



(22) Date de dépôt/Filing Date: 2007/05/16

(41) Mise à la disp. pub./Open to Public Insp.: 2008/11/16

(45) Date de délivrance/Issue Date: 2014/11/04

(51) Cl.Int./Int.Cl. *G05D 7/00* (2006.01),
C02F 1/00 (2006.01)

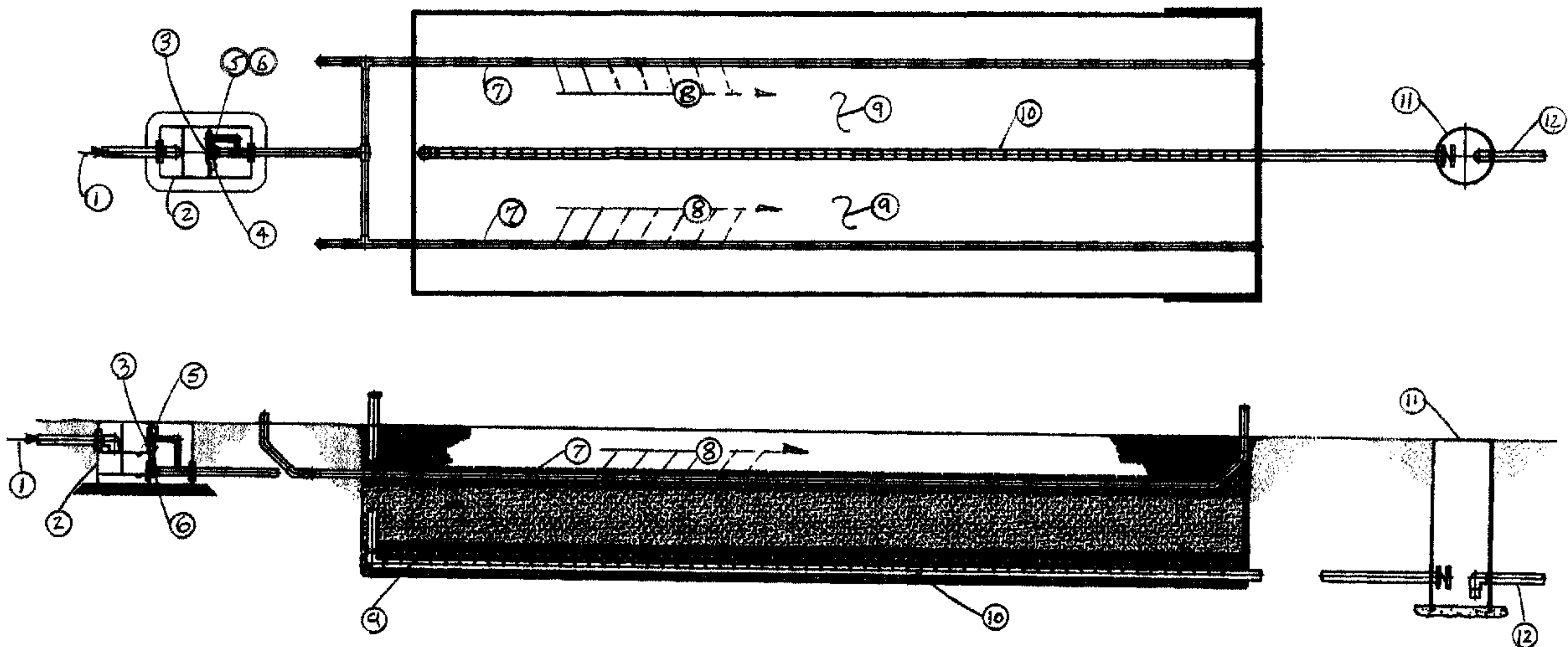
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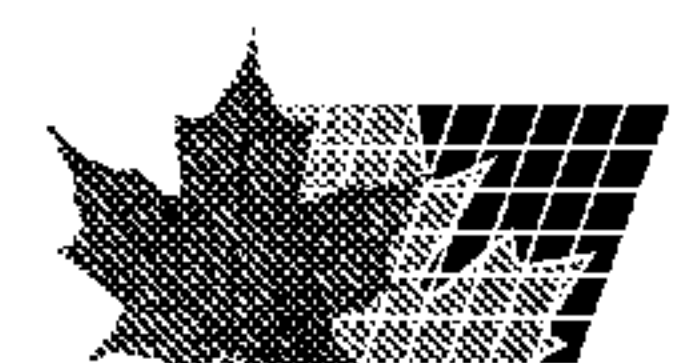
(54) Titre : SYSTÈME DE DOSAGE POUR LE TRAITEMENT DES EAUX USEES

(54) Title: SEWAGE TREATMENT DOSING SYSTEM



(57) Abrégé/Abstract:

The invention relates to a system (and devices) for controlling the dosing of domestic sewage into filter media. The object of the invention is to improve the operational efficiency of this kind of sewage treatment by eliminating the need for pumps and/or siphons.



ABSTRACT

The invention relates to a system (and devices) for controlling the dosing of domestic sewage into filter media. The object of the invention is to improve the operational efficiency of this kind of sewage treatment by eliminating the need for pumps and/or siphons.

Description

Technical Field

The invention relates generally to the treatment of domestic sewage. Although but one embodiment of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention.

Background of the Invention

It is common in the method of treating domestic sewage that the dosing mechanism used to deliver the effluent to the filter media is either mechanically driven by pumps or gravity driven by siphons. Both of these methods have costly long term maintenance and reliability issues that are beyond the ability of most homeowners to deal with. Pumps not only have the obvious mechanical wear and tear issue associated with wet operation but also have an equally serious downstream distribution problem because pressurization necessitates small distribution pipes with very small perforations. This eventually leads to frequent plugging. Siphons are also prone to frequent plugging but have again another equally common ailment known as "trickling". This condition effectively eliminates the dosing effect of the siphon entirely and allows the effluent to simply "trickle" into the filter media. The net result is to cause the filter media to be front end loaded which in turn leads to premature failure of same requiring replacement.

Summary of the Invention

I have found that these difficulties can be overcome by creating a system (and devices) that enables a constant dose of effluent to be delivered to standard large diameter distribution pipes that are perforated in such a way as to force an even distribution of effluent throughout the length of the filter media. The quantity of the dose is controlled in the dosing chamber by a liquid level sensor that controls the operation of an electromagnetic linear actuator that in turn controls the opening and closing of a standard guillotine type gate valve. The dosing chamber itself is divided into two separate and sealed compartments enabling dry operation of the actuator and gate valve and providing easy access for routine maintenance. Similarly, clean-outs and vents of sufficient size are provided for easy access and cleaning of the distribution pipes.

Brief Description of the Drawings

Figure 1 is a plan view showing a typical general arrangement of the present invention.

Figure 2 is a section view of the system of Figure 1.

Figure 3 is a detailed view of the dosing chamber portion of the system of Figure 2.

Detailed Description

Referring to Figures 1 and 2, it can be seen that a typical general arrangement is disclosed. Standard septic tank effluent 1 is discharged into the first compartment of the dosing chamber 2. Upon reaching a pre-determined level, a liquid level sensor 3 activates a timer and power controller 4 that powers an electro-magnetic linear actuator 5 and pulls open the guillotine type gate valve 6 enabling the effluent to flow, under gravity only, into the distribution pipes 7. The effluent then flows out of the distribution pipes 7 through bottom perforations 8 that are individually sized and spaced to enable an even distribution of the effluent into the filter media 9. After a pre-determined amount of time, the timer and power controller 4 releases the actuator 5 closing the valve 6 until sufficient head has accumulated in the first compartment of the dosing chamber 2 enabling the dosing cycle to repeat itself as previously described. Finally, the treated effluent exits the filter media 9 and flows into collector drain 10, monitoring well 11 and dispersal pipe 12 in the standard manner.

Claims

Having thus defined my invention, the embodiment of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. An improvement in a system of controlling the dosing of domestic sewage into a filter media whereby a dosing chamber, consisting of two distinct compartments, is connected to distribution pipes, that are perforated with holes that are individually sized and spaced in a pre-determined manner, to allow for a purely gravity fed even distribution of effluent into the filter media, collector drain, monitoring well and dispersal pipe.
2. The system of claim 1 wherein the filter media is natural soil and the collector drain, monitoring well and dispersal pipe are omitted.

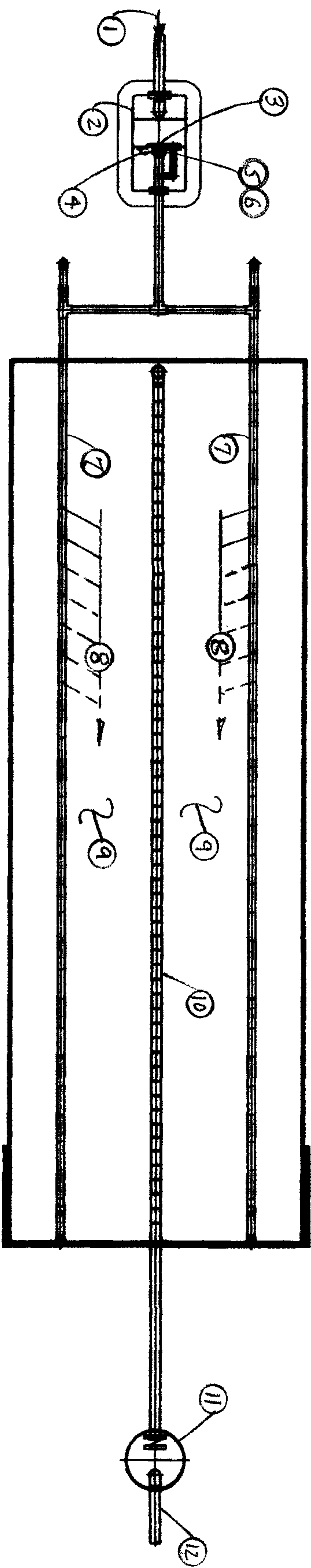


FIGURE 1

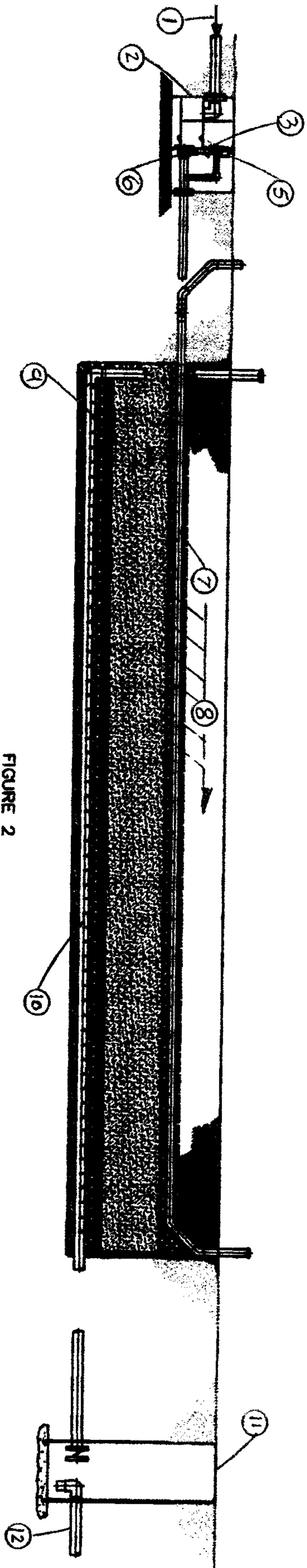


FIGURE 2

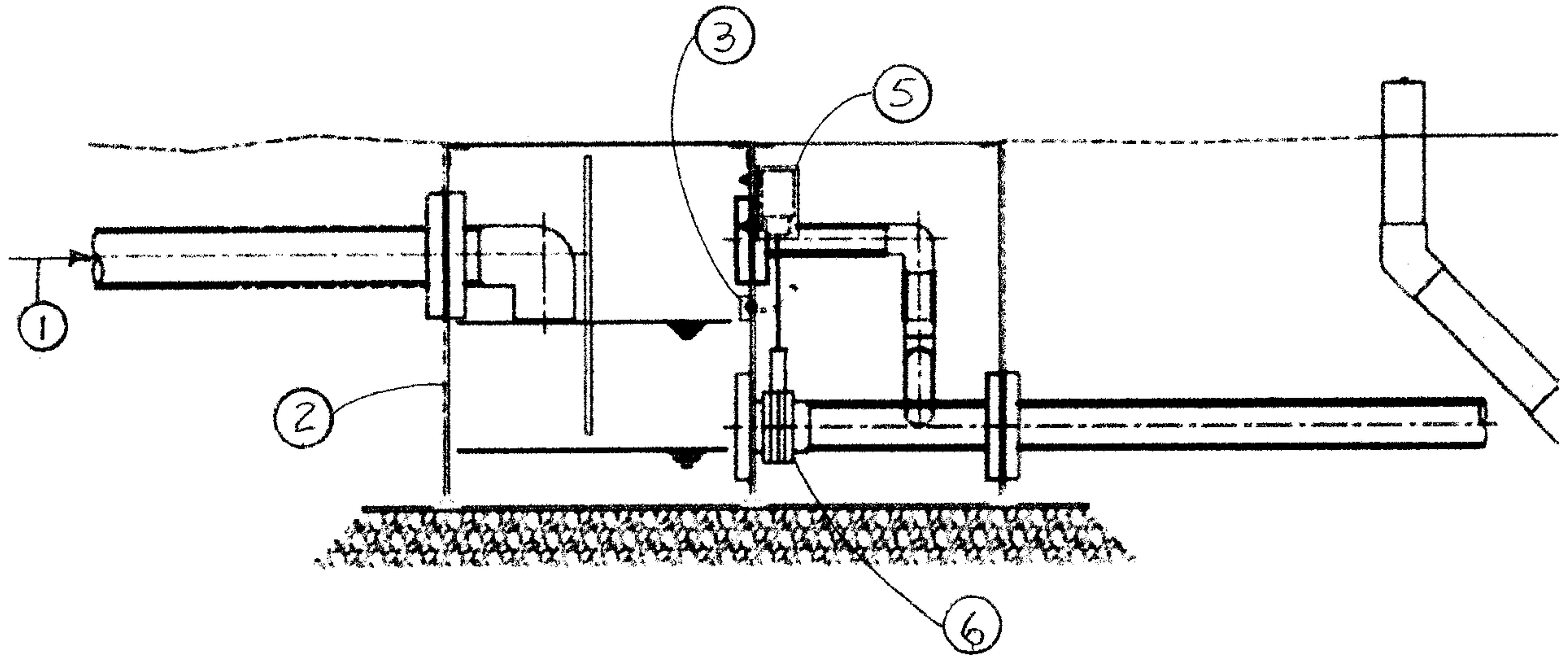


FIGURE 3

