W. E. CREW.

CONCRETE SLAB CONSTRUCTION.

APPLICATION FILED MAR. 22, 1920.

1,361,831. Patented Dec. 14, 1920.

Fig. 1.

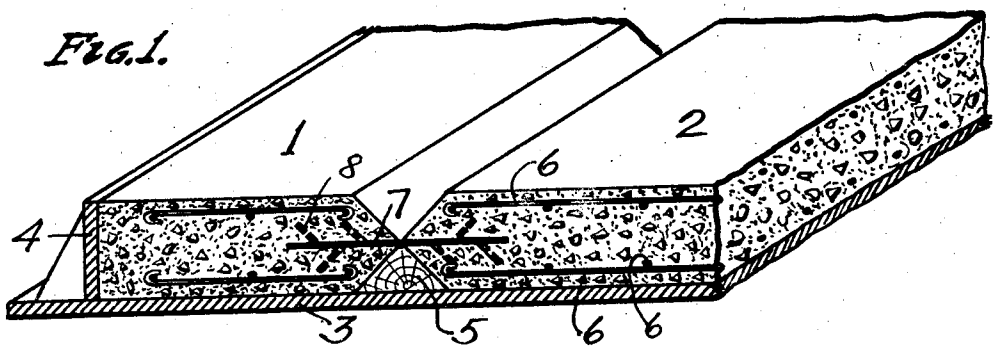

Fig. 2.

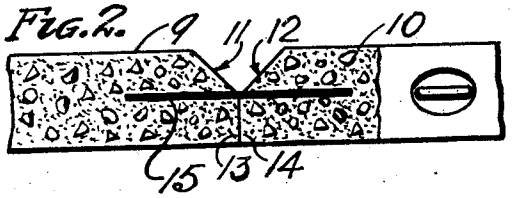

Fig. 3.

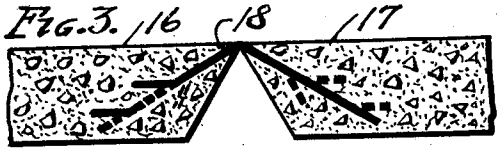

Fig. 4.

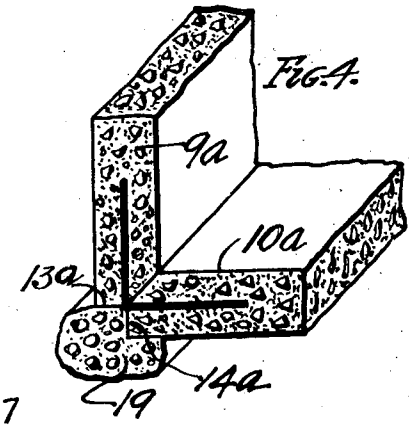

Fig. 7.

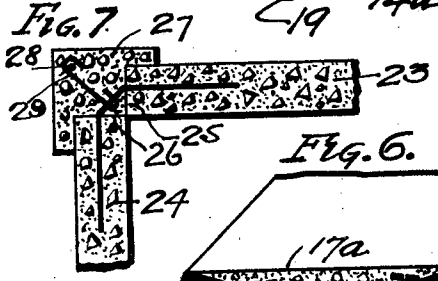

Fig. 5.

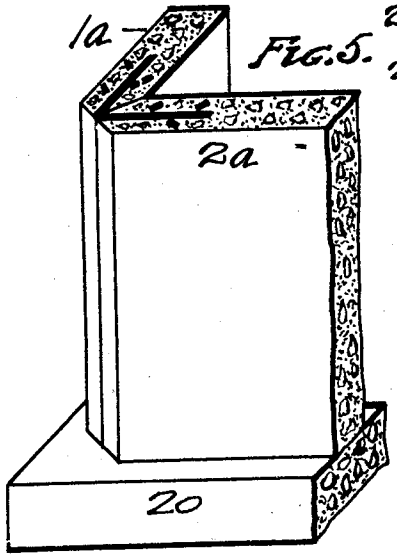

Fig. 6.

WITNESSES

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CONCRETE-SLAB CONSTRUCTION.

1,361,831. Specification of Letters Patent. Patented Dec. 14, 1920.

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To all whom it may concern:

Be it known that I, WALTER E. CREW, a citizen of the United States, residing in Memphis, county of Shelby, State of Tennessee, have invented certain new and useful Improvements in Concrete-Slab Construction, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to make and use the same.

My invention relates especially to improvements in the methods of joining two or more concrete slabs, whereby two adjacent slabs may have at the time of pouring a metal plate or hinge embedded in their contiguous edges, whereby a self bracing structure or wall may be erected by setting up two or more such slabs at an angle to each other. These slabs may be cast in any position, preferably on a horizontal form so that one surface will be given a smooth finish by the form itself, and the other surface may be finished by hand in any desired manner. The slabs may then be erected with the various sections at any desired angle to each other, and when so erected each slab braces the other rigidly.

The objects of my invention are to provide means whereby the casting of a number of sections of slab may be done expeditiously and at low cost with simple forms, and the slabs so cast may then be erected at any desired angle relative to each other, and when so erected will mutually brace each other. I accomplish these objects as will be fully hereinafter set out in the drawings, specifications and plans.

In the drawings:

Figure 1 is a perspective view showing method of casting the slabs.

Fig. 2 is an end elevation showing two adjacent slabs with a modified type of edge and connection.

Fig. 3 is a similar end elevation showing a second modification of the shape of the edges of the slabs.

Fig. 4 is a perspective sketch showing the slabs of Fig. 2 erected.

Fig. 5 is a perspective sketch showing the slab shown in Fig. 1 erected vertically.

Fig. 6 is a perspective sketch showing the slab shown in Fig. 3 erected.

Fig. 7 is a plan view showing a third modification of the edge of the slab, as it would appear when erected.

Referring now to the drawings, in which various parts are indicated by numerals:

Figure 1 is a perspective view of slab 1 and a portion of slab 2, cast on a horizontal form 3, with an edge or side form 4. The corresponding side form not being shown. The two slabs 1 and 2, it will be noted, are cast with edges adjacent. In this particular figure these edges are shown beveled at 45 degrees, this bevel being formed by a beveled strip 5, resting on the form 3, a similar strip not shown, having been used if desired to form the upper bevel. These slabs are shown with reinforcing rods 6, which may be omitted if desired as they have no essential bearing on the invention. The two slabs 1 and 2 are connected by a metal plate 7, which preferably, has lugs 8 punched out therefrom or other type of deformation not shown, to securely embed it and anchor it into the slabs. This plate is preferably a continuous metal plate of soft iron, which can be bent as a hinge during the erection of the slabs and when so bent will securely hold the two slabs in relative alinement with each other.

In Fig. 2 I have shown two sections of slab 9 and 10, having the upper halves 11 and 12 of the adjacent slab edges beveled and having the lower halves 13, and 14 at right angles to the face of the slab. In this case, as in the preceding case, the metal connection 15 is in the center of the slab. In this case, however, the connection shown is a series of plain reinforcing bars instead of a continuous plate. It is of course evident that these bars may be deformed bars, or twisted bars, instead of the plain bars shown, if sufficient adhesion is not obtained by the plain bars or if more adhesion is thought necessary.

In Fig. 3, I have shown the two slabs 16 and 17 beveled on one side only with the connecting plate 18 at the point of the bevel as in the preceding cases. In this particular case I have shown the angle of the bevel on each of the slabs as 60 degrees with the face of the slab. But this bevel may be varied, as may the other bevels, it being properly varied to conform to the angle at which the slabs may be designed to be erected. It will be understood that in whatever manner the slabs are beveled that the metal connection will come approximately at the intersection of the bevels.

In Fig. 4, the slabs 9^a, and 10^a, are the slabs 9 and 10 of Fig. 2 erected, with the slab 10^a in a horizontal position and slab 9^a in a vertical position. In this case the edges 13^a and 14^a should be embedded in a concrete footing 19.

In Fig. 5, 1^a, and 2^a, indicate the slabs 1 and 2 in Fig. 1 in an erected position with both slabs vertical and resting on a footing 20, especially prepared for same.

In Fig. 6, 16^a and 17^a represent the slabs 16 and 17 of Fig. 3 with an additional slab 21, not shown in Fig. 3, similarly connected. These slabs are shown erected on a concrete foundation 22. Slabs 16^a and 21 forming the inclined sides and the slabs 17^a the horizontal top of a culvert, or similar construction.

In Fig. 7, I show two slabs 23 and 24 which have been cast with square edges properly spaced apart and which are then erected so that the corners 25 and 26 of these slabs just meet. 27 is a pilaster covering these corners and finishing same. 28 and 29 are reinforcing rods which may be used to reinforce and anchor the pilaster so that it will function as a part of the construction.

It will be distinctly understood that while I have shown a number of forms for the edges of the coupled slabs that the form of these edges may vary from any of those shown, the essential feature being that the adjacent edges are connected by a bendable metal construction which will preserve the alinement of the slabs while they are being erected and which will permit the slabs being erected with their surfaces at varying angles to each other. I have shown the bevel on the slabs such that when the slabs are erected the bevel surfaces join closely. It is preferable that sufficient space shall be left between these surfaces to permit a mortar joint and it is not necessary that the bevels should conform exactly to the angle that the exterior surfaces of the slabs have when erected, as it is entirely possible to leave a wedge shape mortar joint at the angle. This is clearly illustrated, however, in Fig. 7 in which the entire joint is formed of concrete and in which for all practical purposes the edges of the slabs do not touch.

It is also evident that the metal connection which I have described in one case as a plate and in another case as a number of rods, could also be a number of flat plates of narrow width either close together or spaced apart as the rods would necessarily be and in construing the claims it is expressly understood that such latitude shall be allowed.

Having now fully described my invention, what I claim and desire to secure by Letters Patent in the United States is:—

1. A self bracing structure, comprising concrete slabs cast with edges adjacent, and having bendable metal connections embedded during the casting of the slabs and extended from the adjacent edges thereof to connect the same, and bent during erection to adjust the angle of the slabs relatively to each other, to thereby cause the said slabs to rigidly brace each other.

2. A self bracing structure, comprising concrete slabs cast with edges adjacent, and having a bendable metal plate embedded during the casting of the slabs and extended from the adjacent edges thereof to connect the same, and bent during erection to adjust the angle of the slabs relatively to each other, to thereby cause the said slabs to rigidly brace each other.

3. A self bracing structure, comprising concrete slabs cast with beveled edges adjacent, and having bendable metal connections embedded during the casting of the slabs and extended from the adjacent edges thereof to connect the same, and bent during erection to adjust the angle of the slabs relatively to each other, to thereby cause the said slabs to rigidly brace each other.

4. A self bracing structure, comprising concrete slabs cast with edges adjacent and having bendable metal connections, embedded during the casting of the slabs and extended from the adjacent edges thereof to connect the same, and bent during erection to adjust the angle of the slabs relatively to each other, to thereby cause the said slabs to rigidly brace each other, and a concrete pilaster cast in place and anchored to the said slab edges, substantially as shown and described.

In testimony whereof, I have hereunto subscribed my name.

WALTER E. CREW.

Witnesses:
JACK HARRIS,
J. D. McMURRY.