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W. WAITE
 PREFABRICATED INSULATED PANEL ASSEMBLY FOR
 SEWAGE DIGESTION TANKS
 Filed March 20, 1963

3,226,895

Fig. 1.

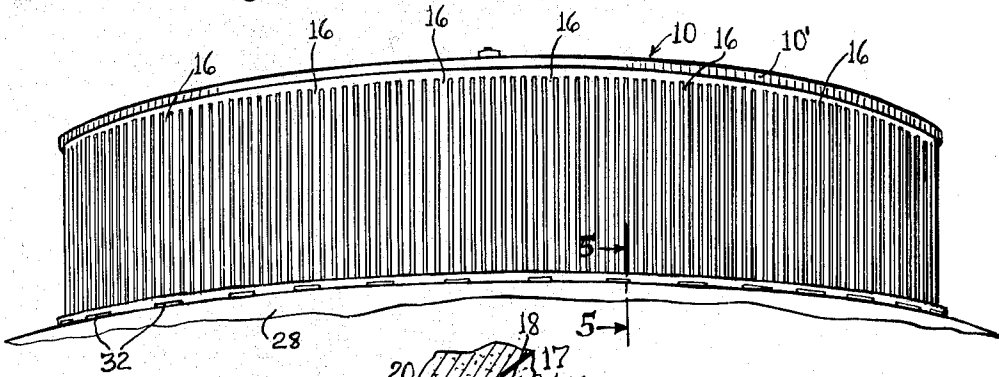


Fig. 2.

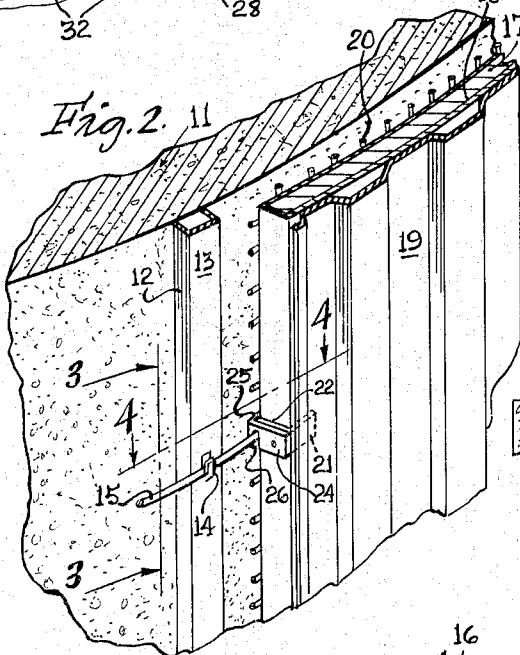


Fig. 5.

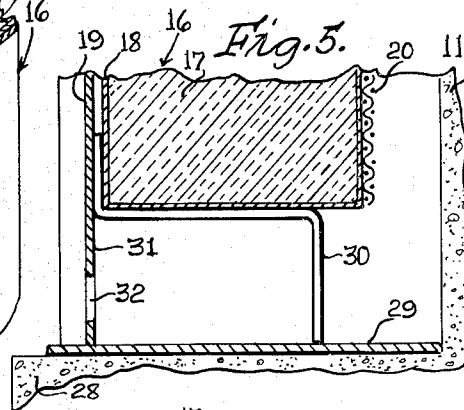


Fig. 3.

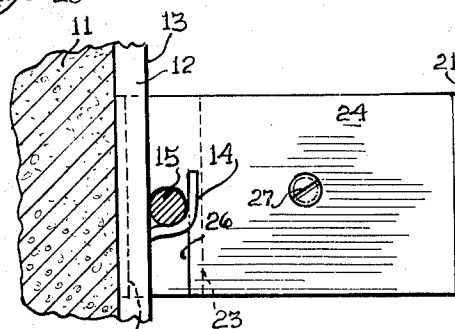
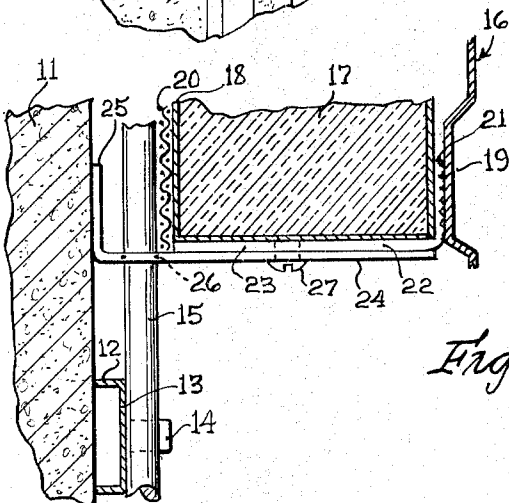


Fig. 4.



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3,226,895 PREFABRICATED INSULATED PANEL ASSEMBLY FOR SEWAGE DIGESTION TANKS

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2 Claims. (Cl. 52-248)

My invention relates to certain new and useful improvements in Prefabricated Insulated Panel Assembly for Sewage Digestion Tanks.

One of the principal objects of the invention is to provide an insulated digestion tank wall panel assembly characterized by the features of easy installation and removability and which will serve to increase the operating efficiency of the digestion tank by decreasing the heat loss through the tank walls, thus yielding an increased and more even production of gas, the assembly being held with respect to the tank without projections into the concrete wall thereof, thus eliminating a possible cause of seepage.

Another and equally important object of the invention is the provision of such a panel assembly which is economical in manufacture and of light-weight material and one requiring for its assembly no special tools or skilled labor.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

FIG. 1 is a perspective view of a digestion tank having associated therewith my improved panel assembly;

FIG. 2 is a fragmentary perspective sectional detail view of the same;

FIG. 3 is an enlarged fragmentary sectional detail view taken substantially on line 3-3 of FIG. 2;

FIG. 4 is an enlarged fragmentary sectional detail view taken substantially on line 4-4 of FIG. 2; and

FIG. 5 is an enlarged fragmentary sectional detail view taken substantially on line 5-5 of FIG. 1.

The efficient operation of the sewage digestion tank is in a large measure dependent upon avoiding the loss of heat through the walls of the tank, thus increasing the production of gas for the sewage digestion operation. To accomplish this and other objects of the invention, I provide a panel assembly consisting of a plurality of panel sections removably secured together concentrically with and spaced from the outer vertical surface of the wall of the digestion tank. Such a tank is indicated at 10 and includes a roof structure 10' and side walls 11, the latter being formed of concrete.

Positioned vertically with respect to the side walls 11 of the tank 10 and spaced circumferentially from each other are a plurality of supports 12 each substantially channel-shaped in cross section with their respective bases 13 spaced from the wall 11. These supports are preferably formed of light-weight aluminum or such other material as will best serve the purpose. Each of the supports 12 has a plurality of equally spaced apart hooks 14 which are preferably struck from the base 13 of the channel support 12.

Positioned in the hooks 14 are tie rods 15 which extend concentrically about the tank 10 and which serve to retain the supports 12 in their upright position against the walls 11 of the tank 10 when the adjacent ends of the rods 15 are secured together in any suitable manner.

The panel is indicated generally at 16 and each panel comprises an insulation backing 17 which may be of fiberglass or such other material as will function as an

insulation. The glass fibers making up the backing 17 is enveloped in a heavy waterproof asphalt jacket 18 to protect the glass fiber backing 17. The outer surface of the jacket 18 is covered by a corrugated section 19, preferably formed of aluminum or other suitable light-weight durable, non-corrosive material. The jacket 18 with the glass fibers therein is mounted against a wire retainer wall 20, preferably of mesh construction and formed of non-corrosive material such as galvanized wire or the like. This retainer wall 20 extends completely around the tank 10. Secured to the corrugated section 19 by welding or the like is the angled end portion 21 of an L-shaped plate 22, the long leg 23 of which extends transversely of the panel 16. Secured to the long leg 23 of the plate 22 is a plate 24, the angled end 25 of which extends beyond the inner wall of the panel 16 and provided with an open slot 26 which receives the rod 15 when the panel 18 is mounted in the position shown in FIG. 2, with respect to the tank 10.

The number of these plates 22 and 24 will vary depending upon the height of the panel 16, it being pointed out that there are employed at least two of the tie rods 15 arranged in proper spaced relation with respect to each other and encircling the tank 10 to provide a support for the panels 16 of the panel assembly. The plates 22 and 24 are connected together by means of a stud screw 27.

As will be seen in FIGS. 1 to 4 inclusive, the channel supports 12 support the panels 16 of the panel assembly in spaced relation with respect to the wall 11 of the tank 10. This provides a sufficiently large space to allow any condensation which may be formed on the wall 11 to find its way to the base 28 of the tank 10. As shown in FIG. 5, the lower edge of the channels are spaced a short distance above a channel seat 29 positioned on the base 28. The panels are supported in this position by Z-shaped feet 30 spaced about the tank 10. The lower edge portion 31 of the corrugated sections 19 may be perforated circumferentially about the tank 10 as at 32 to provide seepage openings to permit the draining of condensation from beneath the panels.

After the panels 16 are installed, they may be readily removed individually to permit inspection for leaks and seepage or for repair purposes. The assembly of the panels may be accomplished without the use of tools and may be done by one other than a mechanic. The entire assembly is prefabricated at the factory, thus greatly facilitating shipment to the place of installation where the panels may be easily and quickly assembled to provide an insulated wall about the tank by merely mounting each panel section on the tie rods 15 by engaging the respective hooks 14 with such rods.

The removal of the panels may be accomplished with the same ease as the assembly of the panels. It will be apparent that my prefabricated assembly may be manufactured at an economical cost and that when in use it will afford maximum protection against loss of heat which would otherwise lessen the efficiency of the digestion operation of the sewage disposal tank.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In combination, a factory-prefabricated panel assembly for a sewage digestion tank of a sewage disposal

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system, the tank having side walls formed of concrete, comprising:

- (a) a plurality of vertical supports equally spaced concentrically with respect to said side walls,
- (b) retainer means extending circumferentially with respect to said side walls and having hooked engagement with said supports for supporting said supports vertically with respect to said side walls, 5
- (c) a plurality of panels each including an insulating backing and an outer non-corrosive cover for said 10 backing,
- (d) hook means for removably connecting the panels of said panel assembly to said retainer means,
- (e) and a foraminated retainer disposed between said panel assembly and said side walls and extending 15 circumferentially with respect to said side walls.

2. In combination, a factory-prefabricated panel assembly for a sewage digestion tank of a sewage disposal system, the tank having side walls formed of concrete, comprising: 20

- (a) a plurality of vertical supports equally spaced concentrically with respect to said side walls,
- (b) tie rods extending circumferentially with respect to said side walls and having hooked engagement with said supports for supporting said supports vertically 25 with respect to said side walls,

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- (c) a plurality of panels each including an insulating backing and an outer non-corrosive cover for said backing,
- (d) hook means for removably connecting the panels of said panel assembly to said tie rods,
- (e) and a wire mesh retainer disposed between said panel assembly and said side walls and extending circumferentially with respect to said side walls.

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