Jan. 3, 1933. H. R. KIMBERLING 1,892,842

UNDER DRAIN FOR SEWER FILTERING PLANTS

Filed Feb. 27, 1931

Fig. 1.

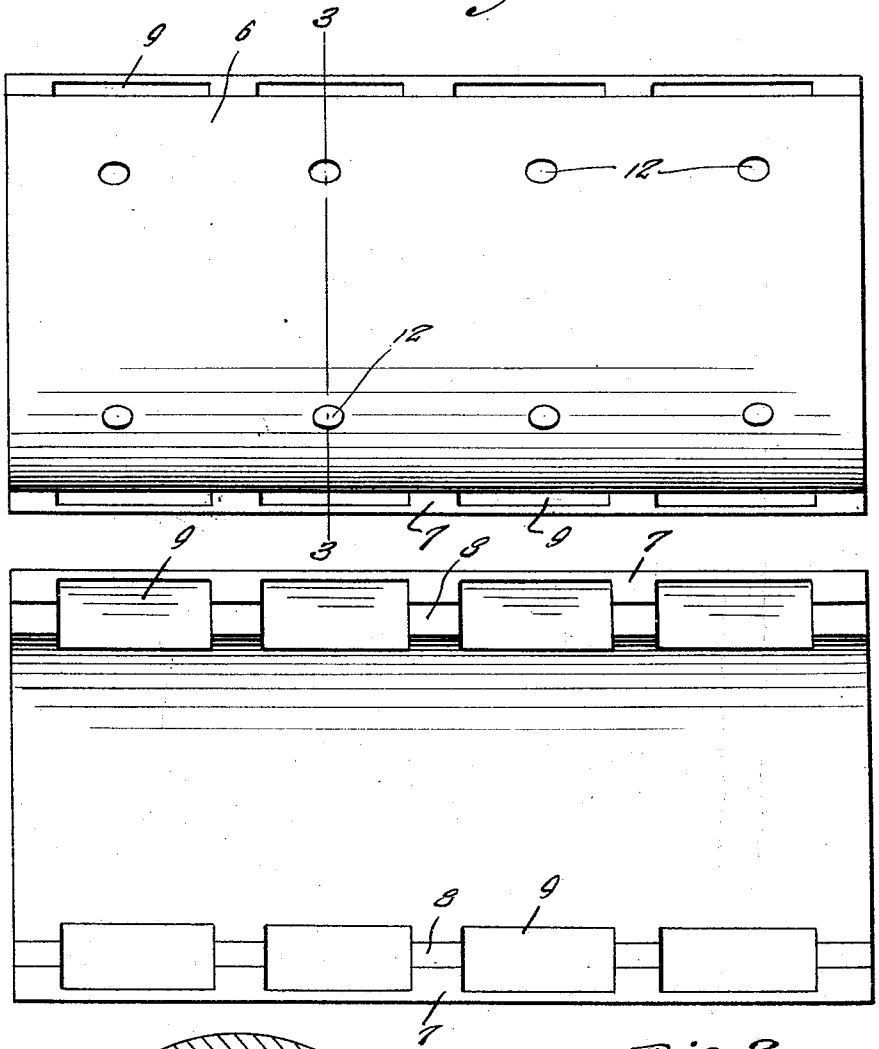


Fig. 2.

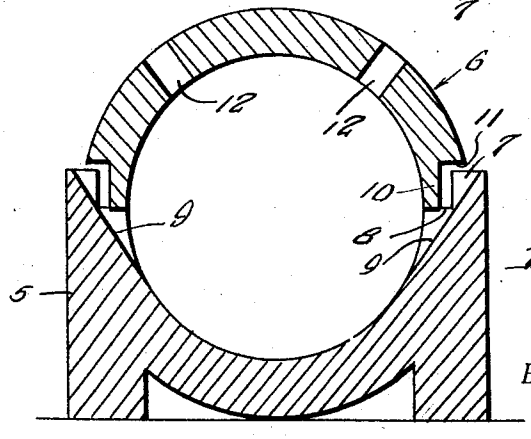


Fig. 3.

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UNITED STATES PATENT OFFICE

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UNDER DRAIN FOR SEWER FILTERING PLANTS

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This invention relates broadly to sewer filtering plants, and the primary object is to provide an under drain therefor.

Other very important objects of the invention are first to provide an under drain or filter bed for sewage disposal plants which is of large capacity and can be easily cleaned and flushed; secondly to provide a filter bed for under drains, the parts of which are relatively simple in construction, economical to manufacture, are easily installed, and capable of sustaining great loads; and thirdly to provide an under drain having a novel arrangement of seepage passages and air holes whereby clogging is reduced to a minimum, and at the same time abundance of air is permitted to circulate through the filter bed.

Other objects and advantages of the invention will become apparent during a study of the following description taken in connection with the accompanying drawing, wherein:

Figure 1 is a top plan view of the under drain.

Figure 2 is a top plan view of the base section of the under drain.

Figure 3 is a transverse sectional view taken substantially on the line 3—3 of Figure 1.

With reference more in detail to the drawing, it will be seen that the filtering bed or under drain comprises two complemental sections including a base section 5 and a cover section 6. The sections may be made of concrete, metal, or any suitable material as is usually employed in the construction of such under drain. The bottom or base section 5 is in the nature of a trough, the interior of which is semi-cylindrical in cross section. On opposite sides thereof, and adjacent the upper edge, the walls of the trough or base section 5 are provided on their inner faces with a series of longitudinally spaced stepped lugs 7 providing inwardly from the top of the base or trough section, seats 8.

Between adjacent lugs, the inner faces of the walls are beveled to provide seepage passages 9 extending downwardly and inwardly from the upper edges of the walls of the base section.

The upper section or cover 6 is preferably semi-cylindrical in cross section and at its opposite longitudinal edges is notched longitudinally to provide longitudinally extending tongues 10 adapted to rest on the seats 8, and shoulders 11 overlying and spaced from the upper ends of the lugs 7.

Preferably the cover section 6, which is removable, is slightly smaller on its outside diameter than the bottom or base section 5 so that the shoulders 11 terminate inwardly from the outer faces of the opposite walls of the base section 5 and will not obstruct the seepage passages 9.

The cover or upper half section 6 is also provided with a plurality of air openings 12 to permit a thorough and sufficient quantity of air to circulate through the under drain.

In actual practice, the complete under drain or filtering bed will comprise a plurality of such under drains as herein described, the same being arranged in end to end relation, and will rest on a concrete base at the bottom of the disposal plant. The under drain, so constructed, will intercept all particles of rock which is dumped on top for filtering purposes thus preventing the rock from clogging up the drain and at the same time permitting an uninterrupted flow or seepage of water through the seepage passages 9 into the drain to be carried off by the under drain.

Such is accomplished by having, as before intimated, the top half or cover section 6 of slightly smaller outside diameter than the bottom half or base section 5. It will be also noted, that the lugs on the opposite sides of the base section 5 are so arranged that the top half or cover section 6 can not be pushed out of its proper position by the dumping of chat or rock on top of it. It will be also noted, that an advantageous feature of this under drain is that the top half, or cover, is easily removed for cleaning and flushing the drain, when necessary, after the rock or chat is removed. It will be also apparent, that a drain constructed in accordance with the present invention, is unlikely to become clogged, and at the same time permit an

abundance of air to circulate through the filtering edge.

Even though I have herein shown and described the preferred embodiment of the invention, it is to be understood that the same is susceptible of changes, modifications and improvements coming within the scope of the appended claims, as for example if it be found more feasible in actual manufacture, both sections may be constructed from one single piece providing a unitary structure for installation in the filtering plant.

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

1. An under drain construction comprising a trough like bottom section provided on its opposite sides, and inwardly and downwardly from the top edges thereof with spaced seats, and a cover section having its opposite longitudinal edges adapted to engage said seats for supporting said cover section, and seepage passages formed in the opposite sides of said bottom sections between adjacent seats, said seepage passages opening out thru the top edges of the sides of said bottom section.

2. In an under drain construction, a pair of complemental sections having concaved confronting faces, one of said sections provided on the opposite sides thereof with spaced seepage passages extending inwardly from the upper edges of said sides, oppositely disposed spaced lugs provided on the sides of said one section, said lugs being disposed between said seepage passages and inwardly and downwardly from the upper edges of the sides of said sections the other of said sections being perforated, and provided on its longitudinal edges with tongues engaging said lugs inwardly from the corresponding portions of the first mentioned section.

In testimony whereof I affix my signature.

HENRY R. KIMBERLING.