

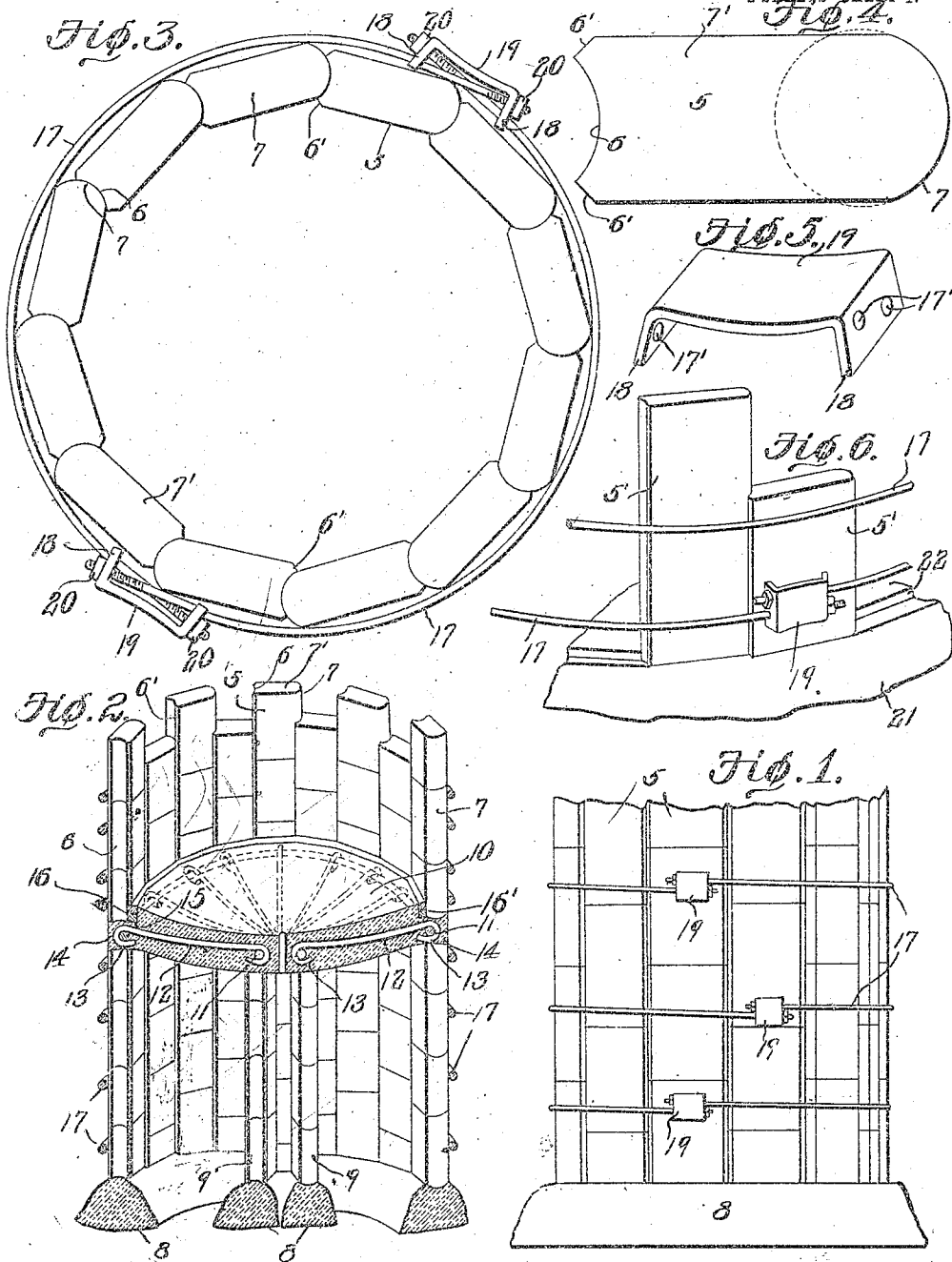
No. 850,048.

PATENTED APR. 9, 1907.

S. T. PLAYFORD.
BUILDING BLOCK.

APPLICATION FILED JAN. 20, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

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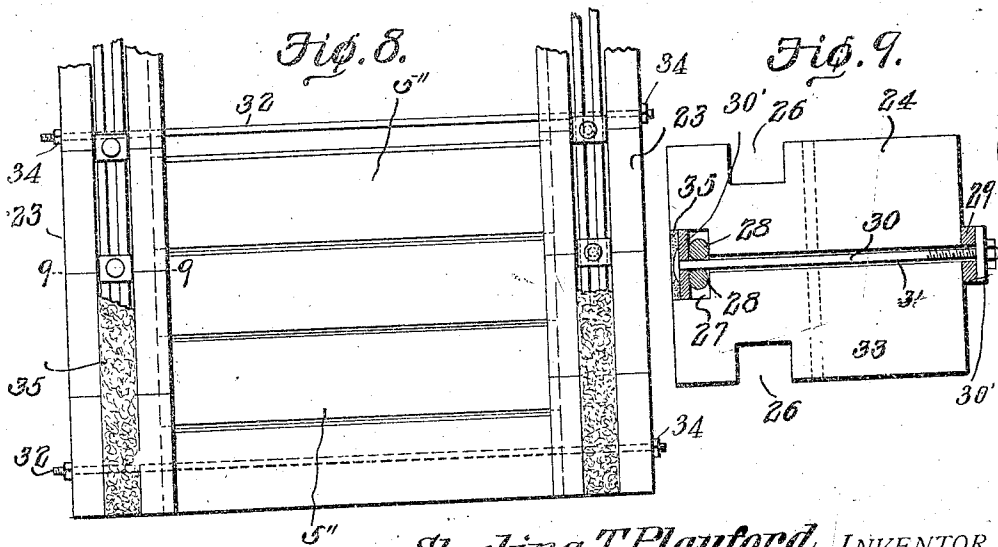
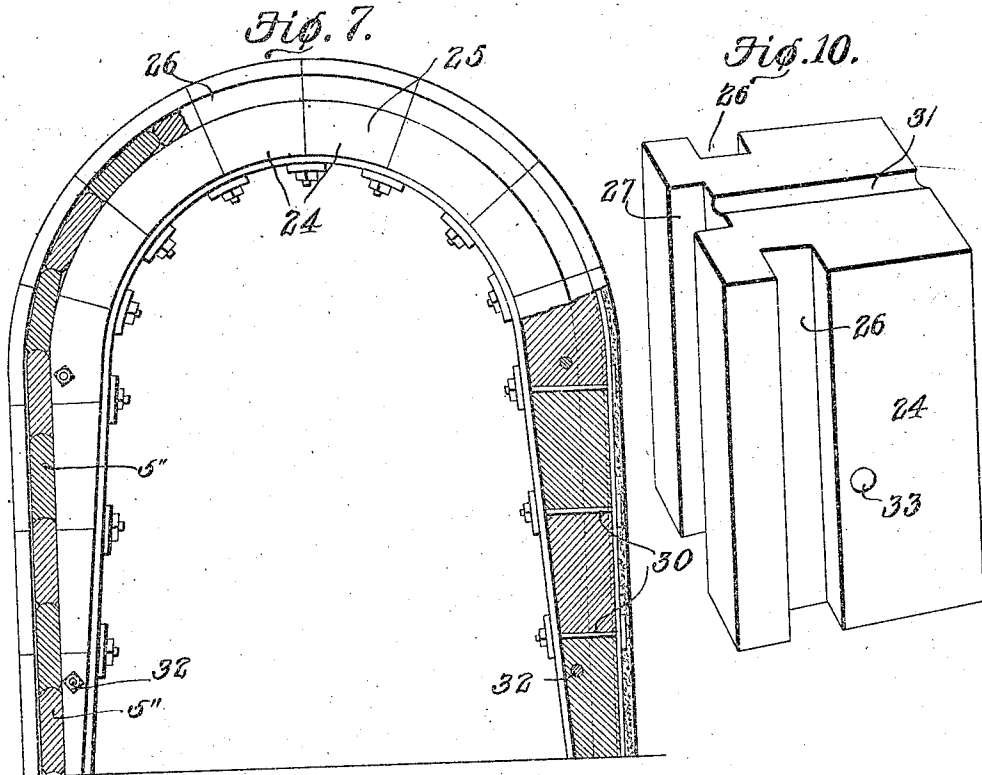
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WITNESSES:
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UNITED STATES PATENT OFFICE.

STERLING T. PLAYFORD, OF CASSOPOLIS, MICHIGAN.

BUILDING-BLOCK.

No. 850,042.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed January 20, 1906. Serial No. 297,042.

To all whom it may concern:

Be it known that I, STERLING T. PLAYFORD, a citizen of the United States, residing at Cassopolis, in the county of Cass and State of Michigan, have invented a new and useful Building-Block, of which the following is a specification.

This invention relates to the construction of buildings, tanks, silos, culverts, and similar structures, and more particularly to a novel form of building block or stave designed for use in constructing the same.

The object of the invention is to provide an artificial-stone building block or stave having one longitudinal edge thereof provided with a segmental seating recess or socket adapted to receive the corresponding curved edge or knuckle of an adjacent block, so that said blocks may be laid into circular form to produce tanks or silos of different diameters.

A further object of the invention is to provide a tank having a plurality of reinforcing-bands adapted to engage the exterior walls of the tank at the meeting edges or knuckles of the blocks, whereby the latter are securely locked in engagement with each other.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings, it being understood that minor changes in form, proportions, and general assemblage of parts may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a portion of a tank or silo constructed of the improved blocks or staves. Fig. 2 is a vertical sectional view, partly in perspective. Fig. 3 is a top plan view of the tank. Fig. 4 is a top plan view of one of the blocks or staves detached. Fig. 5 is a perspective view of one of the brace-engaging clamps. Fig. 6 is a perspective view of a portion of a tank, illustrating a modified form of the invention. Fig. 7 is an end view, partly in section, of an arch or culvert formed of the blocks or staves. Fig. 8 is a side elevation of a portion of the structure shown in Fig. 7. Fig. 9 is a transverse sectional view taken on the line 9-9 of Fig. 8. Fig. 10 is a perspective view of one of the blocks forming the stave-supporting pillars or columns.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The improved block or stave may be molded or otherwise formed of cement, concrete, terra-cotta, or other suitable material and consists of a substantially rectangular body portion 5, one longitudinal edge of which is provided with a semicircular recess or socket 6, extending the entire length of the block and adapted to receive the correspondingly-curved knuckle 7 of an adjacent block when a plurality of said blocks are laid into a wall. The opposite ends of the blocks are flat, as shown, to present unobstructed bearing-faces 7', while the arc described by the socket of one block is less than that of the knuckle of the adjacent block, as indicated by dotted lines in Fig. 4 of the drawings, so that said blocks may be moved laterally at the knuckles to permit the formation of circular tanks or silos of different diameters. Attention is called to the fact that the opposite edges of the block at the recess or socket 6 are inclined or beveled at 6' to prevent fracture or chipping of said edges in handling the blocks and also to permit free lateral movement of said blocks.

In constructing a tank or silo from the blocks or staves a suitable foundation 8 is first laid and the blocks placed one upon the other with their flat bearing-surfaces abutting and arranged to break the joint, as shown, and with the knuckle of one block seated in the socket of the adjacent block. A standard or support 9 is then erected in the center of the tank to support a diaphragm or auxiliary bottom 10, the latter being preferably formed of cement and having a plurality of concentric reinforcing-rings 11 embedded therein and connected by radial braces 12, the ends of which are bent to form terminal hooks 13, which engage the rings, as shown. The blocks or staves are then laid in circular form upon the reduced extension 14 of the auxiliary bottom and positioned one upon the other until the desired height is reached, after which a suitable top or cover may be placed upon the open end of the tank, if desired.

The auxiliary bottom 10 is preferably dished or concaved and the annular shoulder 15, formed by the extension 14, spaced a short distance from the interior walls of the tanks to produce an annular pocket 16 for the reception of a quantity of pitch, asphalt,

or similar liquid packing 16' to prevent leakage. The sockets and mating knuckles are also preferably coated with pitch or asphalt preparatory to laying the same into the wall, and after the wall is completed the interior face thereof is coated with a thin layer of cement, a quantity of the liquid cement being poured into the pocket 16 upon the pitch or asphalt to form a closure for said pocket.

In order to reinforce and strengthen the tank, suitable rods or bands 17 are disposed at spaced intervals on the exterior walls of the tank with their threaded terminals passing in opposite directions through openings 17 in the angular arms 18 of clamping-brackets 19 and engaged by suitable nuts 20. Attention is called to the fact that the bands or rods 17 bear against exterior walls of the tank at the knuckles 7, so that when the tension of the bands or rods are regulated by adjusting the nuts 20 the knuckles will be forced into engagement with the sockets, and thereby effectually prevent accidental displacement of the blocks.

By having portions of the bands spaced from the wall in this manner it also permits expansion of the recessed ends of the blocks when the water in the tank freezes, while by having the free ends of the arms 18 bearing against the adjacent blocks said arms are braced and prevented from bending when the rods or bands are tightened.

If desired, a suitable door may be formed in the side walls of the tank below the auxiliary bottom by omitting one of the blocks or staves, so that a water-supply pipe may be extended upwardly between the walls of the standard 9 and through the auxiliary bottom of the tank for supplying water to the latter.

In Fig. 6 of the drawings there is illustrated a modified form of the invention in which the auxiliary bottom and central support or standard are disposed with the blocks 5', being erected on a foundation of cement, mortar, or other suitable material 21, which is subsequently coated with a layer of cement 22 or with a layer of pitch covered with cement.

In Figs. 7 to 10, inclusive, there is illustrated a further modification in which the blocks are arranged to form a culvert or arched structure. In this form of the device there are provided a plurality of spaced columns or supports 23, preferably formed of substantially rectangular-shaped blocks 24, some of which are curved to form the arch or top of the culvert, as indicated at 25. The blocks 24 are provided with aligned longitudinally-disposed channels or recesses 26, adapted to receive the adjacent ends of the blocks or staves 5'', as best shown in Figs. 7 and 8 of the drawings, the blocks 5'' in this case being oblong in shape and disposed one about the other throughout the height of the arch or culvert. The exterior faces of the blocks

forming the supports 23 are also provided with grooves or channels 27, in which are seated reinforcing-bars 28, said bars being connected to similar bars 29, engaging the interior faces of the blocks by clamping-rods 30, passing through plates or washers 30', and seated in transverse grooves 31, formed in the abutting faces of the blocks 24, as shown. In order to reinforce and strengthen the side walls of the culvert, suitable tie-rods 32 are threaded through openings 33 in the blocks 24 and clamped in position by nuts 34. A layer of mortar or cement 35 is placed within the channels 26 to protect the bars 28 from the action of the elements, and the inner faces of the blocks 5'' are also preferably coated with a thin layer of liquid cement, in the manner before described. It will of course be understood that in constructing the culvert the concaved and convex faces of the blocks or staves 5'' may be coated with pitch or asphalt in order to form a more perfect union between the several blocks, and thereby prevent leakage.

Having thus described the invention, what is claimed is—

1. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said blocks being laid in circular form and arranged in superposed courses, and a binding-rod engaging the side walls of the several blocks at convex ends thereof and spaced laterally from the concaved ends of the blocks.

2. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said blocks being laid in circular form and arranged in superposed courses, a binding-rod engaging the side walls of the several blocks at the convex ends thereof and spaced laterally from the concaved ends of said blocks, and means for adjusting the tension of the rod to thereby force the convex end of one block to its seat in the concavity of the mating block.

3. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block said block being laid in circular form and disposed in superposed courses, clips having perforated angular disposed arms the free ends of which bear against the blocks, threaded binding-rods passing through the perforation in the arms and engaging the walls of the blocks at the convex ends thereof said rods being spaced laterally from the concaved ends of the blocks, and nuts threaded on the binding-wires and adapted to engage the angular arms for adjusting the tension of said rods.

4. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said block being laid in superposed courses to form a circular wall, a diaphragm interposed between adjacent courses at one end of the wall, a central support for the diaphragm, and binding-rods embracing the wall and bearing against the walls of the blocks at the convex ends thereof, said rods being spaced laterally from the concaved ends of the blocks.

5. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said block being laid in superposed courses to form a circular wall, a diaphragm interposed between adjacent courses at one end of the wall and having a plurality of reinforcing-rods embedded therein and extending within the wall, a liquid coating for the interior surface of the wall, and binding-rods embracing the exterior surface of the wall and bearing against

the walls of the blocks at the convex ends thereof.

6. In building construction, a plurality of blocks each having one longitudinal edge thereof convex and its opposite edge concave for the reception of the convex portion of an adjacent block, said blocks being laid in superposed courses to form a circular wall and having their mating edges covered with waterproof material, a diaphragm interposed between the adjacent courses at the lower end of the wall and provided with an annular shoulder spaced from said wall to form a pocket adapted to receive a plastic material, and a plurality of spaced binding-rods embracing the exterior of the wall and bearing against the walls of the blocks at the convex ends thereof.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

STERLING T. PLAYFORD.

Witnesses:

LOWELL H. GLOVER,
— WILLIAM D. JONES,