No. 621,977. Patented Mar. 28, 1899.

E. E. SANFORD.

MOLD FOR CEMENT WATER TANKS.

(Application filed June 2, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

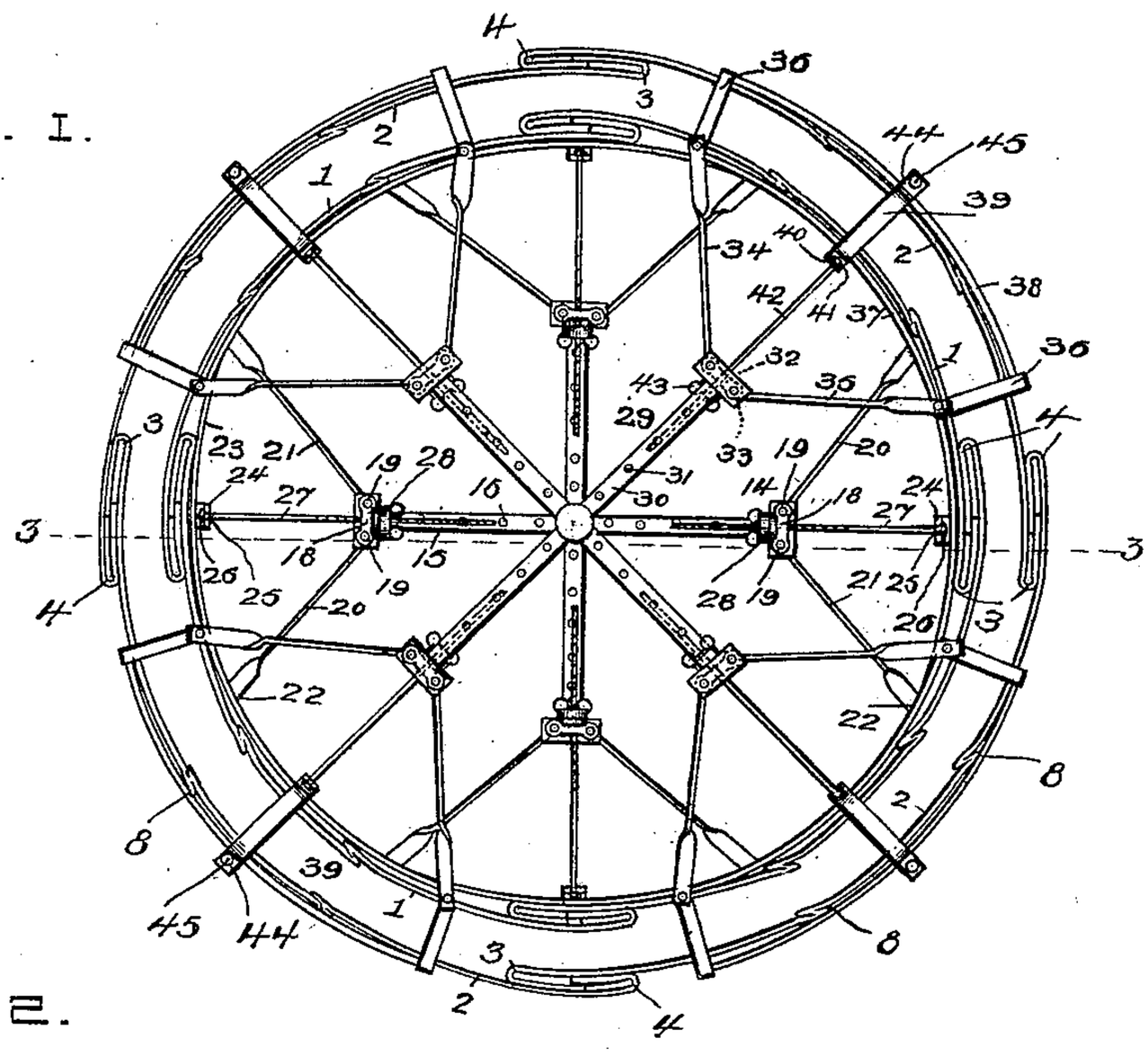
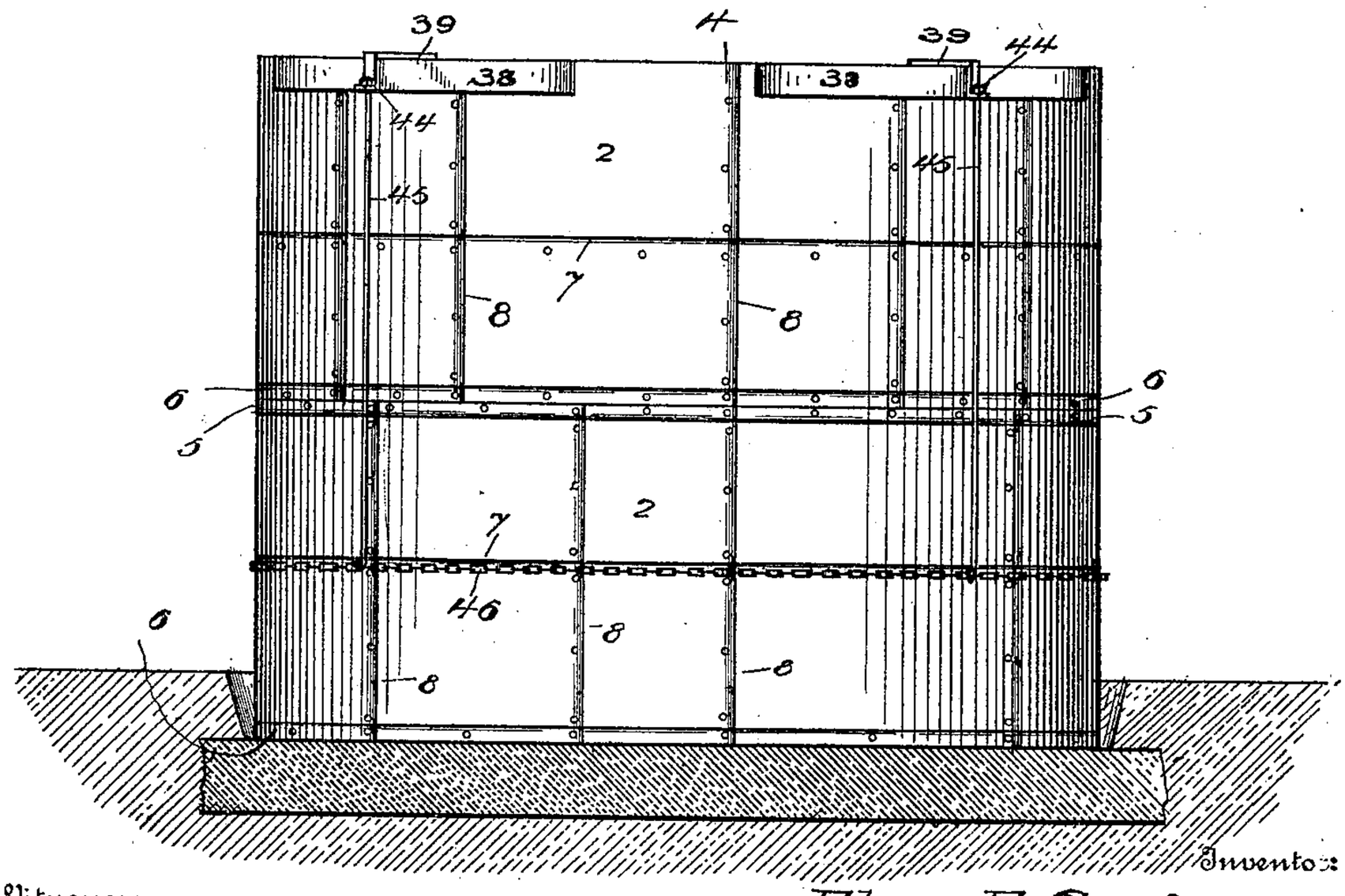


Fig. 2.



Witnesses:

Fenton S. Galt

Gilbertson

Inventor:

Elmer E. Sanford,

by H. B. Wilkinson & Co.

Attorneys.

No. 621,977. Patented Mar. 28, 1899.

E. E. SANFORD.

MOLD FOR CEMENT WATER TANKS.

(Application filed June 2, 1898.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

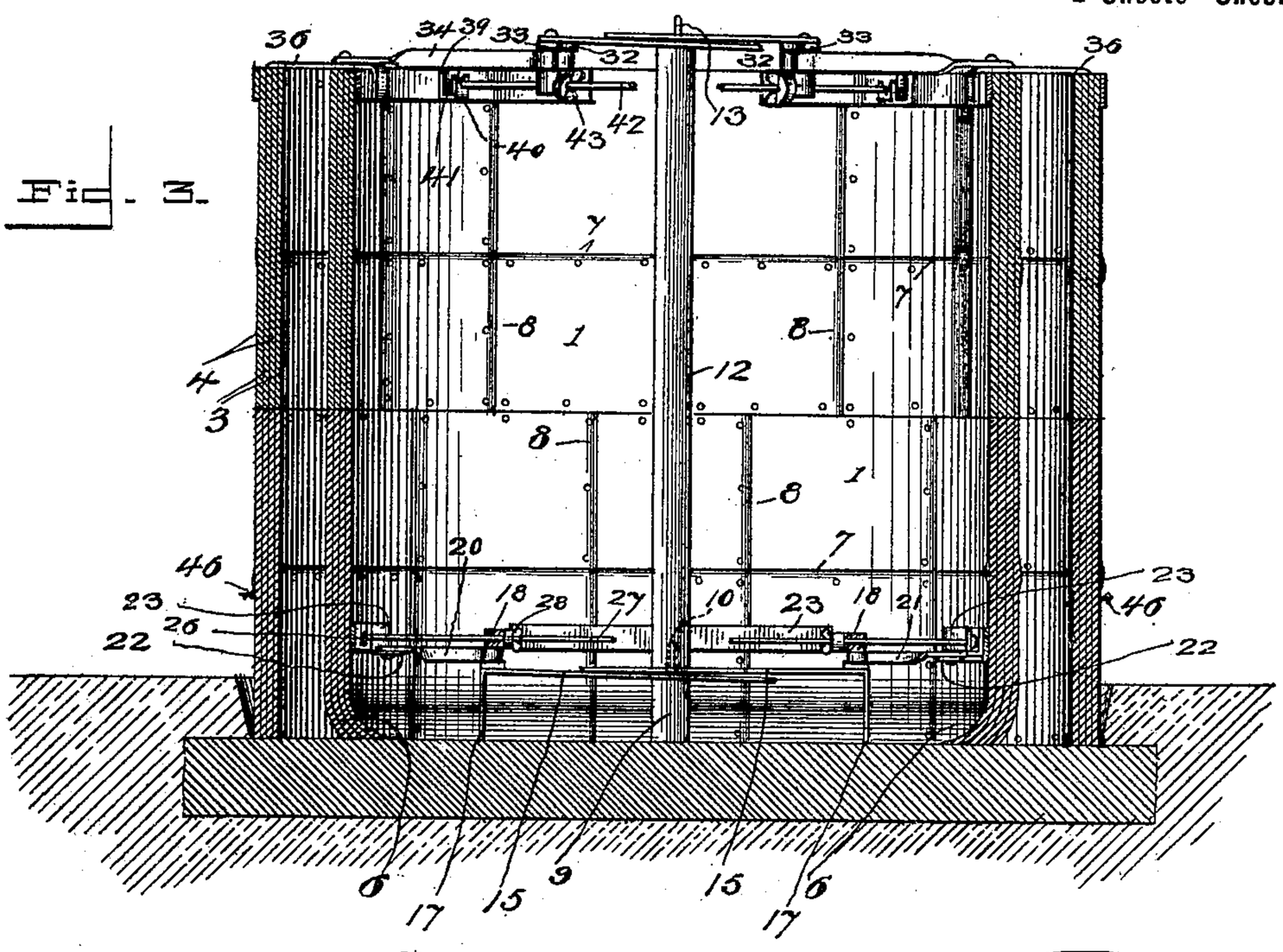


Fig. 4.

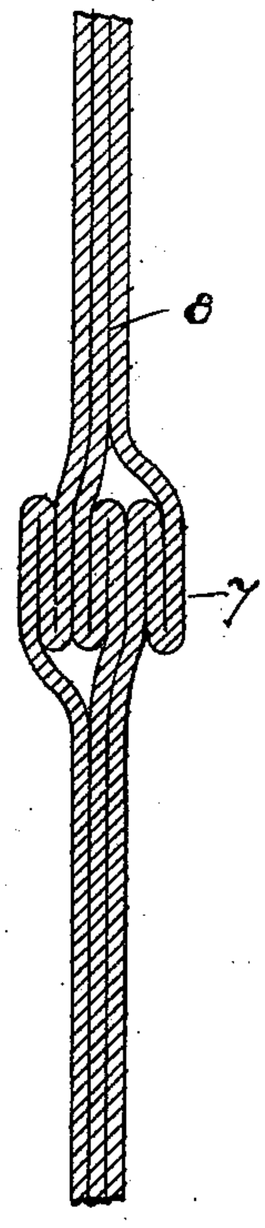
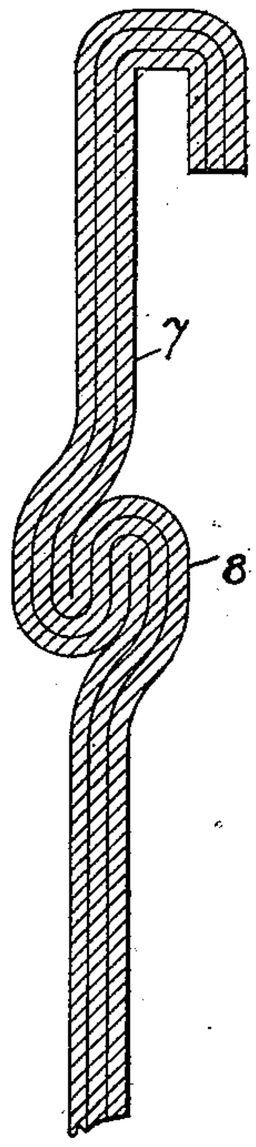


Fig. 5.



Witnesses:
Fenton S. Galt
J. A. Wilkinson

Inventor:
Elmer E. Sanford,
By
A. Bloomfield
Attorneys.

UNITED STATES PATENT OFFICE.

ELMER E. SANFORD, OF JOHNSON, MICHIGAN.

MOLD FOR CEMENT WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 621,977, dated March 28, 1899.

Application filed June 2, 1898. Serial No. 682,363. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. SANFORD, a citizen of the United States, residing at Johnson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Adjustable Molds for Building Cylindrical Cement Water-Tanks; and I do 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 relates to improvements in molds for cement tanks; and the object is to provide a simple and convenient adjustable mold for building tanks of different diameters.

To this end the invention consists in the construction, combination, and arrangement of the mold, as will be hereinafter more fully described, and particularly pointed out in the claims.

The accompanying drawings show my invention in the best form now known to me; but many changes in the details might be made within the skill of a good mechanic without departing from the spirit of my invention as set forth in the claims at the end of this specification.

The same reference characters indicate the same parts of the invention.

Figure 1 is a top plan view of my improved cylindrical tank-mold. Fig. 2 is a side elevation. Fig. 3 is a transverse section on the line 3 3 of Fig. 1. Fig. 4 is a detail vertical section through the horizontal crimped portion of the mold-walls. Fig. 5 is a detail horizontal section through the vertical crimped portion of the mold-walls.

The inner and outer concentric walls of the mold consist of four segmental sections 1 1 1 1 and 2 2 2 2. Each section is formed of sheet metal, preferably galvanized iron, and their vertical parallel edges terminate in reversely-formed flanges 3 and 4, which engage and form lap or slip joints with the reversely-formed corresponding flanges on the contiguous edges of the adjoining sections. By means of this jointed or telescopic jointing of the sections the diameter of the circle embraced therein may be increased or diminished to conform to the diameter of the projected tank. The upper and lower horizontal parallel edges of each of the segmental sections 1 and 2 are formed with heads 5 and 6, which give additional stiffness to the walls and at the same time give a smooth finish to said edges. The lower edge of each of the inner sections 1 is turned inwardly, as shown, to form a rounded instead of a square corner in the bottom of the tank, so as to leave no place for refuse to accumulate where it could not be readily reached and removed. Each section is likewise crimped horizontally to form one or more stiffening-ribs 7, and it is also crimped vertically to form the ribs 8 for the same purpose.

The vertical center post consists of the lower section 9, provided at its upper end with an axial pin 10 to receive the lower end of the upper section 12, the upper end of which is provided with an axial pin 13.

The lower portion of the mold-support consists of four counterpart sections 14, and as each is a facsimile of the other the description of one will answer for all. Each one of these lower supports consists of a radial arm 15, provided with a series of regularly-spaced orifices 16, by means of which it is adjustably secured to the pin 10 on the post-section 9, and its outer end is turned vertically downward to form a supporting-leg 17 the same height as the post-section 9.

18 represents a bracket secured to the outer end of the arm 15, and it is formed with the oppositely-disposed lateral ears 19 19, in which are pivoted the inner ends of the diverging braces 20 21, the outer ends of which are pivoted to the angular lugs 22 22, formed on the outer ends of the lower edge of the flexible segmentally-curved brace 23, which forms a lateral support for the lower end of the inner cylindrical wall of the mold.

24 denotes a retaining-lug on the curved brace 23 intermediate the end lugs 22 and alined with the radial arm 15, and it is formed with a slot 25 to receive the head 26 of the adjusting-rod 27. The inner threaded end of this rod 27 extends through the bracket 18 and is provided with an adjusting-nut 28, by means of which the radius of the circle represented by the curved brace 23 may be increased or diminished to correspond to the diameter of the projected tank. The upper portion of the mold-support also consists of

four counterpart sections 29, and as each is a facsimile of the other the description of one will answer for the rest. Each of these upper support-sections consists of a radial arm 30, formed with a series of regularly-spaced orifices 31, which are alined with the corresponding orifices 16 in the lower arm 15, and by means of which said arm 30 is adjustably secured on the pin 13 in the upper end of the post-section 12.

32 denotes a bracket secured to the outer end of the arm 30 and formed with oppositely-disposed lateral ears 33, in which are pivoted the inner ends of the diverging braces 34 35, the outer ends of which are pivoted to the inverted-U-shaped shoes 36 36, to which are fixed the opposite ends of the parallel segmentally-curved braces 37 and 38. An intermediate shoe 39 is also fixed to the curved braces 37 38, and it is formed with a slotted retaining-lug 40 to receive the head 41 of the adjusting-rod 42, and the inner threaded end of said rod extends through an orifice in the bracket 32 to receive the adjusting-nut 43, by means of which the curve of the braces 37 38 may be made to conform to the adjustment of the lower brace 23. The outside of the shoe 39 is also provided with a lateral horizontal ear 44, in which is secured the upper threaded end of a depending rod 45, the lower end of which supports an endless chain 46, which encompasses the lower portion of the outer cylindrical wall. This chain 46 is provided with removable or detachable links, so that the length of the chain may be increased or diminished to conform to the diameter of the outside wall.

The manner of constructing a tank with my improved mold is as follows: A suitable hole is first formed in the ground, say, about one foot in depth and slightly larger in diameter than the projected tank. A suitable cement bottom is now laid and on this bottom the mold is placed, and after being properly adjusted as to size the space between the walls is filled with cement, which is allowed to set, and the mold removed.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A cement-tank mold comprising an inner and an outer adjustable concentric wall in combination with a series of centrally-radiating braces adjustably secured to and adapted to support said walls parallel with each other, substantially as and for the purpose set forth.

2. A cylindrical mold comprising the adjustable concentric walls, the center post, the radial arms adjustably secured to said post and a series of adjustable braces carried by said arms and adapted to support said walls in vertical position and parallel with each other, substantially as and for the purpose set forth.

3. A cylindrical mold comprising the diametrically-expansible concentric walls, the center post, the radial arms adjustably secured to said post, the diverging braces pivoted at their inner ends to said arms, the flexible parallel curved braces secured to the outer ends of diverging braces and removably secured to said walls to support them in a vertical parallel position and means for adjusting said curved braces to conform to the curvature of the walls, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELMER E. SANFORD.

Witnesses:
H. F. PALMER,
GEO. L. WORTHINGTON.