E. R. LEONARD.

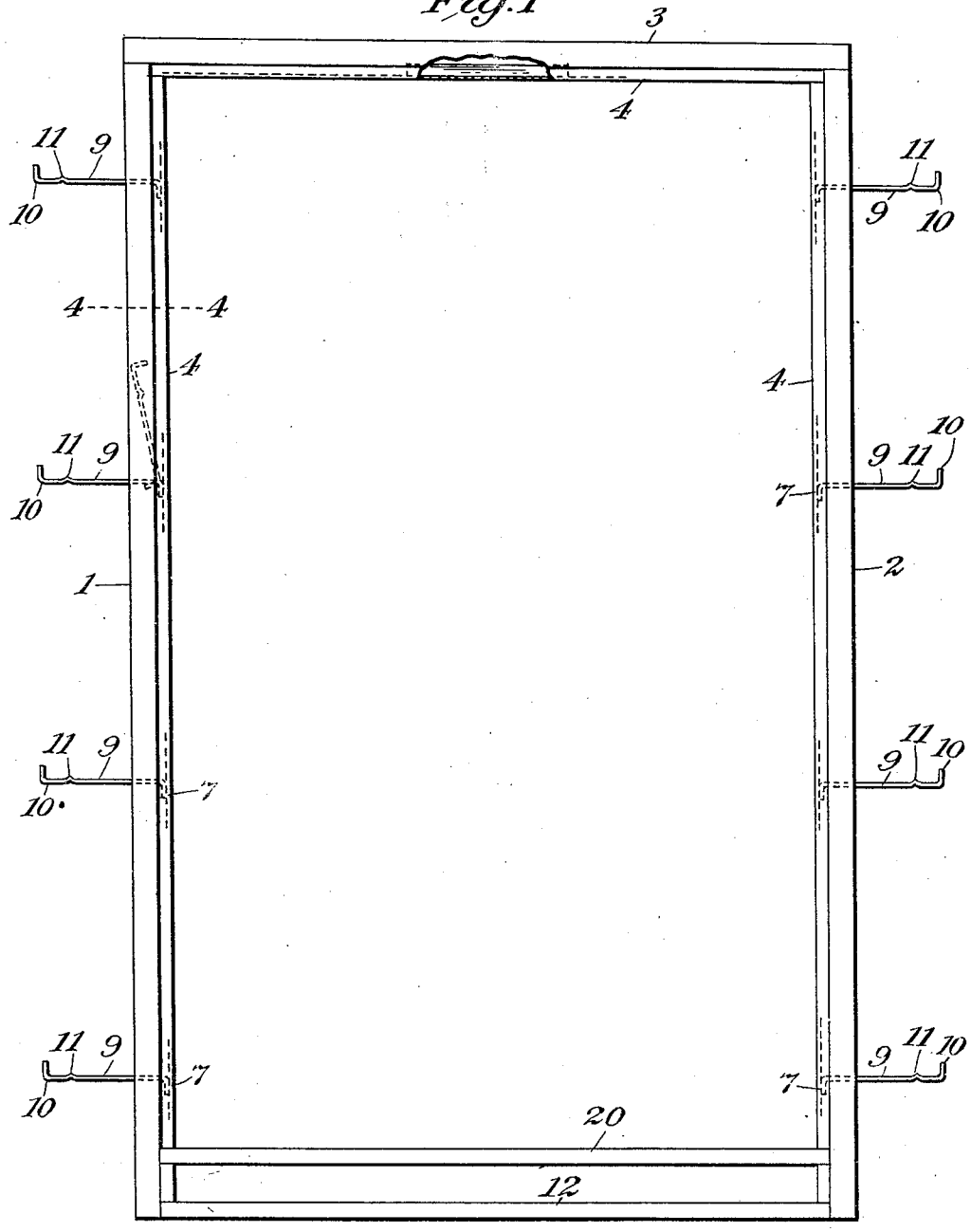
METAL FRAME FOR DOORS AND THE LIKE.

APPLICATION FILED JULY 28, 1920.

1,363,887. **Patented Dec. 28, 1920.**

2 SHEETS—SHEET 1.

Fig. 1



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By his Attorney

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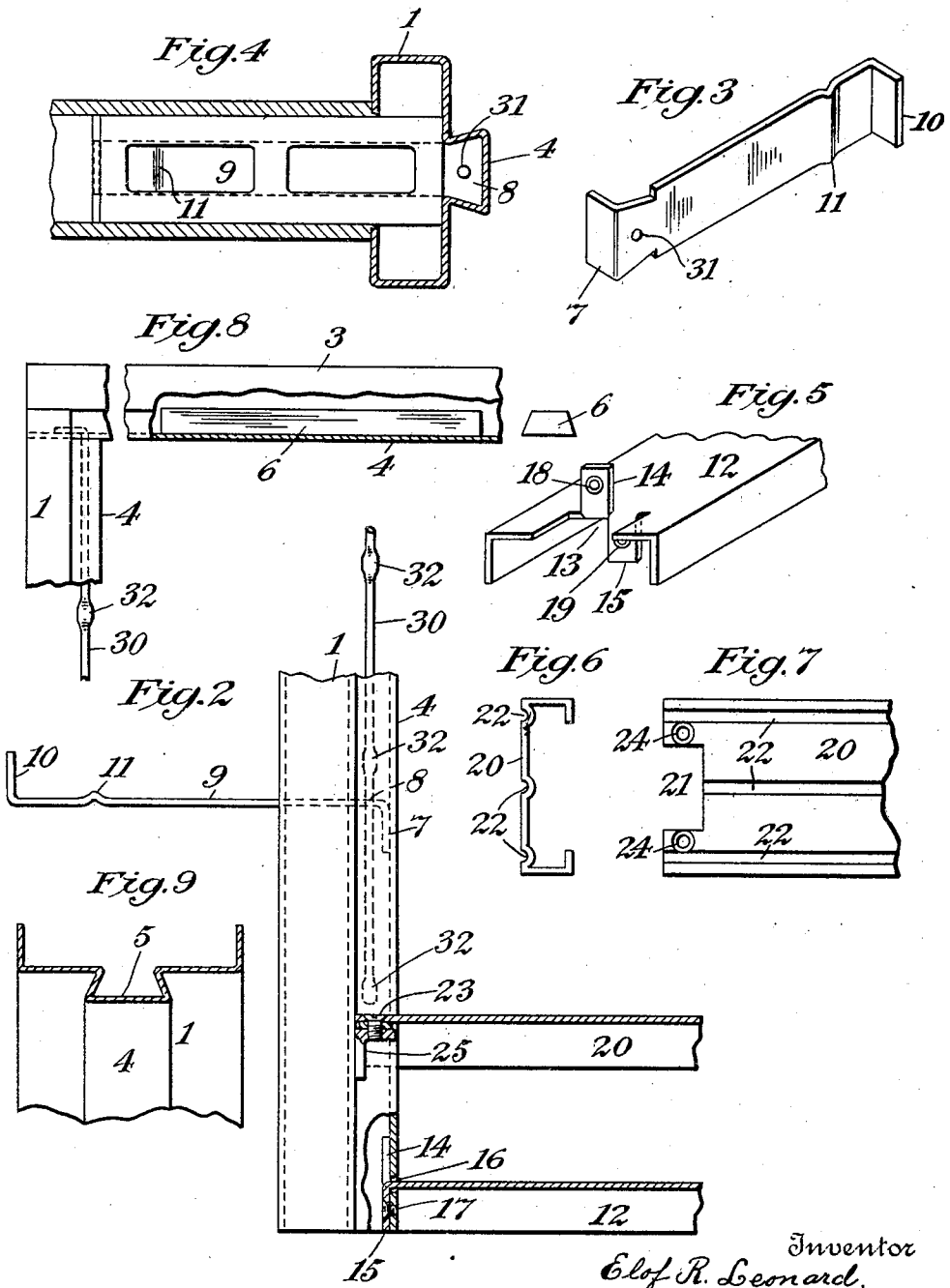
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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METAL FRAME FOR DOORS AND THE LIKE.

1,363,887. Specification of Letters Patent. Patented Dec. 28, 1920.

Application filed July 28, 1920. Serial No. 399,557.

To all whom it may concern:

Be it known that I, ELOF R. LEONARD, a citizen of the United States, residing at Woodcliff, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Metal Frames for Doors and the like, of which the following is a specification.

My invention relates to metal frames for doors, and the like, which are adapted to be set in fireproofed walls, for instance walls built up of hollow tiles; and my improvements are directed to so forming the parts of the frame that they may be readily assembled and securely united together into a unitary structure, provided with means for temporarily holding it in position while the wall is being built up around it, and also with adjustable means for anchoring it to the wall, these and the other details of my improvement being more fully set out and claimed hereinafter.

In the drawings, Figure 1 is a front elevation of a door frame embodying my improvement, part of the header being broken away to show the interior arrangement; Fig. 2 is a detail, partly in section, of the lower left hand corner of the frame; Fig. 3 is a perspective view of one of the anchors; Fig. 4 is a cross sectional view of the side of the frame and an anchor, taken on the line 4—4 of Fig. 1, looking down, and showing also a section of wall adjacent thereto; Fig. 5 is a perspective view of one end of the spreader; Fig. 6 is an end view, and Fig. 7 is a plan view of one end of the sill; Fig. 8 is a view of the upper left hand corner of the frame, partly in section, an intermediate portion being broken away; and Fig. 9 is a view of the upper end of one of the jambs, as looking to the left on Fig. 8.

Fig. 8 is on an enlarged scale, as compared with Fig. 1; and Figs. 2 to 7, inclusive, are on a still further enlarged scale. The jambs 1, 2 and header 3 of the frame are formed of sheet metal channel bars, provided with dovetailed stops 4, from which the body of the metal is bent outward on each side to form the inner face of the frame, then over to form its outside face, and then inwardly to meet and merge with the wall. A dovetailed socket 5 is formed in the top of each jamb, as shown in Fig. 9, to receive an end of the dovetailed stop of the header 3, so that the header and jambs may be slid together into their proper relations, and then, preferably, welded fast to each other, thus uniting the jambs and header into a unitary structure.

This arrangement results in leaving the undercut channel, within the stop 4 of the header 3, open at both ends, so that a dovetailed, wooden block, as 6, may be slid into it, as indicated in Fig. 8, and used as a temporary anchor to which a brace may be nailed for the purpose of holding the frame in position while the wall is being built up around it. Before the wall is carried up to the level of the header, the wooden anchor may be removed, if desired, the frame being supported by the wall.

In the undercut channels within the stops of the jambs I place the flanges 7 of the dovetailed ends 8 of the anchor bars 9. This allows the anchor bars to be slid up and down in the channels, without being withdrawn therefrom, their bodies being extended at right angles from the frame; as shown in Figs. 1 and 2, but being susceptible of being bent over, retractably, into the position shown by the broken lines at the left of Fig. 1, so as to lie within the hollow of the jamb, for convenience in shipping. Before setting the frames, the anchor bars should be straightened out again.

The outer ends of the bars are, preferably, bent over, as indicated by 10; and they may also be provided with irregularities of surface, such as ribs 11, these and similar variations of form serving as points for the wall material to more effectually grip the anchors when embedded in the wall.

At the foot the frame is spaced by a spreader 12, which may be recessed at each end as at 13, to straddle the stops 4 of the jambs, and be secured thereto in some suitable manner, as by flanges 14, 15, passed through slots 16 in the stops and then bent up and down, as shown in Fig. 2, and further secured, as by bolts 17 passed through holes 18, 19 in the flanges and through the stops 4, if desired.

A sill 20 is placed in the frame above the spreader 12, at the proper height to meet the floor when laid. The sill which is spaced at each end, as at 21, to straddle the stops 4, is preferably provided with anti-slipping irregularities, as grooves 22—22, and is secured to the jamb in some suitable way, for instance by being held by bolts 23,

passed through sockets 24—24 in its ends and engaging with flanges 25 secured, as by spot welding, to the jamb.

When thus assembled, the frame constitutes a unitary structure, all the parts of which are permanently united, the anchor bars being adjustable vertically in the grooves of the jambs, but not being removable therefrom because of the flanges on the ends of the spreader and the stop of the header, which project into the channels so as to intercept the line of movement of the anchor bar heads.

The adjustability of the anchor bars is of particular value in setting them in walls built up of hollow tiles or bricks or blocks, for the anchors can be slid up or down so as to be placed between the joints of the wall elements and to be normally bedded in the cement between them, so as to accommodate the anchors to the wall without any special cutting or spacing of the wall elements.

In order to prevent the bunching of the anchors at any particular point, a spacing rod 30 may be employed. In that case the anchors are pierced, as at 31, to slide upon the rod, which is provided with spacing means, as flattened portions 32, 32, over which the anchors will not pass, so that each anchor is restricted to sliding to and fro between two stops 32, 32. The space between the stops is ample to allow of any adjustment needed for positioning the anchors between the wall elements without special cutting of the latter.

If desired, a hole may be made through the stop 4 of the header, and the end of the rod 30 passed up through it and secured, as by bending it over, as indicated by broken lines in Fig. 8, or by other suitable means.

The unitary character of the frame particularly facilitates its shipment as a whole ready for being built into a wall without further special preparation of the frame or the necessity of employing skilled labor other than that of the wall constructor.

It is obvious that my device may be modified in detail, as by the use of mechanical equivalents, without departing from the spirit of my invention as claimed, the particular form of embodiment which I have shown in the drawings being intended to illustrate a typical but not exclusive design.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is:

1. The combination, in a metal frame for doors or the like, of jambs provided with stops having interior, undercut channels therein, and anchor elements slidably disposed in the channels of the jamb stops.

2. The combination, in a metal frame for doors or the like, of jambs and a header each provided with stops having interior, undercut channels therein, and anchor elements slidably disposed in the channels of the jamb stops.

3. The combination, in a metal frame for doors or the like, of jambs provided with stops having interior, undercut channels therein, and anchor elements with expanded heads slidably disposed in the channels of the jamb stops.

4. The combination, in a metal frame for doors or the like, of jambs provided with stops having interior, undercut channels therein and anchor elements slidably but not detachably disposed in the channels of the jamb stops.

5. The combination, in a metal frame for doors or the like, of jambs provided with stops having interior, undercut channels therein, anchor elements slidably disposed in the channels of the jamb stops, and common means for limiting the movement of the slidable anchors.

6. The combination, in a metal frame for doors or the like, of jambs provided with stops having interior, undercut channels therein, anchor elements slidably disposed in the channels of the jamb stops, and means consisting of a rod passing through the anchors for limiting their movement on each side of the frame.

7. The combination, in a metal frame for doors or the like of a unitary structure embodying a header, spreader and jambs provided with stops having undercut channels therein and anchors longitudinally adjustable in said jamb stops, and means, consisting of a rod passing through the anchors on each side of the frame and provided with enlargements, to limit the movement of the anchors.

ELOF R. LEONARD.