Sept. 10, 1957 B. A. QUINN 2,805,740

DOOR AND HINGE CONSTRUCTION

Filed March 15, 1956

Fig. 1

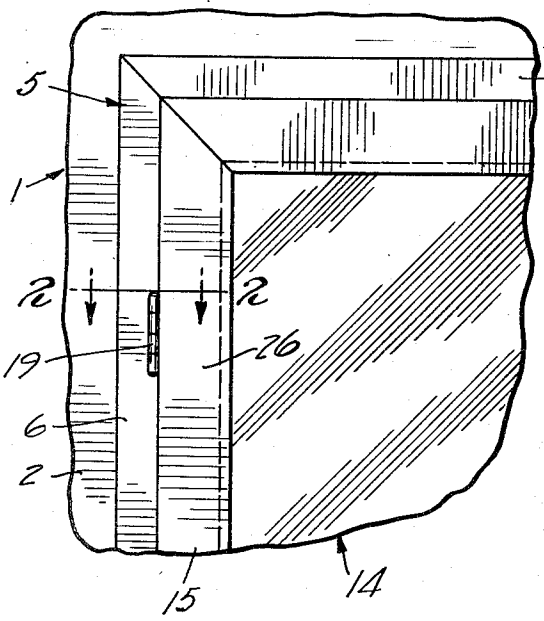


Fig. 3

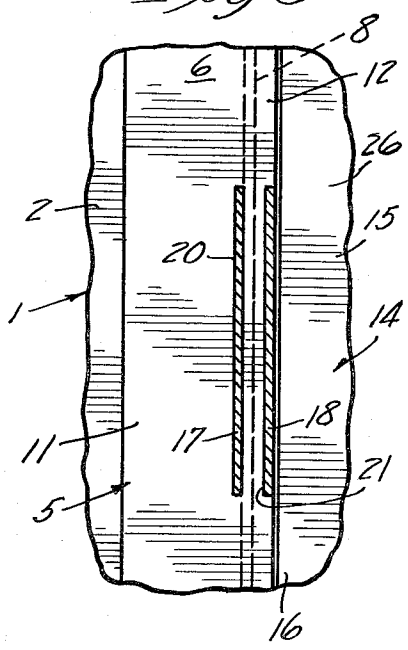


Fig. 2

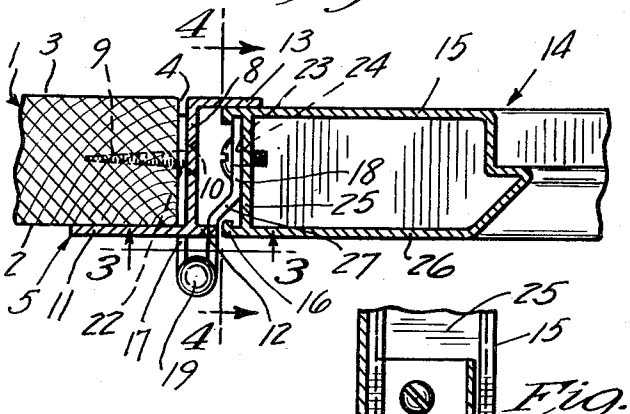
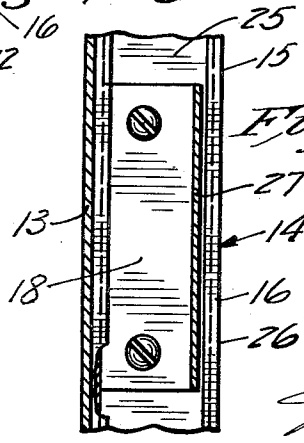


Fig. 4



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DOOR AND HINGE CONSTRUCTION

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1 Claim. (Cl. 189—46)

My invention relates to metallic doors and frames, and more particularly to hinge means therefor.

More particularly, my invention relates to metallic doors and frames formed from extruded aluminum or the like. Such frames are formed of mating sections at the factory and are cut to precise size by the installer on the job or place of construction. Furthermore, such frames and cooperating doors therefor, are provided with opposed lips, one on the frame and one on the door, the latter of which conventionally is notched by the installer on the job only after it has been determined whether the door will be hung with a left or right hand hinge. The metal cutting and the setting of the hinges on the job in this manner is often time consuming and unsatisfactory because of the fact that proper tools and/or workmen are not available to do a mechanically sound as well as a good appearing job.

The primary object of my invention is the provision of a means whereby the conventional metallic door frames may be completely slotted and notched at the factory to avoid this operation on the job by the installer.

A still further object of my invention is the provision of a device of the class described above which is inexpensive to produce, yet is durable and fool-proof in construction.

The above and still further objects of my invention will become apparent from the following detailed specification, appended claims and attached drawings.

Referring to the drawings, wherein like characters indicate like parts throughout the several views:

Fig. 1 is a fragmentary view in side elevation of a conventional metallic door frame and cooperating door modified in conformity with my invention;

Fig. 2 is an enlarged fragmentary sectional view taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a view partly in section and partly in side elevation as seen substantially from the line 3—3 of Fig. 2; and

Fig. 4 is a view in vertical section taken substantially on the line 4—4 of Fig. 2.

Referring with greater particularity to the drawings, the numeral 1 indicates a wall, the outer surface of which is identified by the numeral 2, the inner surface by 3, and the connecting surface defining a door opening by the numeral 4. Adapted to be detachably secured around the door opening defined by the surface 4 is a frame 5 comprising a pair of matching side frame sections 6, only one of which is shown, and a connecting horizontally disposed section 7.

Side frame sections 6 comprise an elongated flat vertically disposed liner element 8 adapted to be secured to the wall surface 4 defining the opening in the wall 1 through the means of anchoring screws or the like 9 which extend through longitudinally spaced openings therein 10. Formed integrally with the liner element 8 and projecting laterally outwardly from one longitudinal edge thereof, and substantially normal thereto, is a longitudinally extended flange 11 which is adapted to overlie a marginal surface portion of the outer surface 2 of the wall 1 adjacent the opening defined by the surface 4. Also formed integrally with the liner element 8 and projecting laterally inwardly from the same longitudinal edge thereof, is a longitudinally extended lip 12. Preferably and as shown, lip 12 not only is normal to the liner element 8 but lies in the same vertical plane as, and forms an inward extension of, the flange 11.

A second longitudinally extended flange 13 is formed integrally with the liner element 8 and projects laterally inwardly from the opposite longitudinal edge thereof in the direction of the opposite side of the opening defined by the surface 4. The flange 13 provides a stop for a conventional door identified by the numeral 14 and, preferably and as shown, extends inwardly in the same direction as the lip 12 a greater distance than said lip 12.

The door 14, as shown, is formed of tubular sections 15, the outer longitudinal edge of which is provided with a longitudinally extended lip 16 which opposes the lip 12 on the frame sections 6 and lies in extremely closely spaced relationship thereto when the door 14 is in the closed position of Figs. 1 and 2.

According to present practices, one of the frame members 6 is provided with a pair of vertically spaced elongated slots 20. As shown particularly in Fig. 3, slots 20 are immediately outwardly adjacent the liner element 8 and are parallel thereto. Obviously, the frame member 6 with the slots 20 therein may be placed on the left, as shown in Fig. 1, to provide a partial hinge mounting for a door to be swung on a left hand hinge. On the other hand, if a right hand hinge is desired, the frame member 6 with slots 20 therein is merely turned upside down and placed on the right. Thereafter, the frame members 6 and 7 are cut and mitred precisely to size to form the frame 5.

It will be noted that the elongated slots 20 accommodate one of the wings 17 of a conventional hinge 19. However, under this conventional arrangement, it is customary to notch the lip 16 of the door 14 to accommodate the wing 18 of the hinge 19. As above indicated, this metal cutting on the job is not only time consuming, but also unsatisfactory because of the frequent lack of proper tools.

In accordance with my invention, the lip 12 of the frame member 6 containing the slots 20 is provided with notches 21 at the factory, at the same time as the slots 20 are formed therein. It will be noted that the notches 21 are substantially the same depth as the cooperaitng slots 20 and that same lie in closely spaced parallel side by side relation, one each to one of the slots 20. Furthermore, as shown, the notches 21 are of a width to at least snugly accommodate the wing 18 of the hinge 19 therein.

With this arrangement, it is never necessary to notch the frame 5 of the door 14 on the job. It is merely necessary to determine in advance whether the hinges 19 are to be positioned on the left or right hand side of the frame 5. If the hinges 19 are to be positioned on the left hand side of the frame 5, then and in that event, the frame section 6 having the slots 20 and notches 21 therein is positioned on the left as indicated in Fig. 1; whereas, if the hinges 19 are to be positioned on the right side of the frame 5, then and in that event, the frame section 6 with slots 20 and notches 21 therein is inverted and positioned on the right. Finally, the frame sections 6 and 7 are mitred, cut to size and the frame erected.

To hang the door 14 on the hinges 19, as shown particularly in Fig. 2, the leaves 17 of the hinges 19 are inserted through the slots 20 with the inwardly projected ends thereof being received between the liner element 8 and the wall surface 4. Wings 17 are provided with one

or more openings **22** which are alignable with the openings **10** in the liner element **8** for the reception of anchoring screws or the like **9**. The other wings **18** of the hinges **19** are received within the notches **21** and the lip **12**. The inwardly projected ends thereof, as shown, are provided with anchoring bolt receiving apertures **23** which are alignable with openings **24** of the wall **25** of the adjacent door section **26** of the door **14**. Note the offset in the wing **18** of the hinge **19**, as indicated at **27**.

My invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above objects, and while I have disclosed a preferred embodiment thereof, it should be specifically understood that same is capable of modification without departure from the scope and spirit of the appended claim.

What I claim is:

In a metallic door frame construction, a frame section having an elongated flat liner element adapted to be secured to a surface defining an opening through a wall, a longitudinally extended flange formed integrally with said element and projecting laterally outwardly from one longitudinal edge thereof and substantially normal thereto, said flange being adapted to overlie a marginal surface portion of said wall adjacent said opening, a longitudinally extended lip formed integrally with said liner and projecting laterally inwardly from said one longitudinal edge thereof and also substantially normal thereto, a second longitudinally extended flange integrally formed with said liner element and projecting laterally inwardly from the opposite longitudinal edge portion thereof toward the opposite side of said opening and providing a door stop, said first mentioned flange being provided with an elongated slot immediately adjacent said liner element and parallel thereto, the longitudinal edge of said lip being notched to approximately the width of said slot, said notch being of a depth corresponding approximately to the length of said slot and being disposed in side by side relation to said slot, and a hinge, one leaf of said hinge being snugly receivable in said slot whereby the inwardly projecting end thereof is received between the liner element and the adjacent surface defining said wall opening, the other leaf of said hinge being received within said notch in said lip.

References Cited in the file of this patent

UNITED STATES PATENTS

2,200,251	Atwood	May 14, 1940
2,717,061	Katz	Sept. 6, 1955
2,726,745	Quinn	Dec. 13, 1955