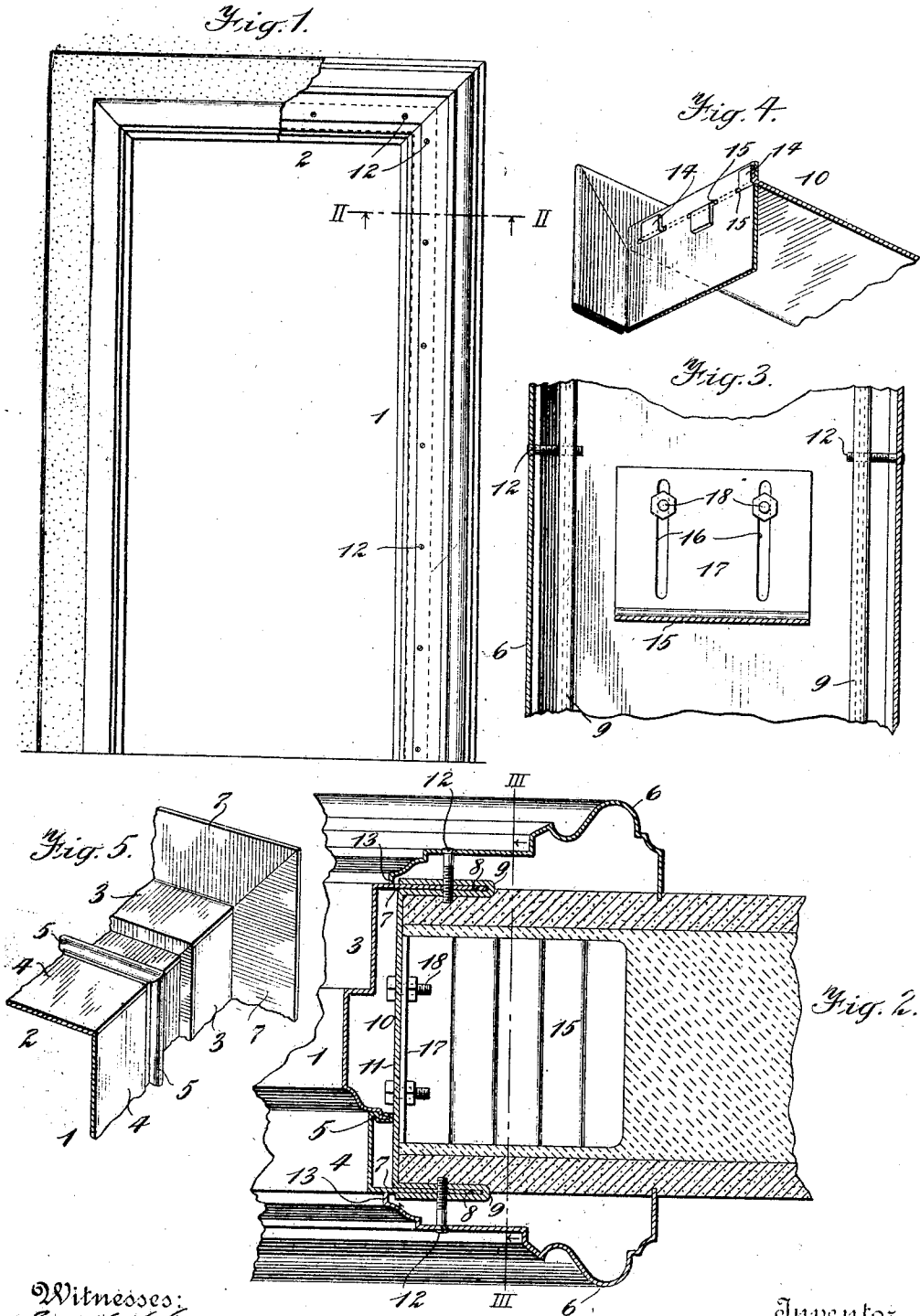


A. J. ELLIS.
HOLLOW METAL DOOR FRAME AND THE LIKE.
APPLICATION FILED MAR. 4, 1911.

1,063,517.

Patented June 3, 1913.



Witnesses:
Geo. C. Cheney
Chas. H. Hadden

Inventor
Alfred J. Ellis
By his Attorneys
Rosenbaum & Stockbridge

UNITED STATES PATENT OFFICE.

ALFRED J. ELLIS, OF WOODCLIFF-ON-HUDSON, NEW JERSEY, ASSIGNOR TO A. J. ELLIS, INC., A CORPORATION OF NEW JERSEY.

HOLLOW METAL DOOR-FRAME AND THE LIKE

1,063,517.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed March 4, 1911. Serial No. 612,225.

To all whom it may concern:

Be it known that I, ALFRED J. ELLIS, a citizen of the United States, residing at Woodcliff-on-Hudson, township of North Bergen, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Hollow Metal Door-Frames and the Like, of which the following is a full, clear and exact description.

This invention relates to hollow metal door frames, and the like, and has for its object the simplification of such structures; providing a hollow metal door frame, the parts of which may be readily assembled.

The frame is preferably composed solely of straight elements, means being provided for uniting such members to form a unitary structure.

A further object of my invention is to provide novel means whereby certain of such elements may be firmly locked in position in brick work or the like, said means being adjustable with respect to said elements for reasons hereinafter specified.

I further aim to secure a structure having great strength and rigidity with a minimum amount of material.

A still further object of my invention is to provide means whereby, for example, in a door constructed in accordance with the principles of my invention, a portion of the jamb forming elements thereof may be made substantially of uniform dimensions for various widths of jambs, such portions being adapted to interlock with other jamb forming parts which may be of variable widths, to the end that any desired overall width of jamb may be furnished at a minimum cost of production and expense of sale.

Another object of my invention is to so form and dispose the several frame elements as to facilitate their assembly and to reduce the number of bolts or like uniting devices to a minimum.

These and other objects of my invention will be hereinafter set forth and more particularly pointed out in the appended claims.

Referring to the drawings which form a part hereof, and in which like reference characters designate like parts throughout the several views: Figure 1 is an elevation of a door frame constructed in accordance

with the principles of my invention, the left hand side of the molding thereof being broken away to expose a portion of the buck. Fig. 2 is a fragmentary section of the frame shown in Fig. 1, taken on the line II—II of said figure, the section being viewed as shown by the arrows in Fig. 1. Fig. 3 is a detail fragment of said door frame, taken on the line III—III of Fig. 2. Fig. 4 is a fragmentary detail showing means for uniting the buck members; and Fig. 5 is a fragmentary detail of a corner of the jamb.

Referring to the drawings, the vertical jamb sections have been broadly designated 1, and the corresponding horizontal jamb section 2. These jamb sections are preferably of the same general configuration in both sections 1 and 2, and are each formed of two elements, as shown in Fig. 2, to wit, the main element or part 3, and an auxiliary L-shaped part 4. These elements are adapted to be interlocked longitudinally thereof as at 5, the particular connection used being preferably that disclosed in my co-pending application Serial No. 629,099, filed May 4, 1911. By reason of this construction it is possible to maintain the cross sectional dimensions of the elements 3 standard for various sizes of doors, regardless of the thickness of the wall to which the frame may be applied, while the auxiliary elements 4 may be of varying widths to accommodate various thicknesses of wall; the interlocking connections being also standard. These connections are preferably positively interlocked; that is, the interlocked parts are so held together by the connections used that even without the use of screws, rivets, or the like, the parts cannot become inadvertently laterally displaced with respect to each other when in assembled relationship. By reason of this, the parts 3 can be kept in stock while the usually narrower parts or elements 4 can be made up as required. This feature is obviously of great importance to the trade, in that it expedites the filling of orders and also reduces the cost of shipment in many instances by reducing the weight of parts to be expressed. Parts 3 and 4, however, when assembled may be regarded as a unit and will together be hereinafter referred to as a jamb section. These jamb sections are provided

with suitable molding sections 6; and, when assembled, are adapted to receive a door in the usual manner.

It will be noted that each jamb section, considering the elements 3 and 4 as assembled to form a whole, is substantially U-shaped in cross section, and the respective flanges 7 of such section are each adapted to be received into a groove 8 which is formed in a flange 9 of the buck 10; one of such flanges 9 extending laterally from either side of the body 11 of each buck forming part. In cross section each of these buck forming parts or buck-members is also substantially U-shaped, and is formed preferably by bending sheet material into channel-like form and further bending or folding over portions of the flanges so formed upon themselves, so as to provide grooved flanges; the grooves 8 of which are preferably adapted to receive the flanges 7 of the jamb sections quite snugly.

Apertures or holes are provided in the respective molding sections, jamb flanges 7, and buck flanges 9, which when the parts are in assembled relationship will be in alignment and adapted for the reception of suitable uniting or securing devices, such as the bolts 12. Herein is a feature of considerable importance, in that the number of securing devices is reduced to a minimum. The molding sections are preferably flanged as at 13 so that the edges of these flanges may engage the respective jamb flanges 7. The buck members are preferably secured together at the respective corners of the buck in any suitable manner, as for example by means of the tongues 14 and corresponding slots 15, and these members are firmly held in place when the wall has been erected therearound by means of anchoring devices or plate 15. In my prior application above referred to, in lieu of these anchoring plates, tongues were struck up out of the body of the buck members therein described, but I have found in practice that such securing means should preferably be adjustable longitudinally of the buck members, in order to accommodate the devices to a brick wall, for example, since therein the plane between courses of brick in which an anchoring device is to be disposed, may vary materially in elevation or level, owing to different thicknesses of mortar between the several tiers of brick. I have now therefore formed the anchoring elements separate and distinct from the buck members and have rendered the same adjustable longitudinally with respect thereto, by making such members substantially L-shaped as shown in Figs. 2 and 3, and by slotting as at 16 the sides 17 of such plates which abut against the outer wall of a buck member. These anchoring plates may hence be clamped at any desired height or along the length of a buck-member by

means of bolts 18, and the wall engaging portions thereof are preferably corrugated, as shown, in order to more firmly lock the same into the wall.

In erecting a door of this type, the several buck members will be secured together initially by means of the slot and tongue connections at the abutting ends thereof; the wall will then be erected about the buck; the several jamb sections will be slipped into place inside of the buck; the moldings will be applied thereto in the manner shown; and the molding, buck and jamb sections will be firmly locked together by means of the single line of securing devices which are disposed around either side of the door. The buck will obviously be concealed by the molding and jamb sections, and the resulting frame is attractive in appearance and the cost of producing and assembling the same is reduced substantially to a minimum.

It will be observed that when the parts are in assembled relationship that a portion of the interlocking connections 5 of the jamb sections will bear against the respective sections of the buck so that the middle portions of said jamb sections are supported against inadvertent lateral displacement.

In conclusion, I particularly wish to point out that I contemplate various applications of my herein described invention, the door frame shown in the accompanying drawings being but one exemplification thereof, so that the said invention should only be limited by the scope of the claims appended hereto.

Having described my invention, what I claim, is:

1. In a device of the class described, sheet metal buck-forming parts having flanges at the respective sides thereof said flanges being returned to form recesses, jamb sections having flanges adapted to enter the recesses in the buck flanges, moldings, and means for securing said buck-forming parts, jamb sections and moldings together.

2. In a device of the class described, a sheet metal buck-forming member having a flange said flange being returned to form a recess therein, a molding section and a jamb section, one of said sections having a portion thereof adapted to be inserted into the recess in said flange, and common means for fastening said buck-forming part and sections together.

3. In a device of the class described, a sheet metal buck-forming member having a flange said flange being returned to form a recess therein, a molding section and a jamb section, one of said sections having a portion thereof adapted to be inserted into the recess in said flange, and means for fastening said buck-forming part and sections together.

4. In a device of the class described, a sheet metal buck-forming member having a

recessed flange, a molding section and a jamb section, one of said sections having a portion thereof adapted to be inserted into the recess in said flange and a uniting device adapted to engage all three of said parts to hold the same together.

5 5. In a device of the class described, a sheet metal member having a flange laterally projecting from one side thereof, said
10 flange being grooved, a second member insertable into the groove of said flange, a third member having a flange adapted to bear against one of the two members first mentioned, each of said members having a
15 hole therein, said holes being substantially in alinement when the parts are in assembled relationship, and a uniting device adapted to be inserted into said holes to hold said members together.

20 6. In combination, a buck element having a grooved flange, a jamb element having a portion thereof adapted to enter the groove in said flange, a molding element adapted to co-act with said jamb element to cover
25 the buck element when the several parts are operatively disposed, some of said elements having holes therein, said holes being substantially in alinement when the parts are assembled, and a uniting device adapted to

be inserted into said holes to hold said elements together. 30

7. In a device of the class described, a plurality of jamb sections adapted to be assembled to form a frame, each of said sections comprising two interlocking elements, 35 a buck for said jamb, a portion of the interlocking connections between said elements being adapted for contact with said buck when the parts are in assembled relationship, whereby the middle portions of said
40 jamb sections are supported against inadvertent lateral displacement.

8. In a device of the class described, sheet metal buck-forming parts having flanges at the respective sides thereof, said flanges being longitudinally bent back to form
45 recesses, jamb sections having flanges adapted to enter the recesses in the buck flanges, moldings, and bolt members passing through said flanges of the buck-forming parts and
50 said jamb sections and said moldings to thereby hold said parts together.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

ALFRED J. ELLIS.

Witnesses:

WALDO M. CHAFIN,
WILLIAM C. LANG.