Dec. 22, 1925. 1,566,583

C. E. CORTES

CONCRETE FORM

Filed May 10, 1922 2 Sheets-Sheet 1

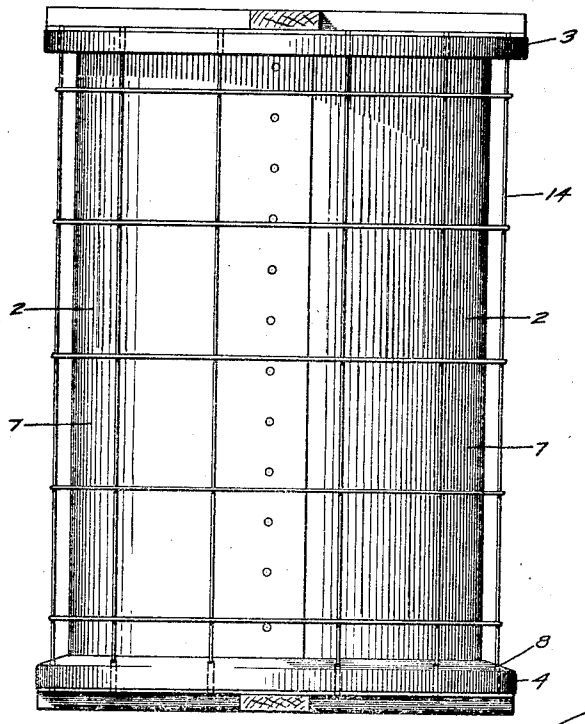


FIG. 1.

FIG. 2.

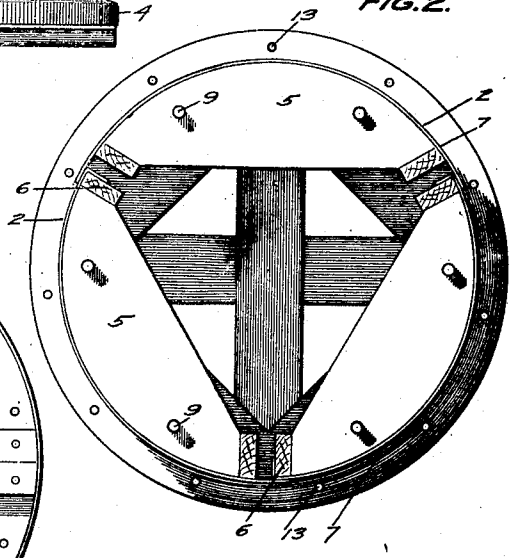
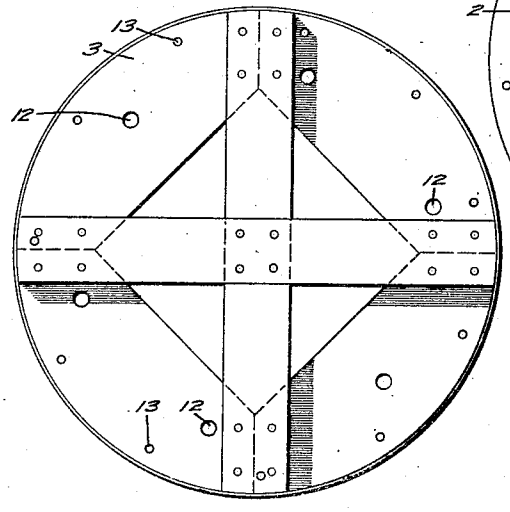


FIG. 3.



INVENTOR.
CARLOS E. CORTES.
BY White Prout & Evans
his ATTORNEYS.

Dec. 22, 1925. 1,566,583

C. E. CORTES

CONCRETE FORM

Filed May 10, 1922 2 Sheets-Sheet 2

FIG. 6.

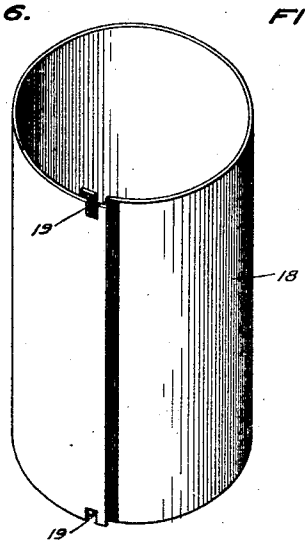
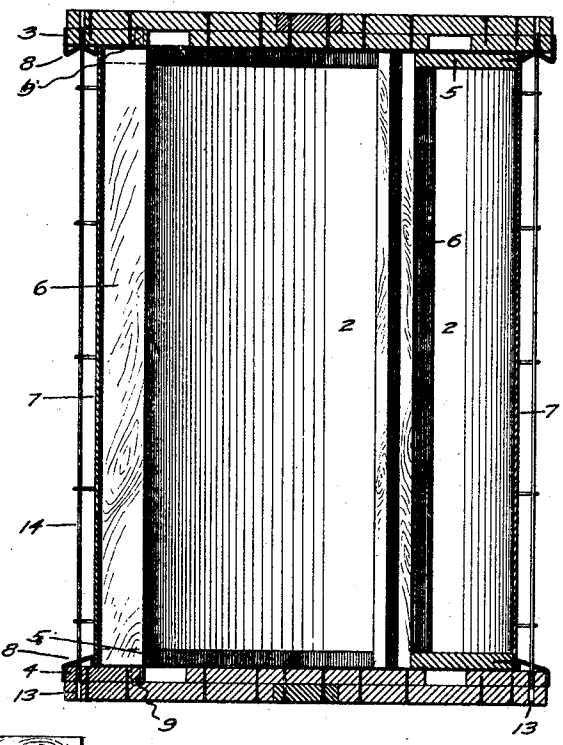


FIG. 4.



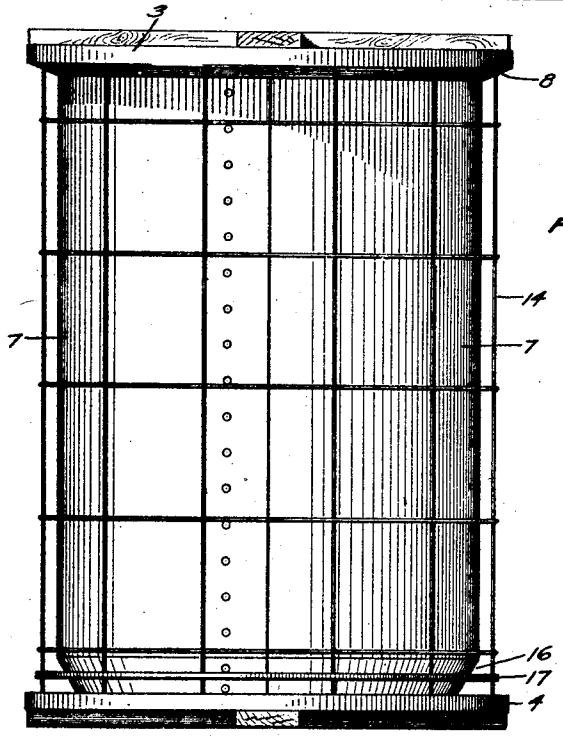
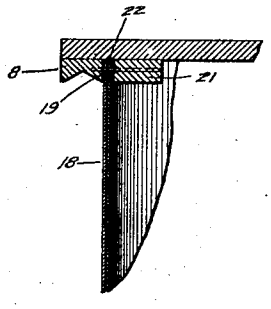


FIG. 5.

FIG. 7.



INVENTOR.
CARLOS E. CORTES.
BY White Prat Howe
his ATTORNEYS.

Patented Dec. 22, 1925. 1,566,583

UNITED STATES PATENT OFFICE.

CARLOS E. CORTES, OF MARTINEZ, CALIFORNIA.

CONCRETE FORM.

Application filed May 10, 1922. Serial No. 559,706.

To all whom it may concern:

Be it known that I, CARLOS E. CORTES, a citizen of the United States, and a resident of Martinez, Contra Costa County, State of California, have invented certain new and useful Concrete Forms, of which the following is a specification.

The invention relates to forms for use in making hollow concrete structures, such as water pipes, pile casings and other comparable structures.

An object of the invention is to provide a form from which the concrete structure may be readily removed after it has been formed.

Another object of the invention is to provide a form on which concrete is placed by impact and by which the inner and end surfaces of the concrete structure are molded.

Another object of the invention is to provide a form having means for holding reinforcement in place and which may be readily removed from the finished concrete structure for reuse.

The invention possesses other advantageous features, some of which, with the foregoing, will be set forth at length in the following description, where I shall outline in full, that form of the invention which I have selected for illustration in the drawings accompanying and forming part of the present specification. In said drawings, I have shown one embodiment of the invention, but it is to be understood that the invention, as expressed in the claims, may be embodied in a plurality of forms.

Referring to said drawings:—

Figure 1 is an elevation of one type of form of my invention, with reinforcement arranged thereon.

Fig. 2 is an end view of the form in extended position, with the end plate removed.

Fig. 3 is a plan view of the end plate.

Fig. 4 is a vertical section through the form.

Fig. 5 is an elevation of a modified type of form.

Fig. 6 is a perspective view of a modified form of core.

Fig. 7 is a cross section of a corner of a form, showing the use of the core shown in Fig. 6.

The form of my invention comprises a collapsible cylindrical mold or core having removable end sections, which, when in place, hold the core in expanded position, and which, when removed, permit the core to collapse.

The core shown in Fig. 2 comprises a plurality of body segments 2, in the present instance being formed arcuate on their outer surfaces to form a cylindrical mold, which are held in expanded or spaced position by the end plates 3—4. In the present construction I have shown three body segments having curved faces and forming a cylindrical shell. Each segment comprises a frame consisting of the segmental end sections 5 and the longitudinal members 6, connected at their ends to the end sections, thus forming a frame, on the outer surface of which is secured a sheet metal sheathing 7. The frames have radial side edges, which, when the form is in use in expanded position, are spaced apart circumferentially. The spaces between the side edges of the form sections, are covered by the sheathing 7, which, for that purpose extends past the side edges of the frames. This overlapping margin of the sheathing may be formed on one edge of each frame, or it may be formed on both edges, both of these constructions being shown in the drawings.

The form sections are held in expanded position by the end plates 3—4, which comprise a frame having a sheet metal covered margin 8, which forms a mold for the ends of the concrete structure. The end plates and the ends of the frames are provided with engaging means for holding the form sections in expanded position. This means comprises usually dowels 9 on one member seating in apertures 12 in the other member, each frame end being preferably provided with two dowels 9 adapted to seat in apertures in the end frame. The marginal portions 8 of the end plates project beyond the frames of the end plates, so that when the end plates are in position, the marginal portions 8 overlap the end edges of the form sections, thus definitely and positively holding the form sections in place. The marginal portions are shaped on their inner surfaces to give the desired shape to the ends of the hollow concrete structure, in the present instance, one marginal portion being inclined to form a bevelled end and the other marginal portion being grooved to form a wedge shaped end.

Means are also provided for holding reinforcement in place on the form. The marginal portions are provided with holes 13

extending therethrough, the holes being spaced outward from the face of the sheathing. The longitudinal members 14 of the reinforcing material extend through these holes, holding the reinforcing material in position in front of the sheathing.

The form, with the reinforcing in place is assembled in a manner apparent from the foregoing description. The concrete is applied to the form by impact, as with a cement gun, and the form is rotated during the application of the concrete, to evenly distribute the concrete and to form a layer of uniform thickness. After the concrete has set sufficiently, one end plate is removed, the segmental forms collapsed and withdrawn and the completed concrete structure removed from the other end plate.

In Fig. 5, I have shown a modified form of concrete form, in which the sectional forms are tapered or inclined inwardly at one end, as at 16, to form an inclined shoulder or flange on the end of the concrete structure. In this structure, a heavy circumferential reinforcing wire or bar 17 is usually placed at the shouldered end of the structure.

In Figs. 6 and 7 I have shown a modified form of core which is particularly adapted for the manufacture of concrete cylinders of smaller diameter. The core comprises a sheet 18 of metal, which may be bent into the form of a cylinder, with overlapping ends. The sheet is provided at its top and bottom edges, adjacent the side edges, with notches 19, which lie in registry when the sheet is bent to form a cylinder of the desired diameter. The end plates are provided with circular rails 21 spaced inward slightly from the end molds 8, to form channels, in which the edges of the core 18 are disposed. Arranged in the channels are pins 22 which seat in the registered notches in the core and hold the core in fixed expanded position.

I claim:

1. A collapsible concrete form comprising end plates having marginal mold sections, a collapsible core disposed between said end plates and behind said marginal sections, the surfaces of the marginal sections and the core being contiguous, means connecting the core and the end plates to hold the core in expanded position and removable means for holding reinforcement in position over the surface of the core.

2. A collapsible concrete form comprising end plates having marginal mold sections having holes therein, a collapsible core disposed between said end plates and behind said marginal sections, the surfaces of the marginal sections and the core being contiguous, means connecting the core and the end plates to hold the core in expanded position and reinforcement overlying the surface of the core and having members extending through the holes in the marginal sections.

3. A collapsible concrete form comprising end plates having marginal mold sections, a collapsible core disposed between said end plates and behind said marginal sections, the surfaces of the marginal sections and the core being contiguous and means connecting the core and the end plates to hold the core in expanded position, the marginal sections being provided with apertures adapted to receive and position reinforcement.

4. A collapsible concrete form comprising end plates having marginal mold sections, laterally spaced sectional mold frames disposed between said plates, sectional sheathing covering said frames and covering the spaces between said frames and means connecting the mold frames and the end plates to hold the frames in laterally spaced position.

5. A collapsible concrete form comprising circular end plates having marginal mold sections, laterally spaced segmental mold frames disposed between said plates, sheathings covering the frames and extending over the spaces between the frames to form a cylindrical mold surface and means connecting the mold frames and the end plates to hold the frames in laterally spaced position.

6. A collapsible concrete form comprising circular end plates having marginal mold sections, laterally spaced segmental mold frames disposed between said plates, sheathings covering the frames and extending over the spaces between the frames to form a cylindrical mold surface and means connecting the mold frames and the end plates to hold the frames in laterally spaced position; said marginal sections being provided with circumferentially spaced apertures to receive members of reinforcement and position the reinforcement over the cylindrical mold surface.

In testimony whereof, I have hereunto set my hand.

CARLOS E. CORTES.