Feb. 6, 1968 R. W. MASUR 3,367,618

FORMS FOR CAST-IN-PLACE WINDOW FRAMES

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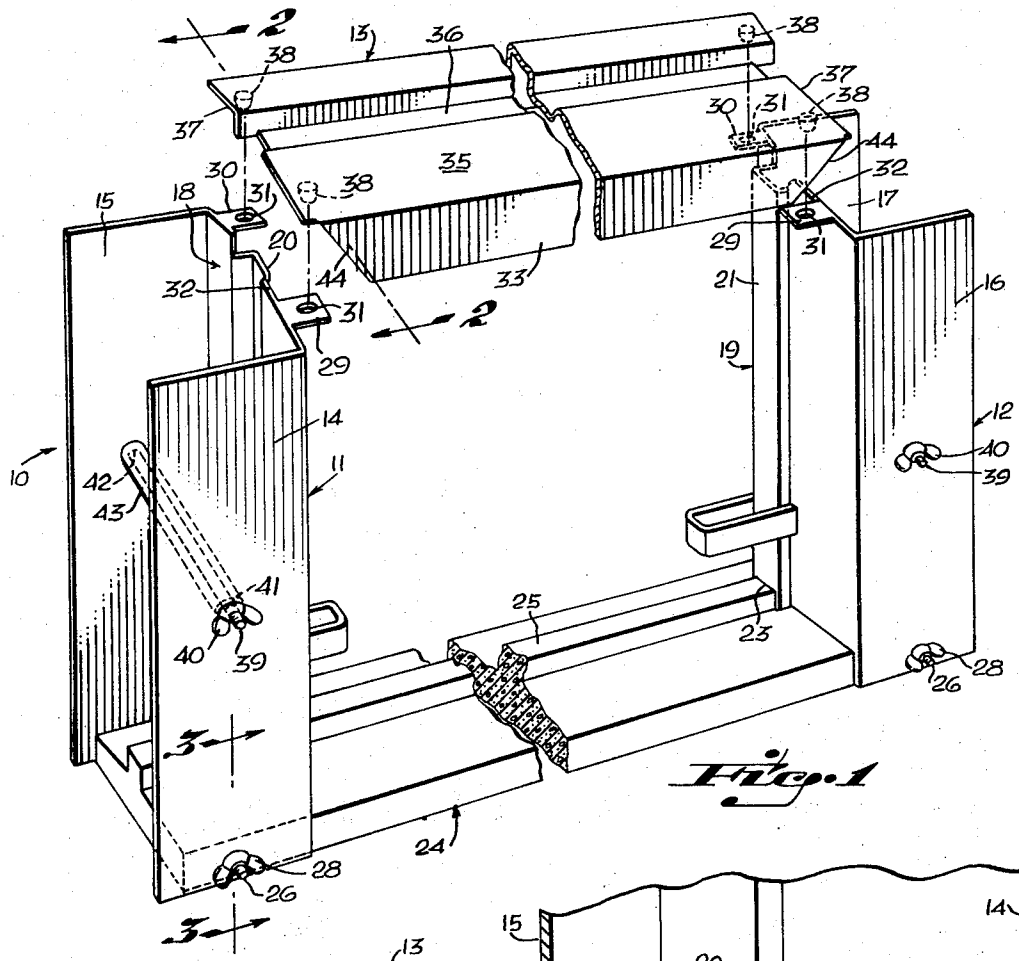


Fig. 1

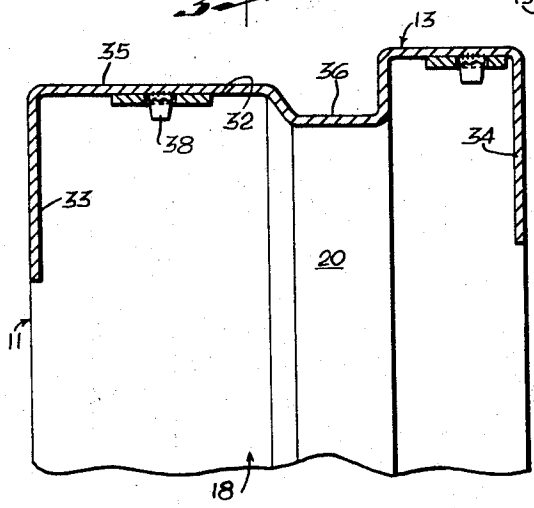


Fig. 2

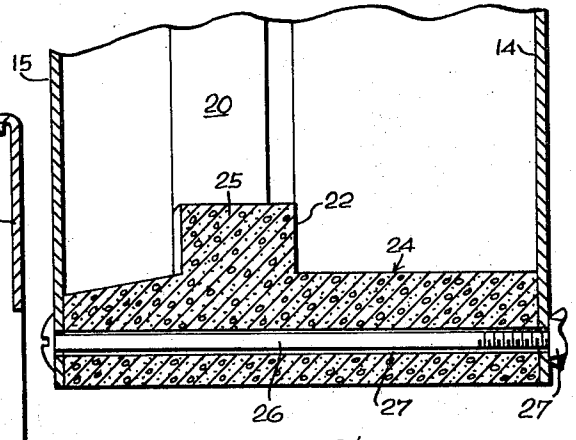


Fig. 3

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FORMS FOR CAST-IN-PLACE WINDOW FRAMES

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ABSTRACT OF THE DISCLOSURE

A form for casting in place concrete window frames in a building wall opening including a pre-cast concrete sill, a pair of jamb members and a header member removable connected in spanning relation thereover, and including bolts extending through the sill and end portions of the jamb members for securing them temporarily in interfitting relation, and bolts extending transversely through the jamb members intermediate their ends for temporarily clamping them in place with respect to marginal side portions of the building wall openings.

This invention relates to building erection and is directed particularly to improvements in metal forms for casting in place concrete window jambs and headers in exterior building walls of concrete block or the like.

The use of metal window jamb and header forms for casting in place a concrete window frame in concrete block walls under construction is old and well known. Such forms constitute separate jamb and header members erected over a precast sill accurately leveled and secured at the bottom of a rough wall window opening, and include mechanism for securing the jambs to side wall portions of the window opening and for securing the header member to the upper ends of the jamb members to hold them in interassembled relation until the pour is completed and hardened. Since the jamb and header members are necessarily fabricated of heavy gauge metal to withstand the considerable forces applied in their placement, and, particularly, in their removal from the window frames once formed, it is of great importance that the means used for temporarily holding the form members in place in interassembled relation not only be secure, but also readily and simply released with as little obstruction as possible in the disassembly and removal of the form members once the window frame has been poured and hardened. Heretofore, such securing means for holding the jamb members in place and for interconnecting the header member with the jamb members had toggle mechanisms, heavy transverse locating pins assembled through interrelated lug openings, and the like. Toggle mechanisms, because of their bulk not only add considerable weight to the jamb members, increasing difficulty in handling, but also, because they project inwardly of the form at each side, interfere with each other to cause difficulties in removal of the jamb members, particularly in the case of small window openings. The heavy transverse locating pins, moreover, project outwardly of the sides of the frame at the upper corners, necessitating custom cutting of the boards used to form or mold the tie beam or lintel usually poured integrally above the header.

It is accordingly the principal object of this invention to provide an improved form for cast-in-place window frames that eliminates the need of complicated toggle mechanisms, transverse locating pins and the like, characteristic of prior constructions, thereby simplifying, economizing and otherwise facilitating the erection and disassembly of forms for cast-in-place window frames in concrete block walls.

A more particular object is to provide a window frame form of the character described wherein the jamb members are temporarily secured at their lower ends by bolts extending through pre-formed transverse openings in a pre-cast sill secured at the bottom of a rough window opening, and wherein the header member is located and interfitted with respect to the upper ends of the jamb members by means of short pins extending downwardly at the inside of end portions of the header member and receivable in locating holes in flanges extending horizontally inwardly at the upper ends of the jamb members.

Yet another object is to provide a window frame form of the character described which will be simple in structure, low in cost, easy to assemble and disassemble, and durable and effective in use.

Other objects, features and advantages of the invention will be apparent from the following description when read with reference to the accompanying drawings. In the drawings, wherein like reference numerals denote corresponding parts throughout the several views:

FIG. 1 is a perspective view, with portions broken away and partially disassembled of a window form embodying the invention shown attached to a sill member;

FIG. 2 is a transverse cross-sectional view taken along the line 2—2 of FIG. 1 in the direction of the arrows and illustrating the mechanism by means of which the header member is interconnected with the jamb members, and

FIG. 3 is a transverse cross-sectional view taken along the line 3—3 of FIG. 1 and illustrating how the lower ends of the jamb members are assembled to the pre-cast sill member.

Referring now in detail to the drawings, **10** in FIG. 1 designates a form for cast-in-place window frames embodying the invention, the same comprising, generally, a pair of side frame or jamb members **11**, **12** and a header member **13**, the lower ends of the jamb members being shown secured to the ends of a pre-cast sill **24** as in assembly of the frame in a building wall opening (not illustrated). The jamb members **11**, **12**, which are preferably formed of heavy gauge plate steel, are of U-shaped cross-section to provide opposed, substantially parallel side wall portions **14**, **15** and **16**, **17**, respectively, spaced by a distance substantially equal to the thickness of the block wall with which the frame is to be used. The web portions **18**, **19** of the jamb members **11**, **12** are formed with outwardly-projecting, substantially rectangular channels **20**, **21**, respectively, for the purpose of providing integrally formed or molded outstanding lips against the sides of which the window framework seats upon the installation of a window. The lower ends of the web portions **18**, **19** of the jamb members **11**, **12** are cut away to provide recesses **22**, **23**, respectively (see FIGS. 1, 3) conforming to the cross-sectional shape of a pre-cast sill **24** having an upstanding lip **25** in register with the channels **20**, **21** of said web portions to provide a continuous inwardly-projecting lips in the pre-cast frame. The lower ends of the side wall portions **14**, **15** and **16**, **17** of the respective jamb members **11**, **12** overlap opposite end portions of the pre-cast sill **24** when assembled thereto, and are removably secured thereat by bolts **26** extending through transverse openings **27** formed near each end of said sill and held in place by a wing nuts **28**.

The upper ends of the web portions **18**, **19** of the respective jamb members **11**, **12** are formed with laterally-spaced, inwardly-extending lugs or flanges **29**, **30**, one at each side of the said web portions, each of which flanges is provided with a round opening **31** for locating and securing the header member, as hereinbelow described. The flanges **29**, **30** can be integrally formed with the jamb members, as illustrated, or alternatively, can be provided by welding right angular lugs to said jamb members. The upper ends of the jamb members **11**, **12** are also cut along

an irregular line 32 (see FIG. 2) complemental in shape to the cross-sectional shape of the header member 13 to receive said header member in interfitting engagement upon assembly of the frame, as is hereinbelow more fully described.

The header member 13, which is also formed of heavy gauge plate steel, is generally U-shaped in cross-section to provide outwardly-extending, spaced, parallel side wall portions 33, 34 at each side of a central web portion 35. The web portion 35 is formed with an inwardly-extending, longitudinal channel 36 of substantially the same size and shape as the channels 18, 19 in the jamb members 11, 12 and so disposed as to continue the cast-in-place lips formed by said jamb channels along the underside of the window frame opening to be formed. The outer ends of the web portion 35 of the header member 13 are cut along an irregular line, indicated at 37, to interfit in mating engagement with the upper ends of the web portions 18, 19 of the respective jamb members 11, 12 when said header member is assembled thereto. The outer ends of the side wall portions 33, 34 of the header member 13 are cut away at an angle, as indicated at 44, to provide clearance facilitating assembly and disassembly. In order to locate and secure the header member 13 in such engagement with the jamb members 11, 12, each end of the web portion 35 of said header member has welded against the inside thereof in laterally spaced relation at each side of the channel 36, a pair of short, outstanding pins 38 receivable in respective openings 31 in the flanges 29, 30 at the upper ends of said jamb members. The pins 38 are preferably of frusto-conical shape to permit limited shifting of the jamb members with respect to the header as these members are brought into interfitting engagement by moving said header member down upon said flanges as indicated in FIG. 1. When assembled in interfitting engagement, a small gap between the ends of the header member and the upper ends of the jamb members permits limited lateral movement to facilitate plumbing of the frame in its assembled relation in a wall opening. Once assembled and plumbed, the jamb members are locked in place against side wall portions of the rough concrete block wall opening by means of one or more transverse bolts 39 and wing nuts 40 extending through aligned openings 41, 42 in the side wall portions of said jamb members and operative to bring said side wall portions in tight clamping engagement against said side wall portions of the wall opening. In order that the bolts 39 may readily be removed after the concrete window frame is poured, said bolts are run through sleeves 43 of plastic tubing or the like, which remain in the concrete upon hardening and provide a clearance opening from which the bolts can be withdrawn.

An important advantage of my invention resides in the fact that the use of pins 38 interfitting in openings 31 of flanges 29, 30 as a means for assembly of the header to the jamb members not only simplifies construction and simplifies assembly and disassembly, but also eliminates the use of laterally-extending pins which protrude substantially from the side of the building wall to necessitate trimming of the wooden forms used to form the beam or lintel at the upper end of the window frame. Removal or disassembly of the frame members after the poured concrete has set can readily be accomplished by shifting the lower ends of the jamb members inwardly to disengage the header pins, thereby automatically separating the jamb members from the header member and permitting easy removal of the frame members.

While there is illustrated and described herein only one form in which the invention may conveniently be embodied in practice, it is to be understood that this form is presented by way of example only, and not in a limiting sense. The invention, in brief, comprises all the embodiments and modifications coming within the scope and spirit of the following claim.

What I claim as new and desire to secure by Letters Patent is:

1. In a form for casting in place a window frame in a rough, rectangular building wall opening, a pre-formed sill, the combination comprising, a preformed concrete sill operative to be fitted in the wall opening, a pair of jamb members of U-shaped cross-section defining a pair of spaced, parallel side walls at each side of a central web portion, said jamb members being operative to fit one each against marginal side portions of a rough wall opening with marginal portions of said side walls in overlapping engagement with inner and outer surface portions of the wall, a header member of U-shaped cross-section defining a pair of spaced, parallel side walls at each side of a central web portion, and means for removably interconnecting the ends of said header member with one each of the upper ends of said jamb members when fitted in a wall opening, said interconnecting means comprising a pair of laterally-spaced, outwardly-extending pins at each end of said central web portion of said header member and a pair of laterally-spaced, outwardly-extending flanges at one end of each of said central web portions of said jamb members, said pin members and said flanges being so disposed relative to one another that said pins are received in round openings in said flanges when said header is placed in interspanning relation down upon said jamb members fitted in a wall opening, means for temporarily securing lower end portions of said jamb members one each to the opposite ends of the sill when fitted in a wall opening, said securing means comprising recesses in said web portions of said jamb members for receiving end portions of the sill, the side wall portions at said other end of said jamb members being operative to fit in face-to-face relation against outer wall portions of the sill at each end thereof, bolts extending through transverse openings at each end of said sill and through aligned openings in said side wall portions at the other ends of each of said jamb members, and means for constraining said side wall portions of said jamb members into clamping engagement with inner and outer surface portions of a wall along vertical marginal portions of a rough wall opening in which the jamb members are fitted, said constraining means comprising a plurality of bolts extending transversely through laterally aligned pairs of openings in said side wall portions of said jamb members, and nuts threaded on said bolts.

References Cited

UNITED STATES PATENTS

916,705	3/1909	Hill et al.	249—165
1,253,981	1/1918	King	249—19
1,539,035	5/1925	Zollinger	249—39
1,630,801	5/1927	Parson	249—193
2,017,553	10/1935	Troiel.	
2,557,631	6/1951	Callan	249—178
2,642,645	6/1953	Commet et al.	25—128
2,704,876	3/1955	Puckett et al.	249—19
2,941,276	6/1960	Goodlad	249—186
3,021,586	2/1962	Uruburu	249—165

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