

EFFECTIVE SEPARATION, EASY MAINTENANCE (ESEM) FLOW FILTER

BACKGROUND – FIELD

[Para 1] The invention relates to flow system such as rivers, canals, domestic drainage, passages for industrial processes. It is aimed at separation of immiscible components, while improving flow efficiency, aeration, reducing pollution to the environment, mitigate in-process degradation through the use, better use of forces of nature to achieve economy and elegance.

[Para 2] One common application is in surface drainage. This invention uses forces inherent in the flow, to promote the effectiveness and efficiency of separation while present the filtrates in a manner to minimize effort of removal, maintenance. .

BACKGROUND – PRIOR ART

[Para 3] This application applies to drainage, sewer, buildings, domestic, industrial systems, such as chemical, food processing, etc. We shall use surface drainage as the system, water as the media, to ease reading, comprehension by general readers.

[Para 4] Surface drainage system requires straining of flotsam, while releasing surface water to down stream.

[Para 5] Prior arts systems have been focusing primarily on drainage and filtration. They neglected immense forces the flow possesses. Resulting in low effectiveness, efficiency, reliability, while increases cost for monitoring, servicing,



energy usage. These prohibit full and effective coverage of all passages, resulting in poor media quality, lower flow rate, pollution.

[Para 6] In prior art 1, commonly seen installed in drainage world wide, perforated devices are inserted across water passage to filter flotsam, while allowing cleansed water to flow. The perforated devices are often choked from the trapped flotsam. Without frequent clearing, flood is the natural, unavoidable outcome.

[Para 7] The flotsam trapped are in touch with the flow, they become warm bed for grow of harmful vectors. Resulted in severe deterioration in water quality, (through contamination, pollution, fermentation), while also accelerates deterioration of filter (through biological, chemical attack, rotting, corrosion). Without frequent and effective maintenance, it will spread contamination both up and down streams as well as air surrounding it.

[Para 8] In prior art 2, by the use of larger capacity trap, such as a huge bag with perforations. Water enters the bag, seeps through the perforation while the flotsam is trapped within the bag. This is a solution, it aimed to capture, contain larger volume of flotsam. This reduces the frequency of maintenance. But the speed of flow in the bag is slowed down, promoted the decay of the trapped. Worse, the full water body is forced to seeps through these decaying media, the deterioration of water quality not only is definite, it is made more severe.

[Para 9] The increased in size and sophistication not only severely affected cost, construction, space requirements. It also now demands heavy machinery, such crane, and agile labors to perform. This is not only a wrong solution; it cannot be considered acceptable in the first place.

[Para 10] In prior art 3, to overcome the above, a motorized stainless steel combs is added to comb the filter in order to clear the flotsam. As clear the full

length of the filter, the comb has to be equally long. The combed flotsam has to be dropped on to an even longer receptacle. To ensure the movement of these flotsam, which is not fluid, not moving, nasty. An Archimedes screw is added to transport the flotsam to a collection ground. In the collection ground, large machinery, such as crane; and labor force are still required to fork out the flotsam. This process calls for great investment in heavy investment, and energy consumption to maintain, merely just to isolate the flotsam from contacting the water body.

[Para 11] Therefore, the onus has been on users and inventor alike to improve, to simplify the effective separations of mixtures in a flow system in a way that improve efficacy (relevant), effective, and economical.

SUMMARY

[Para 12] It is therefore an object of the invention to achieve an effective flow system that segregate the immiscible, through using the forces embedded in the flow, such as flow speed, passage elevation, forces of gravitation. The invention demonstrates means for filtration-separation, to effectively segregate the immiscible, and transported away from the way of passage, present the filtrate for easy cleaning with operation elegance.

[Para 13] Accordingly, the invention consists of a slanted device located in the passage; guiding the flow to propel, promote the flotsam to move to a collection point that is higher, easier for removal, inspection, handling, servicing, maintenance. This also placed the collected from blocking the flow, so not only the following media would not get in contact with these collected, the collected will be left to drained drier, reduce speed of fermentation, while easier for operation access, clearing, .

BRIEF DESCRIPTION OF THE DRAWINGS

Fig 1 shows a pedestrian pathway, and drainage system of the first embodiment.

DRAWINGS – REFERENCE NUMERALS

- 10 tangential entry
- 12 main stream
- 14 perforated device
- 16 flotsam
- 18 collection point
- 20 perforations

DETAILED DESCRIPTION- FIG 1

[Para 14] One embodiment of the flow system is illustrated in Fig 1. Immiscible mixture enters through a tangential entry **10**, flows down to a main stream **12**, and through a perforated device **14**. The perforated device **14** is embedded with diverging shape perforation, and is slanted. The slanted body channels the filtrate to a collection point **18**, which is away from the flow; allow to drain dry, ready for collection by operators.

OPERATION – FIG 1

[Para 15] As shown in Fig 1, surface flow media enters to the mainstream **12** through tangential entry **10** along the pathway. The immiscible mixture then flows towards a perforated device **14** located in the mainstream **12**, as the immiscible

mixture is powered by the flow, guided to flow tangential to the perforated device **14**, the flotsam **16** is rush to a higher point while the cleansed media seep through gently the perforations **20**. The perforation **20** is diverging, so it will not be choked.

[Para 16] The flotsam **16** is elevated from the flow system to the surface, so subsequent flow will not be in touch with them, they are left to drain dry by forces of gravity. This elevation also facilitated maintenance worker to clear the flotsam **16**, even less agile, aged workforce, can accomplish the task with great ease.

CONCLUSION, RAMIFICATIONS, AND SCOPE

[Para 17] The documentation of this invention is necessary and absolute necessary so that urban planners, town developers, engineers would comprehend the qualitative consideration behind and quantitative knowledge for implementing filters for effective filtering, ease for maintenance, thus system is sustainability, flow is clean. With this invention, with the fundamental considerations established, significant saving in energy, maintenance, environmental conservation could thus be achieve.

What IS Claimed IS:

[Claim 1] Means of filtration of immiscible mixture via the use of fluidic force inherent in the flow, to propel immiscible components to a collection point for drain dry, ease for collection, maintenance, while clear the passage for the smooth, expedient passage of the media.