June 19, 1945. N. J. BURGETT 2,378,616

SEPTIC TANK

Filed April 20, 1942

FIG.1.

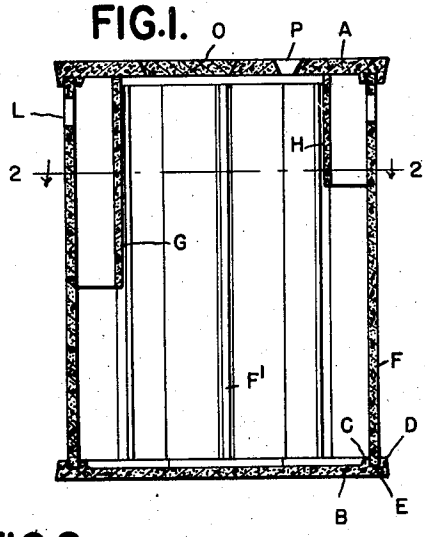


FIG.4.

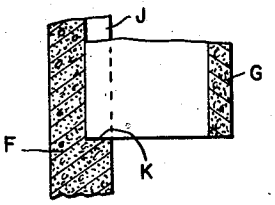


FIG.5.

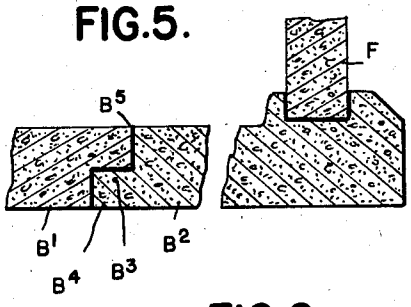


FIG.2.

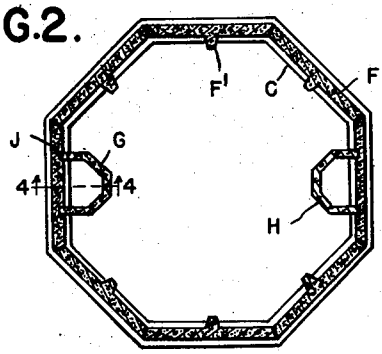


FIG.6.

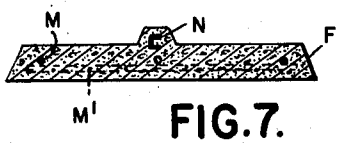


FIG.7.

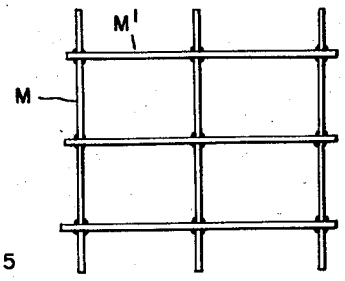
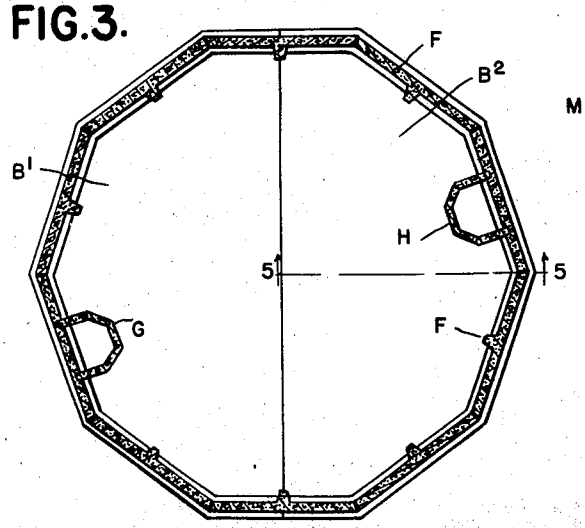


FIG.3.



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SEPTIC TANK

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4 Claims. (Cl. 210—6)

The invention relates to septic tanks and has for its object the obtaining of a construction which can be manufactured at small cost and easily transported and erected.

It is a further object to obtain a construction formed of separately molded interengageable slab units and in which the weight of the separate units is limited so as to be easily handled by a workman without the aid of hoisting apparatus.

With these objects in view, the invention consists in the construction and method of forming the same as hereinafter set forth.

In the drawing:

Fig. 1 is a vertical central section through a septic tank of my improved construction;

Fig. 2 is a horizontal section thereof on line 2—2 of Fig. 1;

Fig. 3 is a similar view showing a slightly modified construction for increased capacity of tank;

Fig. 4 is an enlarged section on line 4—4 of Fig. 2; and

Fig. 5 is an enlarged section on line 5—5 of Fig. 3;

Fig. 6 is a cross section through one of the side slabs of modified construction; and

Fig. 7 is an elevation of a portion of the reinforcement used in Fig. 6.

Septic tanks are usually formed either as a monolithic structure made at the point of installation or of premanufactured structures which must be transported to the point of use. The latter structures are usually of relatively large dimensions and of such weight as to require hoisting apparatus for handling the same. Also, a different structure is required for each change in capacity.

It is the primary object of my invention to facilitate the building of a septic tank of the desired capacity, by any workman and without the use of expensive equipment.

Generally described, my improved tank comprises polygonal top and bottom slabs and rectangular side slabs which are interengageable with said top and bottom slabs. The polygonal top and bottom slabs have more than four sides, and the number of these sides is increased with the diameter of the tank so that the width of the side slabs for the larger tank capacities is substantially no greater than that of the tanks of smaller capacity. These elements when erected form a tank of substantially circular form, giving the greatest capacity for the amount of material used.

More in detail, the top slab A and bottom slab B are the same in construction, being of polygonal form and provided in their peripheral portions with ribs C and D forming grooves E therebetween for the reception of the ends of the side slabs. These side slabs F are of rectangular form and preferably of standard height. When engaged in the grooves E, their opposite side edges will abut against the sides of adjacent slabs, and the joint therebetween may be calked with any suitable sealing material such as asphaltum. One of the features of a septic tank is that the inlet communicates with the interior of the tank at a lower level than the outlet. This I have accomplished by providing members of substantially U-shaped cross section which are attached to opposite side slabs to extend downward from the top slab to the desired level. As shown, the member G, which forms the inlet connection, extends downward from the top more than one-half the height of the tank, while the member H forming the outlet is shorter, so that its lower end is a considerable distance above that of the member G. Both members G and H are held in position by forming grooves J in the slabs to which they are attached, for receiving the ends of the U, said grooves having shoulders K for engaging the lower ends of the members and holding them from falling. The top slab A bears against the upper ends of these members and assists in holding them in position. Also, the joints in the grooves may be cemented. The slabs to which these members are attached have apertures L therein, for connection with the inlet and outlet conduits.

Where the tanks are made for relatively large capacity, the dimensions of the polygonal top and bottom slabs may be such as to increase the weight thereof to an objectionable extent. I therefore preferably make these slabs in two sections, with an overlapping joint. As shown in Fig. 5, the bottom slab is formed of the sections B′ and B^2, arranged on opposite sides of a center line, the meeting edges being fashioned to form a rabbet B^3 for engaging a tongue B^4 of the adjoining section. This permits handling of the two slabs separately, and when they are placed in position, the joint therebetween may be sealed by asphaltum or other plastic, as indicated at B^5. The top slab is similarly formed in two sections, and if desired, the joint between these sections may be arranged to extend transversely to that in the bottom section.

The separate elements of the structure as above

described are all of a character to be easily cast in molds using any suitable cementitious mixture. As all of the elements with the exception of the small sections G and H are flat, they will occupy relatively small space in packing, for storage or shipment. The erection of the structure is such a simple matter as to require no particular skill on the part of the workman, nor is he required to use expensive equipment. Therefore, my improved construction supplies a want unsatisfied by constructions heretofore made.

It is quite important in the use of septic tanks to prevent the forming of circulating currents in the fluid content. I therefore preferably form the side slabs F with inwardly extending ribs or baffles F′ which check any circulatory currents. These ribs also constitute a reinforcement for the slab.

As shown in Figs. 6 and 7, I may further strengthen these side slabs by placing a metallic reinforcement therein. This preferably comprises a structure formed of wire having a plurality, preferably three, parallel longitudinal strands M and overlapping cross strands M′ welded thereto. This is embedded in the slab and constitutes a reinforcement therefor. I also preferably reinforce the rib F′ by embedding a small metallic channel member N therein.

If it is desired to provide access to the interior of the tank without the necessity of removing the top slab, a manhole may be formed therein with a cover O normally closing this aperture. Also, in some cases, it is desired to provide a vent for the tank and to permit of this, I form a small aperture in the top section normally filled by the lid P.

One of the advantages of my improved construction is that the polygonal structure approximates the form of a cylinder or circular wall which has the greatest strength for resisting radially inwardly directed stresses. It is a fact that the stresses to which the tank is subjected are chiefly in a radially inward direction, due to the thrust of the soil surrounding the tank, whereas the radially outward directed force, due to hydrostatic pressure of the liquid content, is not as great. With my construction the larger the capacity of the tank, the greater the number of sides, so that each side is reinforced by the thrust of adjacent sides, which increases the strength thereof.

What I claim as my invention is:

1. A septic tank having inlet and outlet connections comprising separately formed top, bottom and side slabs formed of molded cementitious material and adapted to interengage with each other, at least one of said side slabs having an aperture therethrough for connection with an external conduit and also having parallel grooves on opposite sides of said aperture with shoulders at their bottom ends, and a channel member of substantially U-shaped cross section engaging said parallel grooves in said side slab in registration with said aperture and extending from contact at its upper end with said top slab to said shoulders at the bottom of said grooves.

2. A septic tank having inlet and outlet connections comprising similar polygonal top and bottom slabs and rectangular side slabs formed of molded cementitious material, said side slabs corresponding in number to the sides of the polygon and adapted for interengagement with said top and bottom slabs to enclose a single chamber, at least one of said side slabs having an aperture therethrough for connection with an external conduit and being also provided with parallel grooves extending from its top downward on opposite sides of said aperture and with shoulders formed at the bottom of said grooves, and a channel member of substantially U-shaped cross section fitting in said grooves and resting upon said shoulders, said member being of a length to contact at its upper end with said top slab.

3. A septic tank having inlet and outlet connections comprising polygonal top and bottom slabs, the number of sides of the polygon being greater than four, rectangular side slabs parallel to each side of the polygon and having an interlocking engagement with said top and bottom slabs, all of said slabs being formed of molded cementitious material, a calking in the joints between slabs for rendering the tank substantially water-tight, and inwardly projecting baffles on said slabs to check circulation in the fluid content of the tank.

4. A septic tank having inlet and outlet connections comprising polygonal top and bottom slabs, the number of the sides of the polygon being greater than four, rectangular side slabs parallel to each side of the polygon and having an interlocking engagement with said top and bottom slabs, all of said slabs being formed of molded cementitious material, each of said side slabs having a skeleton metallic reinforcement embedded therein, ribs projecting inward from said slabs forming baffles, and a metallic reinforcement embedded in each of said ribs and slabs.

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