

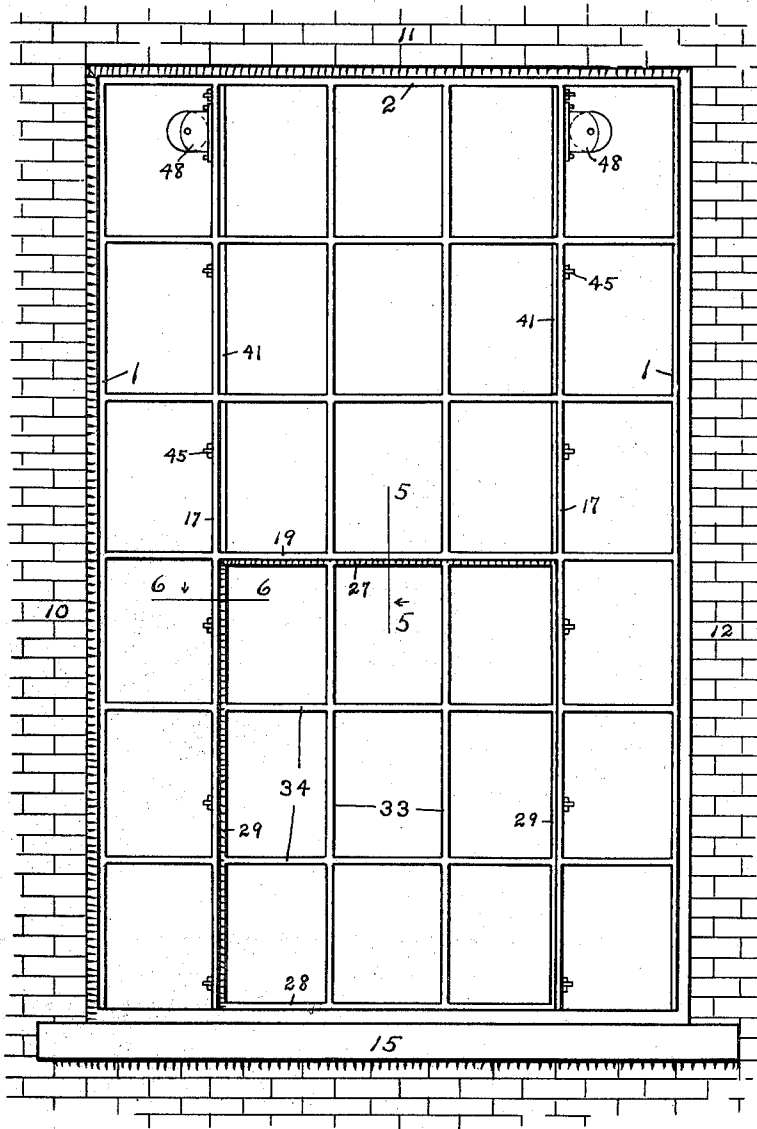
T. H. KANE.
WINDOW CONSTRUCTION.
APPLICATION FILED MAR. 20, 1912.

1,031,124.

Patented July 2, 1912.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

J. H. Perrault

Hugo W. Kleinbring

INVENTOR

Thomas H. Kane

BY

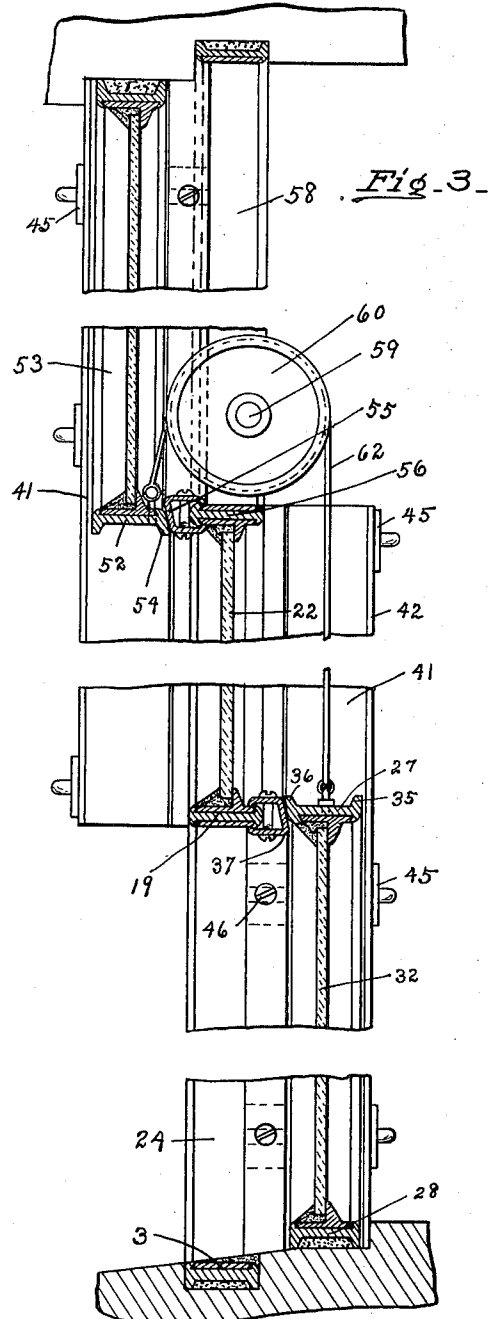
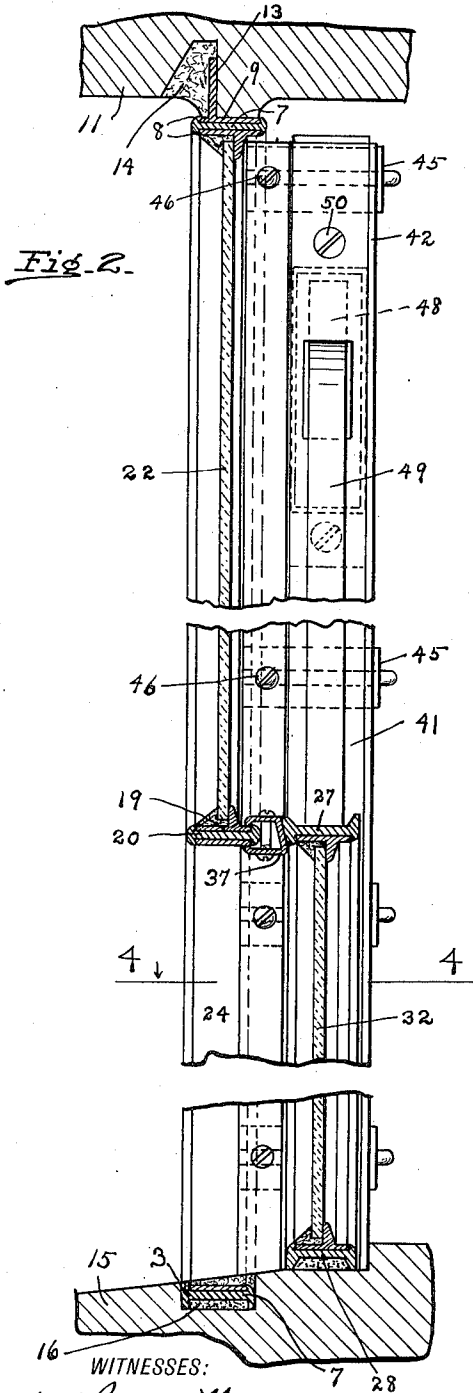
Edward N. Pagelsen
ATTORNEY

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3 SHEETS-SHEET 2.



WITNESSES:
J. H. Herrault.

Hugo W. Kreinbring.

INVENTOR
Thomas H. Kane
BY
Edward N. Pagelsen.
ATTORNEY

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3 SHEETS-SHEET 3.

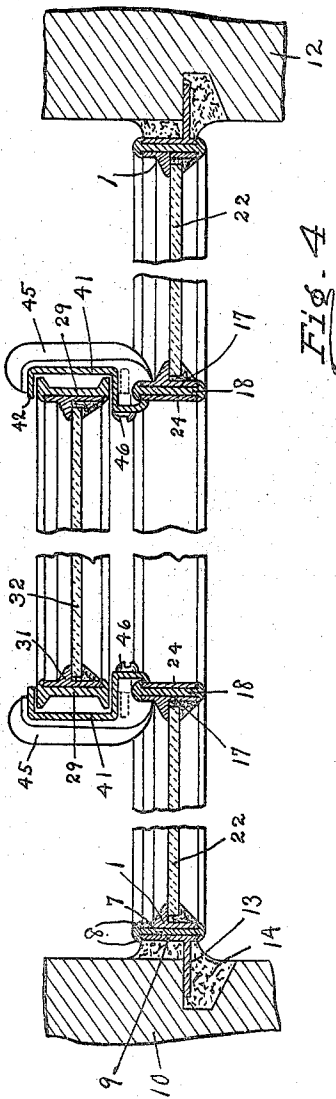


Fig. 4

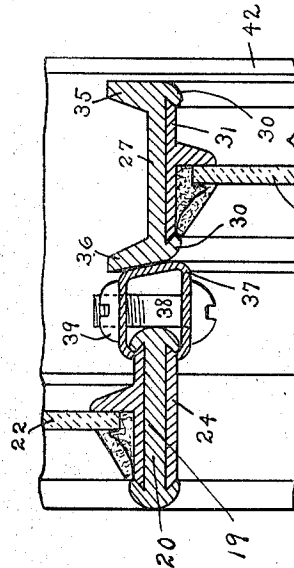


Fig. 5-

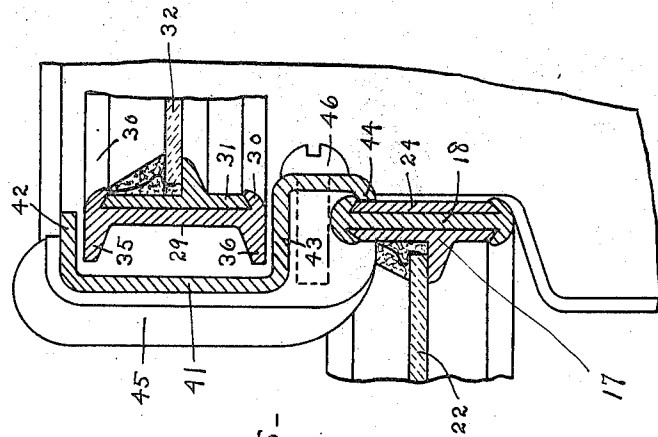


Fig. 6-

WITNESSES:

J. H. Kerrault

Hugo W. Kreinbring

INVENTOR

Thomas H. Kane

BY *Edward N. Pagelsen*
ATTORNEY

UNITED STATES PATENT OFFICE.

THOMAS HENRY KANE, OF YOUNGSTOWN, OHIO, ASSIGNOR TO TRUSSED CONCRETE
STEEL COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

WINDOW CONSTRUCTION.

1,031,124.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed March 20, 1912. Serial No. 684,992.

To all whom it may concern:

Be it known that I, THOMAS H. KANE, a citizen of the United States, and a resident of Youngstown, in the county of Mahoning and State of Ohio, have invented a new and useful Window Construction, of which the following is a specification.

This invention relates to metal window frames, and its object is to provide novel guides for slidable sashes and novel supports for the guides which may be secured to window frames already in place, and which can also be easily and cheaply embodied in window frames while being constructed.

This invention consists, in combination with a stationary metal sash having upright bars or muntins, of novel upright guide bars and supporting members for the same secured to the muntins of the stationary sash, a movable sash mounted in said guide bars, and a novel transverse bearing or weather strip secured to the proper rail of the stationary sash.

In the accompanying drawing, Figure 1 is an outside elevation of a window embodying this invention. Fig. 2 is a central vertical section of the same. Fig. 3 is a similar section of a window construction having two slidable sashes. Fig. 4 is a section on the line 4—4 of Fig. 2. Figs. 5 and 6 are sections on the lines 5—5 and 6—6 of Fig. 1, respectively.

Similar reference characters refer to like parts throughout the several views.

The general construction of the window frame shown in the drawings is that set forth in Patent No. 933,908, to Kahn and Kane, dated Sept. 14, 1909. The stationary part of the construction preferably consists of side frames, top and bottom frames, and interior cross bars. In each case, as in the patent referred to, the preferred form of these members consists of an I beam whose flanges are rolled down to hold flanged bars in position. The side frames 1 and the top frame 2 are formed of an I beam 7 having flanges 8 that are rolled down on the beveled edges of a T bar 9 provided with outwardly extending flanges 13. These flanges 13 preferably extend into grooves in the adjacent walls 10, 11 and 12, and are held in position by cement or mortar 14. The bottom frame 3 of this construction also consists of this same I beam 7, or one similar

and joined thereto, and it may rest in a groove in the sill 15, being embedded in cement 16. Extending between the top and bottom frames are the muntins 17, whose central portions are I beams 18, which connect to the top and bottom frames as explained in the patent cited. Extending between the muntins 17 is a cross-bar 19, whose main portion is an I beam 20.

The panes 22 of glass may be supported in the stationary frame as described in the patent above cited or in any other desired manner. Extending along the bottom of the I beam 20 of the cross-bar 19, along the top of the I beam 7 of the lower frame 3, and the inner sides of the I beams 18 of the muntins 17, are flat bars 24, held in position by the down-turned flanges of the I beams 20, 7 and 18 respectively. This causes the inner faces of the opening in the window frame to be flat.

The slidable sash is formed of an outer frame, preferably consisting of a rolled bar bent to form the top-rail 27, the bottom rail 28, and the stiles 29. This bar has flanges 30 which are rolled down to grip the beveled edges of the T bars 31 which support the panes 32 of glass. Upright bars 33 and horizontal bars 34 may be employed if desired and connect to the rails and stiles and to each other in the usual manner. The rails and stiles are preferably formed with flanges 35 and 36, the inner flange 36 of the top rail 27 being bent outward, as shown in Fig. 5, to engage the bearing or weather strip 37. This strip may be formed of sheet-metal, properly bent, and secured to the flanges of the I beam 20 of the cross-bar 19 by means of bolts 38 and nuts 39. The proportions should be such as to force the front flanges 35 of the stiles and rails against the front flanges 42 of the guides 41 when the slidable sash is down.

The guides 41 for the slidable sash are preferably formed by rolling strips of flat metal to give them a cross-section of substantially S-shape. See Fig. 6. The outer flanges 42 and the intermediate portion 43 form the guides proper for the stiles of the slidable sash, while the edges 44 form the jaws to engage the upright bars 17 of the stationary frame. Properly spaced braces 45 receive the screws 46 by means of which the braces and guides are secured to the muntins 17.

Any desired means may be employed to counterbalance the slidable sash. In Figs. 1 and 2 the well known spring barrels 48 are shown secured to the outer sides of the guides 41, which guides are provided with openings to permit the passage of the flexible connectors 49, the lower ends of which are secured to the sash in any well known manner. Screws 50 may be employed to hold the spring-barrels in position.

In Fig. 3 a modified construction is shown, in which are two slidable sashes, one at the top and one at the bottom of the window. The lower slidable sash is constructed as that just described and the same reference characters are employed. The lower rail 52 of the upper slidable sash 53 is formed with a flange 54 which engages the bearing strip 55 secured to the upper cross-bar 56, in the same manner as the flange 36 on the lower sash engages the bearing strip 37 on the cross-bar 19.

Secured to the bars 58, which are similar to the bars 24 previously described, are pins 59, on which are journaled the wheels 60. Flexible connectors 62 pass over these wheels and connect to the two slidable sashes, preferably to the upper rail 27 of the lower and to the lower rail 52 of the upper sash. Any desired means may be employed to make these connections.

The braces 45 and the clamps 44 of the guide bars 41 must be fitted to the upright bars or muntins of the windows which are to be supplied with slidable sashes. Where the windows are already in position, these guides may be attached to the muntins and the panes of glass may be removed from that portion of the window which is covered by the slidable sash in its raised or lowered position as desired.

While it is expected that this novel sash construction will be principally used with metal window frames, it will be understood that the slidable sash, the guides therefor, and the weather strips may be connected to window frames of wood, as well.

The details of construction of the various parts and the proportions may all be varied as desired without departing from the spirit of the invention set forth in the claims.

I claim.

1. In a window construction, the combination of a stationary sash comprising bars, guides adjacent two of the bars, clamps to secure the guides to said bars, and a slidable sash mounted in said guides.

2. In a window construction, the combination of a stationary sash comprising upright and horizontal members and having an

opening, guides secured to the upright members along the sides of the opening, which guides are formed substantially S-shaped in cross-section, a weather strip secured to one of the cross-bars along the top of the opening, and a slidable sash mounted in said guides.

3. In a window construction, the combination of a stationary sash comprising upright and horizontal members and having an opening, guides secured to the upright members along the sides of the opening, which guides are formed substantially S-shaped in cross-section, a weather strip secured to one of the cross-bars along the top of the opening, and a slidable sash mounted in said guides, said sash formed with a flanged top adapted to engage the weather strip when the slidable sash is in its lowered position.

4. In a window construction, the combination with the stationary sash having upright bars along the sides of an opening, of a pair of guides extending along said upright bars, clamping brackets securing said guides in position, and a sash slidable in said guides over said opening.

5. In a window construction, the combination with the stationary sash having upright bars along the sides of an opening, of a pair of guides extending along said upright bars, clamping brackets securing said guides in position, and a sash slidable in said guides over said opening, said guides being substantially S-shaped in cross-section.

6. In a window construction, the combination of a stationary sash comprising parallel bars, guides adjacent two of the parallel bars, clamps to secure the guides to said bars, said guides formed substantially S-shaped in cross-section, and a slidable sash mounted in said guides.

7. In a window construction, the combination of a stationary sash comprising parallel bars, parallel guides adjacent two of the bars and formed substantially S-shaped in cross-section and each having one edge in engagement with a sash bar, clamps secured to said guides at intervals in engagement with said bars, and a slidable sash mounted in said guides.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS HENRY KANE.

Witnesses:

T. J. PADDON,

HARRY FOLSOM.