July 21, 1931. A. M. LANE 1,815,719

METALLIC WINDOW SASH

Filed Oct. 12, 1929

Fig. 1.

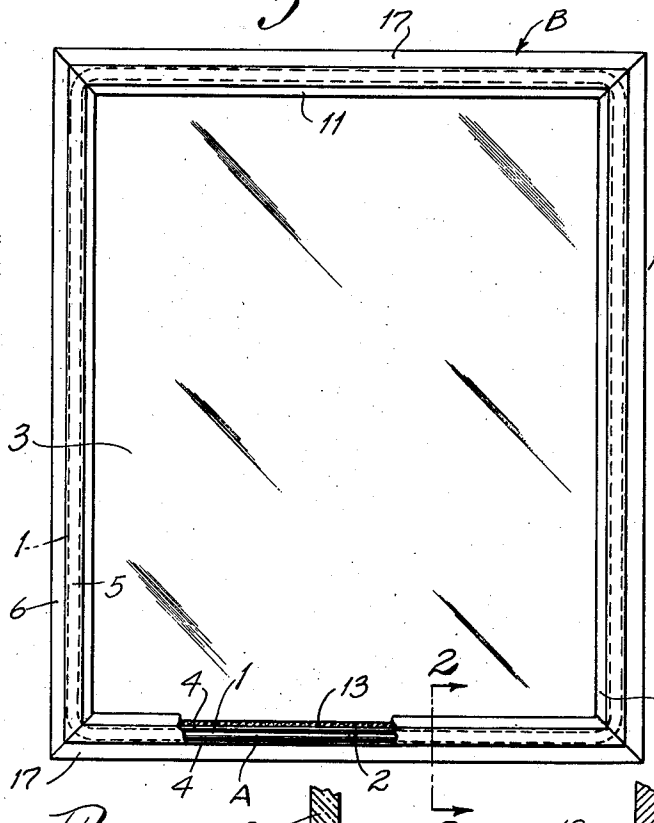


Fig. 2.

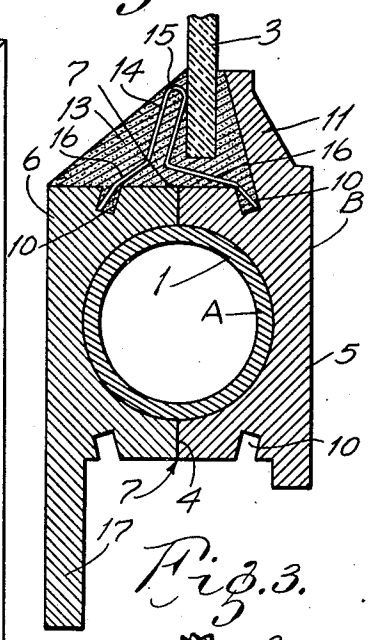


Fig. 3.

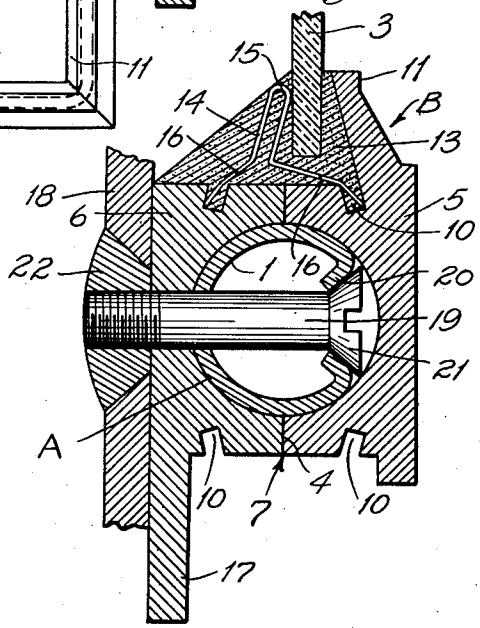
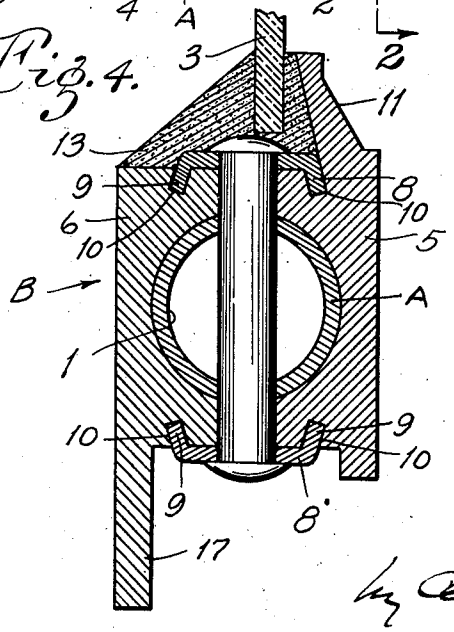


Fig. 4.



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UNITED STATES PATENT OFFICE

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METALLIC WINDOW SASH

Application filed October 12, 1929. Serial No. 399,141.

This invention relates to metallic frames, particularly to metallic frames for window sashes. Heretofore, window sashes have been made with metal frames; but they have been subject to divers disadvantages. The more common disadvantages are that the frames are more or less flimsy in construction and thus permit winding or twisting of the sash or else they are made with rails of heavy cross-section and are thus difficult to operate and unncessarily expensive; many of them are of more or less unsightly appearance due to the employment of commercial roll sections for the frames; and usually it is quite difficult or impracticable to protect the parts against damage from rust. The object of the present invention is to overcome these disadvantages and to produce a lightweight metallic window sash of neat appearance, adapted for economic manufacture, of great strength and rigidity and well adapted for repair and replacement of parts, and for use with windows of various types and designs. It consists in the parts and in the combinations and arrangements of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification and wherein like numerals refer to like parts wherever they occur,

Fig. 1 is an elevation of a metallic window sash embodying my invention,

Fig. 2 is an enlarged cross-section on the line 2—2 in Fig. 1,

Fig. 3 is a similar cross-section showing an arrangement for securing a hinge or other fitting to the sash; and

Fig. 4 is a similar section showing a modified arrangement for securing the split ornamental casing to the main frame of the sash.

My metallic window sash comprises a continuous, one-piece tubular main frame A made of a length of seamless steel tubing 1 which is bent to the desired shape and has its ends disposed in abutting relation and welded together, as at 2, to form said frame. If desired, the tubular main frame A of said sash may be made of separate lengths of tubing with their adjacent ends mitered and welded together at the corners of the frame. As shown in the drawings, the tubing is of a cross-sectional shape, preferably circular, well adapted to resist forces which tend to cause winding or twisting of the frame.

The tubular main frame A is covered by or encased within a metallic ornamental and protective outside frame or casing B, which also serves as a seat for the sash pane 3. For purposes of assembly and removal, the outside frame B is split vertically along a line 4 passing through the longitudinal center line of the tubing 1 of the main frame A; that is said outside frame B comprises outside and inside frame sections 5 and 6, respectively, that are grooved to fit the tubing and to bring them into substantially abutting relation along their inner and outer edges. As shown in Fig. 2 of the drawings, the inner and outer frame sections 5 and 6, respectively, of the outside frame B may be permanently secured together along their adjacent inside and outside edges as by lines of welding 7; or, as shown in Fig. 4 of the drawings, said outside frame sections may be removably secured together by means of clips 8 that are disposed cross-wise of the joints between said frame sections and have bent end portions 9 that fit within recesses or longitudinal channels 10 provided therefor in the inner and outer edges of said sections. The inner margin of the inner frame section 5 of the ornamental outside frame or casing B is provided with a longitudinal outstanding flange or projection 11 which serves as a seat for the sash pane 3, which, in accordance with common practice, is held in position by means of putty 13. The sash pane 3 is held in position before the application of the putty 13 by means of metallic glazing springs 14 comprising a folded portion 15 adapted to bear against the outside face of said sash pane and laterally projecting flanges 16, whose ends are bent to fit within the longitudinal clamping receiving grooves 10 in the inner edges of the inner and outer frame sections 5 and 6 of the outside frame B.

The portions of the ornamental casing or frame B which form the edges of the sash frame may be provided with edge flanges 17 adapted to overlap or slidably engage the

window frame according to the type of window in which the sash is to be mounted. As illustrated in Fig. 3, hinges, handles, pivots or other fittings 18 may be secured to the sash by means of a screw 19 which extends through holes provided therefor in diametrically opposite sides of the tubing 1 of the main frame A, one of the openings being counterpunched, as at 20, to accommodate the countersunk head 21 of said screw. The end of the screw 19 extends through an opening provided therefor in one of the frame sections of the ornamental outside casing or frame B and is threaded into a nut 22 seated in a conical opening provided therefor in the fitting 18. With this arrangement, the fitting 18 may be clamped tightly against the vertical face of the frame B by tightening the screw 19.

The hereinbefore described construction has numerous advantages. It provides a neat, lightweight metallic window sash whose tubular inside or main frame A is well adapted to resist any strains tending to distort the frame of the sash. The frame A is protected by and concealed within an outside frame or casing B which supports the sash pane and may be of any desired ornamental design or any shape to adapt the sash for use with different types and designs of windows. The outside frame B may be readily removed to permit the tubular inside frame A to be painted; and said outside frame may be made of different materials such, for instance, as steel, zinc, bronze, brass, aluminum or wood. For example, the outside frame section 6 of the split outside frame or casing B may be made of rust resisting metals, while the inner section 5 of said casing may be made of steel or wood to match the finish on the inside of the building.

Obviously, the hereinbefore described construction admits of considerable modification without departing from the invention, therefore, I do not wish to be limited to the precise shapes and arrangements shown and described.

What I claim is:

1. A metallic frame comprising a continuous one-piece metallic supporting frame, and a casing completely enclosing said metallic supporting frame.

2. A metallic window sash comprising a one-piece tubular supporting frame, and a casing completely enclosing said tubular supporting frame.

3. A metallic window sash comprising a one-piece tubular main frame, and a frame completely enclosing said tubular main frame.

4. A metallic window sash comprising a one-piece main supporting frame, and a frame completely encasing said tubular main frame and removably secured thereto.

5. A window sash comprising a one-piece tubular main supporting frame, and a frame completely enclosing said tubular main frame and rigidly secured thereto.

6. A metallic window sash comprising a one-piece tubular main supporting frame, and a two-piece frame completely enclosing said tubular main frame and removably secured thereto, the frame for enclosing said tubular main frame being shaped and designed for cooperation with the type and design of window frame within which it is to be mounted.

7. A metallic window sash comprising a continuous main supporting frame, and a frame completely encasing said tubular main frame and removably secured thereto, the frame for enclosing said tubular main frame being shaped to provide a seat for a sash pane.

8. A metallic window sash comprising a one-piece tubular main frame, and a frame completely enclosing said tubular main supporting frame and removably secured thereto, the frame for enclosing said tubular main frame being shaped for cooperation with the type of window frame within which it is to be mounted, and being provided with a seat for a sash pane.

9. A metallic sash comprising a continuous one-piece tubular main supporting frame, and a frame completely enclosing said tubular main frame, the frame for enclosing the tubular main frame comprising two one-piece frame sections rigidly secured together and to said tubular main frame.

10. A metallic sash comprising a continuous tubular main supporting frame, and a frame enclosing said tubular main frame, the frame for enclosing the tubular main frame comprising two frame sections rigidly secured together and to said tubular main frame, clips cooperating with said frame sections for securing them together about the tubular main frame, and fastening members for removably holding said clips in place.

11. A metallic sash comprising a continuous tubular main supporting frame, and a frame enclosing said tubular main frame, the frame for enclosing the tubular main frame comprising two frame sections shaped to embrace said tubular main frame, means for rigidly securing said frame section together and to said tubular main frame, said means comprising clips cooperating with said sections and fastening members therefor extending diametrically through the tubular main frame, and means for securing a fitting to said enclosing frame, said means comprising a screw extended through alined holes provided therefor in the walls of said tubular main frame and in one of the sections of said enclosing frame, and a nut threaded on the end of said frame and cooperating with said fitting.

12. A frame comprising a main support-

ing frame and a frame enclosing said main supporting frame, said enclosing frame comprising two frame sections of different materials.

13. A frame for an opening in a building, said frame comprising a main supporting frame and a frame enclosing said main supporting frame, said enclosing frame comprising two frame sections, one of said sections being made of weather resisting material and the other of said sections being made of a material conforming to the finish on the inside of the building.

14. A frame comprising a main supporting frame and a frame enclosing said main supporting frame, said enclosing frame comprising two frame sections one of wood and the other of metal.

Signed at St. Louis, Missouri, this 9th day of October, 1929.

ALFRED M. LANE.