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(54) **PURPLE PIPE WASHING MACHINE KIT**

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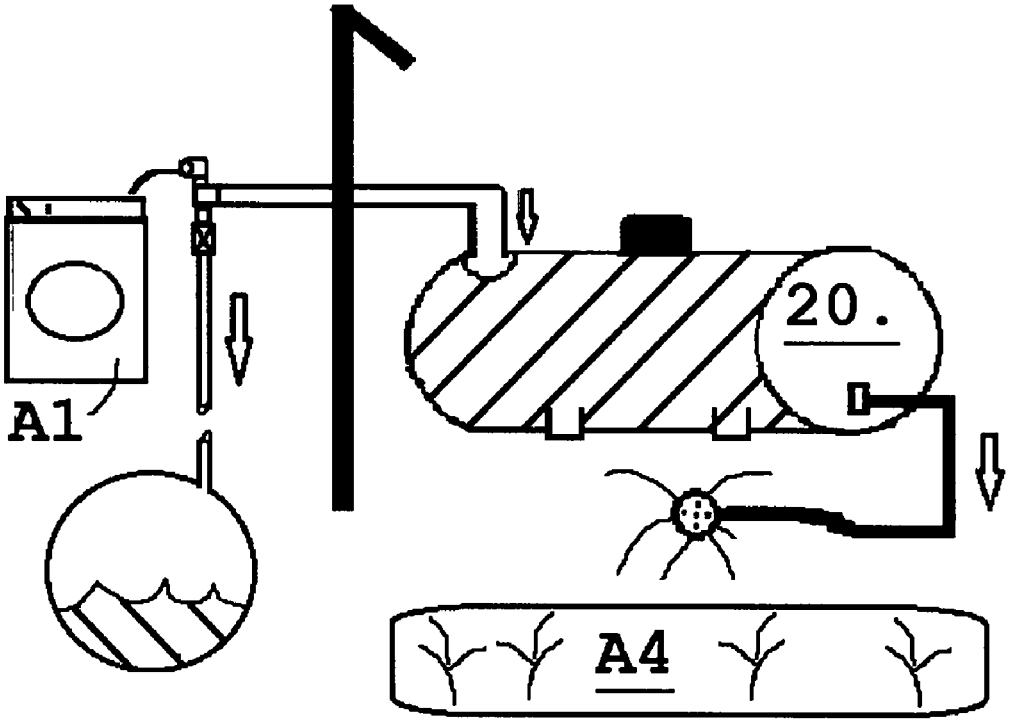
CPC ***E03B 1/042*** (2013.01); *E03B 2001/045* (2013.01)

(57) **ABSTRACT**

This invention harvests abundant, highly usable washing machine rinse cycle water for irrigation and other uses. This is accomplished using two separate devices working together; it is comprised of a valve assembly (FIG. **2**B), for diverting this rinse water to a collector and the collector (**10**) which improves the quality of the water, then distributes it. By closing a single valve (**7**) during the rinse cycle, the user is effectively watering the landscaping. The rinse water is regenerated during normal household washing so it is not dependent on rain. It does not use power nor does it depend on filters or storing water. It reduces the amount of city water required as well as reducing the volume of waste water generated.



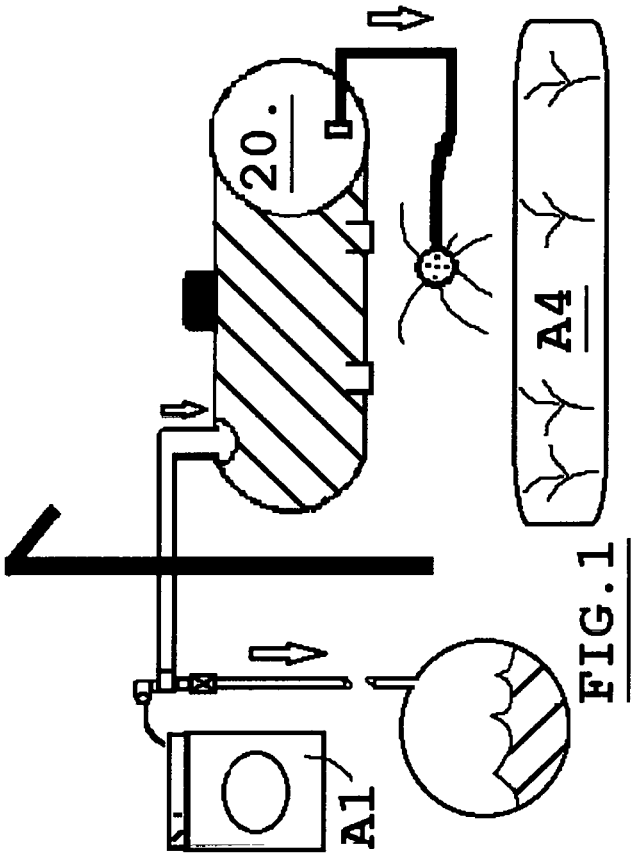


FIG. 1

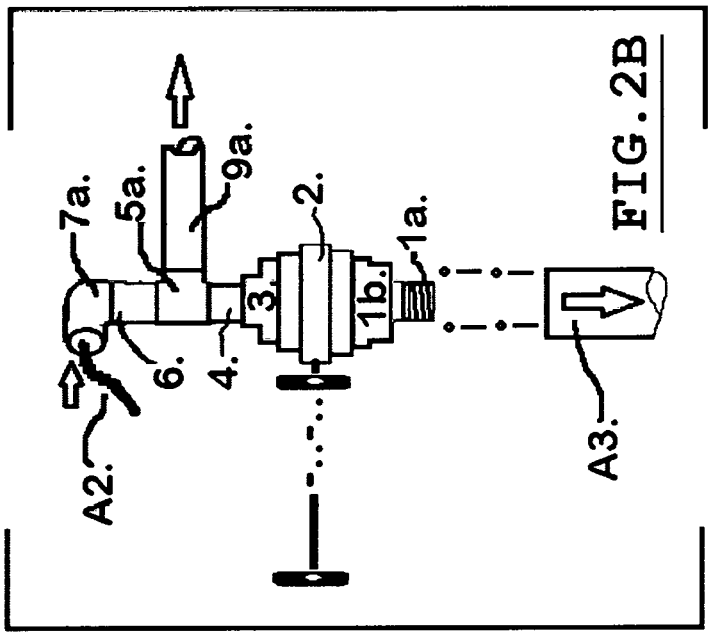


FIG. 2B

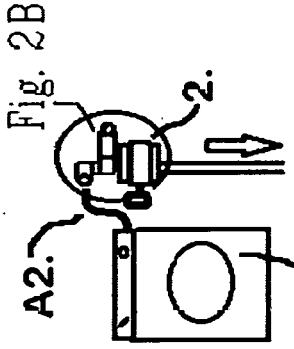


FIG. 2A

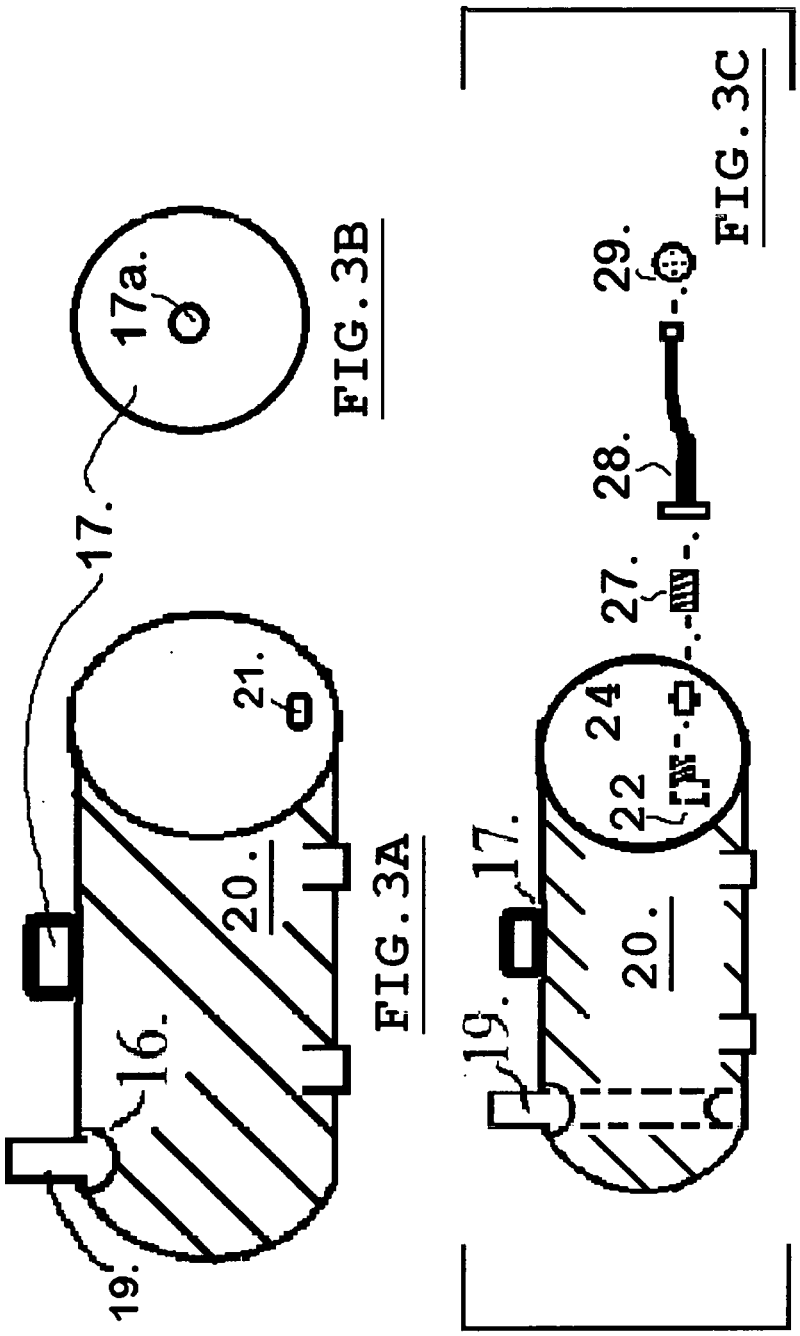


FIG. 3A

FIG. 3B

FIG. 3C

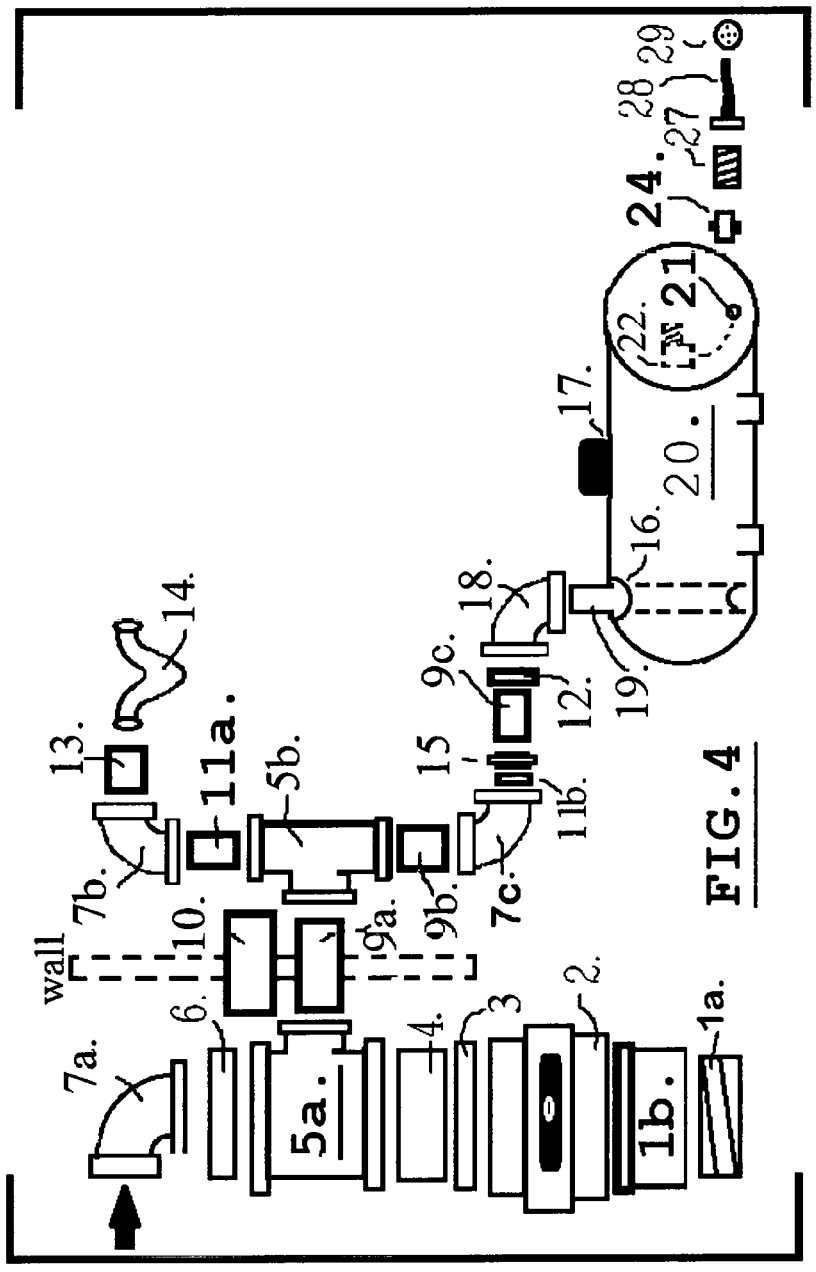

wall
7a.
6.
10.
7b.
13.
14.
11a.
5b.
5a.
4.
9a.
9b.
7c.
3
2.
1a.
1b.
15
9c.
18.
11b.
12.
19.
16.
17.
20.
22.
21
24.
27
28
29

FIG. 4

PURPLE PIPE WASHING MACHINE KIT

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BACKGROUND OF THE INVENTION

[0002] I am a pipefitter by trade and I began to start thinking about ways to save water about twenty years ago. I made some early prototypes of water harvesters, but water was viewed as cheap and plentiful so I shelved the idea. When I moved here in 2006, North Carolina was in a drought condition and I made some prototypes using clear plastic boxes and buckets to observe the hydraulic action. Later, when I heard on the news that there were extraordinary droughts in Texas and elsewhere, I thought I might try again in earnest. This invention is the result.

[0003] The greywater harvesting systems that I had seen contained good ideas, such as using greywater to flush toilets, but there are problems inherent in dual water supply fixtures like backflow protection and filter maintenance. Reclaimed water systems using purple piping depend on harvesting diverse grey water and sending it to a treatment plant. Then the water is treated and pumped back to the customer. This invention harvests only clean rinse water from a washing machine and uses it immediately for irrigation. This invention does not need maintenance, use power, filters, large tanks or extra pumps as in a car wash. It is not dependent on rain nor does it store water, so it does not foster stagnant water type growth as in a rain barrel and it is vermin resistant. The only moving part is the diverter valve.

Advantages

[0004] The benefit to society by the use of The "Doogie Box" Water Reclamation and Reuse System is significant. The Box was created to help address the need for more effective water management. I have seen no other system that attempts to harvest only abundant, high quality washing machine rinse water, which allows a simple system to harvest and distribute this water for irrigation. The benefit to the individual in society is to reduce his use of city water, reduce the amount of wastewater he sends to the treatment plant and lower the cost of his monthly utility bills. The benefit to society as a whole is the cumulative benefit that reduces the demands on overtaxed utilities. The benefit to our habitat is we are supporting the growth of green plants, which supports the water cycle and the regeneration of aquifers. The root systems of these plants help to anchor topsoil.

BRIEF SUMMARY OF THE INVENTION

[0005] This invention is designed to harvest the rinse water from a clothes washing machines and other washing machines in a new and unique way for use in irrigation and other washing. It consists of two main elements working together; a diverter assembly and a collector that distributes the harvested water. The diverter assembly is comprised of a plumbing tee that is installed on the top of the standpipe that accepts the washer discharge. The diverter valve is installed on the downstream port of the tee. During the rinse cycle the valve is closed, redirecting the waste/rinse water to piping through the wall, outside to a collector. This collector accepts the discharge from a typical domestic washer rinse cycle and immediately starts a slow release for irrigation. The collector uses the inlet pipe as a baffle to reduce the force of the influent and to direct the water downward. The collector discharge ell faces downward, accepting the water from below the surface of the collected water; thus trapping any residual soap suds which float. The ell is slightly above the bottom of the tank to exclude the small amount of solids which sink and uses only the middle part of the water column for irrigation or other uses. The irrigated plant system supports the water cycle without using any additional city water as well as reducing the amount of waste water to the city sewer and delaying construction of grey water treatment plants.

DETAILED DESCRIPTION OF THE INVENTION

[0006] (All piping and fittings are thin walled, schedule **40**, PVC unless otherwise noted. All parts are shown on **4**/**4**) The Invention consists of a 1" plumbing tee (FIG. **2**B #**5***a*.) used to divert water from the rinse cycle of a washing machine (FIG. **2**A #A**1**,) to a collector (FIG. **3**-**4** #**20**) for reuse in irrigation instead of going to the city sewer. A plastic 1½" FPT X F glue, knife blade valve (FIG. **2**B #**2**), whose handle faces the user, is used to provide a full port for the 1" pipe for discharging wash water to the standpipe (FIG. **2**B #A**3**) when in the open position. A manual valve is used because it is much cheaper than an electrical valve and does not add the unwanted leverage of a ball valve on the piping and it does not require an electrician. (If a domestic dishwasher is used, the discharge hose is about ½".) An 1½" MPT X **1**" FPT bushing (**4**/**4** #**1***b*.) is screwed into the bottom of the knife blade valve and the height is adjusted by tightening the threads. Four horizontal, ¼" holes are drilled into this fitting to maintain the indirect waste air admittance. An 1" MPT nipple (**4**/**4**, FIG. **2**B #**1***a*.) is screwed into the bottom of this fitting to facilitate insertion into the standpipe; also with 4 horizontal holes. On top of the run, or straight line through the tee, is a 1" connecting nipple (FIG. **2**B #**6**). A PVC elbow (FIG. **2**B #**7***a*.) is connected to the top of the nipple. This elbow accepts the washer discharge hose (FIG. **2**B #A**2**) and faces the washer. A standard 1" clothes washing machine discharge hose (FIG. **2**A, **2**B #A**2**) has an outside diameter equal to that of a schedule **40**—1" PVC pipe so it fits neatly into receptor ell **7***a*. The bull, or side port of the tee (FIG. **2**B #**5***a*.) faces the outside wall and is connected to a 1" PVC pipe (FIG. **2**B #**9***a*.) which channels the water outside, to the collector, when the valve (#**2**.) is closed by the user. Pipe #**9***a* passes through an 1¼" nipple (**4**/**4** #**10**.) to protect it from the wall. The outside opening is sealed with a bead of caulk. Outside a 35 gallon horizontal

drum (FIG. **3**A #**20**) is used to accept the rinse water through an 1½" inlet opening (FIG. **3**A #**16**) drilled in the top, outside perimeter of the drum, on the opposite side of the discharge port (FIG. **3**A #**21**). The inlet pipe to the drum (FIG. **3**B #**19**) is increased to 1½" pipe to reduce the force of the washer discharge entering the drum and to direct the water downward. The inlet (**16**) is sealed with caulk to prevent vermin from entering or gas from escaping. The drum has a 5" FT removable cap (FIG. **3**A #**17**) to allow access for rinsing. This cap has a ¼" spring check valve in the center. The restricted flow allows the drum time to do its job; which is to catch any residual, floating suds (FIG. **3**B) above the discharge weir and to settle any remaining solids below the discharge weir (FIG. **3**B) allowing the cleanest, highly usable residual water for irrigation and other uses like car washing, to emerge from the discharge port (FIG. **3**A #**20**). The harvested rinse water is of high quality to begin with because it excludes wash water which may contain soap, bleach or other contaminants. Using dryer sheets keeps fabric softener out of the rinse water. A ¾" MPT X M garden hose fitting (FIG. **3**C #**27**) is screwed into the ¾" FPT bulkhead fitting (FIG. **3**A #**24**) at the discharge port. A soaker hose (FIG. **3**C #**28**) is connected to the hose fitting and a watering ring (FIG. **3**C #**29**) is connected to the end of the hose.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0007] The first drawing, **1/4**, is a complete depiction of the entire system for the purpose of inclusion on the front page of the patent application publication and patent as the illustration of the invention. FIG. **1**.

[0008] In the second drawing, **2/4**, FIG. **2**A is designed to show the location of the directional valve and FIG. **2**B shows an exploded view of the valve assembly.

[0009] In the third drawing, **3/4**, FIG. **3**A shows the collector. FIG. **3**B shows the collector cap and the location of the check valve vent (#**17***a*). FIG. **3**C shows an exploded view of the collector and distribution hose.

[0010] The fourth drawing, **4/4**, shows every part in an exploded view.

I claim:

1. A vessel with ports which accepts greywater discharge at a primary inlet port and allows said greywater discharge to pass through said vessel exiting through a primary discharge port to waste piping and is redirected through a secondary discharge port for further use.

2. A primary valve which allows the flow of said greywater discharge through said primary discharge port to said waste piping when in the open position and redirects flow through said secondary discharge port when in the closed position.

3. A collector with ports which accepts said greywater discharge through a secondary inlet port directing flow through said collector exiting a tertiary discharge port for further use.

4. The collector in claim **3** with a baffle in said collector which redirects said greywater discharge.

5. The collector in claim **3** with an air admittance port.

6. A vent on the piping connecting said primary valve to said collector to facilitate water flow.

7. The collector in claim **3** with said tertiary discharge port supplying distribution piping.

8. A method of harvesting greywater comprising:

(a) providing said vessel with ports for accepting greywater discharge.

(b) providing said vessel with ports for allowing flow of greywater discharge.

(c) providing said primary valve for directing flow of greywater discharge.

(d) closing said primary valve to redirect the flow of greywater discharge.

(e) opening said primary valve to allow the flow of greywater discharge to said waste piping.

whereby said primary valve can be closed to redirect greywater discharge for further use and can be opened to allow flow of greywater discharge to said waste piping.

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