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## PRESSED STEEL DOORFRAME CONSTRUCTION

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2 SHEETS--SHEET 1

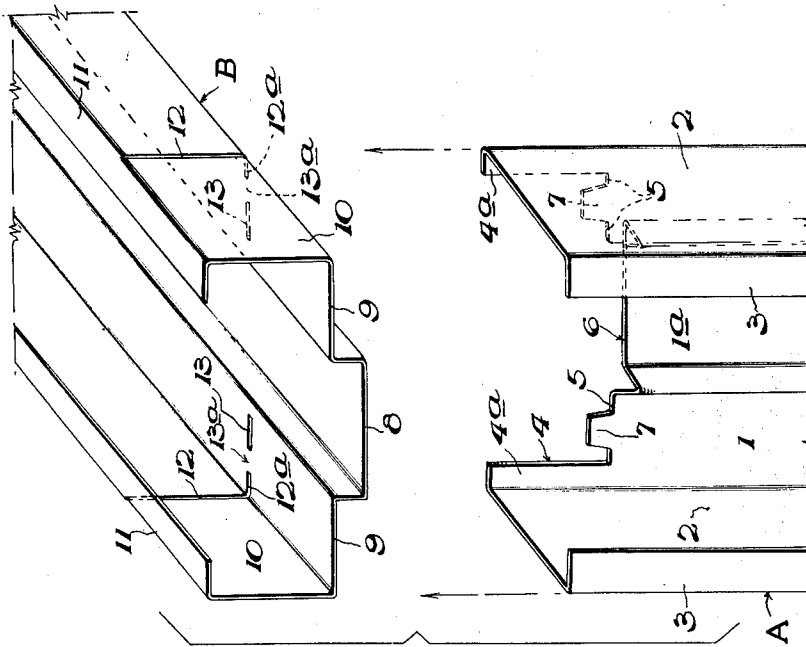


**FIG. 2.**

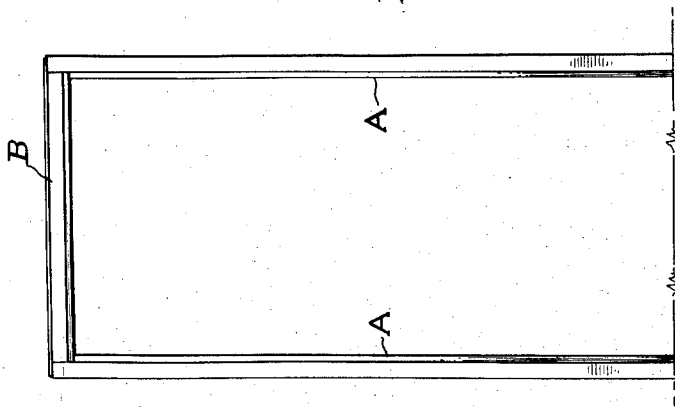


**Fig. 1.**

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## UNITED STATES PATENT OFFICE

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PRESSED STEEL DOORFRAME  
CONSTRUCTION

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4 Claims. (Cl. 139—46)

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This invention relates to pressed steel structural units for buildings, and more particularly to a prefabricated door frame construction.

One of the objects of the invention is to provide a door frame or door case made of rolled sections, wherein the meeting ends of the lintel and jamb members are provided with novel interfitting formations which enable them to be shipped in knock-down form and connected on the construction site in a substantial and rigid manner for installation, and for use. In that connection, the invention contemplates a construction which will not only quickly and easily interlock the lintel and jamb members against lateral separation but will also assist in holding them in abutting contact against relative angular movement at their points of connection, in other words at their junction or joints thereby enabling the parts of the door frame to make and maintain a true fit with relation to the door ultimately fitting against the door stop portions of the frame.

Another object of the invention is to provide the jamb and lintel members with mating interfitting key and keeper parts which may be readily formed during the course of fabrication, and which also enables the members to be assembled by relatively unskilled labor in final form by deforming the said keys to effect the desirable rigid connection of the members in finished frame relationship to avoid separation of the jamb members from the lintel.

A further object is to provide a construction which may be assembled from knock-down form to avoid damage and resulting expense which usually occurs where metal door frames are shipped in assembled form.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a front elevation of a complete door frame embodying the parts of the present invention;

Figure 2 is a detail perspective view showing more clearly the means for interlocking the jamb and lintel members in the order of their assembly;

Figure 3 is a side elevation of the lintel and jamb members of Figure 2 in their final assem-

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bled positions before the locking keys or tabs on the jamb members are bent down; and

Figure 4 is a detail front elevation of the construction shown in Figure 3 with the locking keys on the jamb members bent from a vertical to a horizontal position.

Similar reference characters represent corresponding parts throughout the several figures of the drawings.

As will be seen from the drawings, the door frame includes in its organization a pair of jamb members A and a lintel or head end section B. The lower ends of the jamb members A are not specially formed and are preferably square or of other formation sufficient to enable them to rest on the floor. These members can be fabricated and bundled in parallel relation to save shipping space during transportation and readily assembled and erected at the point of installation.

The upper ends of each of the jamb members A are provided with special formations to interfit and interlock with complementary formations on adjacent ends of the lintel B.

Referring first to the jamb members A, it will be seen that they comprise a rolled channel section including a bottom wall medially offset at 1<sup>a</sup> to provide a door stop portion, and the side walls 2, the latter having the outer lintel abutting flanges 3 turned inwardly at a point opposite the bottom wall 1. The upper portion of the bottom wall 1 is cut away vertically as indicated at 4 to provide lintel engaging and abutting flanges 4<sup>a</sup>, said cut extending down to a suitable point 5, and then is further cut away at the zone of the door stop to the level 6 so that the edges 4, 5 and 6 provide in effect a socket for receiving the lintel member B. The edges 5 which are elevated with respect to the edges 6 are formed with the originally upwardly directed keys or tongues 7. The upper ends of the jamb members thus formed are intended to receive the lintel member B. The jamb members are thus provided with outer and inner pairs of lintel abutting flanges 3—3 and 4<sup>a</sup>—4<sup>a</sup>.

The lintel member B consists of a rolled channel section including a depressed central bottom portion forming a door stop 8 on the lintel to match the door stop portions 1<sup>a</sup> on the jamb members and also includes the relatively elevated bottom portions 9 whose outer ends terminate in upstanding side walls 10. The upper ends of said side walls 10 are provided with the inwardly directed flanges 11. The side walls 10 are provided throughout their height with the vertical slots or slits 12 of substantially the gauge of the

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metal of which the jamb members are formed. These slots or slits communicate at their lower ends with a continuation 12<sup>a</sup> of said slots in the wall portions 9. Appropriately spaced from the inner ends of the slots 12<sup>a</sup>, the elevated bottom walls are provided with keeper openings 13.

With the jamb members A formed as described, and looking at Fig. 2, it will be seen that the lintel member B may be horizontally assembled thereto so that the door stop portion 8 of the lintel will rest on the edges 6 of the door stop portions of the jamb members while the keys or tongues 7 of the jamb members fit into the keeper slots 13. It will also now be seen that the flanges 4<sup>a</sup> of the bottom wall 1 of the jamb member, will slidably fit into the slots 12 and 12<sup>a</sup> of the lintel member as shown in Figure 3.

As will be apparent from Figures 2 and 4 the distance between the slots 12 and the ends of the walls 10 of the lintel member is such that the inner ends of the inner walls 10 will abut against the inner faces of the flanges 3 of the jamb member when the parts are assembled as indicated. In other words, the projection of walls 10 outwardly of the slots 10 is equal to the depth of the channel of the jamb members.

After the parts are assembled, as shown in Figure 3, the keys 7 will bend from a vertical to a horizontal position as shown in Figure 4 thereby to lock the jamb members A and the lintel B together against vertical displacement. It will also be apparent that the tabs 7 interlock the jamb and lintel members against horizontal displacement.

When the jamb and lintel members are interlocked at 7 and 13, and 4<sup>a</sup>, 12, 12<sup>a</sup>, as shown in Figure 4, it will now be apparent that the lintel member B is well braced due to the further fact that the ends of the side walls 10 of the lintel member abut snugly and firmly against the outer pair of flanges 3 of the jamb members while the flanges 4<sup>a</sup> of the jamb members entering the vertical and horizontal slot portions 12 and 12<sup>a</sup> will also serve to prevent relative rocking or hinging movement between the ends of the lintel member and the upper ends of the jamb members when they are assembled. In other words, a distinctive feature of the invention is the arrangement of the slots 12 and 12<sup>a</sup> with respect to the ends of the side walls 10 of the lintel member so that the latter has sufficient projection into the channel formation of the jamb members 2 to abut the flanges 3. In addition the lintel flanges 11—11 overlie and abut the upper ends of the outer pair of jamb flanges 3—3. Thus, in effect three anchoring or steadying points are provided between the jamb and lintel members, namely, at the point of abutment of the ends of the inner ends of flanges 10 of the lintel with the flanges 3 of the jamb members; where lintel flanges 11—11 abut the tops of flanges 3—3; and at the point of the interlocking of the flanges 4<sup>a</sup> with the slots 12—12<sup>a</sup>. To further enhance the steadying effect by interlocking the members as just described, it will also be seen that the web portions 13<sup>a</sup> in the walls 9 of the lintel fit into the space between the keys 7 and the edges 4 to further augment the tightness of the connection.

The locking keys 7 may be conveniently bent down from a vertical to a horizontal position by a hammer or mallet, after the lintel and jamb sections are assembled and this simple action facilitates the final assembly after the parts have been moved together from the position shown in Figure 2 to that shown in Figure 3.

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The construction is particularly advantageous in the respect that it provides a firm and steady all mechanical, end interlock between the jamb and lintel sections without the necessity of welding operations at the point of use.

Without further description, it is believed that the features and advantages of the invention will be readily understood by those skilled in the art, and of course, it will be understood any changes may be resorted to within the scope of the appended claims.

I claim:

1. A fabricated pressed steel door frame construction, comprising, in combination a pair of jamb members of channel formation and formed at one end with spaced facing pairs of outer and inner lintel engaging and abutting flanges, bendable keys adjacent the said inner flanges, and a lintel member of channel formation having side walls provided with slots located inwardly of the ends of said lintel member for a distance equal to the depth of the inside clearance of the channel of the jamb members and having its inner ends abutting the inside faces of the said outer pair of flanges on the jamb members, said lintel member also having keeper openings to receive the keys on the jamb members.

2. A fabricated pressed steel door frame construction, comprising, in combination, a pair of jamb members of channel formation and formed at one end with spaced facing pairs of outer and inner lintel engaging and abutting flanges, bendable keys adjacent the said inner flanges, and a lintel member of channel formation having side walls provided with inturned flanges overlying and abutting against the upper edge portions of the outer pair of lintel abutting flanges of the jamb members and having its inner ends abutting the inside faces of the said outer pair of flanges on the jamb members and having its side walls formed with slots terminating in its bottom wall and further having keeper openings in its bottom wall, said slots located inwardly of the ends of said lintel member for a distance equal to the depth of the inside clearance of the channel of the jamb members.

3. A fabricated pressed steel door frame, comprising, in combination, a pair of jamb members, a lintel member, said jamb members being of channel formation and including a bottom wall having an offset door stop portion, side walls and inturned flanges at the outer ends of the side walls, said bottom wall being cut away downwardly to provide abutment edges at an upper elevation and at a lower elevation in the zone of the door stop portion, locking keys projecting upwardly from the edges of the bottom wall of upper elevation, said lintel member comprising a channel member having a bottom wall provided with a central door stop portion of lower elevation than the contiguous bottom wall portions which join with vertically disposed walls having inturned flanges at their upper edges, said side walls and adjacent portions of the bottom wall which are of higher elevation than the door stop portion of the lintel bottom wall being provided with communicating slot portions for receiving the inturned flange portions of the bottom wall between the locking keys and the outer faces of said walls, said bottom wall of the lintel member also having keeper openings for receiving said locking keys, said locking tabs bent horizontally to lock the lintel against vertical separation relative to the jamb members.

4. A fabricated pressed steel door frame con-

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struction, comprising, in combination, a pair of jamb members of channel formation and including an inner bottom wall having an offset door stop portion, side walls and inturned outer flange portions opposite the bottom wall, said bottom wall being cut vertically inwardly of its corner to provide lintel interlocking flanges at each side of the said bottom wall of the jamb member, and said jamb member being cut horizontally at an upper elevation and also horizontally at an interminate lower location in the zone of the door stop portion, keys projecting from the edges of the bottom wall having said upper elevation, a lintel member of channel formation and having its ends formed to fit into the space provided by the cut-away formation described in the jamb members, said lintel member having a bottom wall including a central depressed door stop portion for mating with the edge of lower elevation of the jamb members and also having keeper openings therein between said door stop portion and the side walls thereof which extend upwardly therefrom to receive said keys, flanges turned inwardly at the upper ends of the side walls of the

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lintel member, and communicating vertical and horizontal slots in the side walls and adjacent the portion of the bottom wall of the lintel member for receiving the flanges on the inner bottom wall of the jamb members, said slots spaced relative to the ends of the side walls of the lintel section so that when the flanges on the inner bottom wall of the jamb members interlock with said slots in the side and bottom walls of the lintel member the inner end portion of said side walls will abut against the inner faces of the inturned outer flange portions of the jamb members.

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