

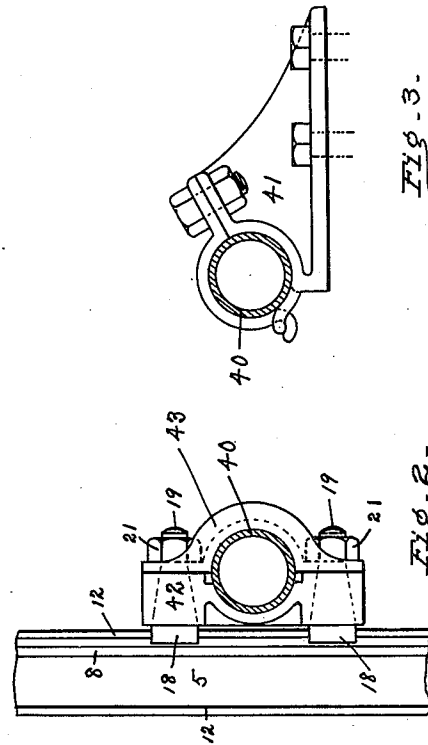
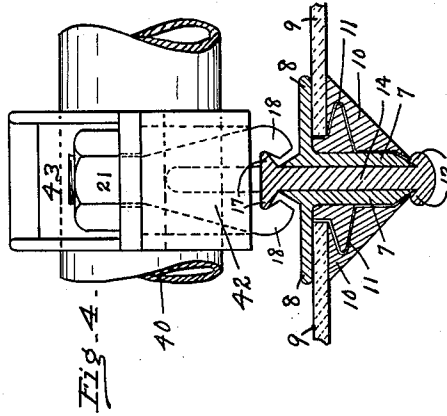
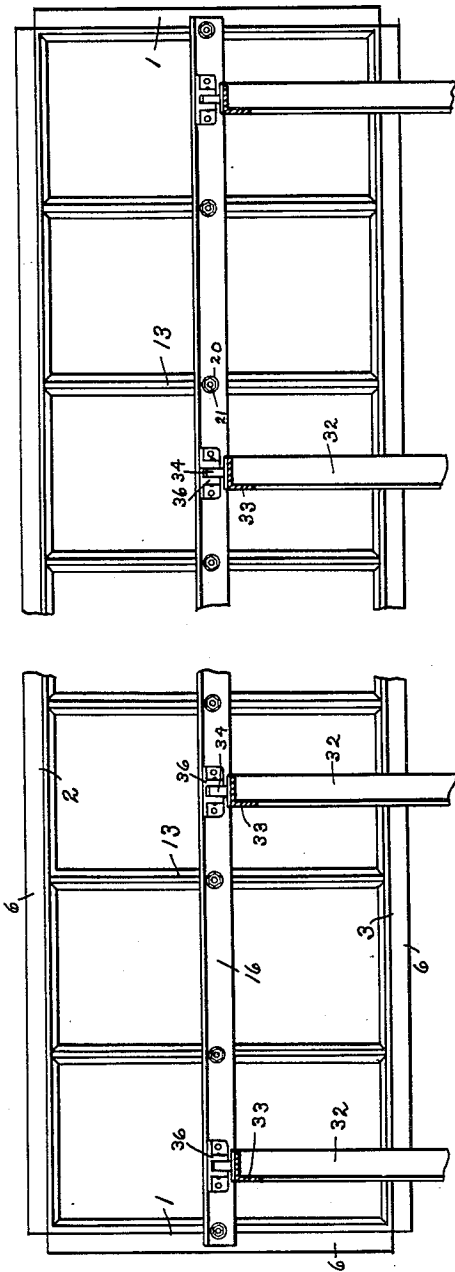
T. H. KANE.
WINDOW CONSTRUCTION.
APPLICATION FILED OCT. 2, 1911.

1,023,938.

Patented Apr. 23, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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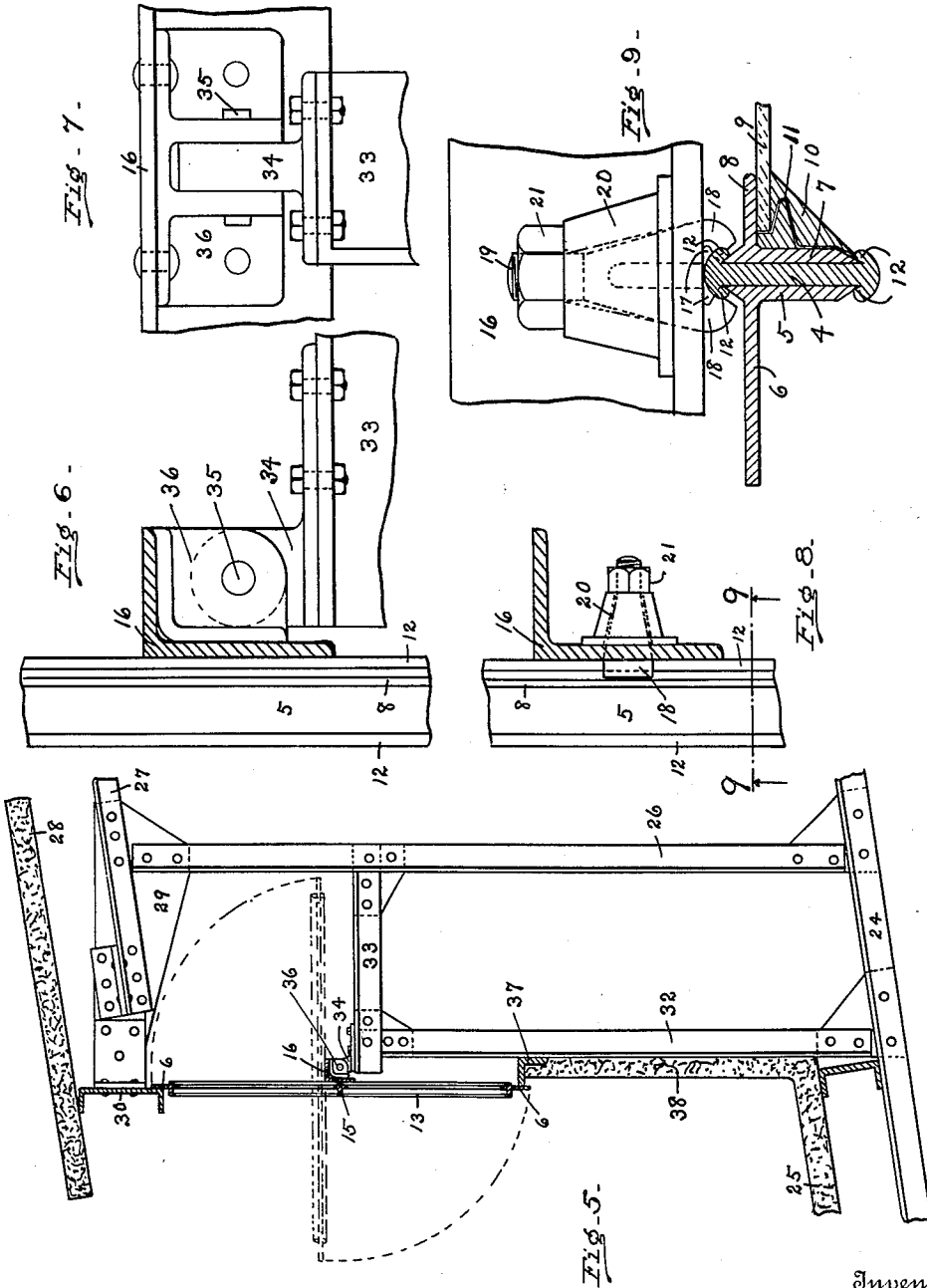
Witnesses
J. H. Perrault.
H. W. Kleinbring.

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2 SHEETS—SHEET 2.



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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.

1,023,938.

Specification of Letters Patent.

Patented Apr. 23, 1912.

Application filed October 2, 1911. Serial No. 652,404.

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 the construction of the monitors or continuous windows of clear-stories of buildings, and its object is to provide a continuous window-sash construction which may extend the full length of the building, which shall be pivoted intermediate its height, and which shall be supported at any desirable number of points intermediate its length.

This invention consists, therefore, of a window sash pivoted intermediate its height at a number of points intermediate its length.

In the accompanying drawing, Figure 1 is an elevation of this window sash from the inside of the building. Figs. 2, 3 and 4 are details of a supporting device for this sash. Fig. 5 is a vertical cross section of a clear-story framing and this improved sash. Figs. 6, 7, 8 and 9 are details of a modified form of supporting device for the sash, Fig. 9 being a section on the line 9—9 of Fig. 8.

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

The window sash shown in the drawings, and which is particularly adapted to this present invention, is of the general type shown by Patent No. 933,908 to Kahn and Kane, dated Sept. 14, 1909. The end bars 1, top bar 2, and bottom bar 3 of the sash are preferably of the construction shown in cross-section in Fig. 9. Each may be formed of an I-beam 4, and two T bars. The outer bar 5 has a wide flange 6 to engage the bars forming the window-frames and the inner bar 7 has a flange 8 to support the glass 9. Putty 10 and fasteners 11 may be employed. The flanges 12 of the I-beams are rolled down onto the beveled edges of the bars 5 and 7, as shown in Fig. 9, excepting where the supporting means for the sash are attached. The intermediate vertical members 13, or muntins, are preferably formed as shown in Fig. 4. The I-beam 14 and its flanges, and the bars 7 with their flanges 8, are the same as those of Fig. 9. The bars 7 will extend entirely around the pane of glass as explained in the above mentioned

patent. Intermediate bars 15 (Fig. 5) may be employed, in which case they will preferably be constructed like the intermediate bars shown in Fig. 6 of the above mentioned patent. While the sash described is preferred for this monitor construction, my invention may be used with sash of any desired construction.

An angle-bar 16 extends along the middle of the sash and may connect to the side bars 1 and muntins 13 by means of the devices shown in Figs. 6 to 9 inclusive. The flanges 12 of the I-beams 4, are not rolled down at the point of suspension, but are allowed to project outwardly, as at 17 in Figs. 4 and 9. Bolts, comprising jaws 18 united by the threaded stems 19, extend through the adjacent flange of the angle-bar 16. Washers 20, having tapering holes, slip over these bolts, and the nuts 21 hold these members rigidly united. These gripping bolts are so positioned that the jaws 18 engage the portions 17 of the flanges 12. The angle-bar 16 is then placed so these bolts will extend through holes in the same, the washers 20 are slipped over the bolts and the nuts 21 tightened down, rigidly securing the sash and angle-bar together. These bolts may be provided for each muntin 13 as well as for the end bars 1, or a less number may be found sufficient. The size of the angle bar 16 will be proportioned to that of the window sash and any other proper securing devices may be employed in place of those shown.

While the window sash and its angle-bar 16 may be supported in any manner most convenient for the building of which they form a part, the frame shown in Fig. 5 may be found very effective. The rafters 24 of the main roof 25 support the posts 26 of the clear-story, which posts support the rafters 27 of the clear-story roof 28. Small cantalivers 29 carry the channel bar 30, which forms the upper portion of the window frame. Auxiliary posts 32 and beams 33 support the small blocks 34, which carry the pivot-pins 35 of the saddles 36, which are secured to the angle-bar 16. An angle-bar 37 extending along the posts 32 forms the lower member of the window frame.

It is the usual custom to hinge the window-sash at its upper end to proper supports at the upper ends of posts, corresponding to the posts 26, and to carry the roof 25

up to and secure the wall 38 to these posts. But in the present construction the supports for the sash and the wall 38 may be said to be moved outwardly as shown so as to permit the sash to be centrally pivoted. As shown in Fig. 5, this sash may be swung to horizontal position which permits the hot air in the building to flow out just below the roof of the clear-story. Normally, where the entire sash is hinged at its upper edge, a pocket of hot air is retained, extending down to the lower edge of the sash.

Instead of securing an angle-bar 16 to the sash, a hollow shaft or pipe 40 may be employed to act both as a brace and as a pivot. The pipe is revolubly mounted in the blocks 41 which are secured to the supports 33. The same bolts 19 may be employed as before described. Clamps formed of the parts 42 and 43 grip the pipe 40, and are held together by the bolts 19 shown in Figs. 2 and 4. If desired, the pipe may be revoluble in the parts 42 and 43 and be securely held in the blocks 41. Many other devices for pivotally supporting and pivoting the sash, may be substituted for those shown in the drawings without departing from the spirit of my invention.

Having now explained my construction, what I claim as my invention and desire to secure by Letters Patent is:—

1. In a window construction, a sash comprising top, bottom and side bars and muntins, pivots secured to said side bars and muntins intermediate their ends, and supports for said pivots.

2. In a window construction, the combination of a sash, a series of supports for the

same intermediate its ends, and a series of bearings mounted on said supports and connected to said sash intermediate its top and bottom.

3. In a window construction, the combination of a sash comprising top, bottom and side bars and muntins, a beam secured to said side bars and muntins equally distant from the top and bottom, bearings secured at intervals to said beam throughout its length, and supports for said bearings.

4. In a window construction, the combination of a frame comprising a series of posts and horizontal beams spaced at intervals along the roof of a building, a series of bearings mounted thereon, and a sash extending along said posts and pivotally mounted between its top and bottom edges on said bearings.

5. In a window construction, the combination of a sash comprising top and bottom members, and end-bars and muntins extending between them, a series of bolts formed with jaws on their outer ends to engage the end-bars and muntins, a longitudinal member secured to said sash midway between its top and bottom members by said bolts, bearings for pivotally mounting said longitudinal member, and supports for the bearings at intervals along the sash.

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

THOMAS HENRY KANE.

Witnesses:

H. B. FOLSOM,

W. H. BUEHLER.