

No. 782,675.

PATENTED FEB. 14, 1905.

E. H. LUNKEN.
FIREPROOF WINDOW.

APPLICATION FILED APR. 9, 1904.

2 SHEETS—SHEET 1.

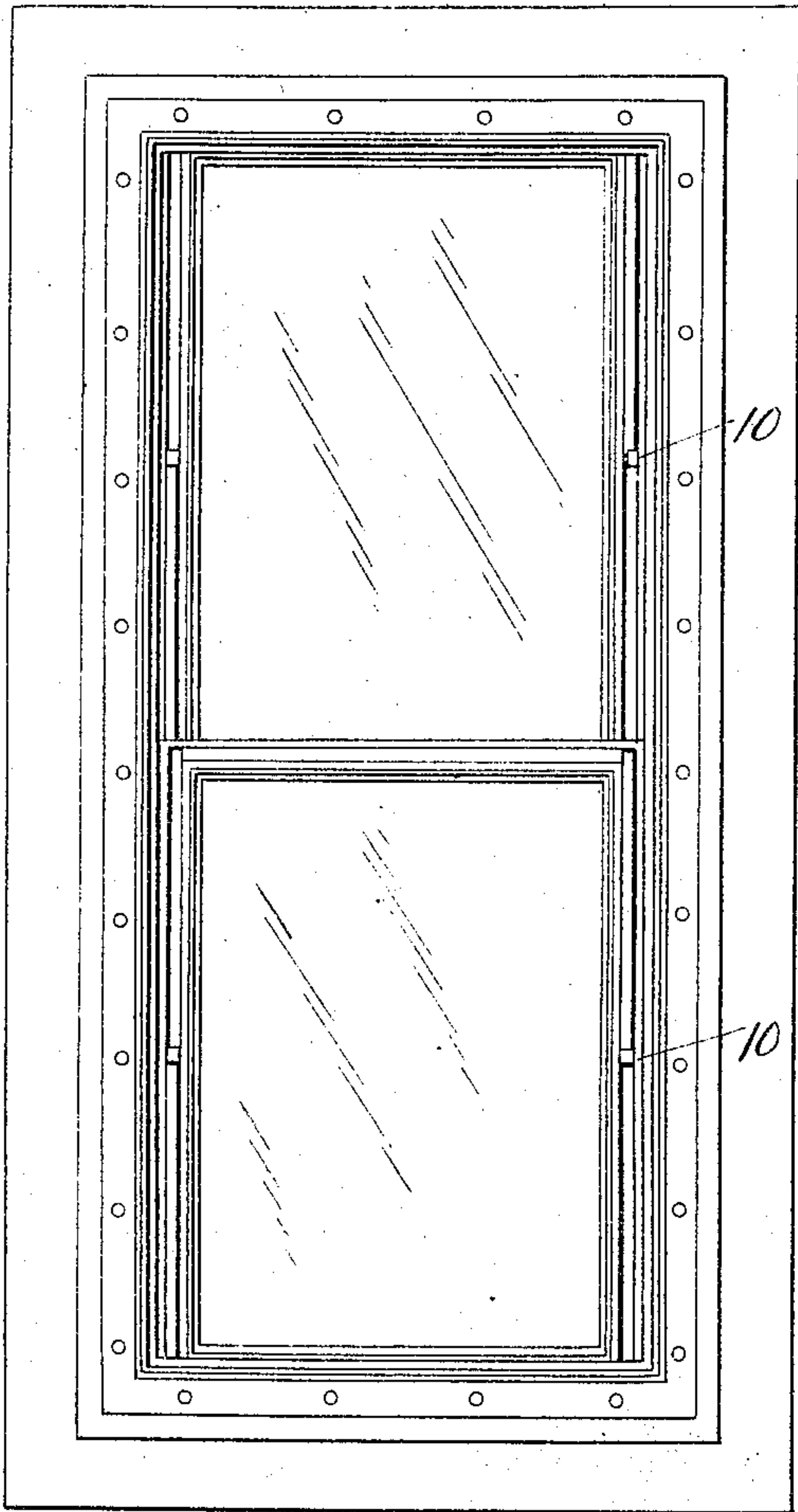


Fig. 1.

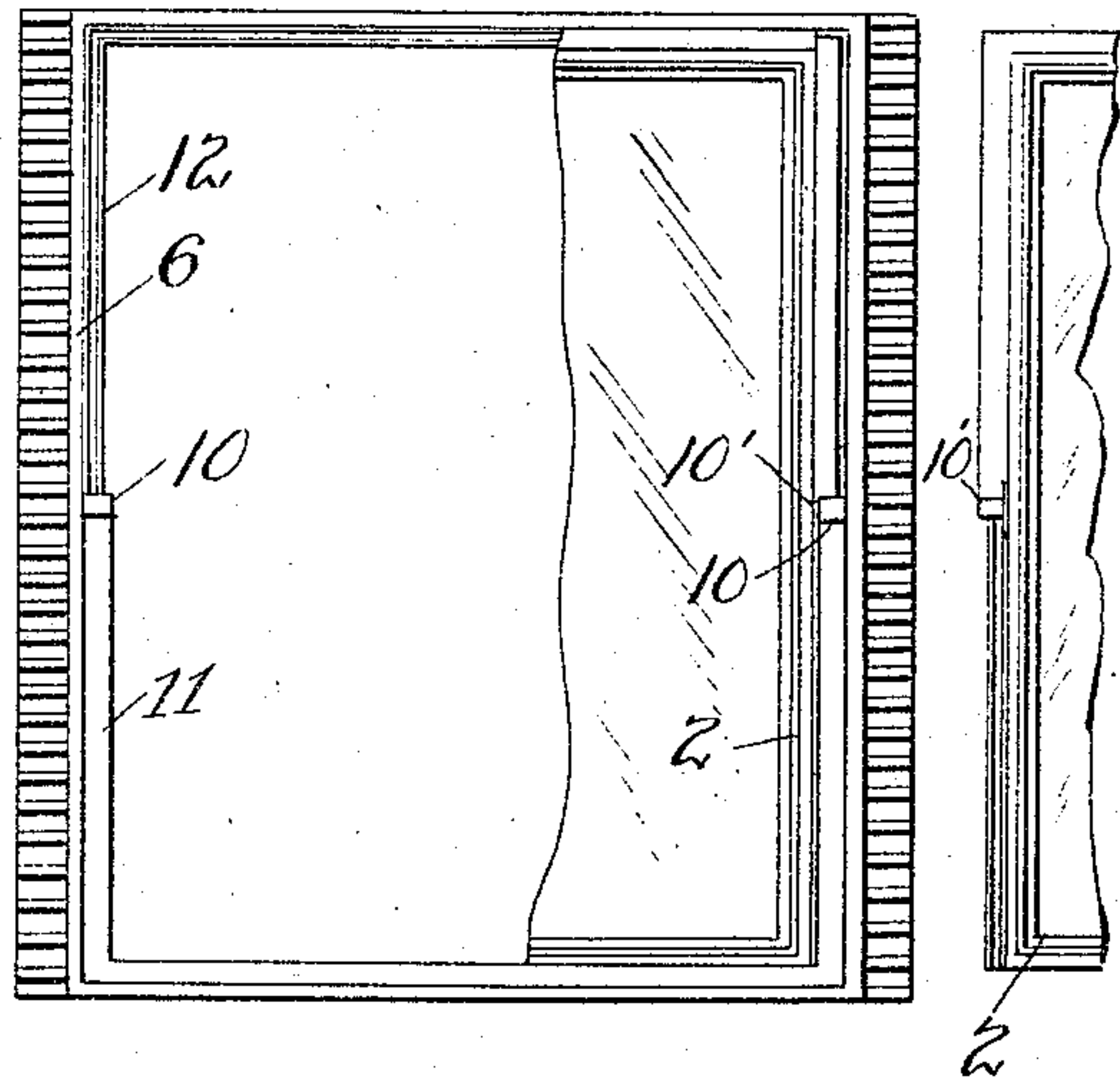


Fig. 3.

Fig. 3a.

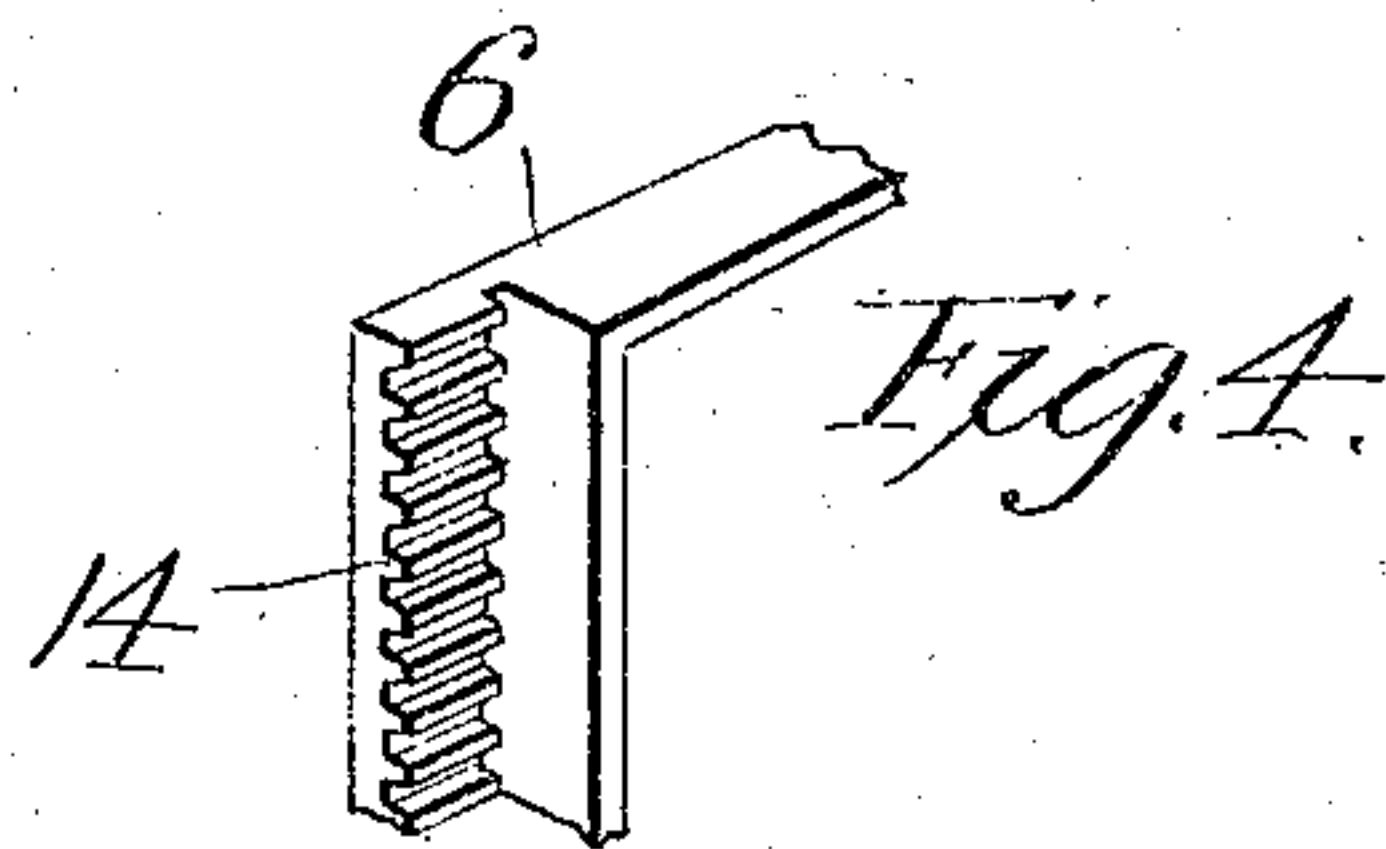


Fig. 4.

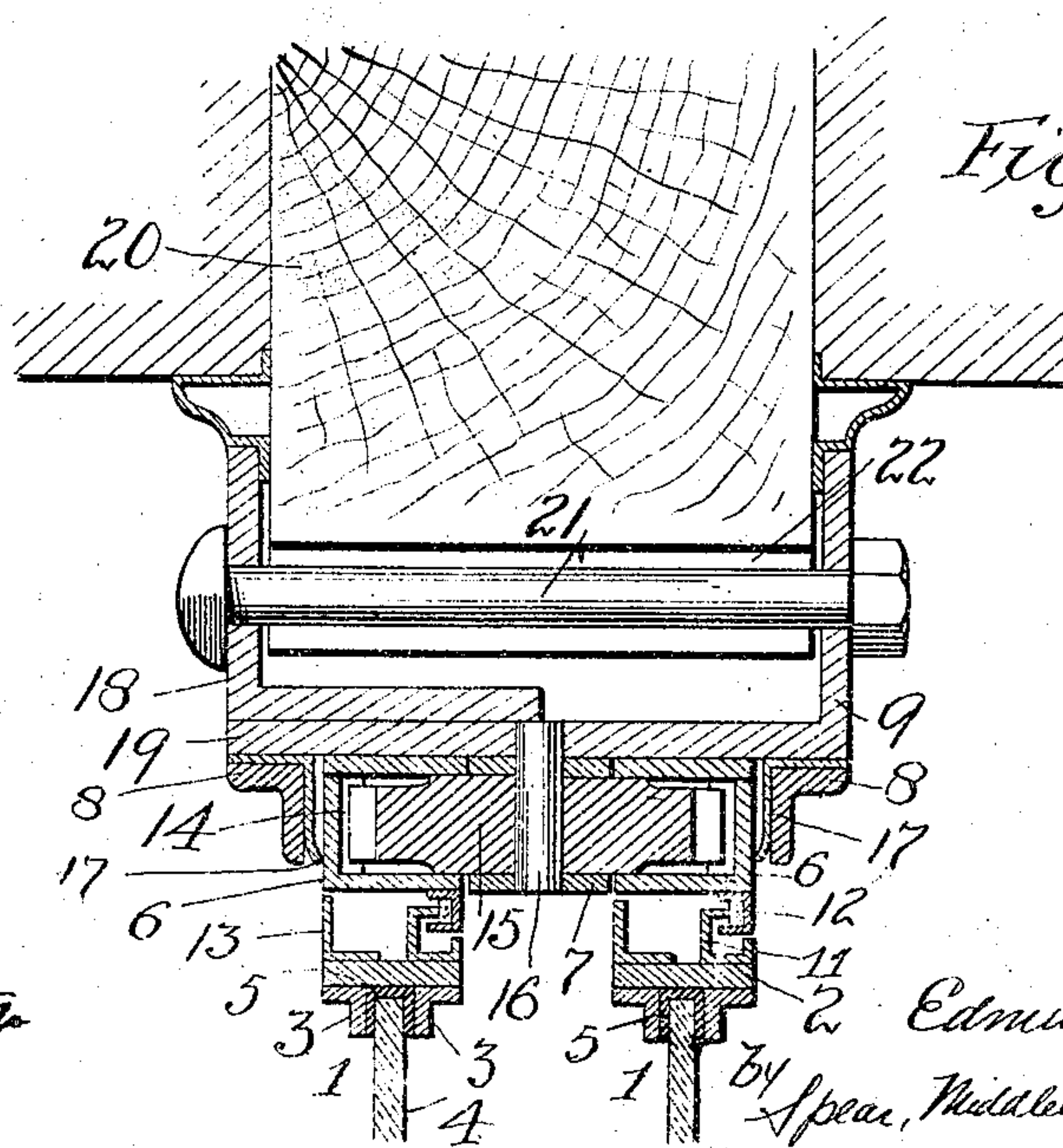


Fig. 2.

Attest,
W. C. Curran
Edward Sartor

Inventor
Edmund H. Lunken
Spears, Middleton, Douglas & Spears
ATTYS

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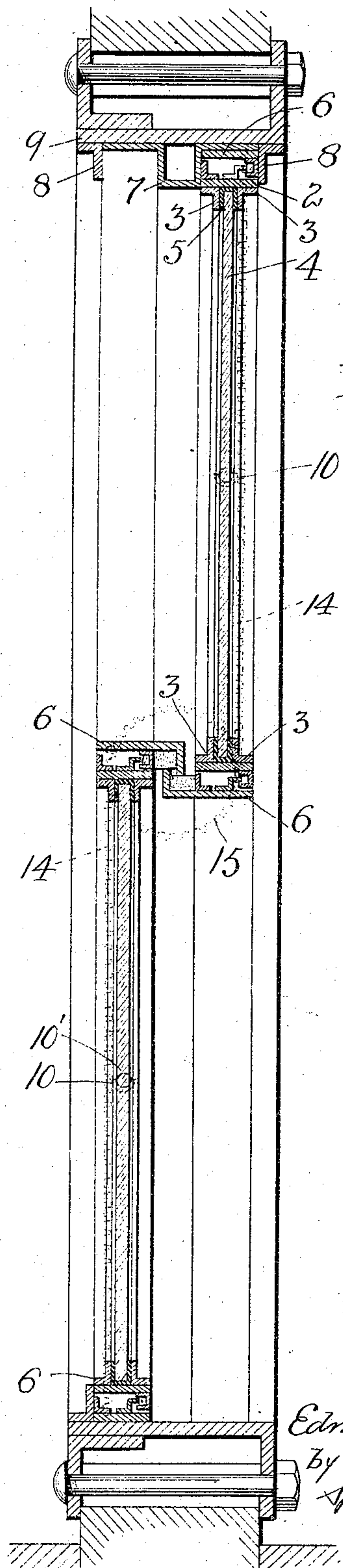


Fig. 5.

Attest
R. E. Curran
Edward Sartor

Inventor
Edmund H. Lunken
By
Spear, Middleton, Donaldson & Spear
Attys.

UNITED STATES PATENT OFFICE.

EDMUND H. LUNKEN, OF CINCINNATI, OHIO.

FIREPROOF WINDOW.

SPECIFICATION forming part of Letters Patent No. 782,675, dated February 14, 1905.

Application filed April 9, 1904. Serial No. 202,403.

To all whom it may concern:

Be it known that I, EDMUND H. LUNKEN, a citizen of the United States, residing at Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Fireproof Window Constructions, of which the following is a specification.

My invention relates to fireproof window constructions, and embodies some of the features disclosed in an application filed by myself and Bernard J. Hausfeld September 14, 1903, Serial No. 173,188.

My invention consists in the features and combinations and arrangement of parts hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front view of a window construction embodying my invention. Fig. 2 is a horizontal sectional view, enlarged, of one side of the window frame and sashes; and Fig. 3 is a detail view of one of the slide-frames for carrying the sash, which is partly shown therein. Fig. 3^a shows a part of the sash, showing the stop-strips thereon, which are adapted to cooperate with the stop-strips on the inner side of the left-hand rail or side of the frame shown in Fig. 3. Fig. 4 is a detail view of part of the sliding frame to show the structure thereof. Fig. 5 is a central vertical sectional view of a window construction embodying my invention.

In my present invention instead of employing an inner swinging frame carrying the sliding sashes, as in the application above referred to, I arrange to pivot the two sashes independently of each other within independent frames which are movable vertically in guideways on the main frame of the window.

In the drawings, 1 indicates the sashes, composed of metal frames 2 and angle-irons 3, holding between them the glass 4, with interposed packing 5. The sash-frames 2 fit within sliding frames 6, which are adapted to move vertically in guideways formed between the central parting-bead 7 and angle-iron guide-strips 8, the said parting-bead and guide-strips being attached to the main frame 9, which will be hereinafter described. The sash-frames 2 are pivotally connected at the points 10, as

indicated in Figs. 1, 3, and 5, to the sliding frame 6, and these pivotal connections are substantially the same as those disclosed in the above-mentioned application, consisting of a pivot 10' on one part fitting into a socket 10 on the other part and stop-strips arranged on each side of the pivot, the strip 11 on one side thereof being higher or projecting farther into the window-opening than the strip 12 on the other side of the said pivot, as indicated in Fig. 3, while the strips on the opposing member, as indicated in Fig. 3^a, are reversed in position with respect to the strips just mentioned, so that when the sash is swung on its pivots it may be turned very nearly through a half-circle and will be substantially reversed in position, the low stop-strips being arranged so that one will override the other and will not interfere with the complete half-revolution of the sash. In connection with the swinging sash-frames I also employ hiding-strips 13, adapted to close the space between the swinging sash-frames and the sliding-frame, these hiding-strips being substantially like those disclosed in an application filed by myself and Bernard J. Hausfeld, Serial No. 188,199, January 9, 1904.

In my present construction I balance the sashes by providing a connection between the sliding frames 6, which pivotally carry the sashes, as above described. For this purpose each of the sliding frames is provided with rack-teeth 14, which are engaged by a pinion 15, pivoted on a pin 16, supported in the parting-bead 7, the said pinion reaching from one sliding frame to the other and engaging the teeth thereon. As indicated in Figs. 2, 3, and 4, the sliding frames are each composed of metal with sides in the form of angle-irons and with top and bottom pieces formed of flat metal strips. The angle-iron sides have the rack-teeth in their channels, and the pinion extends into these channels to engage the said teeth.

Weather-strips 17, as shown in Fig. 2, may be arranged between the sliding frames and the angle-iron guide-strips 8, the said weather-strips being clamped between the guide-strips and the face of the section 9 of the main frame and having free edges to bear upon the sliding

frame 6 and close the space between the same and the guide-strips 8.

The main frame comprises a section 9, composed of overlapping angle-iron 18 19, forming substantially a U-shape frame, the sides of which embrace the other member, 20, of the main frame, which latter is composed of wooden or metal beams adapted to be embedded in the wall of the building. The angle-iron portion of the main frame 18 and 19 is supported adjustably on the other portion, 20, of the main frame by bolts 21 extending through the sides of the channel-iron and through recesses or openings 22, formed at or near the edge of the member 20, the said openings 22 being of sufficient size to permit movement of the bolts therein, so as to afford means of adjustment of the channel-iron section 18 and 19 on the other section, 20, to compensate for any settling of the wall of the building.

It will be seen that I employ two complete rectangular open frames within which the sash are pivotally mounted.

I do not wish to limit myself to the particular arrangement for counterbalancing the sash-carrying frames, as other means may be used for this purpose.

I claim as my invention—

1. In combination in a window construction, a main frame, sliding members moving in guides on the main frame, sashes pivoted to the sliding members and stop-strips between the sashes and sliding members consisting of high and low parts on the sliding members and high and low parts on the sash, reversed in respect to the high and low parts on the sliding member, the said high and low parts being on opposite sides of the pivot, and the low part on the sash being adapted to override the low part on the frame, substantially as described.

2. In combination a main frame, angle-iron

sliding members guided in the main frame and having rack-teeth, sashes pivotally connected to the sliding members and means associated with the racks whereby the said sliding members are balanced, said means comprising a pinion meshing with the two racks, and having its side overlying lateral flanges of the angle-irons, substantially as described.

3. In combination a main frame, angle-iron members sliding therein and having rack-teeth, balancing means associated with the said rack-teeth and sashes pivoted to the sliding members, substantially as described.

4. In combination a main frame, sliding members guided in the main frame and each consisting of an open rectangular frame with angle-iron sides providing laterally-extending flanges located respectively at the outer and inner faces of the window, balancing means within the space between the laterally-extending flanges, and sash pivoted within the said open frames, substantially as described.

5. In combination a main frame, open sliding frames having angle-iron sides with teeth on the angle-iron, balancing means associated with the said teeth and sashes pivoted within the said open frames, substantially as described.

6. In combination in a window construction, a main frame, an open sliding frame for each sash movable on the main frame, a sash pivotally supported on each sliding frame, the said sliding frames being formed of angle-iron, with rack-teeth thereon and a pinion engaging the rack-teeth to balance one sliding frame by the other, substantially as described.

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

EDMUND H. LUNKEN.

Witnesses:

CARRIE B. STUBERT,
J. BENJ. MYERS.