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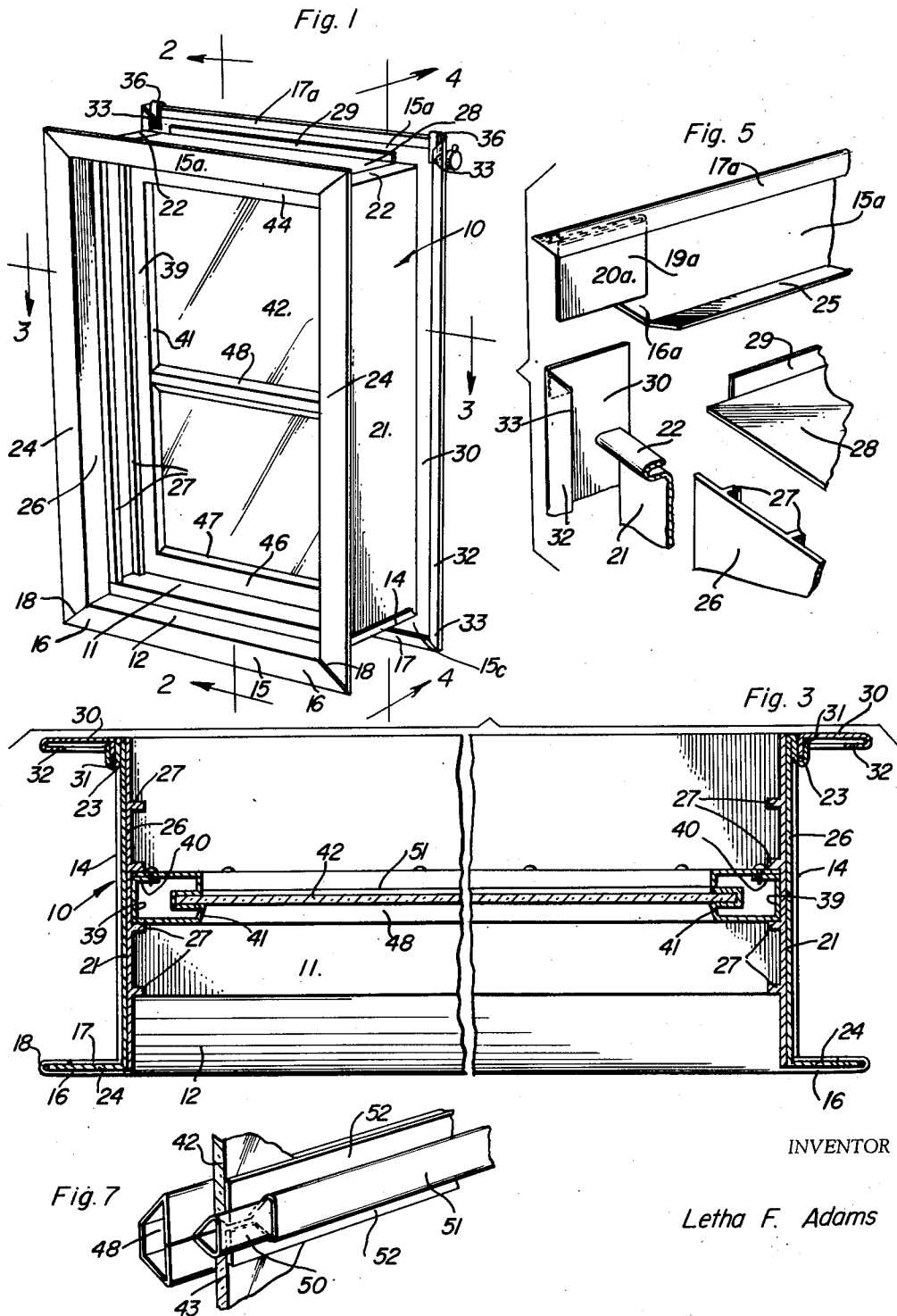
L. F. ADAMS

2,777,548

WINDOW FRAME ASSEMBLY

Filed June 11, 1956

2 Sheets-Sheet 1



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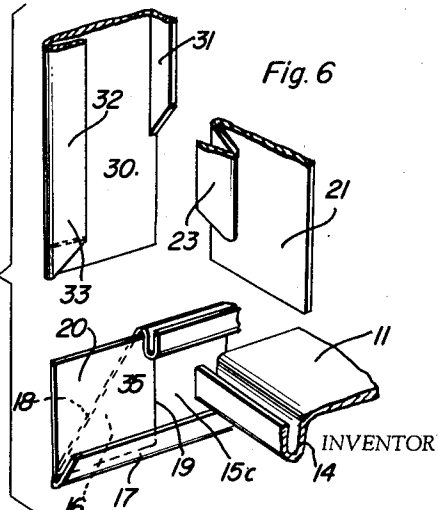
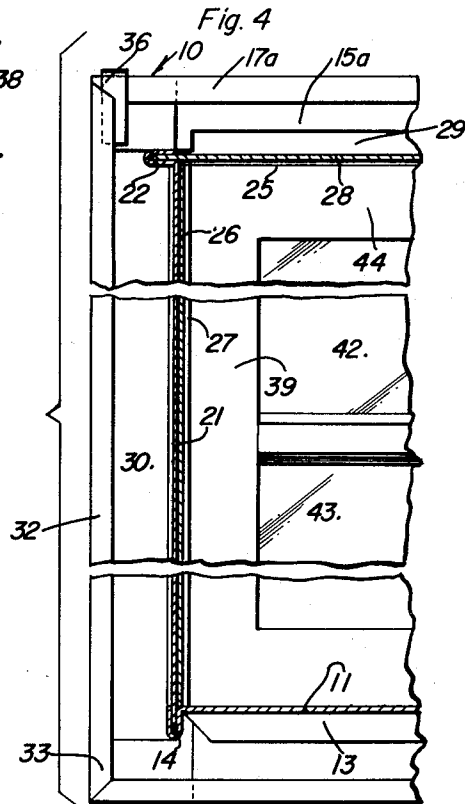
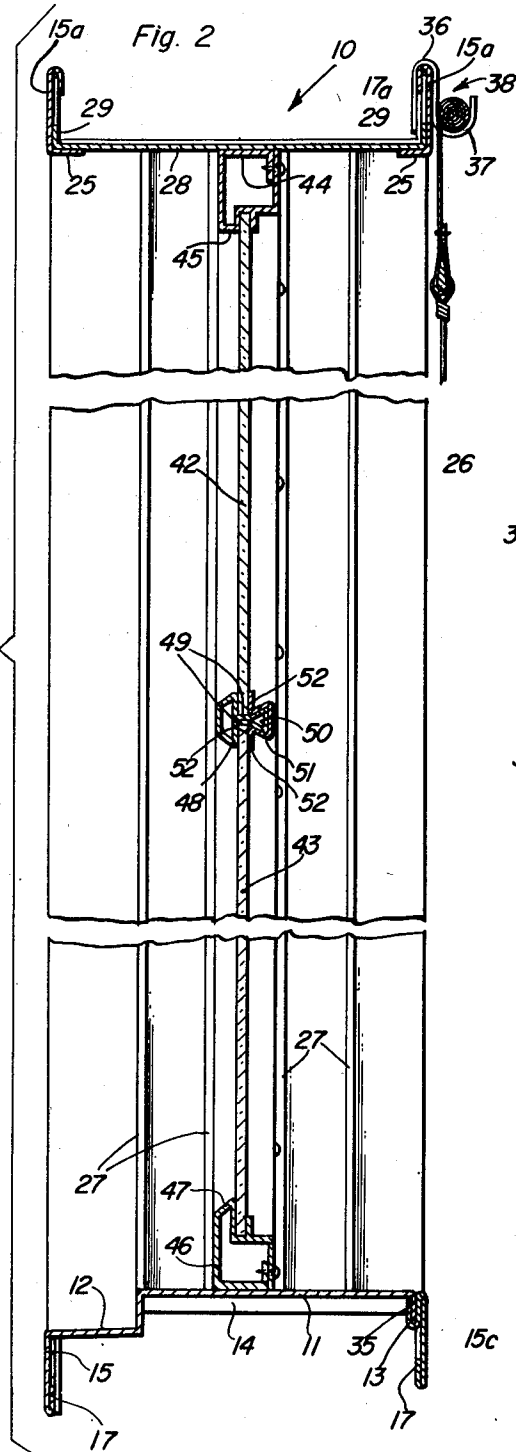
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WINDOW FRAME ASSEMBLY

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9 Claims. (Cl. 189—64)

This invention relates to window frame assemblies.

It is an object of the present invention to provide a window frame assembly which is formed entirely of metal strips, bent and crimped to provide cooperating tongues and slots and which may be readily assembled without special tools, putty, nails, tacks and without requiring any skilled workmanship.

It is still another object of the present invention to provide a window frame assembly of the above type wherein the panes are sealed by a simple sliding movement and which facilitates the replacement of broken window panes.

It is still another object of the present invention to provide a window frame assembly of the above type which can be shipped unassembled to effect an economy of shipping space and which may be readily assembled with a minimum of time and effort.

Other objects of the invention are to provide a window frame assembly bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture, and efficient in use.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of a preferred embodiment of the present invention;

Fig. 2 is a vertical sectional view thereof taken along the line 2—2 of Fig. 1;

Fig. 3 is a horizontal sectional view thereof taken along the line 3—3 of Fig. 1;

Fig. 4 is a vertical sectional view taken along the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary exploded perspective view of a portion of the invention;

Fig. 6 is a fragmentary exploded perspective view of another portion of the invention; and

Fig. 7 is a perspective view of still another portion of the invention.

Referring now more in detail to the drawing, 10 indicates generally a window frame embodying the features of the present invention, and includes a substantially rectangular bottom wall 11 (Fig. 2) integrally formed at its outer longitudinal edge with an inwardly offset sill portion 12, substantially as illustrated. The inner longitudinal edge of the bottom wall 11 is integrally formed with a depending flange 13 at right angles thereto (Fig. 2). The bottom wall 11 at the opposite ends thereof is integrally formed with a depending U-shaped portion 14 at right angles thereto (Fig. 4).

The outer longitudinal edge of the sill 12 is integrally formed at right angles thereto with the depending flange 15 (Fig. 2) having the triangular end portions 16 (Fig. 1).

As shown in Fig. 6, the lower edge of the flange 15 along its entire length is bent inwardly and upwardly, as at 17. The triangular end portion 16 at the ends of the

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flange 15 are formed by the fold line 18 and the fold line 19 at right angles to the lower edge of the flange to provide the rectangular portion 20 which extends outwardly behind the flange and forms therebetween a space for a purpose which will hereinafter become clear.

The pair of rectangular side walls 21 have their lower ends positioned in the U-shaped portions 14 at the end of the bottom wall 11 and are integrally formed at their upper ends with the U-shaped portions 22 at right angles thereto. The inner vertical edges of the side walls 21 are integrally formed with the U-shaped portions 23 while the outer vertical edges are integrally formed at right angles thereto with the outwardly extending flanges 24 (Fig. 3). The flanges 24 lie in the same plane as the flange 15 and the lower ends thereof fit between the flange 15 and the rectangular end plate 20 (Fig. 1).

A flange 15a having end portions identical with the flange 15 connects the upper ends of the flanges 24, the outer longitudinal edges of the flange 15a and flanges 24 being folded inwardly and back upon themselves for reinforcement purposes. The lower longitudinal edge of the flange 15a is integrally formed at right angles thereto with the inwardly extending flange 25 (Fig. 2).

A pair of rectangular guide plates 26 of the same size and shape as the side walls 21 are positioned against the inner faces of the latter, their lower edges resting on the bottom wall 11. The flange 15a is shown more clearly in Fig. 5. The inner face of the guide plates 26 are integrally formed with the vertically extending, laterally spaced ridges 27, four such ridges being provided on each guide plate.

A rectangular top wall 28 is provided, the opposite ends thereof being received within the U-shaped portions 22 of the side walls 21 (Fig. 4). The longitudinal edges of the top wall 28 rest upon the flanges 25. The opposite longitudinal edges of the top wall 28 are integrally formed at right angles thereto with the upwardly extending flanges 29 which abut the inner faces of the flange 15a.

A pair of separable side flanges 30 complementary to the flanges 24 are provided along their inner edges with the inwardly extending flanges 31 at right angles thereto (Fig. 6) which are received within the U-shaped portions 23 of the side walls 21 (Fig. 3). The outer edges of the flanges 30 are folded inwardly, as at 32 and are provided with the triangular lower portions 33.

A second separable flange 15a connects the upper ends of the flanges 30 (Fig. 5), the upper ends of the latter being received intermediate the flanges 15a and the rectangular end portions 20a in the manner previously described. It will be noted that the beveled ends of the flanges 17a and 32 are complementary to provide corners.

The lower ends of the flanges 30 are connected by a separable flange 15c (Fig. 6) similar in construction to the flanges 15 and 15a. However, the flange 15c in addition along its upper longitudinal edge is integrally formed with the U-shaped portion 35 which receives therewithin the flange 13 at the edge of the bottom wall 11 (Fig. 2).

A pair of U-shaped clips 36 are positioned on the upper edge of the inner flange 15a at the opposite ends thereof, being received behind the upper ends of the flanges 32 and terminating at their outer ends in the semicylindrical supporting portions 37 adapted to support thereon the window shade roller indicated generally at 38.

A rectangular window frame is provided for selective positioning intermediate a pair of ridges 27 and includes the side frame members 39 of L-shaped cross section (Fig. 3) integrally formed at their outer ends with the inwardly extending flanges 40 which abut the adjacent ridge 27. The inner ends of the side frame members 39

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are integrally formed at the L-shaped flanges 41 which are secured to the vertical window panes 42 and 43.

The window frame also includes the top horizontal L-shaped portion 44 which connects the upper ends of the side portions 39 and is integrally formed at its lower edge with the L-shaped flange 45 which is secured to the upper face of the pane 42 (Fig. 2). The window frame is completed by the lower horizontal L-shaped portion 46 which is integrally formed at its upper edge by the flange 47 of triangular cross section which is secured to the lower edge of the pane 43.

The adjacent edges of the panes 42 and 43 (Fig. 2) are slightly spaced apart and secured together by means of a hollow member 48 of trapezoidal cross section, the base of which rests against the faces of the panes 42 and 43 and which is integrally formed at the center of its base portion at right angles thereto with the overlying portions 49 which pass between the panes 42 and 43 and are integrally formed with the hollow member 50 of triangular cross section. A hollow member 51 of frusto-triangular cross section is slidably positioned on the hollow member 50 and is integrally formed at the free ends thereof with the outwardly extending flanges 52 which abut the other sides of the window panes 42 and 43.

The outer tongue and slot connections may be permanently effected by providing suitable adhesive or solder before inserting the tongues into the slots.

It should now be apparent that there has been provided a window frame assembly which may be shipped in a knock-down condition and easily and readily assembled without requiring special tools, putty, nails or other fastening means as well as requiring no skilled labor in assembly. It should also be apparent that there has been provided a window frame assembly of the above type wherein the window panes are locked by a sliding movement and may be easily and readily replaced when broken.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A window frame assembly comprising a bottom wall having a downwardly offset outer sill terminating in an outer lower facing at right angles to said sill, means releasably connecting an inner lower facing to the inner edge of said bottom wall, a pair of side walls, means for connecting the lower edges of said side walls to the ends of said bottom wall, a pair of outer vertical facings connected to the forward edges of said side walls and lying in the same plane as said outer lower facing, means releasably connecting the lower ends of said vertical outer facings to said lower outer facing, an upper outer facing, means releasably connecting the ends of said upper outer facing to the upper ends of said vertical outer facings, a pair of guide plates positioned against the inner faces of said side walls, said guide plates having vertically extending, laterally spaced ridges defining tracks therebetween, a pair of vertical inner facings, means releasably connecting the lower ends of said inner vertical facings to the ends of said inner bottom facing, an upper inner facing, means releasably connecting the ends of said upper inner facing to the upper ends of said vertical inner facings, a top wall, means releasably connecting the ends of said top wall with the upper ends of said side walls and window means positioned within a pair of oppositely disposed ridges.

2. A window frame assembly according to claim 1, said means releasably connecting the ends of said bottom wall to the lower ends of said side walls comprising said bottom wall at the ends thereof being integrally formed with depending portions of U-shaped cross section at right angles thereto adapted to receive downwardly therewithin the lower ends of said side walls, said means re-

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leasably connecting the ends of said top wall to the upper ends of said side walls comprising said side walls at the upper ends thereof being integrally formed at right angles thereto with outwardly extending U-shaped portions adapted to receive therewithin the ends of said top wall.

3. A window frame assembly according to claim 2, said means releasably connecting the ends of said outer bottom facing to the lower ends of said outer vertical facings comprising the outer ends of said bottom facing being substantially triangular in shape and being integrally formed along their hypotenuse portions with inwardly folded portions, said inwardly folded portions being folded outwardly again at right angles to the lower edge of said bottom facing to provide between the bottom facing and the outwardly folded portions a slot, the lower edge of said bottom outer facing being folded upwardly to provide a flange having a beveled outer edge, the outer edges of vertical outer facings being folded inwardly to provide an inner flange having bevelled ends adapted to abut the bevelled ends of said bottom facing flange, the lower ends of said vertical outer facings fitting within said slots thus provided.

4. A window frame assembly according to claim 3, said means connecting the upper ends of said vertical outer facings to said upper outer facing comprising the ends of said upper outer facing being triangular and formed with inwardly bent portions, said inwardly bent portions being bent outwardly at right angles to the longitudinal edges of said upper outer facing to provide an extended rectangular portion freely spaced from said upper outer facing and providing a slot, the upper edge of said upper outer facing being folded downwardly to provide a flange having beveled ends, said slot receiving therewithin the upper ends of the vertical outer facings with the beveled ends of said flanges abutting each other.

5. A window frame assembly according to claim 4, said bottom wall along the inner longitudinal edges thereof being integrally formed at right angles thereto with the depending flange, said means for connecting the inner bottom facing to said bottom wall comprising said inner bottom facing along its upper edge being formed with a U-shaped portion adapted to receive said bottom wall flanges therewithin.

6. A window frame assembly according to claim 5, said means for releasably connecting the ends of said inner bottom facing to said inner vertical facings comprising the ends of said inner bottom facing being triangular and being integrally formed with inwardly bent portion, said inwardly bent portion being outwardly bent at right angles to the longitudinal edges of said inner bottom facing and providing an extended rectangular portion freely spaced from said inner bottom facing and providing a slot, the lower edge of said inner bottom facing being folded upwardly and having beveled ends said inner vertical facings having inwardly bent outer edges having beveled ends adapted to abut said inner bottom facing beveled ends when said inner vertical facings are positioned within said slots, said inner vertical facings along their inner edges being integrally formed at right angles thereto with inwardly extending flanges, said side walls along their inner vertical edges being integrally formed with U-shaped members adapted to receive said flanges therewithin.

7. A window frame assembly according to claim 6, said means for releasably connecting the ends of said inner upper facing to said inner vertical facing comprising the ends of said inner upper facing being triangular and being integrally formed with an inwardly bent portion, said inwardly bent portion being folded outwardly at right angles to the longitudinal edges of said inner upper facing to provide a rectangular extended portion freely spaced from said inner upper facing and providing a slot, the upper edges of said inner upper facing being folded downwardly and outwardly and to provide a flange having bevelled ends adapted to abut the upper beveled ends of said inner facing flanges when the upper ends

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of said inner facings are received within said slots, the lower edges of said inner and outer upper facing being integrally formed at right angles thereto with supporting flanges receiving thereon the said top wall, said top wall along the opposite longitudinal edges thereof being integrally formed with upwardly extending flanges adapted to abut the inner faces of said inner and outer upper facings.

8. A window frame assembly according to claim 7, said window means comprising a rectangular frame of L-shaped cross section having side portions adapted to fit intermediate said ridges, upper and lower window panes secured to the frame and having adjacent edges spaced apart, a hollow outer member of trapezoidal cross section having a base positioned against the outer faces of said window panes and integrally formed with overlapping portions extending through the opening therebetween, said overlapping portions being integrally formed at their inner ends with a hollow member of triangular cross

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section having its base remote from the window panes, and a hollow frusto-triangular member slidable on said triangular member, said frusto-triangular member at the free ends thereof being integrally formed with outwardly extending flanges adapted to abut the inner faces of said window panes.

9. A window frame assembly according to claim 8 including a pair of U-shaped clips straddling the upper end edges of said inner upper window facing behind the flanges of said inner vertical window facings, said clips at their inner ends terminating in semicircular supporting portions adapted to support thereon a window shade roller assembly.

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