Apr. 24, 1923. 1,453,174

E. E. PATMOR

CONCRETE FORM

Filed June 9, 1922

Fig. 2.

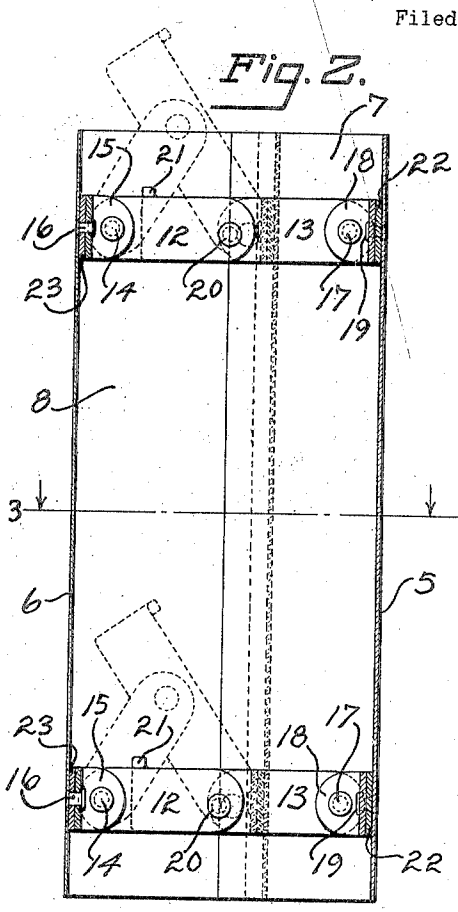
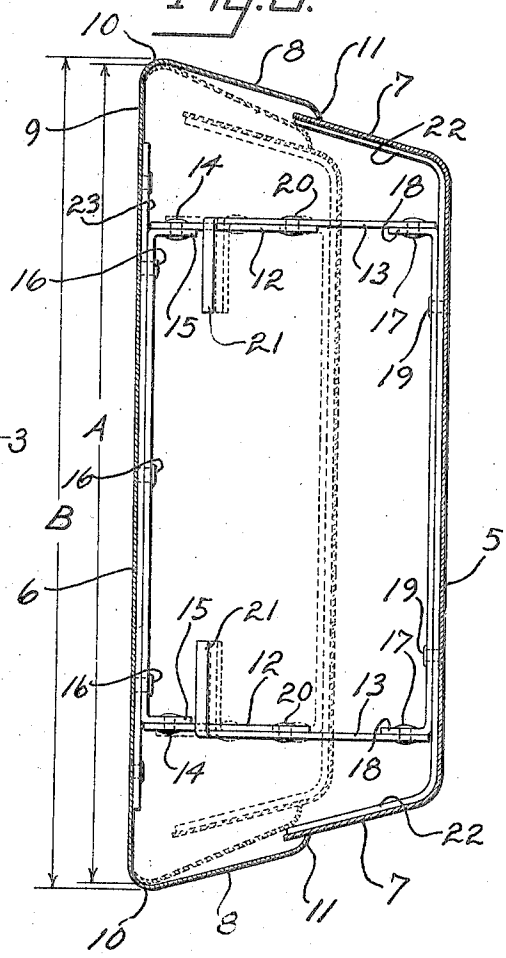


Fig. 3.



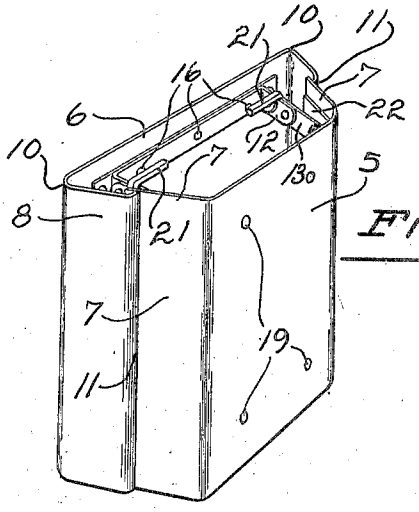
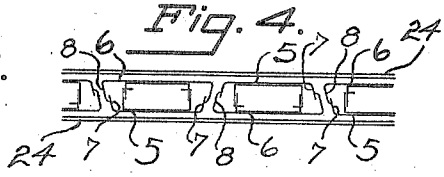


Fig. 1.

Fig. 4.



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Patented Apr. 24, 1923. 1,453,174

UNITED STATES PATENT OFFICE.

EDWARD E. PATMOR, OF SANTA ANA, CALIFORNIA.

CONCRETE FORM.

Application filed June 9, 1922. Serial No. 567,038.

To all whom it may concern:

Be it known that I, EDWARD E. PATMOR, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented a new and useful Concrete Form, of which the following is a specification.

This invention relates to metal forms of the type employed in the casting of hollow "poured" cement or concrete structures, and an object of the invention is to make provision for contraction of the form in width and thickness by the simple expedient of closing the sides toward each other, so that the form can be easily withdrawn from the hole which it occupies.

Another object is to produce contraction in width of the form by permitting the edge walls or flanges of one of the form sections to spring inwardly when the form sections are relatively moved toward each other.

The accompanying drawings illustrate the invention:

Figure 1 is a perspective view of a concrete form constructed in accordance with the provisions of this invention.

Fig. 2 is an enlarged longitudinal section of Figure 1.

Fig. 3 is a plan section on the line indicated by 3—3 Figure 2.

Fig. 4 is a diagrammatic view showing a plurality of the forms, embodying the invention, arranged in position between outer form members preparatory to the pouring of the concrete.

There are provided two trough-shaped sheet metal sections 5, 6 of different widths assembled with their flanges 7 in opposition, the flanges 7 of the member 5 fitting inside of the side flanges 8 of the member 6. In other words the flanges 7 are disposed between the flanges 8. The members 5, 6, when assembled, form in end elevation the outline of a trapezoid, the flanges 7 flaring and the flanges 8 slanting inwardly toward the flanges 7. Thus, the flanges of the wider section 6 have the distance between the longitudinal edges closer together than the longitudinal edges of the flanges 7 of the narrower section 5. The sheet metal of which the section 6 is constructed causes the flanges 8 to be resilient so as to normally tend to return to the position shown in broken lines in Figure 3 when the form is collapsed. When the form is expanded the sections 5, 6, being moved away from one another to the position shown in full lines in Figure 3, the flaring flanges 7 engage the flanges 8 and bend said flanges 8 away from one another. This increases the over-all width of the section 6 from that indicated by the dimension line A in Figure 3 to that indicated by the dimension line B. In order to effect this the junctions of the flanges 8 with the main body 9 of the section 6 are curved as indicated at 10. Preferably the longitudinal margins of the flanges 8 are bent inwardly as indicated at 11 so as to effect contact of only the longitudinal edges of the flanges 8 with the outer faces of the flanges 7, thus preventing leakage of liquid concrete into the interior of the mold and minimizing friction when the sections are relatively moved.

Any suitable means may be provided for contracting and expanding the form and the invention is not limited to the means shown. These means are constructed as follows:

Two pairs of toggles are provided, an upper and a lower pair, and each toggle comprises links 12, 13. The links 12 are pivoted at 14 to ears 15 secured by rivets 16 to the inner face of the section 6. The links 13 are pivoted at 17 to ears 18 secured to the inner face of the section 5 by rivets 19. The links 13 are pivoted at 20 to the links 14, and are provided with handles 21 which extend at right angles to the links 13 above the links 12. The handles 21 can be grasped by the operator to manipulate the toggles, and said handles also serve as stops to limit downward motion of the toggles. The axis of the pivot 20 of each toggle is below a line passing through the axes of the associated pivots 14, 17, so that when the toggles are extended they cannot be collapsed by pressure against the outer faces of the sections 5, 6. In order to retract the toggles it is necessary to raise the handles 21.

The section 5 may be stiffened by ribs 22 which preferably extend transversely on the inner face of said section from the edge of one flange 7 to the edge of the other flange 7, thus the flanges 7 are relatively unyielding when they press against the flanges 8.

The section 6 may also be stiffened in part by ribs 23 which are shorter than the distance between the curved portions 10 so that

said portions can readily yield when the flanges are spread by pressure of the flanges 7.

The form is used in the following manner:

The outer forms, indicated at 24 in Fig. 4, having been first constructed in a manner well understood in the art pertaining to reenforced concrete construction, the inner form described above, in its expanded condition, will be inserted between the outer form members and other similarly constructed inner forms will be inserted in the same manner. Alternate inner forms will be reversed so as to be relatively arranged as shown diagrammatically in Figure 4. Then the fluid or semi fluid cement or concrete will be poured into the spaces outside of the collapsible inner forms and will be allowed to set for the requisite period of time.

When the concrete has set, the handles 21 will be drawn upwardly to collapse the toggles, thus drawing the section 5 toward the section 6, to the dotted position shown in Figure 3. This, as is clearly seen, permits the flanges 8 to spring inwardly, thus reducing the width of the section 6 to the dimension indicated at A in Figure 3. The form may then be easily withdrawn from the cavity formed by it in the wall being cast.

I claim:

In a concrete form, the combination of trough-shaped sheet metal sections of different widths assembled with their flanges in opposition, the flanges of the narrower section flaring and being disposed between the flanges of the wider section, the flanges of the wider section having their longitudinal edges closer together than the longitudinal edges of the flanges of the narrower section when the sections are in collapsed position, and retractable means to hold the sections against pressure tending to collapse them.

Signed at Los Angeles, California this 31st day of May 1922.

EDWARD E. PATMOR.

Witnesses:

GEORGE H. HILES,

L. BELLE WEAVER.