

No. 744,509.

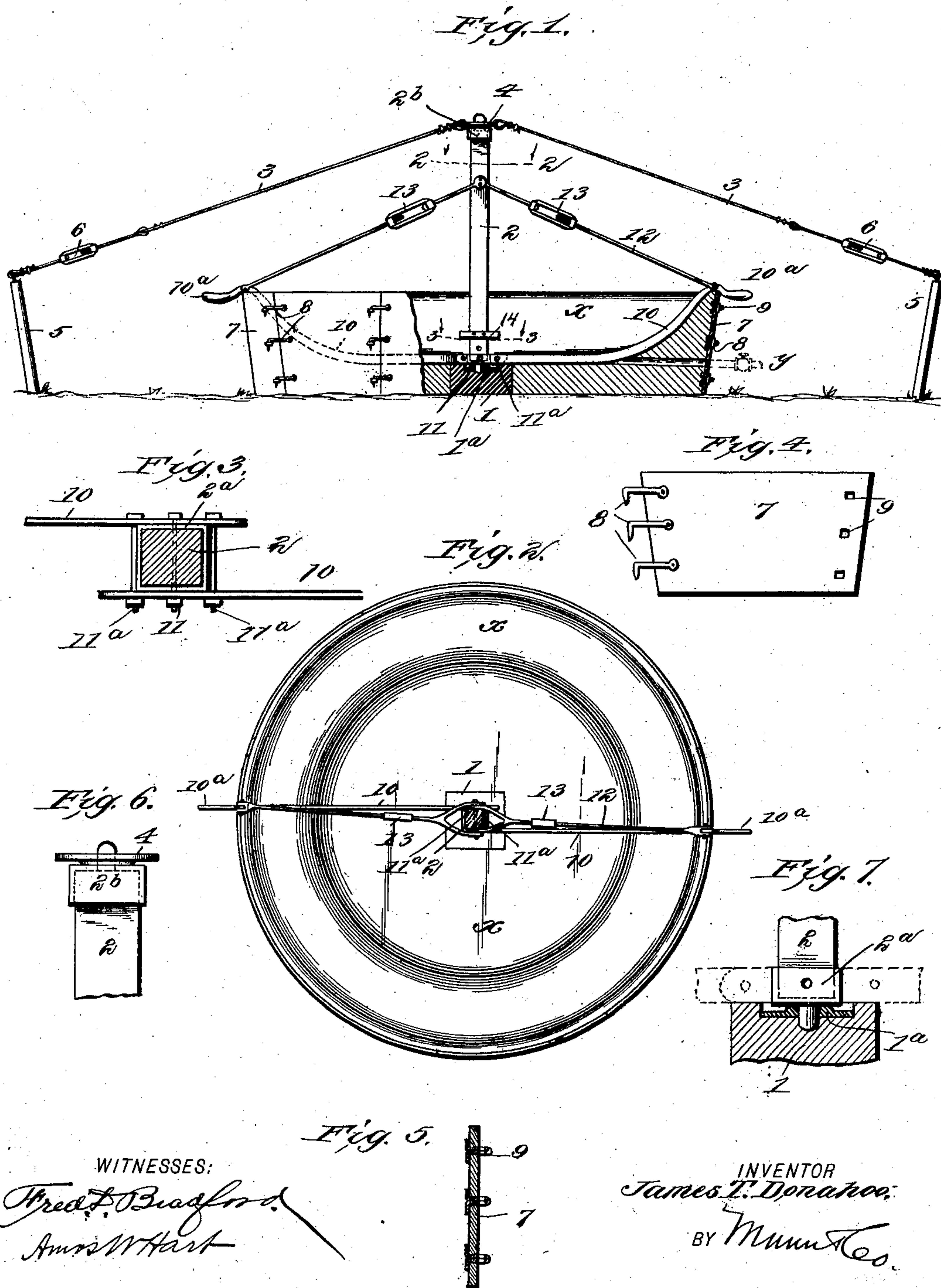
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J. T. DONAHOO.

APPARATUS FOR FORMING CEMENT WATER TANKS.

APPLICATION FILED JAN. 29, 1903.

NO MODEL.





# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR FORMING CEMENT WATER-TANKS.

SPECIFICATION forming part of Letters Patent No. 744,509, dated November 17, 1903.

Application filed January 29, 1903. Serial No. 141,035. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES T. DONAHOO, a citizen of the United States, and a resident of Edgar, in the county of Clay and State of Nebraska, have invented an Apparatus for Forming Cement Water-Tanks, of which the following is a specification.

Hand labor is usually employed for forming water-tanks of this class.

It is the object of my invention to provide an apparatus by which the work may be greatly facilitated and the tank thereby finished in a shorter time as well as in better form and also at least cost.

The details of construction, arrangement, and operation of the apparatus are as hereinafter described, reference being had to the accompanying drawings, in which—

Figure 1 is in part a side elevation and in part a section illustrating my improved apparatus and a tank formed by means of the same. Fig. 2 is a horizontal section on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1. Fig. 4 is a side view of one of the plates forming the circular rim or inclosing portion of the tank. Fig. 5 is a transverse section of one of such plates. Figs. 6 and 7 are detail views illustrating the mast-cap and seat.

In Figs. 1 and 2,  $\alpha$  indicates the tank proper, formed of cementitious material. I first set a pivot-block or step 1 upon the horizontal foundation whereon the tank is to be formed. A post or mast 2 is then set up, its lower end (see Fig. 7) being inserted in a socket or cap 2<sup>a</sup>, whose pivot enters the step 1. A circular plate 1<sup>a</sup> is interposed between the block 1 and mast-socket 2<sup>a</sup>. Guys 3 are attached to a plate 4, placed loosely upon the upper end of the post 2, and their outer ends are connected with stakes 5 or any other fixed object. The mast is provided with a cap 2<sup>b</sup>, having a pivot, as in case of the socket 2<sup>a</sup>. The guys 3 are provided with elongated turnbuckles 6 to provide for adjustment of the guys to any length as required to set the post 2 exactly vertical. I then set up the circular rim 7 concentric with the step 1, as shown. This rim is inclined slightly outward from the base up, and consequently the several plates composing the same (see Fig. 4) require to be formed with their ends on diverging lines. In other

words, the plates are slightly tapered or narrowed from the upper edge downward. The several plates are connected by hooks 8 and eyes 9, the hooks being pivoted to one end of each plate and the eyes being attached to the other. The plates are preferably constructed of sheet metal; but any other suitable material may be employed. The plastic cementitious material of which the tank is to be formed is filled into the inclosure beginning at the center and proceeding outward toward the ring, it being tamped as the filling proceeds. The shapers or shaper-bars 10 are then brought into action. The same are curved, as shown in Fig. 1, conformably to the required shape of the interior of the tank  $\alpha$ . Their inner ends are attached to the post 2 and their outer ends project beyond the rim 7 and are suitably formed to serve as handles 10<sup>a</sup>, which are grasped by the operator for the purpose of carrying the shapers along or rotating them around the post. The attachment to the post 2 is effected by three bolts 11 and 11<sup>a</sup>, (see Fig. 3,) the central bolt 11 passing through the post, the socket 2<sup>a</sup>, and the shapers and the other two being arranged on opposite sides of the same or passing through the shapers only, the shaper-bars being applied on opposite sides of the post. The several bolts 11 and 11<sup>a</sup> are threaded at each end to adapt them for application of nuts, as shown. By this construction or mode of attachment the post is but little weakened, and the bars may be secured very tightly by screwing up the nuts at either end of the bolts. The outer end of the shapers 10, or the portion adjacent to the handles 10<sup>a</sup>, are connected by rods 12 with the upper portion of the post 2. They are provided with elongated turnbuckles 13, by which they may be lengthened or shortened, as required, according to the vertical adjustment of the shapers 10—that is to say, the post 2 is provided with two or more holes for reception of the central clamping-bolt 11, so that the shapers 10 may be placed higher or lower relatively to the foundation, according to the desired thickness of the tank  $\alpha$ .

It is apparent that when the shapers are carried around or rotated the post 2 rotates also, and the shapers smooth the interior or top surface of the tank, so that it receives



the desired form. It may be stated in this connection that the upper surface of the cementitious material is formed of a mixture of sand and cement, each one part, properly moistened. By this means the tank is very quickly formed and in a manner superior to those made in the old way. The lower portion of the post 2 is provided with a cross-bar 14. This is for the purpose of providing a rest for planks or boards which are arranged with their inner ends thereon, the outer ends resting upon a trestle or "horse" placed outside the tank. When the tank has been mainly formed or nearly finished, the planks are removed from the cross-bars 14 and placed on the bottom of the tank, so that the workman may stand therein while removing the post or mast. Then the hole previously occupied by the post is filled with cement and the planks removed. After this any marks or depressions on the inner surface of the tank are smoothed out by means of a long-handled trowel.

In Fig. 1 dotted lines at y illustrate the position and attachment of a water-pipe. This may connect with any suitable source of supply, and means for heating the water passing through it may be also provided.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The apparatus for forming water-tanks of cementitious material, the same compris-

ing a vertical post, and a pivot-block therefor, guys for supporting the post, a rim for inclosing the plastic material of which the tank is formed, the same being arranged concentric with the post, and shaper-bars attached to the base of the post, and adjustable connections between them and the upper portion of the post, substantially as shown and described.

2. In an apparatus for the purpose specified, the combination, with the central post, and a surrounding rim arranged concentrically, of bars conforming to the required shape of the interior of the tank, the same being attached to the base of the post and extending beyond the rim, where they are suitably constructed to serve as handles, and guys connecting the outer portions of the shaper-bars with the upper portion of the post, and provided with turnbuckles for adjusting their length, substantially as shown and described.

3. In an apparatus for forming water-tanks, the combination, with the vertical post having a series of transverse holes in its lower portion, of shaper-bars which are adjustably connected with the post by the holes, and adjustable connections between the outer ends of said bars and the upper portion of the post, substantially as shown and described.

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Witnesses:

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I. V. HOWARD.