April 28, 1931. W. M. GOLDSMITH 1,803,109

CONCRETE FORM

Filed July 8, 1926

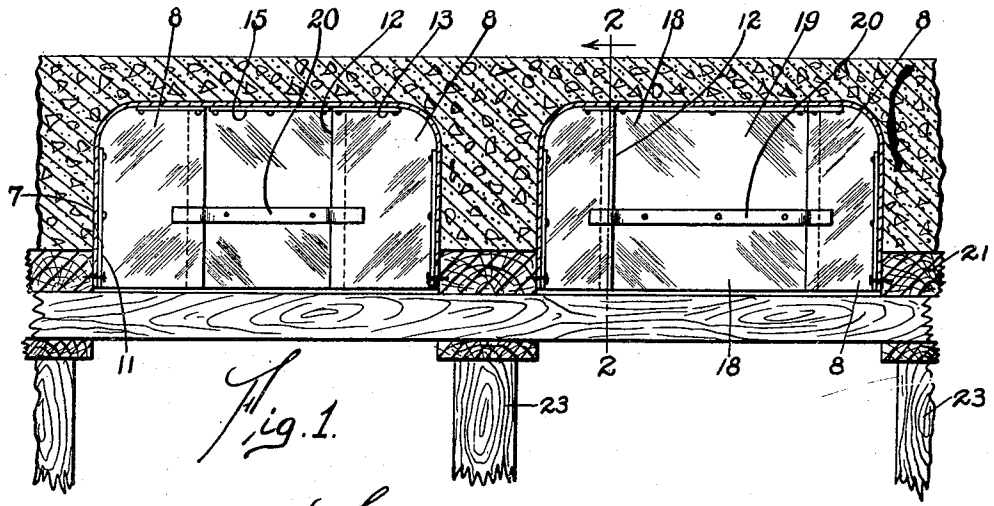


Fig. 1.

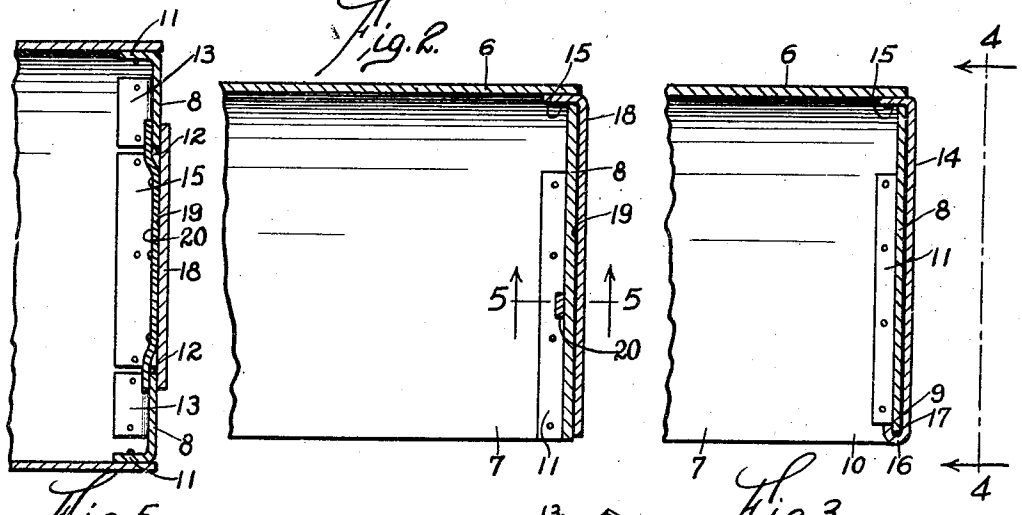


Fig. 2.

Fig. 5.

Fig. 3.

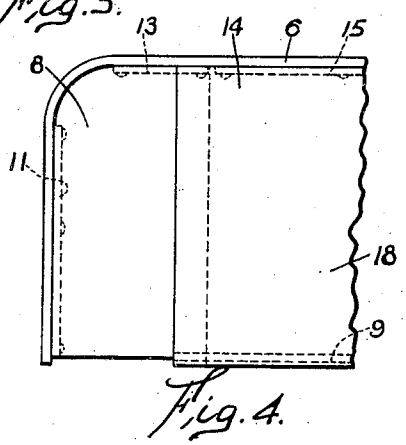


Fig. 4.

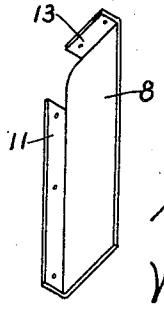


Fig. 6.

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Patented Apr. 28, 1931 1,803,109

UNITED STATES PATENT OFFICE

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CONCRETE FORM

Application filed July 8, 1926. Serial No. 121,183.

This invention relates to metal forms for use in concrete construction and particularly in the construction of concrete floors and beams.

An object of my invention is to provide a form for the purpose stated, which is provided with telescoping end closure portions.

Another object is to provide a form of the class described which comprises an uninterrupted surface to the concrete to the end that it may be easily stripped from the concrete after the concrete has set.

Another object is to provide a device of this kind which has great flexibility, so that removal of the forms from concrete is facilitated and the danger of distorting the top is eliminated.

These and other objects are attained by the means described herein and disclosed in the accompanying drawings in which Fig. 1 is a cross sectional view of a concrete floor and temporary supporting structure, showing devices of my invention embodied therein.

Fig. 2 is a cross sectional view on line 2—2 of Fig. 1.

Fig. 3 is a similar view of a modified form of my invention.

Fig. 4 is a fragmental end view taken on line 4—4 of Fig. 3.

Fig. 5 is a cross sectional view on line 5—5 of Fig. 2.

Fig. 6 is a perspective view of an end flap member forming a detail of my invention.

The forms of my invention comprise a sheet of suitable metal bent to provide a substantially flat top 6 and angularly disposed side walls 7 extending from the opposite longitudinal sides of the top 6. At each end of each of the side walls 7 and top 6 is secured an inwardly extending flap 8, the bottom edge 9 of which extends parallel to the top 6 and substantially aligned with the edges 10 of side walls 7. The flaps 8 are provided with integral angularly disposed flanges 11, which are suitably secured to the inner faces of side walls 7 by spot welding, riveting, or any other suitable means. The free edges 12 of opposed flaps 8 are spaced from one another so as to permit flexing of the side walls 7 relatively to the top 6 without overlapping the edges 12 of the flaps 8. The top flanges 13 of flaps 8 are secured to the lower face of the top 6. As shown in Figs. 3 and 4, a closing plate 14 has an angularly disposed ledge 15, cut away at its opposite ends, and secured to lower face of top 6. At its lower edge the plate is provided with an inwardly turned U-shaped portion 16 providing a groove 17 in which the lower edges 9 of flaps 8 are slidably retained.

In the embodiment shown in Figs. 1, 2 and 5, the closing plate 18 takes the form of a flat sheet having its top flange spot welded or otherwise secured to the top 6 of the form and has secured to its inner face 19 a transversely extending bar 20. The opposite ends 21 of bar 20 are offset from closing plate 18 sufficiently to permit the flaps 8 to be reciprocally retained between such offset portions and face 19 of the plate.

The closing plates and their associated end flaps, in each embodiment shown, serve to mutually support one another against bodily separation. The ends thus formed are reinforced against the pressures due to the weight of wet concrete disposed about the forms when in use. The spaced overlapping vertical portions of metal permit of the use of comparatively light gage sheet metal for these end closures.

From the foregoing it will be apparent that in each of the embodiments described the side walls 7 may be freely flexed relatively to the top 6 and that the flaps may be moved toward and away from one another in a common plane while the closing plates cover the gap between the spaced edges 12 of adjacent flaps 8. The outer exposed edges 20 of closing plates 14 or 18 are disposed substantially perpendicular to the top 6 and the end structures of the forms are free from depressions or projections against which the hardened concrete may set to preclude facile removal of the forms.

As shown in Fig. 1 the longitudinal edges of side walls 7 may be disposed upon soffits 21 forming part of a temporary structure. The forms are suitably spaced and may be toe nailed along their inner edges by means of suitable nails 22 driven into the soffits.

When the shoring 23 and the temporary support structure, including soffits 21, are removed the side walls 7 may be flexed toward one another without distorting the top 6. The slidable relation of the flaps 8 to closing plates 15 or 18 permits free movement of the sides so that the forms may be stripped from the concrete and again used in another structure. It should be noted that the closing plates 14 and 18 in the several embodiments preclude entry of the concrete into abutment with the spaced edges 12 of the flaps 8 and thus precludes the formation of abutting ledges of concrete which would preclude movement of the flaps. The arrangement of the end flaps permits flexing of the form at two places along the top 6, so that greater flexibility is attained without danger of distorting the top and this results in facilitating stripping of the forms from the concrete and also prolongs the period of utility of the form.

I do not limit myself to the exact structures disclosed as they may be modified within the spirit and scope of this invention.

What I claim is:

1. An arch form for use in concrete construction comprising a substantially flat top portion and integral spaced side walls, the top and side walls being flexible at their approximate junctions, a pair of aligned end flaps, each end flap extending at substantially a right angle to its side wall and secured thereto, the flaps extending toward one another, and a closing plate provided with means for retaining the end flaps in alignment with one another and permitting longitudinal reciprocation of the flaps beneath the closing plate as the side walls are flexed relatively to the top.

2. A form comprising a top and spaced side walls, flexible at the approximate junctions of the top and said walls, an end flap disposed within the body lines of the form and secured to a side wall thereof adjacent its end, and a closing plate arranged to permit slidable reciprocation of the end flap beneath said plate, the flap and plate presenting an imperforate closure at the end of the form.

3. In a device of the class described the combination of a form comprising a top and angularly disposed side walls, the top and walls being flexible at their approximate junctions, end flaps secured to the side walls and extending in spaced alignment with one another, and a closing plate for telescopically receiving the end flaps and for covering the opposed edges thereof.

4. In a device of the class described the combination of a U-shaped form comprising a top and side walls, the top and side walls being flexible at their approximate junctions, end flaps secured to the inner faces of opposed side walls and having the free edges thereof spaced from one another and a plate for closing the space between the free edges of the flaps and for covering said free edges and permitting free slidable movement of the flaps relatively to said plate.

5. In a device of the class described the combination of a U-shaped form comprising a top and side members, the top and side members being capable of flexing at their approximate junctions, end flaps secured interiorly of the form upon the side walls thereof and extending for a distance across the end of the form, and an imperforate closing plate retained in abutment with the outer faces of the flaps and permitting movement of the flaps toward and away from one another as the side walls are flexed relatively to the top.

6. A form comprising an integral elongated flexible U-shaped sheet metal member, flaps secured to the arms of the U-shaped member and extending for a distance across the end thereof, and an imperforate closing plate overlapping the flaps upon the outer faces thereof.

7. An elongated flexible arched form comprising a top and arms capable of flexing at their approximate junctions, end flaps, one flap connected to each arm and extending toward the other, a plate carried by the top and extending over the adjacent ends of the flaps, and a bar carried by the plate on its inner face and having its opposite ends slidably projecting over the said adjacent ends of the flaps.

In testimony whereof, I have hereunto subscribed my name this 2nd day of July, 1926.

WILLIAM M. GOLDSMITH.