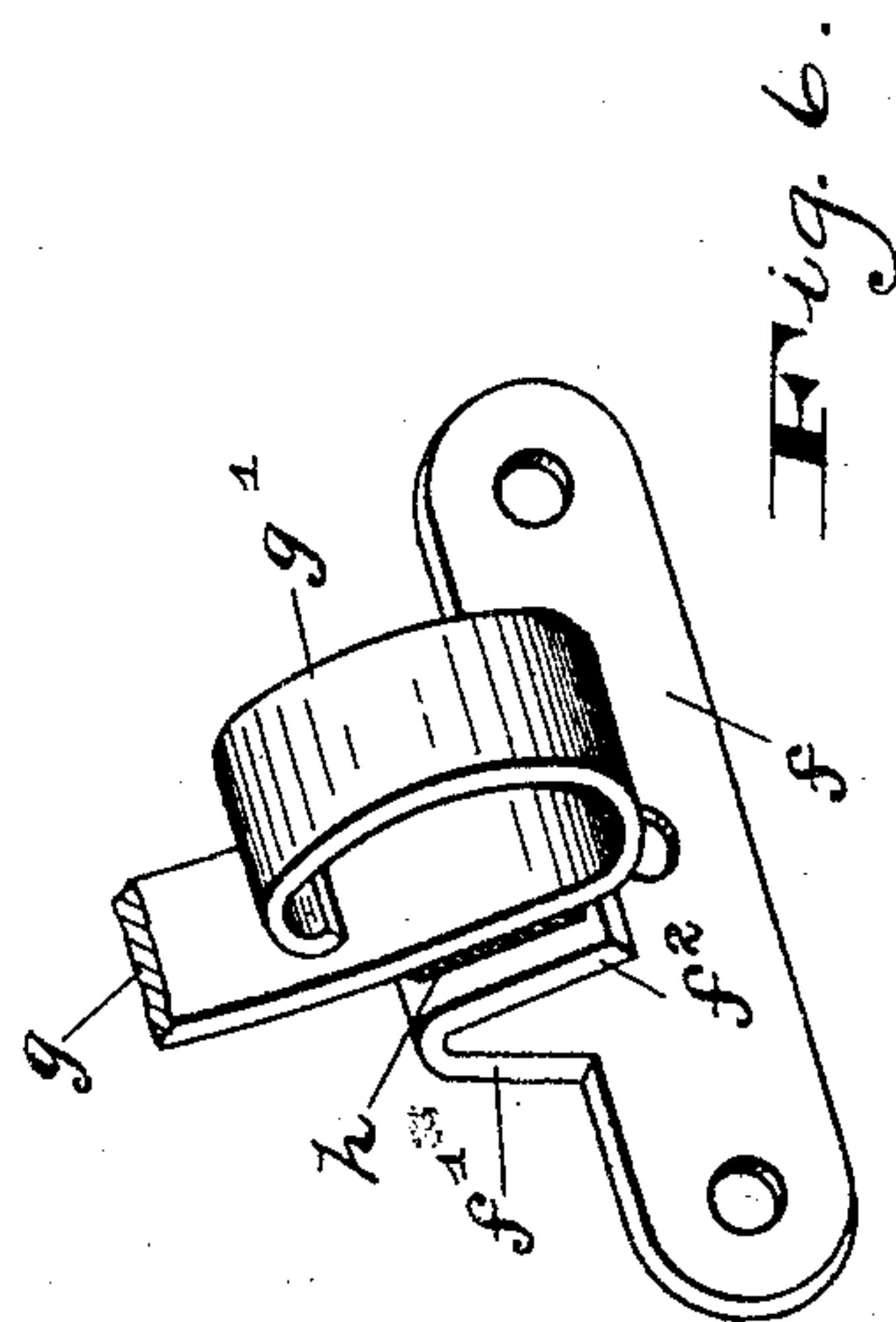
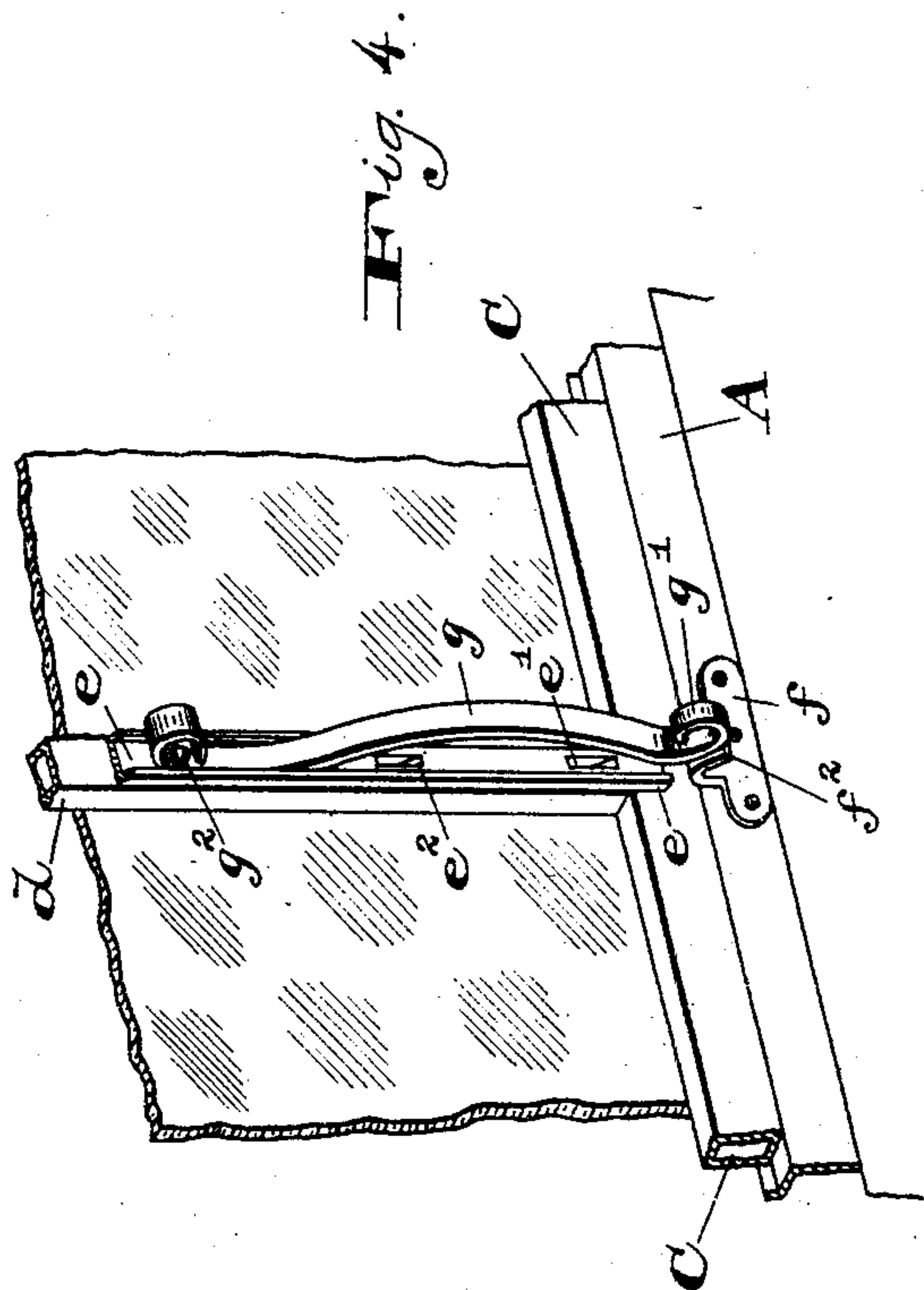
Clarence D. Pruden

By Mann & Co.
Attorneys.

C. D. PRUDEN.
SELF CLOSING SASH FOR WINDOWS.

APPLICATION FILED JUNE 27, 1904.

2 SHEETS—SHEET 2.



Witnesses.

J. C. Sirich Jr.

G. Ferdinand Vogt.

Inventor.

Clarence D. Pruden

By

Mann & Co.,

Attorneys.

UNITED STATES PATENT OFFICE.

CLARENCE D. PRUDEN, OF BALTIMORE, MARYLAND.

SELF-CLOSING SASH FOR WINDOWS.

SPECIFICATION forming part of Letters Patent No. 779,801, dated January 10, 1905.

Application filed June 27, 1904. Serial No. 214,246.

To all whom it may concern:

Be it known that I, CLARENCE D. PRUDEN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Self-Closing Sashes for Windows, of which the following is a specification.

This invention relates to improvements in self-closing sashes for windows, and is preferably employed in conjunction with metallic window frames and sashes or frames and sashes having a metallic covering and wire or fire-proof glass.

The object of the invention is to provide an improved construction, combination, and arrangement of devices by means of which the sliding sashes will be automatically closed by the separation of parts fusibly connected and to arrange said fusible parts so they will have position in the most exposed places, to be promptly acted upon by heat caused by fire.

The invention is illustrated in the accompanying drawings in connection with sliding windows; but it is to be understood that it is as readily applied to sliding doors or other sliding closures which are secured in the open position and will automatically close when released.

In the drawings, Figure 1 is a front elevation of the frame and sashes to which the invention is applied, the sashes both being closed. Fig. 2 is the same with the sashes partly opened. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is an enlarged perspective detail of a portion of the sash and frame, showing the application of the device. Fig. 5 shows a sectional detail, on an enlarged scale, of the end of the sash-retaining device; and Fig. 6 shows a perspective view of the frame-bracket and the fusibly-connected spring-arm.

Referring to the drawings by letters, A designates the frame, B the upper sash, and C the lower sash, all of which may be constructed in any desired manner, but which in the present instance are illustrated as being of a metallic construction. The upper sash B is provided with the usual cords or chains b , which pass over pulleys in the frame and to which the weights b' are attached; but these

weights b' differ from the usual upper sash-weight, in that they are of sufficient weight to overcome the weight of said upper sash. Thus unless a retaining device is employed to hold the upper sash open the weights b' will keep it closed. The lower sash C differs from the ordinary sash only because its weights c are lighter than said sash and only aid in lifting the same and also as a check when the sash drops automatically, as will presently be described. It is to be understood that this idea of employing weights heavier than the upper sash and lighter than the lower sash is not broadly new and is merely shown in the drawings as one form of device by which the sashes may be closed automatically when unrestrained.

In the present instance both of the sash-retaining devices are precisely alike, and it will therefore only be necessary to particularly describe one of them.

The sashes shown in the drawings are each provided with a central strip d , and a metallic channel-strip e is secured in any suitable manner to said strip d and extends in the direction parallel with that in which the sash moves. It is obvious that in cases where the sash is not provided with a central strip the channel may be secured to the upper and lower rails of such sash or to the side rails. This channel-strip e is provided with one or more indentations or perforations e' , which may be formed in any suitable manner, but preferably having at one side an inclined formation e'' , that extends from the outer surface inwardly for a purpose that will presently appear. A bracket-plate f is rigidly secured to the frame, and at one side said bracket is provided with a flange f' , the extreme end f'' of which is bent backwardly or turned over and has an inclined position adjacent said plate f , as clearly seen in Figs. 3, 4, and 6. A spring-arm g has an outwardly-coiled end g' , which contacts with and is secured by readily-fusible solder h to the inclined turned-over end f'' of the bracket-plate f . The opposite or free end of said spring-arm is curled over in order to be readily grasped and is provided with a pin g'' , and said free end of the arm fits into the channel-strip e and is kept in said channel by

reason of the natural spring device from its formation. The pin g^2 in the free end of the spring-arm is arranged to register with the indentations or perforations e' in the channel-strip, and as the sash is operated so that the channel will move beneath the spring-arm the pin g^2 will spring into the said indentations or perforations and hold the sash against the action of its own weight or of the weights attached to it.

In placing a channel-strip e on a lower sash the strip will be turned so that the inclined ends e^2 of the perforations will extend outwardly and upwardly in order that said lower sash may be raised without the necessity of first withdrawing the pin g^2 by grasping the curled end of the arm g . It will thus be seen that when the lower sash is raised the pin g^2 will merely ride up the inclined end e^2 of the perforation, and the continued elevation of the sash will present the next perforation in front of the pin and the latter will spring into it. In placing the channel-strip on the upper sash it must be reversed, so that the inclined end of the perforations will extend outwardly and downwardly, and the pin will prevent the elevation of the said sash, but will permit it to be lowered. It is to be noted that in case it is desired to elevate the lower sash so that it will remain at the top of the frame the upper spring-arm will be drawn immediately, as indicated by broken lines in Fig. 3, to permit the lower sash to pass, and upon releasing said upper spring-arm it will take position in the channel-strip of the lower sash, and the pin will enter one of the depressions in said channel and hold the lower sash in the extreme elevated position.

In operation when either or both of the sashes are in the open position, as seen in Fig. 3, they are held by the pins on the spring-arms. In case a fire breaks out while the sashes are opened the heat will fuse the solder between the spring-arms and the stationary brackets and said arms will drop and release the sashes and the latter will automatically close.

A decided advantage results from the outward coiling of the attached end g' of the spring-arm, for the reason that if said end were merely cut off and presented a blunt horizontal edge when the solder fused the sudden movement of the sash would drive said end of the upper arm into the ceiling in case the window-frame extended to the ceiling or the lower arm would drop on the sill and be driven into the wood and defeat the operation of the lower sash; but by curling the attached ends of the arms when they are released they will slide over such obstructions and permit the sashes to be entirely closed.

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

1. The combination with a stationary frame

provided with an opening, of a frame slidable in the opening of said stationary frame and arranged to be moved in one direction automatically; a stationary bracket; an arm sustained by said bracket and arranged to adjustably engage the movable frame to hold the latter in an adjusted position within the stationary frame, and a fusible connection between the stationary bracket and the movable frame for the purpose set forth.

2. The combination with a stationary frame provided with an opening, of a bracket secured to the stationary frame; an arm sustained by said bracket and having one end movable; a frame movable in the opening of said stationary frame and arranged to be operated in one direction automatically; means on said movable frame with which the movable end of said arm engages, and a fusible connection between the stationary bracket and the engaging device on the movable frame.

3. The combination with a stationary frame provided with an opening, of a frame slidable in the opening of said stationary frame and arranged to be automatically moved in one direction; a strip secured to said slidable frame and provided with one or more engaging devices; a bracket secured to the stationary frame; an arm sustained by said bracket and provided with a device for coacting with the engaging devices on said strip, and a fusible connection between the bracket and strip.

4. The combination with a stationary frame, of a frame slidable in said stationary frame and provided with a division-strip which extends in the direction in which the frame moves; a metallic strip secured to said division-strip of the movable frame and provided with a plurality of engaging devices; a stationary bracket, and an arm fusibly connected at one end to said stationary bracket and at its other end provided with a device for coacting with the engaging devices on the metallic strip.

5. The combination with a stationary frame provided with an opening, of a frame movable in the opening of said stationary frame and arranged to be automatically moved in one direction; a strip secured to the movable frame and extending in a direction parallel with that in which the frame moves and provided with one or more depressions; a stationary bracket; a spring-arm provided with a projection for engaging one of the depressions in the strip at a time and a fusible connection between the other end of said spring-arm and said stationary bracket.

6. The combination with a stationary frame, of a frame movable within said stationary frame and arranged to be moved automatically in one direction; a channel-strip secured to said movable frame and provided with a plurality of depressions in alinement; a stationary bracket having an inclined surface and a spring-arm having one end fusibly connected

to the inclined surface of said stationary bracket and its other end fitting into the channel-strip and also having a projection for engaging the depressions in said channel-strip.

5 7. The combination with a window-frame, of two sashes slidable in said frame and arranged to be moved automatically in one direction; a vertical strip on each sash and provided with engaging members; stationary
10 brackets secured at the top and bottom of said frame and a spring-arm fusibly connected to each of said brackets and provided with a device which coacts with the engaging member on the corresponding strip to hold the sashes
15 in the open position.

8. The combination with a stationary frame provided with an opening, of a frame slidable in the opening of said stationary frame and arranged to be moved in one direction auto-
20 matically; a bracket; an arm fusibly connected to said bracket and arranged to engage the movable frame to hold the latter against move-

ment, said arm beyond the fusibly-connected point being curved for the purpose set forth.

9. The combination with a stationary frame 25 provided with an opening, of an upper and a lower frame movable vertically in said opening; an engaging device on each of said movable frames; brackets secured to opposite sides of said stationary frame; arms sustained by 30 said brackets and arranged to engage the devices on the movable frames to hold the latter open, one of said arms being capable of engagement with the devices on each of said movable frames, and a fusible connection at 35 a point between the stationary brackets and the engaging devices.

In testimony whereof I affix my signature in presence of two witnesses.

CLARENCE D. PRUDEN.

Witnesses:

CHARLES B. MANN, Jr.,
W. H. H. RALEIGH.