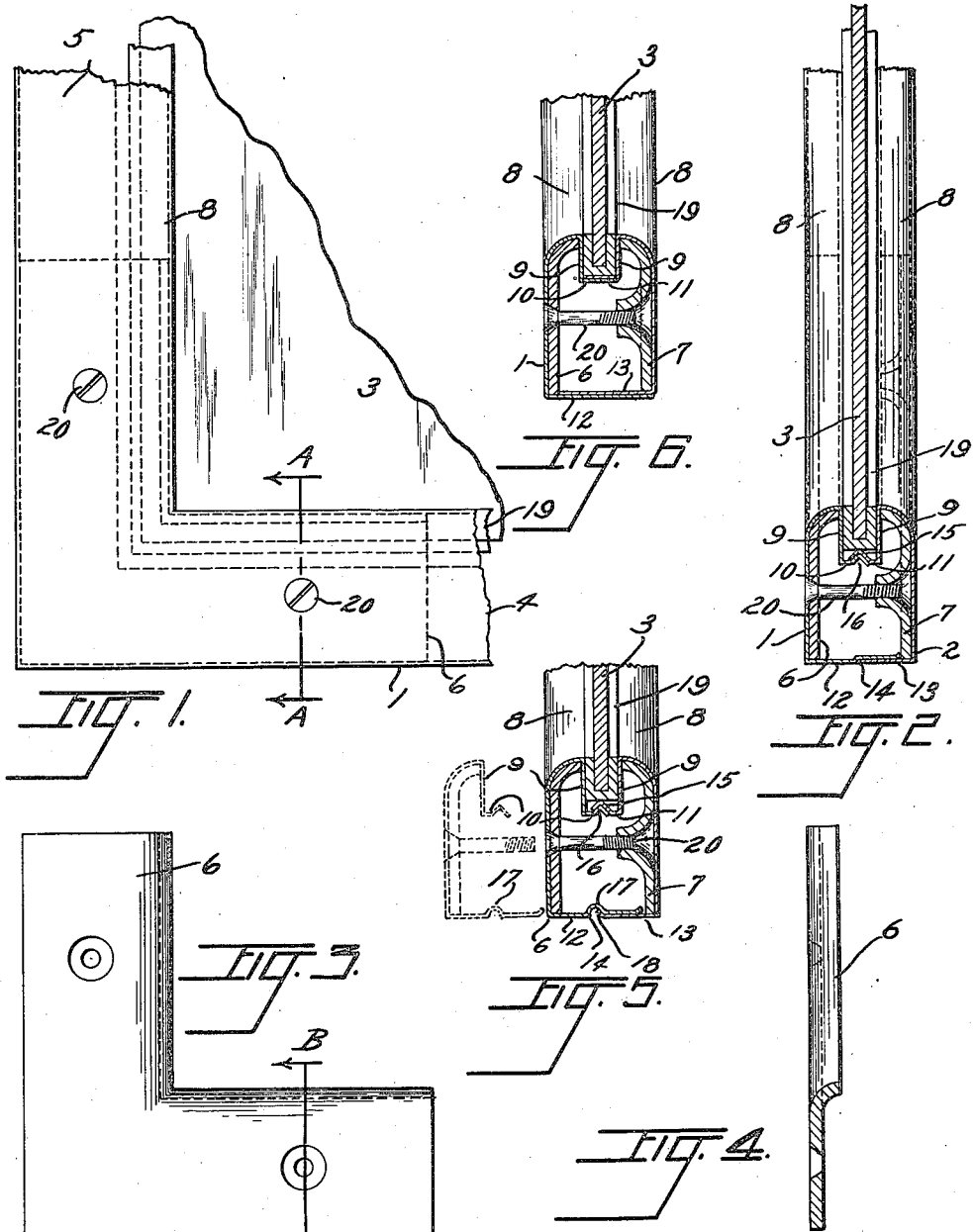


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METALLIC WINDOW SASH.
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981,972.

Patented Jan. 17, 1911.



WITNESSES:
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METALLIC WINDOW-SASH.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILHELM F. BONNESS, a citizen of the United States, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Metallic Window-Sash, of which the following is a complete specification.

The main objects of this invention are to provide an improved metallic window sash of such construction that the window glass may be readily inserted or removed when desired; to provide a metallic sash in which the tension of the sash on the margins of the glass will be uniform throughout and therefore obviate a large percentage of the breakage due to uneven stresses on the glass; to provide a two part sash which is separable in the plane of the glass, and in which the glass is placed in position when the parts are separated and secured in place by forcing the parts into locking engagement with each other; and to provide a sectional sash in which the sections are adapted to be automatically secured together when they are placed in position.

The invention consists of the matters hereinafter described in the specification and more fully pointed out and defined in the appended claims.

In the drawings: Fig. 1 is a fragmentary, side elevation of a sash embodying this invention. Fig. 2 is a section taken on line A—A of Fig. 1. Fig. 3 is a side elevation of one of the reinforcing corner plates. Fig. 4 is a section taken on line B—B of Fig. 3. Fig. 5 is a fragmentary section of the sash showing a slightly modified form of the locking means for the sash sections and showing in dotted lines one of the sections detached. Fig. 6 is a fragmentary section of a sash embodying this invention without interlocking means on the telescoping flanges or webs.

As shown in said drawings, the sash is constructed of two interlocking sections 1 and 2, which are separable in the plane of the pane of glass 3, so that said sections are disposed one on each side of the pane. The rails 4 and 5 of the sash are preferably formed separately and the abutting ends of the rail sections may be brazed, soldered, welded or otherwise connected together so as to form continuous sash sections extending

around the pane. The corners of said sash sections are preferably reinforced with reinforcing plates 6 and 7 which are formed to fit in the corner angles of the inner sides of the sash sections and may be sweated or otherwise secured therein.

Each of the sash sections 1 and 2 comprises a side wall, which at the inner edge of the sash curves toward the glass to provide a rounded retaining bead 8 for the glass, and is then bent toward the outer edge of the sash between the glass and the side wall to a point beyond the margin of the glass to provide the inner sides 9 of said beads, and is then bent laterally toward the other section, thereby forming interlocking flanges or webs 10 and 11 which extend longitudinally of the rails between the margins and the outer edges of the sash. At the outer edge of the sash the margin of each wall is turned laterally toward the other wall to provide overlapping flanges or webs 12 and 13 which fit closely together and one of which is offset inwardly of the sash to provide a shoulder 14 against which the margin of the other flange abuts so as to provide a smooth and unbroken wall for the outer edge of the sash. The flanges or webs 10 and 12 of one section are adapted to fit closely within or telescope with the flanges or webs 11 and 13 of the other section when the sections are in closed position, and all of said flanges are resilient so that they retain their shape and position regardless of the number of times the sections may be taken apart or put together.

The interfitting flanges or webs 10—12, 11—13 may be constructed with flat contact surfaces and depend upon the frictional engagement of one pair with the other to hold the sections together, as shown in Fig. 6, but preferably the flange 11 is provided with a channel or seat 15, and the flange 10 is provided with a bead or tongue 16, which is adapted when the sections are forced together to spring into said channel or seat and lock the sections together, as shown in Fig. 2. Likewise the flanges 12 may be provided with a channel or seat 17, and the flange 13 may be provided with an intumed margin or tongue 18 adapted to snap into the seat 17 when the sections are forced together.

Placed on the margins of the glass are

packing channels 19 of rubber, felt or other suitable material adapted to form a tight joint between the sash and the glass and to yield under the pressure of the sash sections when said sections are forced together.

When desired to afford additional means for securing the sash sections together bolts or screws 20 are placed through the reinforcing plates 6 and have threaded engagement in threaded studs or nuts formed on or attached to the plates 7, so that when said sections have been forced together and the bolts secured in place there is no possibility of the sections becoming separated.

The operation is as follows: When it is desired to place a glass in the sash, the sash section 2 is laid down on its outer face, and the glass, with its packing channels thereon, is laid upon the wall 9 of the bead 8. The section 1 is then laid over the section 2 with the flanges 10 and 12 in position to enter between the flanges 11 and 13. Pressure is then applied to the section 1 to force the flanges 10 and 12 inwardly between the flanges 11 and 13, and to bring its bead 8 against the packing. If the flanges are plain as shown in Fig. 6, it is preferred to secure the sections together by means of the bolts 20. When however the flanges are provided with interlocking means they snap together when the sections are forced into position. In either case the interfitting flanges by reason of their binding contact on each other act to automatically secure the sash sections together in closed position. When it is desired to separate the sections they may be pried apart with any suitable tool.

Obviously a sash constructed in accordance with this invention is adapted to afford an even tension at all points of the margins of the glass which are secured between the beads, and the tendency to break the glass because of uneven stresses is entirely obviated. Obviously also many details of the construction shown may be varied without departing from the spirit of this invention.

I claim:

1. A window sash comprising two sections, and interfitting means on said sections adapted to frictionally engage one against the other and removably secure said sections together.

2. A window sash comprising two sections separable in the plane of the sash, and interlocking flanges concealed within said sections adapted to frictionally engage one

with the other and removably secure said sections together.

3. A window sash comprising two sections separable in the plane of the sash, and interfitting flanges on the inner and outer margins of said sections adapted to frictionally secure the sections together.

4. A window sash comprising two sections adapted to be secured together in parallel planes, and resilient means on said sections adapted to interfit and secure the sections together.

5. A window sash comprising sections, and interlocking means on said sections adapted to automatically and detachably lock the sections together.

6. A window sash comprising a pair of sections adapted to support a window glass therebetween, and means on the inner end outer margins of said sections adapted to automatically lock the sections together when they are forced into binding engagement with the glass.

7. A window sash comprising two sections, and inwardly directed flanges on the inner and outer margins of said sections, those on one section adapted to bind on those of the other section and secure the sections together.

8. A window sash comprising two sections, each having inner and outer inwardly directed, resilient flanges thereon adapted to engage like flanges on the other and secure the sections together.

9. A window sash comprising two sections, each section having two flanges extending longitudinally of the rails and adapted to engage like flanges on the other section and secure the sections together.

10. A window sash comprising a pair of sections adapted to support a glass therebetween, and parallel interlocking flanges on the abutting faces of said sections adapted to removably secure the sections together.

11. A window sash comprising a pair of sections adapted to support a glass therebetween, overlapping flanges on said sections, and means on said flanges adapted to automatically lock the sections together when the sections are in closed position.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

WILHELM F. BONNESS.

Witnesses:

W. W. WITENBURY,
HERBERT GREEN.