

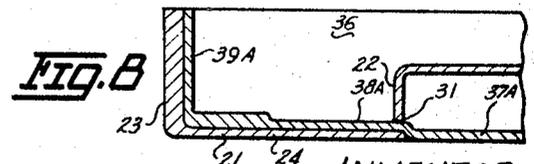
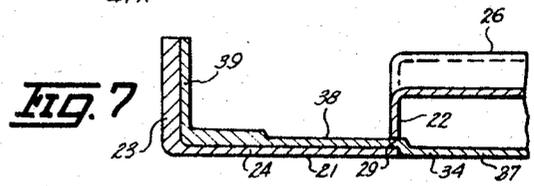
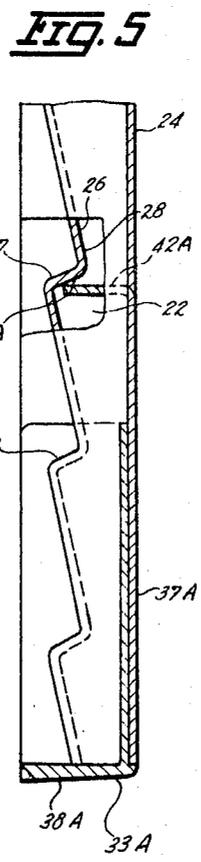
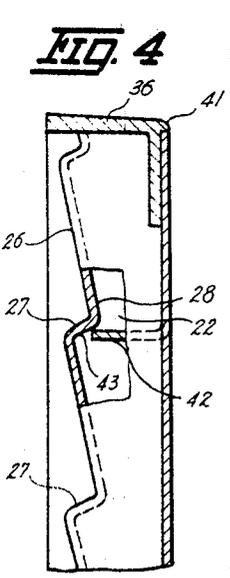
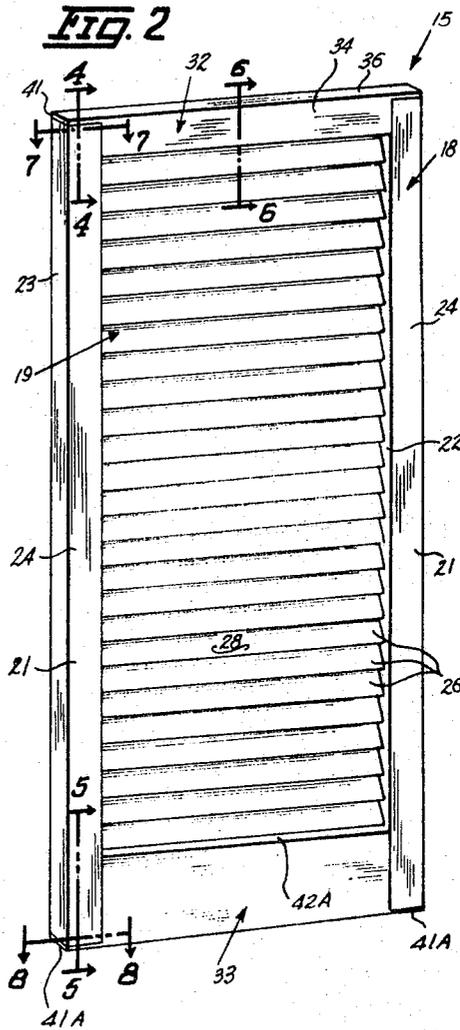
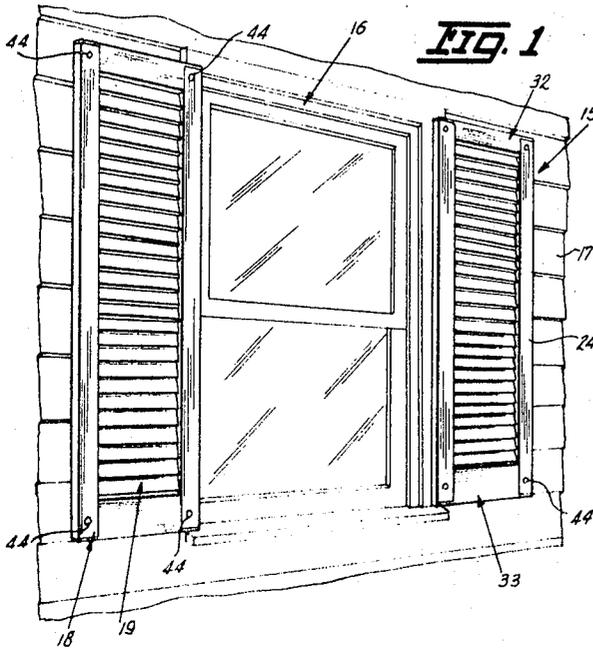
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E. O. FREDERICK
PANEL UNIT AND FRAME

3,455,079

Filed Feb. 21, 1968

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

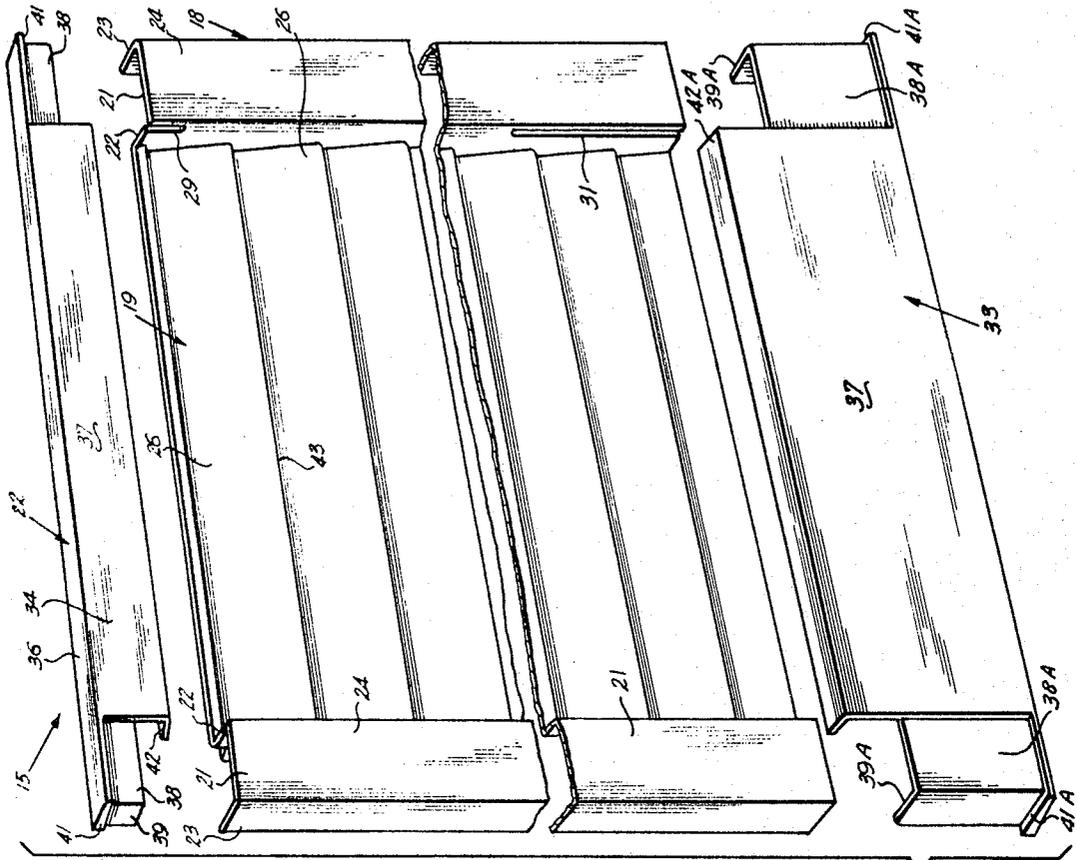


FIG. 9

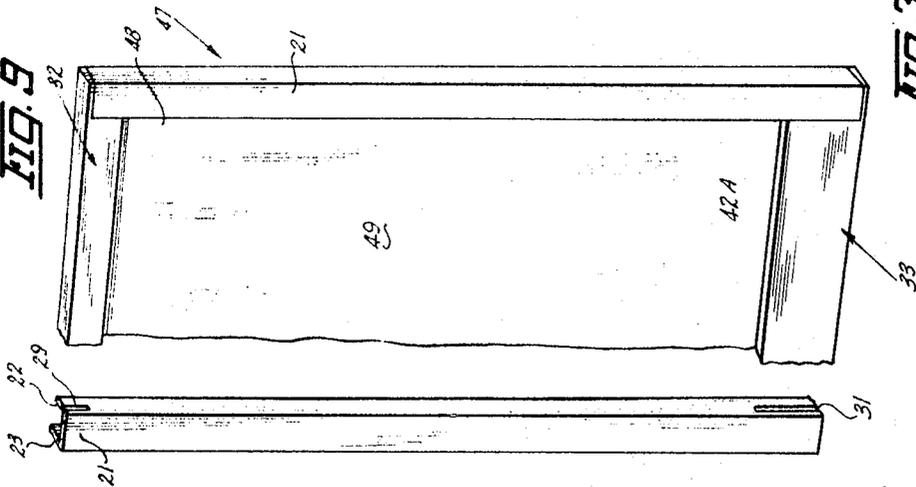
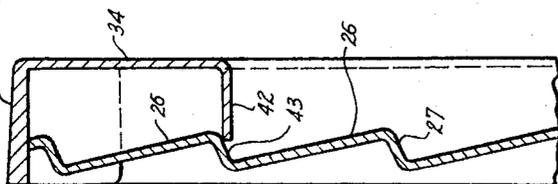


FIG. 3

FIG. 6



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3,455,079

PANEL UNIT AND FRAME

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7 Claims

ABSTRACT OF THE DISCLOSURE

The panel unit is intended primarily for use as a window shutter and includes a body member molded of a plastic material and integrally formed with a center louvered panel section of a rectangular shape and stile members of a channel shape in transverse section. The base sections of the stile members are spaced forwardly from the front face of the panel section with the inner leg sections of the stile members joined at the rear sides thereof with the panel section. Each end of an inner leg section at substantially the junction thereof with the base section of a corresponding stile member is formed with a longitudinally extended slot. A header rail or transverse frame member for each end of the body member is of a right angle shape in transverse section and is formed relative to the body member for interlocking engagement therewith at the slotted ends of the stile members so that the end frame members have front surfaces located in a plane common to the front surfaces of the base sections of the stile members. The side surfaces of the header rails extend normal to the outer leg sections of and across the ends of the stile members so as to form with the stile members a continuous perimetric frame unit for the panel section of the body member.

Summary of the invention

The invention provides a molded body member formed of a plastic material and having a center panel section of a rectangular shape integrally formed with stile or side frame members. The panel section may be formed with transversely extended and joined louver portions to give a window shutter appearance. The body member may be made in continuous lengths of from six to ten feet and cut to a desired length on the job to accommodate or fit the window assemblies with which the panel unit is to be used. After being cut to length it is only necessary to slot the stile members at the ends thereof to provide for an interlocked engagement of the header rails or end frame members with the body member to form a continuous perimetric frame unit for the panel section and a completed panel unit having the same appearance as a usual wooden window shutter.

The end frame members are constructed to provide lateral rigidity at the corners of the perimetric frame so that the panel unit may be firmly secured to a wall surface without distortion of the end frame members. The panel unit may be made with differently colored plastic material to match a desired color scheme. Painting is thus entirely eliminated and by virtue of the plastic composition of the panel unit deterioration from weather exposure is reduced to a minimum. The panel unit is thus economical in cost, readily formed to a desired length, resistant to denting or chipping, and long lasting with a minimum of maintenance attention.

Detail description of the invention

Further objects, features and advantages of the invention will become apparent from the following description

taken in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of a window assembly illustrating the use therewith of the panel unit of this invention as a decorative shutter;

FIG. 2 is a front perspective view of the panel unit; FIG. 3 is an exploded foreshortened perspective view of the panel unit shown in FIG. 2;

FIGS. 4, 5, 6, 7 and 8 are enlarged sectional detail views taken respectively on lines 4-4, 5-5, 6-6, 7-7 and 8-8 in FIG. 2 showing the assembly relation of end frame members and a body member which form the panel unit; and

FIG. 9 is a perspective view of a panel unit, with portions broken away, adapted for use as a picture or mirror supporting frame.

With reference to FIG. 1 of the drawings the panel unit of this invention, designated generally as 15, is illustrated as being a decorative shutter for a house window assembly 16. As is well known decorative shutters are secured directly to the wall 17 of a house to opposite sides of a window assembly to simulate an open position of the usual hinged type shutters that are movable to both window opening and closing positions.

The panel unit 15 (FIGS. 2 and 3) includes a body member 18 molded of a plastic material and integrally formed with a center panel section 19 of a rectangular shape and side frame or stile members 21 of a channel shape having leg sections 22 and 23 and a base section 24. The panel section 19 lies in a plane normal to the planes of the inner leg sections 22 and parallel to and spaced rearwardly from the common plane of the base sections 24 of the stile members 21.

As shown in FIGS. 2 and 4 the panel section 19 is formed with transversely extended shutter members 26 joined at their opposite ends with the rear or free ends of the inner leg sections 22 and joined together along their adjacent sides by connecting portions 27 to provide a continuous panel front surface 28 wherein the shutter members 26 are inclined forwardly and downwardly to simulate partially closed positions therefor. The opposite ends of an inner leg section 22 (FIG. 3) are formed with longitudinally extended slots 29 and 31 at substantially the junction thereof with corresponding base sections 24. The slot 29, which for convenience will be referred to as the upper slot, is of a shorter length than the lower slot 31 and with the slots 29 and 31 being in alignment longitudinally of an inner leg section 22.

To enclose the panel section 19 within a perimetric frame which includes the stile members 21 there are provided upper and lower header or end frame members 32 and 33, respectively. The upper header member 32 (FIG. 3) is of a right angle shape in transverse section having a downwardly extended front leg portion 34 and a rearwardly projected top leg portion 36. The top leg portion 36 has a length equal to the transverse dimension of the body member 18.

The front leg portion 34 has a central section 37 of a length substantially equal to the transverse dimension of the panel section 19 of the body member 18 and end sections 38 of a reduced width and depressed rearwardly from the front surface of the leg portion 34. Each end section 38 is depressed a distance substantially equal to the thickness of the base section 24 of a stile member 21 and is of a length slightly less than the spacing between the leg sections 22 and 23 of a stile member. It is to be noted also that each depressed end section 38 is of a thickness slightly less than the width of an upper slot 29 in the inner leg section 22 of a stile member.

As shown in FIGS. 3 and 7 each end section 38 terminates in a rearwardly extended projection 39 that extends

across the underside of the top leg portion 36 at a position inset from the adjacent terminal end of the top leg portion a distance equal substantially to the thickness of an outer leg section 23 of a stile member.

In the assembly of the upper header member 32 with the body member 18 the central section 37 of the front leg portion 34 is positioned between the inner leg sections 22 of the stile members 21 with the depressed end sections 38 located at the upper slots 29. When thus arranged and applying pressure manually on the top leg portion 36 of the header member 32 the end sections 38 are inserted within the upper slots 29 concurrently with the reception thereof and of the projections 39 between the legs 22 and 23 of a stile member 21. As shown in FIG. 7 an end section 38 and projection 39 are thus positioned in a side by side relation with the inner surfaces of the corresponding base section 24 and outer leg section 23 of a stile member 21. The extent of insertion is limited by the engagement of the lip 41 formed by the top leg portion 36, with the base section 24 and outer leg section 23 of a stile member. This lip 41 (FIGS. 3 and 4) is in an overhanging relation with an end section 38 and projection 39.

As a result of this assembly the upper header member 32 is mechanically interlocked with the body member 18 with the front surfaces of the base sections 24 of the stile members lying in a plane common to the front surface of the front leg portion 34. Likewise, it is seen (FIG. 2) that the portion of a lip 41 corresponding to a projection 39 is flush with the outer surface of a leg section 23.

The header member 32 at the lower end of the central section 37 of the front leg portion 34 is provided with a rearwardly extended flange 42 (FIG. 6) which is adapted to engage the underside 43 of the upper shutter member 26. The upper header 32 thus forms an end frame member for the body member 18 which is continuous with the stile members 21.

The lower header member 33 is constructed similarly in all respects to the upper header member 32 (FIG. 3) except for the center section 37A, and sections 38A and projection 39A of the front leg portion 37A being of a greater width relative to the corresponding parts of the upper header 32. Similar numerals of reference, used in the above description of the upper header member 32, with the suffix "A" are therefore used to indicate like and corresponding parts in the lower header member 33.

In the assembly of the lower header member 33 with the body member 19 the end sections 38A and projections 39A are received within the lower ends of the stile members 21 by insertion of the end sections 38A within the lower slots 31. As shown in FIG. 8, on completion of this assembly, the end sections 38A and projections 39A are in a side by side relation with the inner surfaces of the base sections 24 and outer leg sections 23 of the stile members. The center section 37A of the front leg portion 34A (FIG. 5) is formed at its upper end with an inwardly projected flange 42A adapted to engage the underside of the shutter member 26 which is first above the leg portion 34A.

It is contemplated that the body member 18 be made in varying lengths to provide for its being cut on the job to a desired length corresponding to the length of the window assembly 16 with which the panel units 15 are to be used. After the body member 18 is cut to length it is only necessary to cut the slots 29 and 31 to provide for the mechanical interlocking of the header members 32 and 33 with the body member 18 to form a continuous perimeter frame for the panel section 19.

The panel unit at the corners thereof, is secured to the house wall 17 by screws, indicated at 44 in FIG. 1, extended through the base sections 24 and end sections 38 and 38A for threaded engagement in the wall. By virtue of the projections 39A being engageable with the wall the header members 32 and 33 are fully supported against being pressed inwardly or distorted as a result of such securement.

The panel unit thus provides a window shutter which is

pleasing in appearance and of long lasting duration since it requires no painting, is not readily dented and does not crack or peel from weather exposure.

FIG. 9 illustrates a panel unit 47 which is similar in all respects to the panel unit 15 described in connection with FIG. 2, except that the body member 48 of the panel unit 47 has a flat panel section 49. A mirror or picture (not shown) may thus be mounted on the flat panel section 49 and the panel unit 47 secured to an interior wall or door.

It will also be apparent from a consideration of FIGS. 2 and 9 that the center panel sections 19 and 49 may be eliminated and the stile members 21 formed separately for interlocking engagement with the end frame or header members 32 and 33 to provide an open frame unit for surrounding a wall supported object or panel.

I claim:

1. A panel unit comprising:

- (a) a body member including a panel section of a rectangular shape having a front side and a pair of stile members of a channel shape spaced transversely of said panel section with the open sides thereof faced rearwardly,
- (b) each of said stile members including a pair of leg sections and a base section and said panel section lying in a plane parallel to the plane of said base sections with the side portions thereof joined with the rear sides of the adjacent inner ones of said leg sections,
- (c) each of said inner leg sections having a longitudinally extended slot at each end thereof, with the slots in each inner leg section being in longitudinal alignment and located immediately adjacent the base section of a corresponding stile member, and
- (d) a pair of longitudinally spaced transversely extended header rails for said body member, each header rail being of a right angle shape in transverse section with a first leg portion arranged laterally of said panel section and a second leg portion arranged parallel to said panel section,
- (e) said second leg portion having end sections depressed rearwardly from the front surface thereof a distance substantially equal to the thickness of the base section of a stile member, said depressed end sections being of a length slightly less than the transverse spacing between the leg sections of a stile member and of a thickness slightly less than the width of a slot, and
- (f) said first leg portion having a length equal to the transverse dimension of said body member so that the ends of said first leg portion project outwardly from the ends of said second leg portion a distance equal to the thickness of the outer leg section of a stile member,
- (g) the header rails being interlocked with said body member with the depressed end sections of each header rail being inserted within the slots at corresponding ends of the stile members and between the leg sections of a stile member to a position limited by the engagement of the first leg portion with the stile members and the front face of the second leg portion lying in the plane of the front surfaces of the base sections of said stile members.

2. The panel unit according to claim 1 wherein:

- (a) said body member is formed of a plastic material, and
 - (b) the inner leg section of each stile member is of a shorter width than the outer leg section thereof.
3. The panel unit according to claim 1 wherein:
- (a) the second leg portion of each header rail, over the length thereof between said end sections, terminating in a rearwardly extended flange, with the length of said flange being equal to the transverse spacing between said stile members and the width of said flange substantially equal to the width of the

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inner leg section of a stile member whereby to form with the inner leg sections a continuous wall projected forwardly from the front face of said panel section.

4. The panel unit according to claim 1 wherein:

(a) each depressed end section of said second leg portion terminates in a rearwardly extended projection of a width substantially equal to the width of the outer leg section of a stile member and positioned in a side by side relation with an adjacent outer leg section when the header rail is interlocked with the body member. 5 10

5. The panel unit according to claim 1 wherein:

(a) the front side of the panel section is integrally formed with interconnected transversely extended shutter members. 15

6. A frame unit comprising:

(a) a pair of side frame members of a channel shape, (b) each of said side frame members including a pair of rearwardly extended leg sections and a front base section, 20

(c) each inner leg section of a side frame member having a longitudinally extended slot at each end thereof, with the slots in an inner leg section being in longitudinal alignment and located immediately adjacent the base section of a corresponding side frame member, 25

(d) a pair of transversely extended end frame members each of which is of a right angle shape in transverse section having a first front leg portion and a rearwardly extended second leg portion, 30

(e) each of said first leg portions having end sections depressed rearwardly from the front surface thereof a distance substantially equal to the thickness of the base section of a side frame member, and said depressed end sections each having a length slightly less than the transverse spacing between the leg sections of a side frame member and a thickness slightly less than the width of a slot, and 35

(f) each of said second leg portions having the ends 40 52—624, 656

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thereof projected outwardly from a corresponding end of a first leg portion a distance equal to the thickness of the outer leg section of a side frame member, (g) the end frame members being interlocked with the side frame members with the depressed sections of each end frame member being inserted within the slots at corresponding ends of the side frame members and between the leg sections of a side frame member to a position limited by the engagement of the second leg portion with the side frame members and the front face of a first leg portion lying in the plane of the front surfaces of the base sections of the side frame members.

7. The frame unit according to claim 6 wherein:

(a) each first leg portion terminates in a rearwardly extended flange which is positioned between the side frame members when the end frame members are interlocked therewith with each flange being of a width substantially equal to the width of an inner leg section.

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