No. 822,516. PATENTED JUNE 5, 1906.

F. FLASCHBERGER & M. GEBHART.

WINDOW.

APPLICATION FILED JAN. 16, 1906.

2 SHEETS—SHEET 2.

Fig. 4.

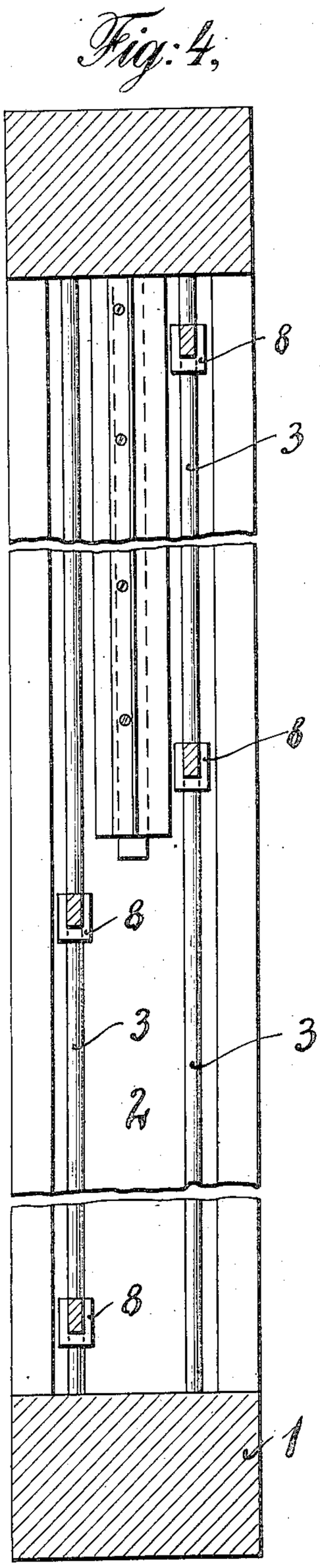


Fig. 5.

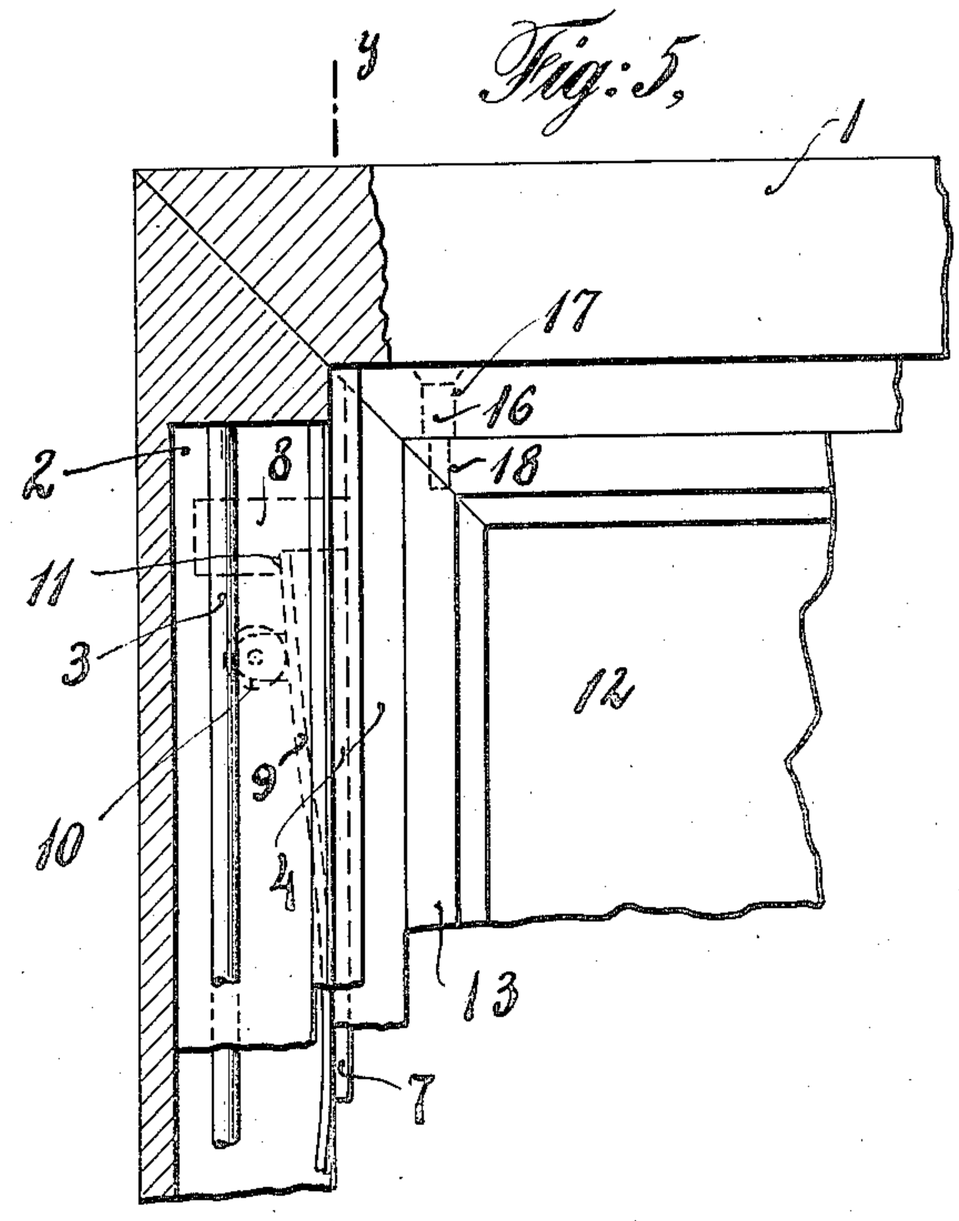


Fig. 6.

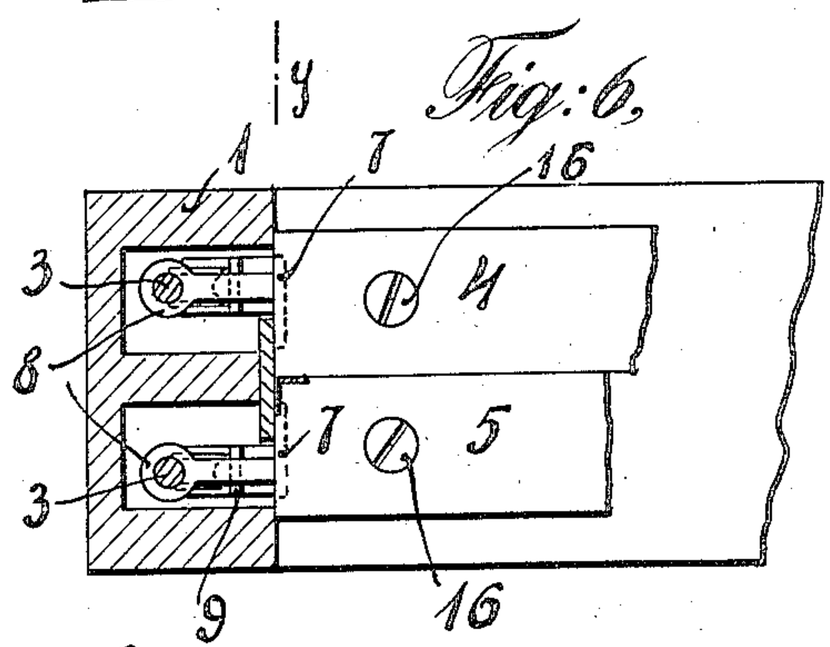
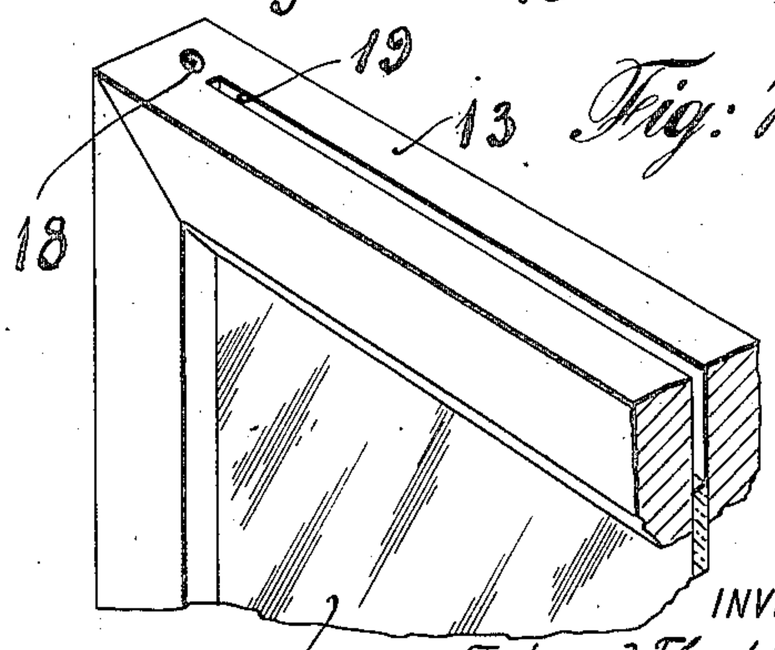


Fig. 7.



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2 SHEETS—SHEET 1.

Fig: 1.

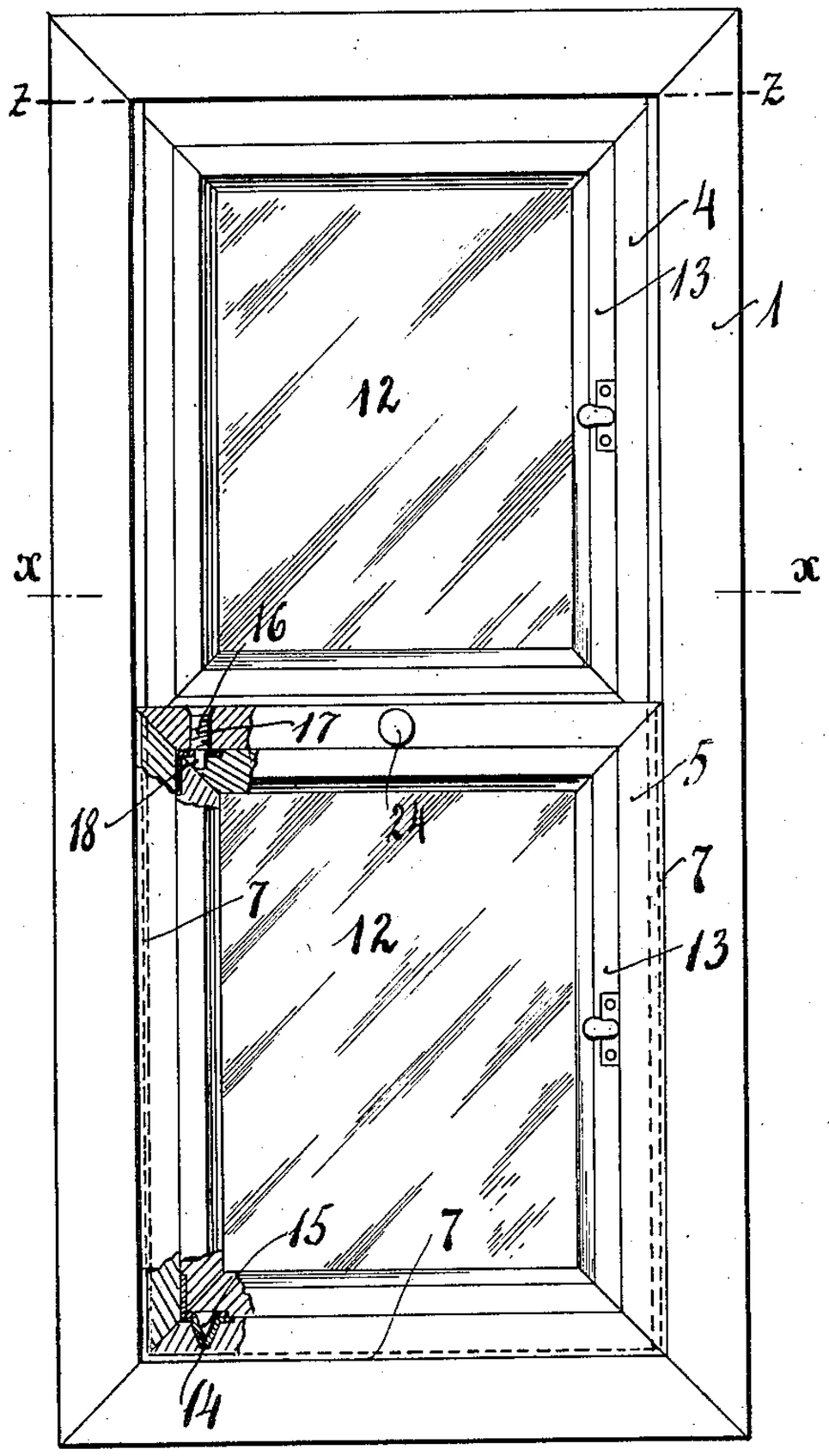


Fig: 2.

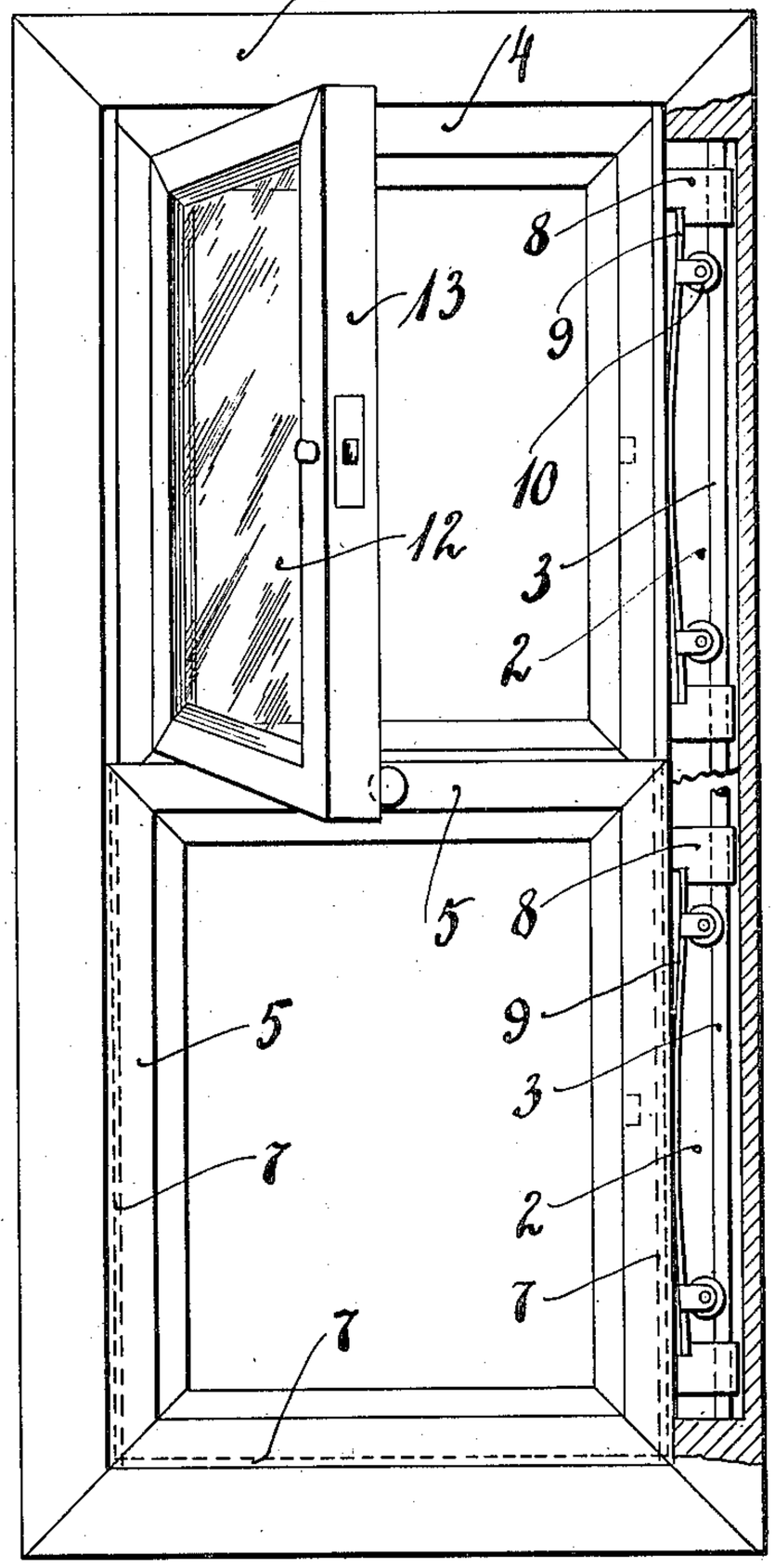


Fig: 3.

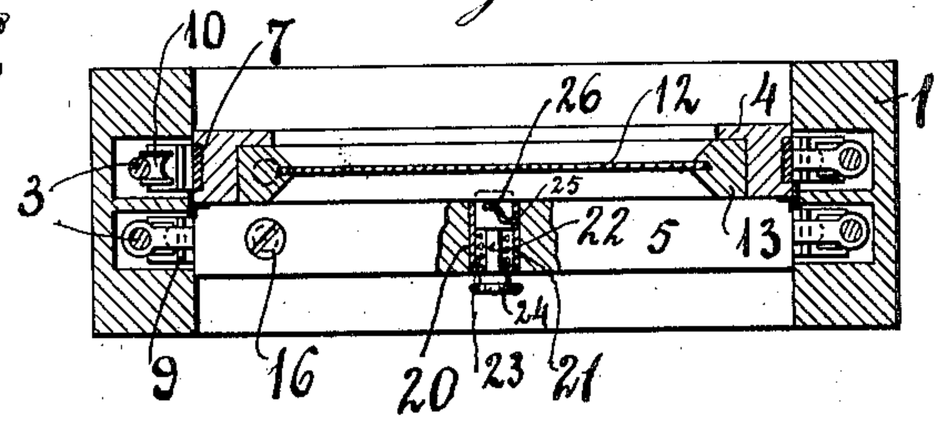


Fig: 8.

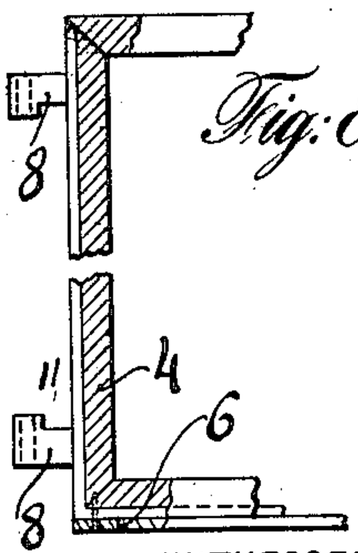
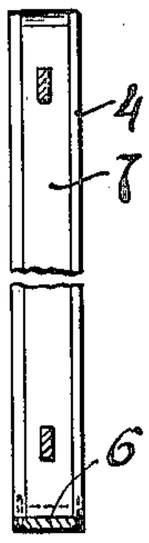


Fig: 9.



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UNITED STATES PATENT OFFICE.

FERDINAND FLASCHBERGER, OF HOBOKEN, AND MEINRAD GEBHART, OF JERSEY CITY, NEW JERSEY.

WINDOW.

No. 822,516. Specification of Letters Patent. Patented June 5, 1906.

Application filed January 16, 1906. Serial No. 296,419.

To all whom it may concern:

Be it known that we, FERDINAND FLASCHBERGER, a subject of the Emperor of Austria, residing at Hoboken, and MEINRAD GEBHART, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Windows, of which the following is a specification.

The present invention pertains to improvements in windows wherein the sashes are vertically slidable, and particularly to that class in which the use of counterweights are dispensed with.

One of the objects of our invention is to provide a window having means whereby the sashes can be raised and lowered and held at rest by a frictional contact with the guideways in which they move at any desired point.

Another object is to render the sashes easily removable from the frame of the window for the purpose of effecting repairs without the necessity of removing any other parts of the window-frame.

A further object is to provide the sliding frames with French sashes or casements swinging inward into the building for the purpose of allowing the cleaning of the panes from the inside and outside, and thus avoiding the necessity for the dangerous practice of using the window-sill therefor.

With these and other objects in view our invention consists in the novel features of construction hereinafter set forth, and pointed out in the claims hereto appended.

In the accompanying drawings similar reference-letters denote corresponding parts.

Figure 1 is a front elevation of a window embodying our invention, some parts of one of the sliding frames holding the casements being in section to show the bearing of the casement therein. Fig. 2 is a similar view as Fig. 1, in which one of the casements is swung open at one side, the window-frame being in vertical section to show the bearing of the sliding frames and the springs effecting a frictional contact thereof with the frame of the window. Fig. 3 is a cross-section on line *x x* of Fig. 1. Fig. 4 is a vertical section on line *y y* of Fig. 5. Fig. 5 is an enlarged front elevation of the window, partly in vertical section, a portion thereof being broken away. Fig. 6 is a cross-section on line *z z* of Fig. 1 on enlarged scale. Fig. 7 is a perspective view of one of the casements, a portion thereof being broken away; and Figs. 8 and 9 are details.

At both sides the frame 1 has longitudinal guideways 2 extending from the top to the sill of the window, and in each of the guideways two longitudinal metal rods 3 are arranged parallel to and behind each other, said rods being rigidly fixed in the top and sill of the frame 1. Guided on said vertical rods 3 are metal bars 7, which have a double bend to form two longitudinal portions and a base portion, (see dotted lines, Figs. 1 and 2,) the longitudinal portions having eyes or ears 8 projecting laterally therefrom, which ears are adapted to loosely engage the said vertical rods and to allow the bars 7 to slide up and down thereon. Each of the frames 4 and 5 is grooved in the outer surfaces of its side rails and bottom for its engagement with the metal bar 7, on which the same is mounted. The bottom portion of each metal bar 7 may be covered by a protection-plate 6, which is screwed or otherwise fixed to the sliding frame and which will prevent the latter from slipping off the metal frame 7. When thus mounted, the sliding frames 4 and 5 can be raised and lowered, together with the metal bars 7, on the vertical rods 3.

Between each of the frames 4 and 5 and the vertical rods 3 springs 9 are arranged at each side thereof, which springs are provided with rollers or wheels 10, adapted to roll on the rods and which are arranged to press laterally against the sashes. As seen from Fig. 2, the upper and lower ends of the springs loosely rest against shoulders 11 formed on the eyes or ears 8.

The springs 9 cause a frictional contact of the rollers 10 with the vertical rods, whereby the frames will be retained in any position placed.

If any repairing is to be effected on the frames or parts connected therewith, the protection-plates 6 are detached and the frames removed from their metal bars 7.

The panes 12 are secured in separate frames, serving as French sashes or casements 13, and arranged within the sliding frames 4 and 5. The casements are adapted to swing inward within the building for the purpose of permitting the cleaning of the panes from the inside and outside. To this end a conical bearing 14 is arranged in the bottom of each

sliding frame to receive a correspondingly-shaped pivot 15, projecting from the bottom of each casement. The upper pivots are formed by screw-headed pins 16, having a contracted portion 18, which engages a corresponding hole in the top rail of the sash 13, the pins 16 working in threaded bores 17, arranged in the upper rails of the sliding frames 4 and 5. Each swinging sash is provided with a suitable locking mechanism. The casements can be removed from the sliding frames by unscrewing the upper pivots 16.

Instead of, as hitherto, cementing the pane with putty to the sashes, each swinging sash is centrally grooved, Fig. 7, and the groove 19 extends outward through the top of the sash to receive the pane 12. In order to render the groove air-tight, its open top may be cemented.

The lock for the sliding frames comprises a cylindrical bore 20 in the lower frame, in which bore a metal sleeve 21 is fitted, a locking-bar 22, the inner end of which is enlarged and adapted to slide like a piston in said sleeve and engage a bore in the upper frame. The locking-bar is pressed inward by a spring 23 and has a knob 24 at its outer end. From the inner surface of the sleeve a nose 25 projects inward, which is adapted to engage a helical groove 26, formed in the enlarged inner end of the locking-bar.

Owing to the helical groove and the nose engaging therein, an involuntary unlocking of the sashes is prevented.

Having thus described the nature of our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with a window-frame, of longitudinal guideways in the sides of the latter, vertical guide-rods in each guideway, vertically-sliding frames guided on said rods, springs between the said sliding frames and guide-rods to effect a frictional contact with the latter and horizontally-swinging sashes in said sliding frames, substantially and for the purpose as specified.

2. The combination with a window-frame, of longitudinal guideways in the sides of the latter, two vertical guide-rods in each guideway arranged parallel and behind each other, double-bent bars guided on said rods, frames mounted on said bars and adapted to be raised and lowered with the latter, springs between the said sliding frames and guide-rods to effect a frictional contact with the latter and horizontally-swinging sashes in said sliding frames, substantially and for the purpose as specified.

3. The combination with a window-frame, of longitudinal guideways in the sides of the frame, two guide-rods in each guideway arranged parallel and behind each other, double-bent bars, ears projecting laterally from the latter and adapted to be in engagement with the said guide-rods to permit said bars of sliding vertically on the latter, frames removably mounted on said double-bent bars, means for connecting the latter with said frames, springs between the said sliding frames and guide-rods to effect a frictional contact with the latter and horizontally-swinging sashes in said sliding frames, substantially and for the purpose as specified.

4. The combination with a window-frame, of a guideway in each side of the frame, two vertical rods in each guideway arranged parallel and behind each other, two double-bent bars slidably mounted on the said guide-rods, frames removably mounted on said bars, means connecting the latter with the said frames, springs located between the sides of the frames and the vertical bars, rollers or wheels borne upon the ends of said springs, the rollers or wheels being adapted to roll upon the vertical rods and to press against the sides of the frames, and horizontally-swinging sashes in said frames, substantially and for the purpose as specified.

5. The combination with a window-frame, of a guideway in each side of the frame, two vertical rods in each guideway, vertically-sliding frames guided on said bars, springs effecting a frictional contact of the said sliding frames with the guide-rods, swinging sashes to swing horizontally in said frames, means permitting a swinging action of the sashes and a removal of the latter from the frames, substantially and for the purpose as specified

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

FERDINAND FLASCHBERGER.
MEINRAD GEBHART.

Witnesses:
WM. E. COOK,
MAX D. ORDMANN.