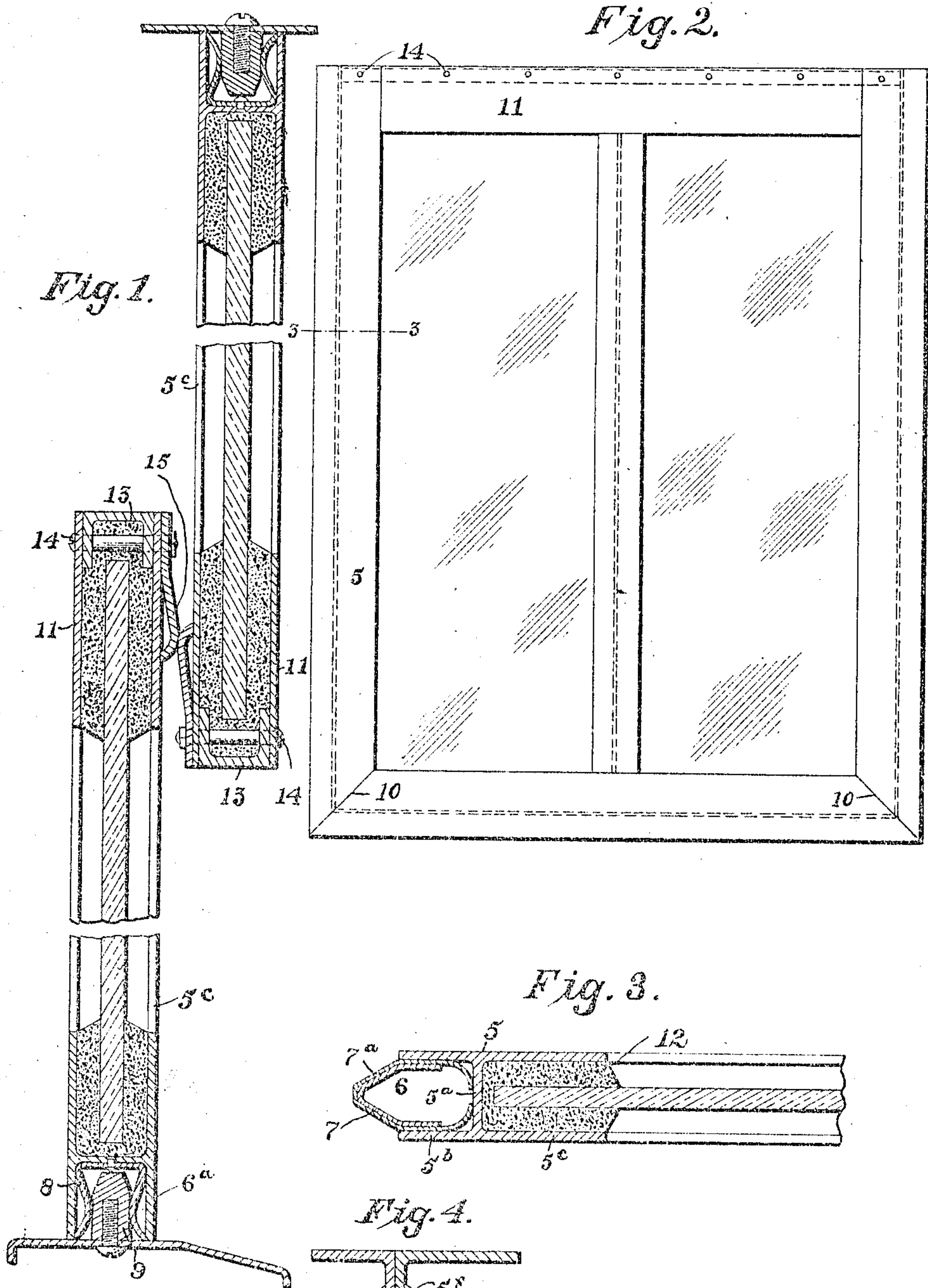


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PATENTED NOV. 19, 1907.

E. H. LUNKEN & C. M. CONKLIN.
FIREPROOF WINDOW CONSTRUCTION.

APPLICATION FILED MAR. 22, 1907.



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UNITED STATES PATENT OFFICE.

EDMUND H. LUNKEN AND CHARLES M. CONKLIN, OF CINCINNATI, OHIO, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE LUNKEN STEEL WINDOW CO., A CORPORATION OF OHIO.

FIREPROOF WINDOW CONSTRUCTION.

No. 871,131.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed March 22, 1907. Serial No. 363,887.

To all whom it may concern:

Be it known that we, EDMUND H. LUNKEN and CHARLES M. CONKLIN, citizens of the United States, residing at Cincinnati, Ohio, have invented certain new and useful Improvements in Fireproof Window Construction, of which the following is a specification.

Our present invention relates to improvements in a fire proof window sash. These improvements are applicable in the main to either sliding or swinging sashes, although in the present drawing they are shown as embodied in a sliding sash designed with particular reference for use in connection with fire proof windows, such as shown and described, for example, in the application filed by us Nov. 22/06, #344643, although of course not limited to use in connection with such window frames.

Among the objects of the invention are to provide an improved construction of sash which will be very compact, will be strong and rigid, especially at the corners, will present an extremely neat and finished appearance, and will permit of the ready insertion and removal of the glass.

With these and other objects in view, the invention includes the various features of construction and arrangement and combination of parts hereinafter described and particularly set forth in the appended claims.

An embodiment of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a sectional elevation of both the upper and lower sash, the central portion of each being broken away. Fig. 2 is a front elevation of the lower sash. Fig. 3 is a part horizontal section on line 3—3 of Fig. 2. Fig. 4 is a sectional view of a modification.

We have found that it is possible, in fireproof window construction, to weld the edges of comparatively thin sheet steel plates. We therefore construct our improved sash of such thin sheet metal plates or bars having abutting edges welded to form an integral or a homogeneous rectangular frame. The sides and one end of such a sash, we preferably form of double channel iron, the cross sectional shape of which is clearly shown in Figs. 1 and 3. The other end is formed of two plane parallel plates having their ends welded to the parallel flanges or webs of the

side members. We construct and locate the sash so that the plane parallel bars constitute the meeting rails, these plane bars permitting removal of the glass frames in the manner hereinafter more fully described. The channel iron bars or members 5 which constitute the sides and closed end of the sash are of substantially broad I beam shape, but with the central web 5^a located nearer to one side so that the flanges 5^b and 5^c are of unequal width.

In the outer channel 6 formed by the flanges 5^b and on each side of the sash, we locate a removable guide strip 7, which is preferably covered by a spring plate of non-corrosive metal, such as brass, as indicated at 7^a, the inner ends of which are curved inward and bear against the web 5^a, thereby serving to press the guide strips outward into engagement with the guide grooves of the window frame. These guide strips may be held in any suitable manner, and as their particular construction, and the best manner of holding them removably in place forms the subject of separate applications filed by us, further illustration or description thereof herein is deemed unnecessary.

The channel 6^a in the end channel rail or member is provided with a spring packing strip 8 which is designed to engage or embrace a bar or rail 9 carried by the window frame at the top or bottom, as the case may be, to form a tight joint when the window is closed. The side and end channel members are mitered where they abut, as shown at 10 and welded together to form a solid, strong integral connection. At the opposite end of the sash the inside edges of the side channel members are connected by the parallel plates 11, the ends of the plates being welded to the inside edges of the side members to form integral joints similar to the joints 10 before described. The space between these parallel plates 11 permits the glass to be slid longitudinally into place with its edges seated in the interior grooves formed by the flanges 5^c of the channel members, it being spaced therefrom by any suitable packing medium, as indicated at 12. After the glass has been inserted, the space or opening between the plates 11 is closed by the removable channel bars 13 which are secured in place by the bolts 14. These same bolts preferably connect the packing strips for the meeting rail

which are shown at 15, but as these form the subject matter of a separate application, a more specific description thereof is deemed unnecessary herein.

5 Where it is desired to use two or more panes of glass in the sash we provide a muntin 16 which is formed from a channel bar similar to that which constitutes the sides of the frame, except that the flanges are of
10 equal width providing glass receiving channels of equal depth.

While we prefer to use a channel iron of the shape shown in Figs. 1 and 3, in some instances it might be found desirable to use
15 a construction such as shown in Fig. 4, in which each bar or member will be made up of two U-shaped channel irons 5^d and 5^e with their central webs secured together by rivets, as indicated at 5^f.

20 Having thus described our invention, what we claim is:

1. A metal sash having three of its sides composed of metal channel bars and its other side of plane parallel bars extending
25 between the webs of the channel bars, all of

said bars having their meeting edges welded together, substantially as described.

2. A sash frame having its sides and one end composed of double channeled bars or members, parallel plane members connecting
30 the flanges or webs of said side bars at the other end, and a removable bar between said plane parallel members, substantially as described.

3. A metal sash having its sides and one
35 end composed of double channel bars or members welded together at the corners, parallel plane members connecting the flanges or webs of said side members at the other end and welded thereto, and a bar re-
40 movably held between said plane members, substantially as described.

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

EDMUND H. LUNKEN.
CHARLES M. CONKLIN.

Witnesses:

CARRIE B. STUBERT,
BEN B. DALE.