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2,782,604

DRAIN TILE

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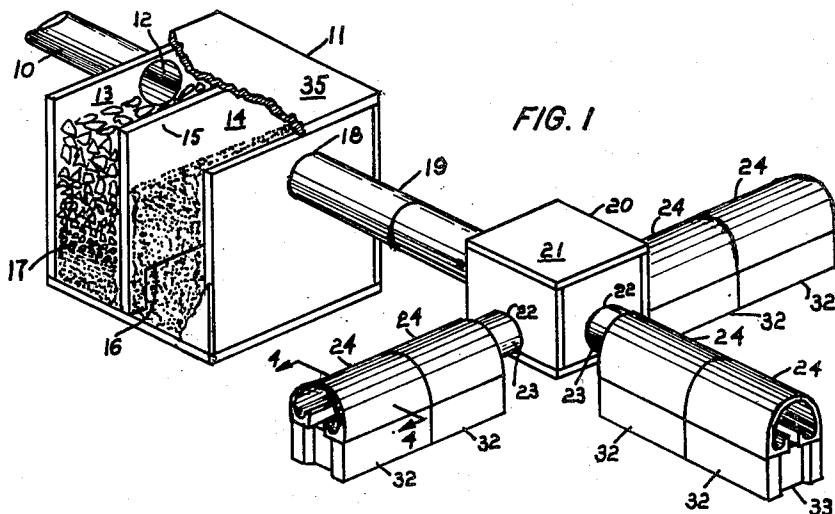


FIG. 1

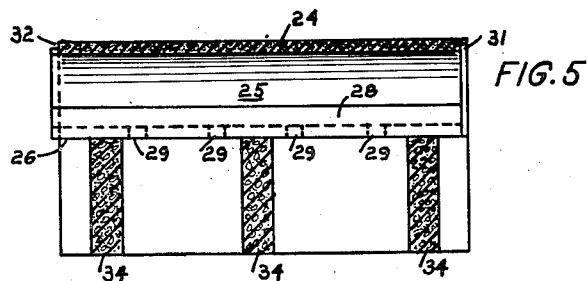


FIG. 5

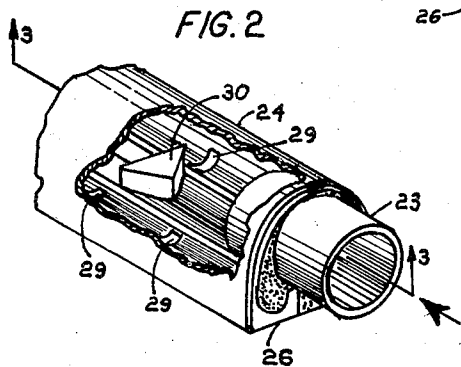


FIG. 2

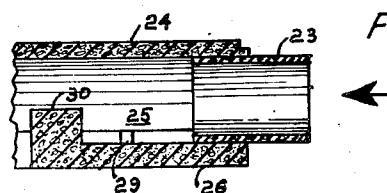


FIG. 3

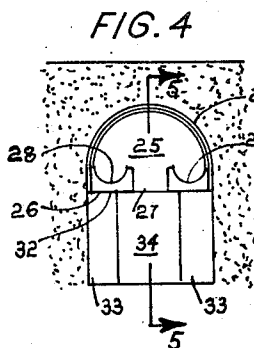


FIG. 4

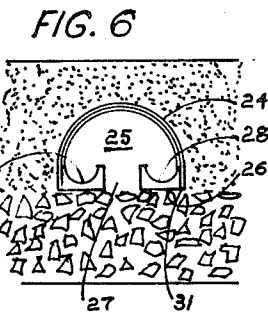


FIG. 6

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DRAIN TILE

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2 Claims. (Cl. 61—11)

This invention relates generally to drain fields and is more particularly directed to a system for draining off septic tank effluents or liquid wastes.

A principal object of the present invention is to provide a simple yet a highly efficient system for draining away septic tank effluents or any other liquid wastes.

A further object of the present invention is to provide a drainage system which is compact and provides an extremely large drainage area per lineal foot of drain line as compared to the present drainage fields.

A still further object of the present invention is the provision of a drainage system characterized as above wherein the drain tiles form a pair of passageways for the liquid wastes with a centrally disposed slot and plurality of transverse slots for the drainage of the fluids therefrom.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Figure 1 is a perspective view of a drainage system embodying my invention.

Figure 2 is a perspective view of a single lead drain tile partially broken away.

Figure 3 is a vertical sectional view taken along the line 3—3 of the drain tile shown in Figure 2.

Figure 4 is a transverse sectional view taken along the line 4—4 of Figure 1.

Figure 5 is a sectional view taken along the line 5—5 of Figure 4.

Figure 6 is a sectional view similar to Figure 4 showing the drain tile placed on a bed of gravel.

Referring to the drawing wherein like numerals are used to designate similar parts throughout the several views, the numeral 10 refers to an outlet of a source of effluent or liquid wastes such as a septic tank and the like. The outlet 10 is connected to a filter box 11 at an inlet opening 12 on one side of the filter box 11. The filter box 11 is divided into two compartments 13 and 14 by a baffle 15 whose lower portion is cut away as at 16 to permit liquids to flow therethrough from the incoming compartment 13 to the outgoing compartment 14. Both compartments 13 and 14 have a carbonaceous filter material contained therein; although in the incoming compartment 13 the filter material at the top is large and coarse, decreasing in size gradually towards the bottom of the compartment 13 while in compartment 14 the filter material is of the same size and degree of fineness as that at the bottom of compartment 13. A cover 35 renders the filter box water-tight and permits access to the inner portion of the filter box 11 in the event the system is

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clogged at this position. An outlet opening 18 which is positioned on the wall opposite that of the inlet opening 12 is at a lower level than that of the inlet opening 12 and communicates with the outgoing compartment 14.

To the outlet opening 18 there is connected a discharge pipe 19 whose other end is connected to a distributor box 20. The box 20 is rectangular in shape, has a cover 21 enclosing a single compartment therein, and is provided with a discharge opening 22 on each of the three sides of the box 20. To each of the discharge openings 22 there is a connector pipe 23 connected therewith, whose other end is connected to a drain tile 24.

The drain tiles 24 are somewhat semi-circular in cross section forming an arch-like chamber 25 with a flat base portion 26. A discharge slot 25 is longitudinally disposed in the base portion 27 along the full length of the drain tile 24. On both sides of the slot 27 there is an open duct or gutter 28 having at regular spaced intervals transverse slots 29. The drain tiles 24 connected directly with the connector pipes 23 are provided with a diverter member 30 triangular in shape and positioned in the path of fluid flowing through the pipe 23. The slot 27 between the diverter 30 and the end of the pipe 23 and the spaces between the pipe 23 and the drain tile 24 are cemented as shown best by Figure 2. The end portions 31, 32 of the drain tiles 24 are rabbeted so that adjacent drain tiles 24 will fit tightly and evenly with each other. As many drain tiles 24 as are necessary are positioned in straight lines extending from the distributor box 20.

To enhance the drainage effect of the drain field described above, the drain tiles 24 may be placed on a bed of gravel 31 as shown in Figure 6, or upon drain tile supports 32 consisting of a pair of vertically disposed walls 33 connected together by transverse webs 34. The drain tile supports 32 are substantially the same dimension as the drain tiles 24, so that the latter rest evenly on the top of the supports 32.

In the normal operation of the drainage system described above, the effluents or liquid wastes being discharged from a septic tank will flow through the inlet 10 into the incoming compartment 13 of the filter box 11. The effluents will percolate through the coarse filter material 17 leaving any solid matter behind as the liquid wastes flow through the opening 16 past the baffle 15 and into the outgoing compartment 14. The liquid waste will then be discharged through the opening 18, the discharge pipe 19 and into the distributor box 20 where the waste water will flow out into one of the drain connector pipes 23. As the fluids flow out of the pipes 23, they are diverted into two streams by the diverter member 30 each stream flowing along the open ducts 28. As the fluids flow over the slots 29, they drain therethrough into the gravel 31 or fall through the open blocks 32 onto the soil therebelow. In the event of a sudden increase of discharging effluents developing, the stream of water flowing along the open ducts 28, 28 will overflow the gutters in the direction of the center of the drain tiles 24 and spill into the slot 27, thereby draining off at a fast rate. Likewise, if the transverse slots 29 should become clogged then the waste fluids will be drained by way of the center slots 27.

The drain tiles 24 are normally placed in furrows or trenches formed in the ground and covered over with earth as shown best in Figures 4 and 6. A cover 35 is provided the filter box 14 to permit access to the filter materials 17, in the event solid waste products have clogged same. In order to expedite the removal and replacement of the filter material 17 in the filter box 11, the filter material may be formed into a solid yet porous mass, so that it may be positioned in each compartment 13 and 14 as a unit.

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Having described my invention, what I claim as new is:

1. A drain tile comprising an elongated member, said member having an opening extending along its full length, a base portion mounted on said elongated member, said base portion having a substantially longitudinally positioned slot extending the full length of said elongated member, a gutter mounted on said base portion on each side of said slot forming a fluid passageway and a plurality of transversely disposed slots formed in said base portion at said gutters.

2. A drain tile comprising an elongated member, said member having an opening extending along its full length, a base portion mounted on said elongated member, said base portion having a substantially longitudinally positioned slot extending the full length of said elongated

member, a gutter mounted on said base portion on each side of said slot forming a fluid passageway, a plurality of transversely disposed slots formed in said base portion at said gutters and diverter means mounted at one end of said drain tile for directing the flow of fluids to said fluid passageways.

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