March 4, 1969 A. J. BIRO 3,430,385

UNITARY PREHUNG DOOR AND FRAME

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Fig. 1

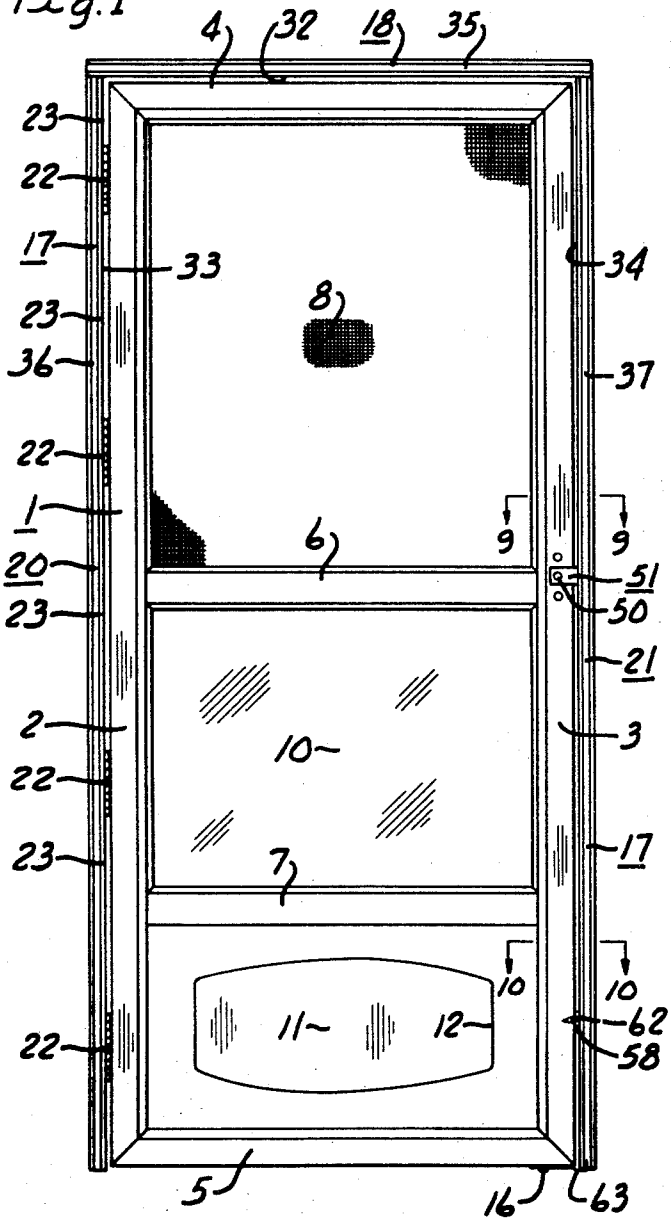

Fig. 3

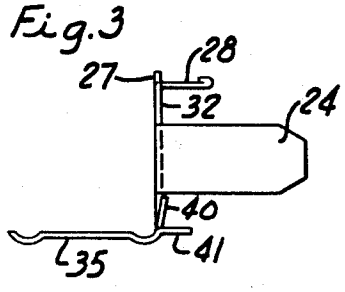

Fig. 4

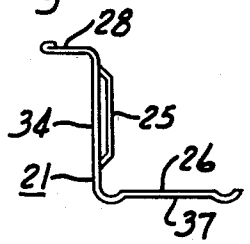

Fig. 2

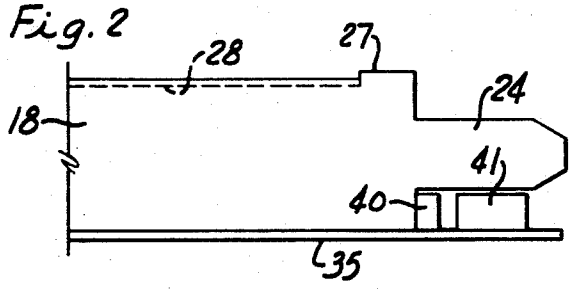

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Fig. 5

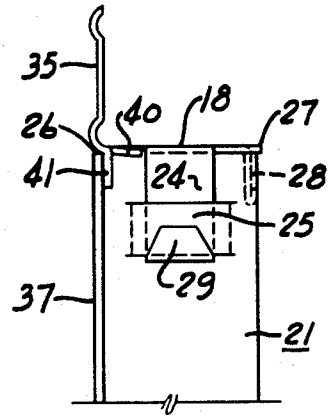


Fig. 7

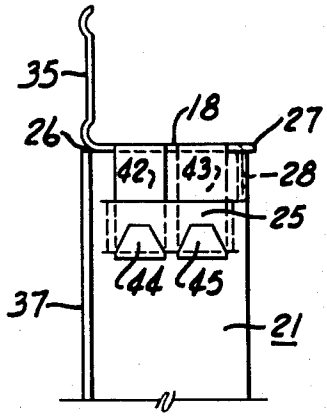


Fig. 6

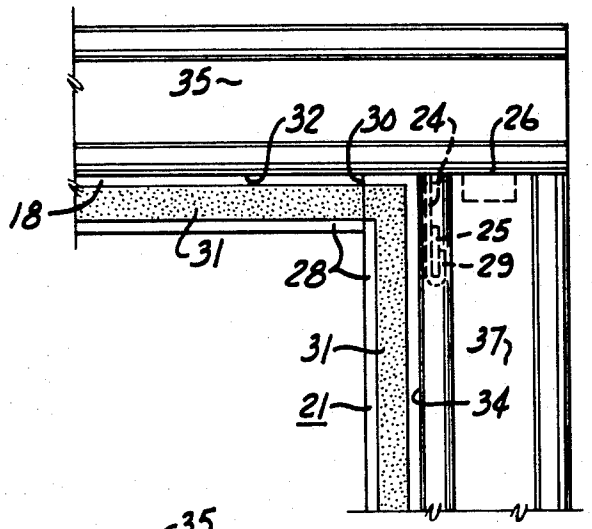
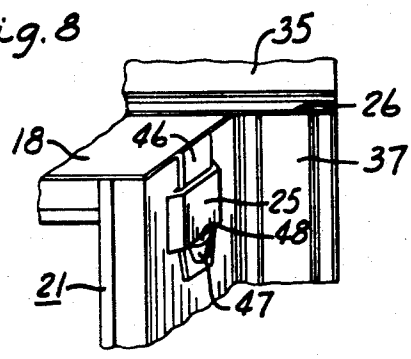


Fig. 8



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UNITARY PREHUNG DOOR AND FRAME

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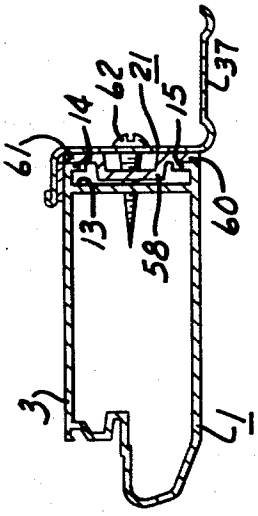

Fig. 10

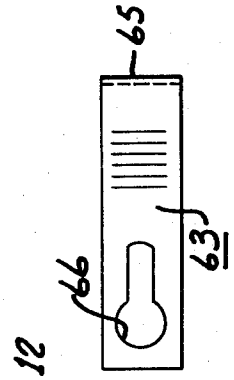

Fig. 12

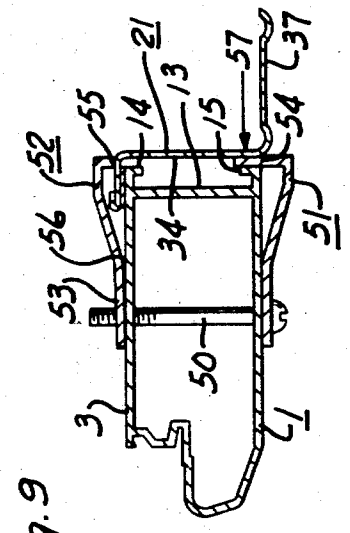

Fig. 9

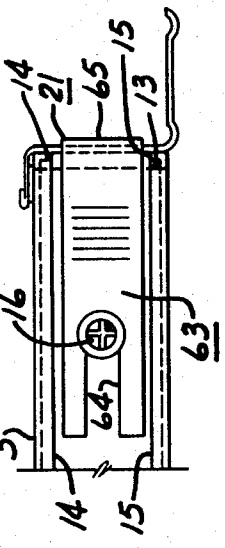

Fig. 11

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Patented Mar. 4, 1969

3,430,385

UNITARY PREHUNG DOOR AND FRAME

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Filed Apr. 10, 1967, Ser. No. 629,492
U.S. Cl. 49—380 13 Claims
Int. Cl. F16b 5/00, 7/00; E04c 2/38

ABSTRACT OF THE DISCLOSURE

A prehung door permanently secured to one side and temporarily fastened to the other side of a door frame for shipment and to be attached to the jamb and lintel of a permanent door frame to function as door opening face trim, and the actual permanent support for the combination screen and storm door.

Prior art

Relative to the Door Frame, 2,755,894, Class 189—46.

Background of the invention

The present screen and storm door combination are preferably prehung before shipment. Very little attention has been paid to temporary attachment of the door to the frame since the packaging of the prehung door and frame was intended to take care of this problem. Difficulties arose because parts of the frame being of light metal would be readily injured even through suitably packaged making them unsightly and frequently unusable. An attempt was made to insert screws through the jamb parts of the frame into the door edges which was not satisfactory when washers were applied and difficulty resulted in the structure of the jamb. Again the lintel of the frame had to be provided with a protruding header which deviated from a flush frame facing.

Summary of invention

The principal feature and object of this invention is the provision of a prehung door and permanently attached frame having its lintel and jamb frame sections secured in overlying relation to embrace the door in operative relation and position the door face in the plane of the marginal faces of the frame. The door and frame are substantially flush and provide a pleasant appearance as well as a practical service when the lintel and jamb sections are secured to the respective permanent lintel and jamb frame sections of the permanent structure.

The free jamb section of the frame is secured to the swinging edge of the door before shipment by a spacer which is clipped or screwed between the door edge and jamb adjacent to the bottom and at the opening for receiving the door handle screw a clip spacer between the door edge and jamb on the door front and a pressure biased clamp clip on the back engaging the doorstop adjacent the jamb to maintain the door in its closed position with the jamb exerting pressure on the front spacer.

Other objects and advantagse of this invention appear hereinafter in the following description and claims.

The accompanying drawings show, for the purpose of exemplification without limiting the invention or the claims thereto, certain practical embodiments illustrating the principles of this invention wherein:

FIG. 1 is a front elevation of a door secured in a frame.

FIG. 2 is an enlarged plan view of one end of the lintel of the door frame with tabs extended.

FIG. 3 is an end view of the lintel section of FIG. 2 with the tabs bent in place.

FIG. 4 is a plan view of the door jamb section.

FIG. 5 is a view in side elevation showing the lintel and jamb sections connected together.

FIG. 6 is a view in front elevation showing a lintel and jamb sections connected together and parts broken away.

FIG. 7 is a modified view of a lintel and jamb sections connected together.

FIG. 8 is a perspective view illustrating the connected lintel and jamb sections of the frame.

FIG. 9 is a view in cross section taken along the lines 9—9 in FIG. 1.

FIG. 10 is a sectional view taken along the lines 10—10 in FIG. 1.

FIG. 11 is a plan view of the under side of the door and jamb section secured by a locking link.

FIG. 12 is a plan view of a modified form of a locking link.

Referring to FIG. 1 of the drawings, the door **1** may be of any suitable structure. However, as illustrated it is preferably constructed of stiles **2** and **3** and rails **4** and **5** with mullions **6** and **7**. All of these parts are preferably of tubular extrusion cross section of the stile **3** illustrated in FIGS. 7 and 8. The stiles, rails and mullions are secured with inserted corner and joint gusset members so as to provide a substantial door frame.

The upper panel **8** as shown in FIG. 1 is indicated as a screen panel which may be covered or replaced by glass to form a storm door in the winter time.

The second panel **10** is glass and it is usually permanently inserted although a screen panel may be substituted therefor. The bottom panel **11** is preferably made of metal such as aluminum and is provided with ornamental designs drawn in the metal of the panel as indicated at **12** for the purpose of providing rigidity for the panel.

As shown in FIGS. 9, 10 and 11, the door edges **13** are ordinarily formed with opposed inturned flanges **14** and **15** which strengthen the edges of the stile and rail members and at the same time provide a recess for the reception of the door assembly screws such as indicated at **16** in FIG. 11 of which there are usually four on each side of a corner of the door.

The door frame indicated at **17** consists of the lintel or header section **18** and the hinge jamb section **20** and the opposite jamb section **21**. Each of the jamb sections **20** and **21** are secured at their upper ends to the header section **18** and the hinge jamb section **20** has the four permanent hinge members **22** each of which is similar in structure and which are separated by axially aligned tubular sections **23**. The actual hinge members are inserted pins spring biased in opposite directions to seat in and hold together opposed hinge surface elements. This type of hinge is known in the art.

As shown in FIGS. 2 to 6, the header **18** of the door frame **17** has at its opposite ends the locking lug means or tab members **24** which are bent over at right angles to the lintel section of the header as shown in FIG. 3 for the purpose of being received into the pocket member **25** adjacent the upper edge **26** of the jamb section **21** and as illustrated in FIG. 5 the lower end of the tab **24** is turned upwardly as illustrated at **29** over the under edge of the pocket **25** to securely lock both ends of the lintel section to the respective upper ends of the jamb sections **20** and **21**.

As also shown in FIG. 2, a tab **27** is struck outwardly and rearwardly from the lintel section **18** and that portion of the doorstop **28** is cut away or removed to form the tab **27** so that the latter will engage over the upper edge of each doorstop section **28** of the jamb sections **20** and **21**. This construction permits the upper edge **26** of each jamb section to lie on a common plane and supply a firm support for the under surfaces of the ends of the lintel **18**.

The foregoing structure is sufficient to actually complete the door frame **17** since this door frame is eventually secured to the permanent corresponding lintel and jamb sections of the permanent door frame on the building. Thus the lintel section **18** provides its doorstop section **28** and abuts against the edge of the doorstop **28** of both jamb sections **20** and **21** at the marginal line **30** shown in FIG. 6. These doorstop faces **28** are usually provided with a sealing material which is preferably made of resilient plastic or wool such as felt or otherwise fixed to their respective parts as indicated at **31** in FIG. 6. The under face of the lintel **32** thus abuts against the jamb faces **33** and **34** of the jamb sections **20** and **21** respectively.

The lintel **18** is provided with a marginal frame face **35** that overlies the outer marginal frame faces **36** and **37** of the jamb sections **20** and **21** respectively and rest on the upper edges **26** of these jamb sections.

To further lock the frame at the corners the material from which the tabs **24** have been cut is also cut to form the tabs **40** and **41**. The tab **40** is merely bent downwardly to engage the edge of the tab **24** to keep the same from shifting forwardly in the pocket **25**. The tab **41** is bent downwardly as shown in FIGS. 5 and 6 to engage the rear surface of the outer marginal frame face **37** of each of the jamb sections **20** and **21**. Thus the tab **24** that is interlocked within the pocket **25** is also supplemented by the tab **41** and prevents any lateral movement of the lintel relative to the jamb sections the tab **40** strengthening the overlying end sections of the lintel and the tabs **41** interlocking the back of the outer marginal frame faces to give relative support to these marginal frame faces on the lintel and jamb sections.

Referring to FIG. 7, the pocket **25** is made larger. However, there are two tabs **42** and **43**. Tab **42** is constructed in the same manner as the tab **24** and extends through the pocket and is turned up to interlock as illustrated at **44**. This tab extends on the rear side of the jamb face of the jamb sections **20** and **21**.

Tab **43** extends down the inner face **34** of the jamb faces **20** and **21** and extends through the bottom slot of the pocket **25** and then is turned upwardly as indicated at **45** to interlock the same with the jamb sections **20** and **21**. Thus these tab members are on opposite sides of the jamb sections **20** and **21** providing a stronger interlocking arrangement. However, the upper edges **26** of the jamb sections **20** and **21** support the opposite sides of the lintel surface **32**. The tab **43** is bent downwardly slightly ahead of the bend in the tab **22** to make allowances for the thickness of the jamb sections forming the faces **34**.

As shown in FIG. 8, the tab member **46** is provided with a button **47** having an upper edge **48** when the tab **46** is shoved through the slit pocket **25** and the button **47** just clears the lower edge of the slit pocket **25** the upper surface **48** of the button or expanded lug engages the under surface of the pocket **25** and thereby locks the members together.

After the frame has been assembled and is permanently hinged by the hinge members **22** to jamb member **20**, a bolt **50** is employed to clamp the free stile **3** of the door **1** to its respective jamb member **21** by means of the spacer clip **51** and the clamp clip **52** as shown in FIG. 9. The clamp clip is provided with a threaded opening at **53** to receive the threaded bolt **50**. The holes usually provided through the stile **3** of the door for the handle are ordinarily larger in diameter than the bolt **50**. However, this does not make any difference because the spacer clip **51** with its inturned flange **54** that properly spaces the jamb face **34** from the edge of the door and the clamp clip members **52** is so shaped with its pressure applicating flange **55** extending beyond the door edge and providing a clearance at **56** between the inner face of the clamp **52** and the face of the stile **3** so as to provide a clamping force as well as a force to effect a pressure in the direction of the arrow indicated at **57** against the spacer flange **54**.

Thus when the screw **50** is tightened the clip clamp **52** exerts a greater pressure as indicated along the arrow at **57** and not only prevents the door from leaving the center of the jamb **21** but holding the jamb face **34** tightly against the spacer **54** adjacent the outer face of the frame.

As shown in FIG. 10, a hat shaped spacer member **58** places flanges **60** and **61** between the flanges **14** and **15** and the face **34** of the jamb section **21** and is held in place by the screw **62**. This simple arrangement is placed approximately in line with the lower spring **22** in the middle of the panel **11**.

As shown in FIG. 11, the bottom of the door stile is in engagement with bottom rail **5** and the latter has a screw **16** holding the joint together. This screw may be loosened and a locking member **63** having an open slot **64** to slide under the screw since the locking member **63** is narrower than the space between the oppositely disposed flanges **14** and **15**. The upturned flange **65** engages the outer face of the jamb section **21** to hold it inwardly against the door edge. Since this locking member **63** is spaced somewhat from the spacer **58** and the screw **62** the locking member may be held under friction and merely force the jamb section against the edge of the door. However, if desired the spacer **58** may be inserted between the jamb and the door. It will be noted that in FIG. 1 the locking member **63** is bent in order to extend beyond the bottom edge of the door and brace of the bottom edge of the jamb section **21**.

As shown in FIG. 12, the locking member **63** may have in place of the slot **64** a bayonet lock **66** to slide over the path of the bolt **16** and when the flange **65** engages the outer jamb surface the flat portion of the locking plate **63** may be clamped in place to hold the end of the door jamb section **21** secured to the door during shipment.

I claim:

1. A prehung door and frame with lintel and jamb sections of matched Z strips each section defining outer marginal frame front faces and spaced parallel doorstop faces connected together by lintel and jamb faces disposed at right angles thereto, the lintel section overlying and engaging the top end edges of the matched jamb, stop and front face sections to position the door and frame marginal front faces in substantially one plane, a permanent hinge secured to the door and to one jamb section and the other jamb section being free, said marginal frame front faces and said stop faces being clean and free of mounting holes, a jamb pocket on the back of each jamb face spaced from its respective overlying lintel face, and a depending locking lug means on each overlying end of said lintel face and extending down over the top end edges of its adjacent jamb face and interengaging and locked in its respective jamb pocket to secure said lintel and jamb sections together and spaced from said door, said lintel face overlying said top end edges of said jamb and stop faces.

2. The prehung door and frame of claim **1** characterized by an upward facing locking means on the end of each depending locking lug to engage and lock on said pocket in securing said lintel and jamb sections together.

3. The prehung door and frame of claim **2** characterized by a turned up part on the end of said lug providing said upward locking means.

4. The prehung door and frame of claim **2** characterized by a turned up flange the marginal edge of which engages with the bottom edge of a stuck out section providing said pocket in each jamb face.

5. The prehung door and frame of claim **2** characterized by opposed expressed buttons in said locking lugs the opposed edges of which are interengaged with the bottom edge of said pockets to lock said lintel and jamb sections and spaced from said door.

6. The prehung door and frame of claim **1** charac-

terized by said hinge secured to said one frame jamb section and one stile of said door to swing therein, spacer means between said other jamb section and said other door stile having means to secure them together to maintain the spacing between said door and jamb section and to prevent said door from swinging on said hinge in said frome when shipping.

7. The hinged door and frame of claim **6** characterized by clip means cooperating with said spacer means, and bolt means extending through said clip and-spacer means and the door stile to secure said door stile and said other jamb section and maintain the spacing therebetween.

8. The hinged door and frame of claim **6** characterized by screw means passing from the back face through said jamb section and said spacer means and into said door stile as said means to secure them together.

9. The hinged door and frame of claim **1** characterized by a clip secured to said other door stile face adjacent a handle opening and having a spacer extending between said other jamb section and said other door style, and fastening means securing said clip to said handle opening to prevent said door from swinging on said hinge in said frame when secured.

10. The hinged door and frame of claim **9** characterized by a spacer between said other door stile and said other jamb section adjacent the bottom of said door, and a screw means passing from the back face through said other jamb section and spacer and secured in said door to hold them together.

11. The hinged door and frame of claim **9** characterized by an L-shaped locking member hooked over the bottom edge to the back of said other jamb section and secured to the bottom of said door mullion by a screw.

12. A prehung door and frame with lintel and jamb sections of matched Z strips each section defining outer marginal frame faces and spaced parallel doorstop faces connected together by lintel and jamb faces disposed at right angles thereto, the lintel section overlying and engaging the top ends of the matched jamb sections to position the door and frame marginal faces in substantially one plane, a permanent hinge secured to the door and to one jamb section and the other jamb section being free, a jamb pocket in each jamb face spaced from its respective overlying lintel face, a depending locking lug means on each overlying end of said lintel face and extending down over the top end of its adjacent jamb face and interengaging and locking in its respective jamb pocket to secure said lintel and jamb sections together and spaced from said door, a clip secured to said other door stile face adjacent a handle opening and having a spacer extending between said other jamb section and said other door stile, and fastening means securing said clip to said handle opening to prevent said door from swinging on said hinge in said frame when secured, a spring pressure clip secured to the rear of said other door stile and an inturned portion pressing against the rear of said other doorstop face to press said other jamb section tightly against said clip spacer.

13. The hinged door and frame of claim **1** characterized by a spring pressure clip secured to the rear of said other door stile and having an inturned portion pressing against the rear of said other doorstop face to press said other jamb section tightly toward the front edge of said other door stile.

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KENNETH DOWNEY, *Primary Examiner*

U.S. Cl. X.R.

49—504; 52—656; 287—189.36