E. TROOLIN.

FORM FOR CONCRETE WALLS.

APPLICATION FILED JULY 29, 1920.

1,390,066.

Patented Sept. 6, 1921.

2 SHEETS—SHEET 1.

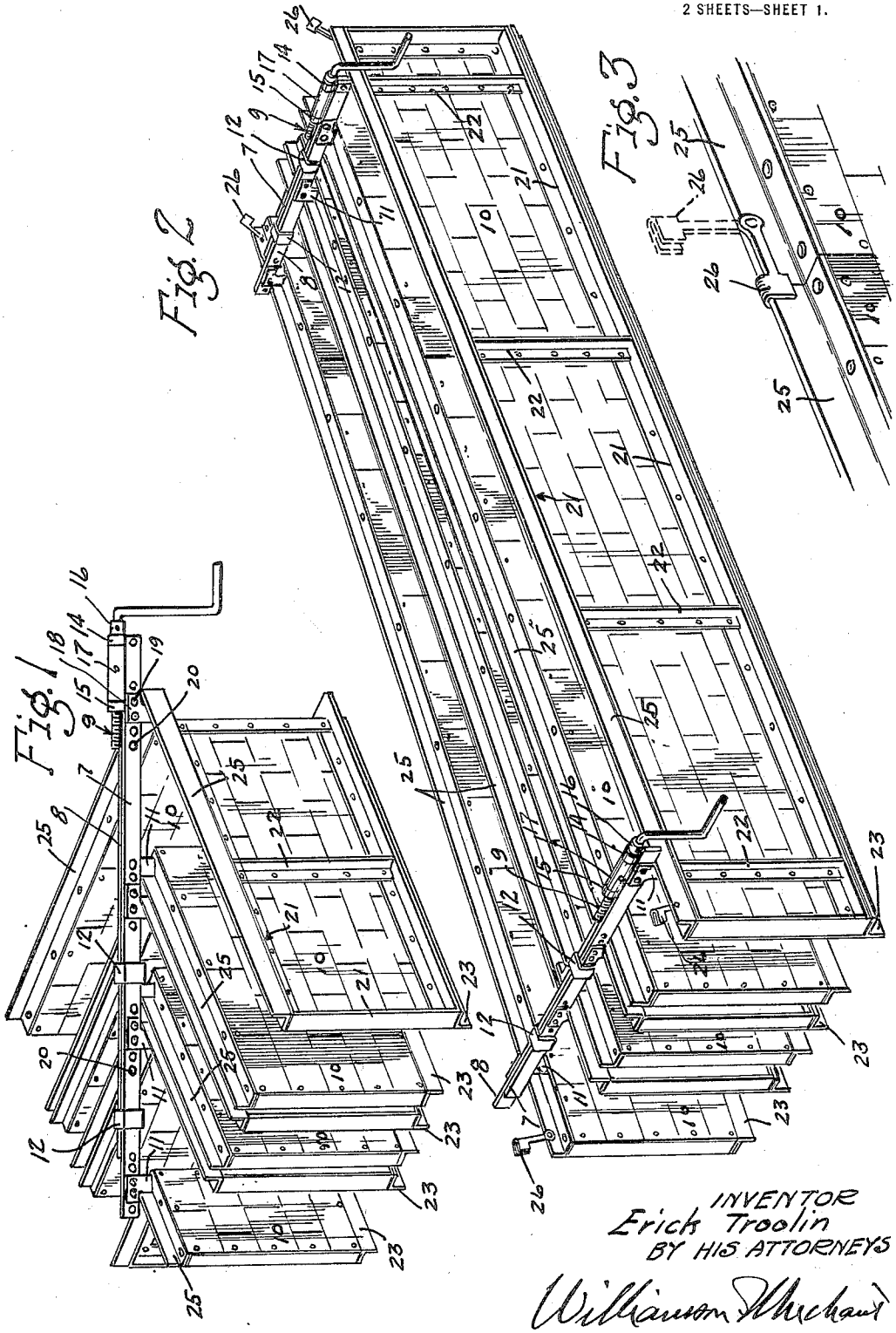


Fig. 2

Fig. 3

Fig. 1

INVENTOR
Erick Troolin
BY HIS ATTORNEYS
Williamson & Merchant

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Fig. 6

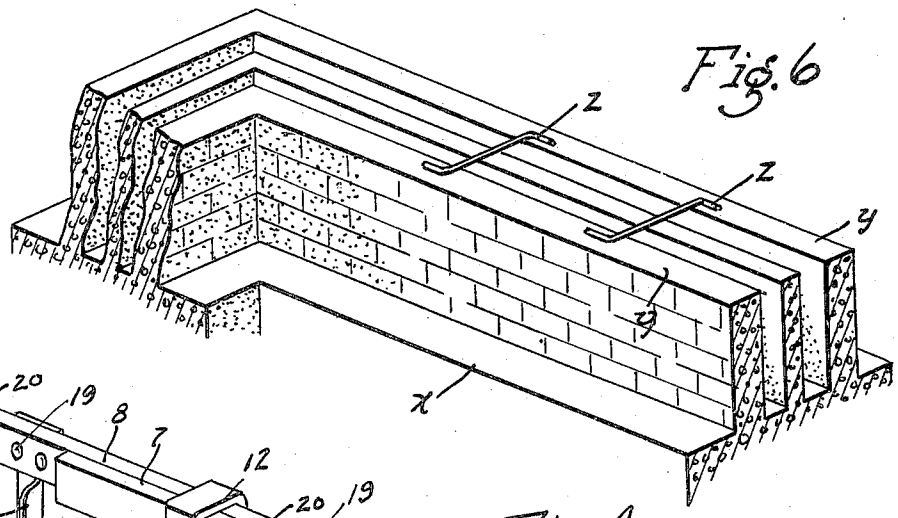


Fig. 4

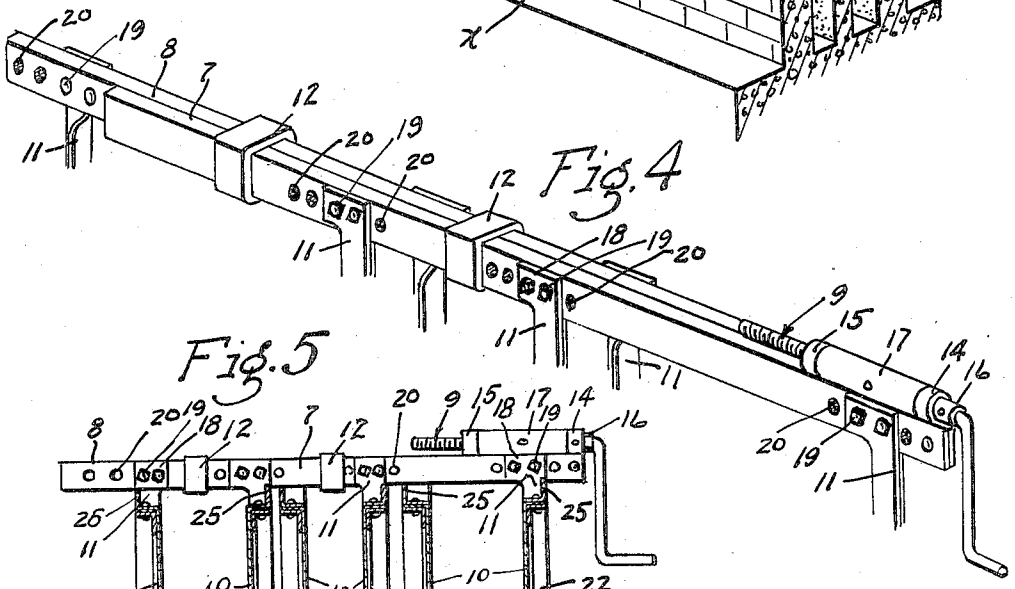
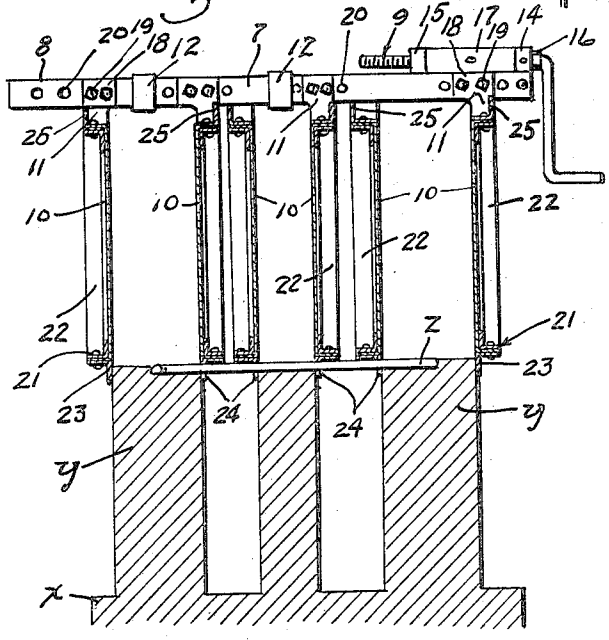


Fig. 5



INVENTOR

Erick Troolin

BY HIS ATTORNEYS

Williamson & Merchant

UNITED STATES PATENT OFFICE.

ERICK TROOLIN, OF BRAHAM, MINNESOTA.

FORM FOR CONCRETE WALLS.

1,390,066. Specification of Letters Patent. Patented Sept. 6, 1921.

Application filed July 29, 1920. Serial No. 399,858.

To all whom it may concern:

Be it known that I, ERICK TROOLIN, a citizen of the United States, residing at Braham, in the county of Isanti and State of Minnesota, have invented certain new and useful Improvements in Forms for Concrete Walls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an extremely simple and highly efficient form for use in constructing concrete walls with one or more air spaces, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Figure 1 is a perspective view of the improved form designed to form a corner section of a wall having a double air space;

Fig. 2 is a perspective view of the improved form designed to form a straight section of a wall having a double air space;

Fig. 3 is a fragmentary perspective view of one of the latches used in connecting and alining abutting wall plates of adjacent forms;

Fig. 4 is a fragmentary perspective view of one of the forms;

Fig. 5 is a transverse section taken through a wall and one of the forms; and

Fig. 6 is a fragmentary perspective view of the wall with improved forms removed.

The improved form, as shown, comprises a pair of overlapping bars 7 and 8, a feed device 9, coöperating pairs of laterally spaced inner, outer and intermediate wall plates 10 alternately secured to the bars 7 and 8 by hanger bars 11. The bars 7 and 8 are held, by collars 12, in assembled relation with freedom for endwise sliding movement, the latter on the former, under the action of the feed device 9, which, as shown, is in the form of a screw rod having at one end a hand crank 13, by which it may be operated. This feed screw 9 is journaled in a bearing 14 on the bar 7 and has screw-threaded engagement with a nut block 15 on the bar 8. A pair of collars 16 and 17, secured to the feed screw 9, is arranged to engage opposite faces of the bearing 14 to hold said feed screw against endwise movement. As shown, the collar 17 is of such length as to be engaged by the nut block 15 as a stop to limit the endwise movement of the bar 8 toward the feed screw 9.

The hanger bars 11, which, as shown, are in the form of angles, have their upper ends flattened to afford heads 18, through each of which is inserted a pair of screws 19 that have screw-threaded engagement with bores 20 in the outer faces of the two bars 7 and 8 to detachably secure said hanger bars thereto. It is important to note that there is a plurality of bores 20 longitudinally spaced to permit adjustment of one of the hanger bars 11 of each pair toward and from the other thereof. The wall plates 10, which are preferably formed from sheet metal, are rigidly secured to the opposing faces of the hanger bars 11, and in addition to these hanger bars 11, the wall plates 10 are reinforced, on outer marginal edge portions, by means of angle bars 21. The wall plates 10 are further re-inforced, at intermediate points, by upright angle or T-bars 22. The opposing faces of each pair of wall plates 10 may be perfectly smooth, or, as shown, they may be pressed both longitudinally and vertically to form ribs arranged to leave impressions in a wall to represent bricks.

To the lower edge of each wall plate 10 is rigidly secured an angle bar to afford a clamping flange 23, the vertical web of which is flush with the inner face of the respective wall plate to afford a depending extension thereof. These clamping flanges 23 are preferably notched at 24 for a purpose that will presently appear. On the upper longitudinal edge of each wall plate 10 is rigidly secured an angle bar to afford a retaining flange 25, the vertical flange of which is turned outward, or, in other words, is laterally offset from the inner face of the respective wall plate.

In Fig. 1, the wall plates 10 are in the form of angles with a pair of the bars 7 and 8 extended directly over the apexes thereof, and which wall plates are alternately secured thereto and designed to form a corner of a wall having a double air space. The wall plates 10, shown in Fig. 2, are straight throughout their entire length and designed to form a wall with a double air space, and which wall plates are connected,

near their ends in parallel arrangement, by two pairs of the bars 7 and 8. Abutting wall plates, of adjacent forms, are connected and alined by latches 26 pivoted to the retaining flanges 24 and having bifurcated heads arranged to overlap abutting ends of said flanges, as shown in Fig. 3.

In constructing a concrete wall by the use of my improved forms, a foundation X is preferably poured, on which said forms are placed after the wall plates have been adjusted, by shifting the hanger bars 11 on the bars 7 and 8, to give the desired thickness to the several sections of the wall and the desired width to the air spaces.

After the first course of the wall is poured, the forms are left a sufficient length of time to permit the cement to set. Said forms are then removed from the formed section of the wall by operating the cranks 13 to impart lateral movement to one of the side plates 10 of each pair and thereby increase the width between the wall plates to separate the same from the formed wall. This movement of the cranks 13 may be very slow, so as to not crack or break the cement when removing the wall plates therefrom. The released forms are then lifted and cross tie-rods Z placed on the formed sections of the wall to not only tie the sections of the wall together, but support the forms while an additional tier of cement is poured, as shown in Fig. 5. The notches 24, in the clamping flanges 23, are arranged to receive the rods Z and thereby permit said flanges to overlap the sides of the wall sections. The cranks 13 are then operated to draw the wall plates 10 toward each other and clamp the flanges 23 onto said wall sections. Cement is then poured in the forms for the next tier in the wall, and so on, until the wall is complete. The retaining flanges 24 prevent cement, as the same is poured into the forms, from running over the top of the side walls 10.

By the use of my improved form, a wall may be formed with a continuous air space, which extends the full height and length thereof as well as around the corner of the wall. If it is desired to form a wall with a single air space, one pair of wall plates 10 may be detached from the bars 7 and 8.

The above described invention, while extremely simple and of comparatively small cost to manufacture, is thought to be highly efficient for the purpose had in view.

What I claim is:

1. A form for concrete walls having in combination two rectangular bars disposed with their long sides vertical and contacting, and straps embracing and securing said bars together, a bearing secured at the end of one bar, a screw rod journaled in said bearing, a long collar at one side of said bearing and a short collar at the other side thereof, said collars being secured to said rod and a nut collar engaging said rod secured to the other bar, said long collar forming a stop for said nut collar and spaced plates depending from and alternately secured to said bars.

2. A form for concrete walls having in combination two rectangular bars disposed side by side with their long axes vertical and secured together for relative longitudinal movement, a plurality of spaced angle plates depending therefrom and having extensions alternately secured thereto at the sides thereof, plates secured to said angle plates and extending therebetween normal to said bars, a pair of oppositely arranged angles secured together and to said plates along the top edge thereof, one of the angles having one side projecting upwardly, and a pair of oppositely arranged angles secured together and to said plates along the bottom thereof, one side of one of said angles extending downwardly and below said plates.

In testimony whereof I affix my signature in presence of two witnesses.

ERICK TROOLIN.

Witnesses:
OSCAR A. OLSON,
ANNA C. MCCORMACK.