

[54] SEWER CONNECTION
[76] Inventor: Leo J. Lyons, 2526 Lincoln Dr., San Bernardino, Calif. 92405
[22] Filed: June 29, 1973
[21] Appl. No.: 375,173

453,308	6/1891	O'Donnel.....	4/201
649,681	5/1900	Scott.....	4/201
1,351,368	8/1920	Burns.....	4/256
1,951,632	3/1934	Selimos.....	137/593 X
2,490,075	12/1949	Matheis.....	210/165
2,718,344	9/1955	Troster.....	137/381 X

Primary Examiner—Henry T. Klinksiek
Attorney, Agent, or Firm—Herbert E. Kidder

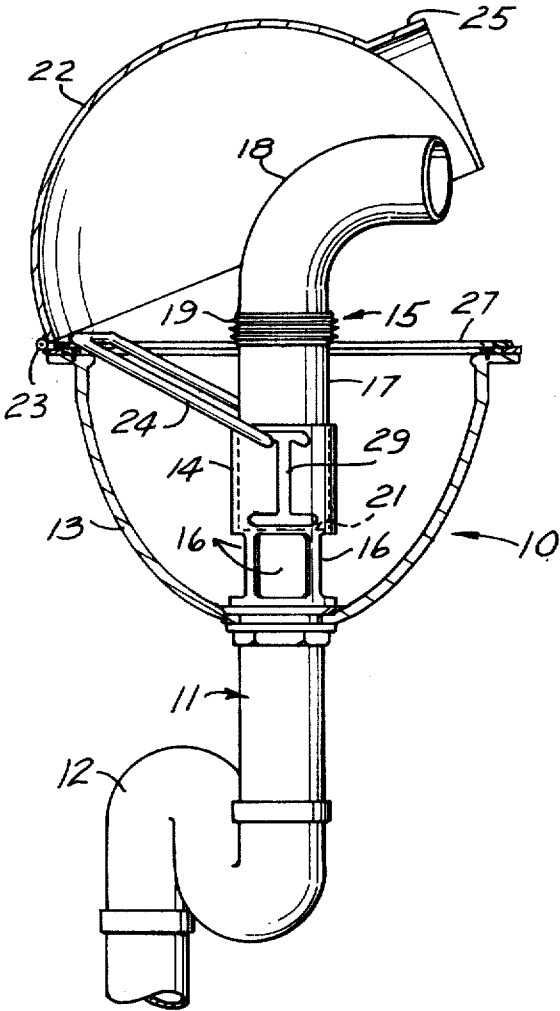
[52] U.S. Cl..... 137/381, 210/165, 141/86, 137/593, 137/798
[51] Int. Cl..... E03f 5/14
[58] Field of Search..... 137/377, 381, 593, 798; 210/163, 164, 165; 4/197, 198, 255, 201, 204, 206, 256; 141/86

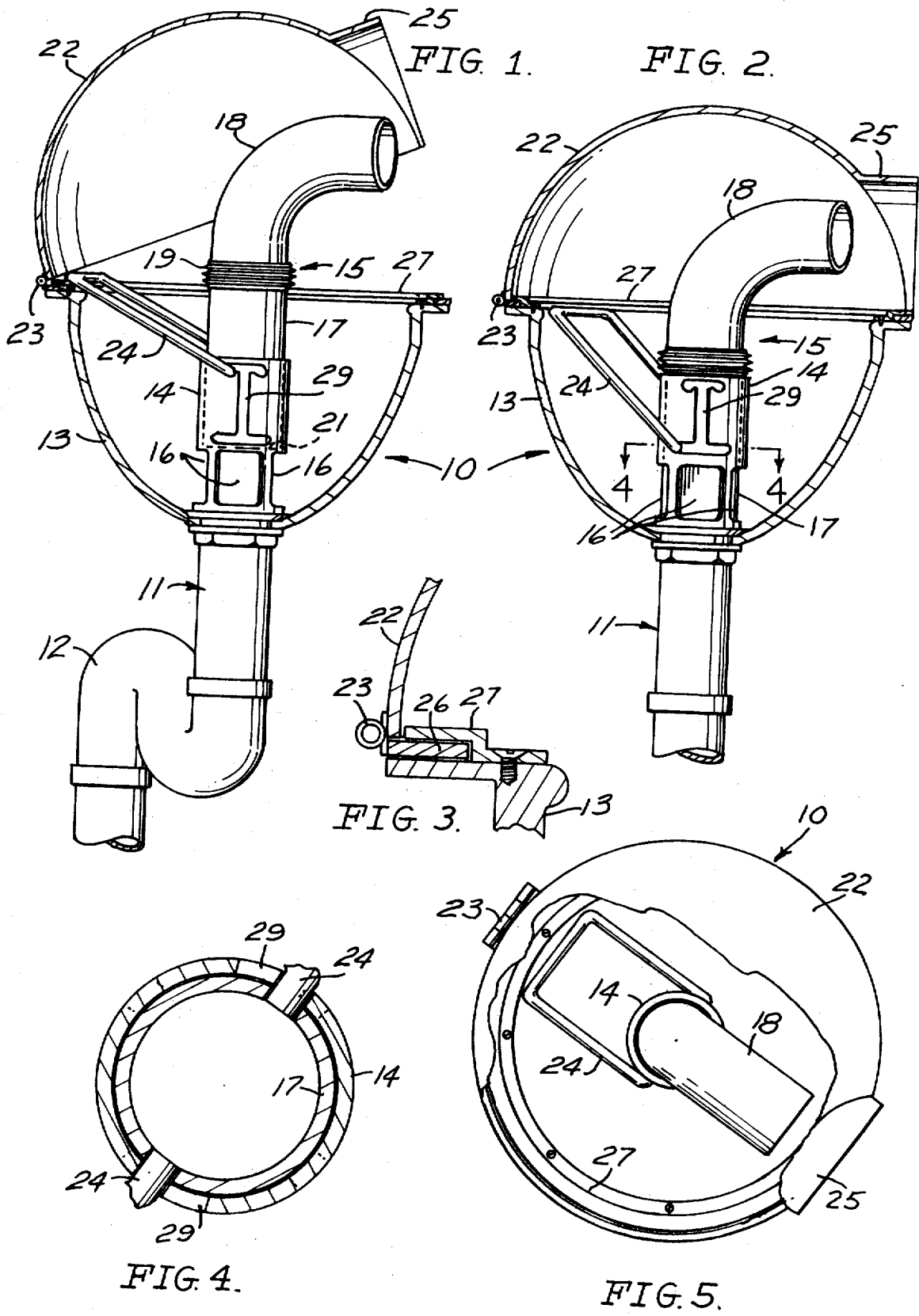
[56] References Cited

UNITED STATES PATENTS			
346,579	8/1886	Butler.....	4/201
420,328	1/1890	Blessing.....	4/201
432,222	7/1890	Blessing.....	4/201

[57] ABSTRACT
The present invention relates to a sewer connection; and more particularly relates to a sewer connection for a vehicle such as a trailer, a camper, or the like. The disclosed sewer connection is such that spillage due to improper draining of the vehicle sewer hose is constrained into a suitable receptacle; and may be flushed into an external sewage system by means of a water hose.

3 Claims, 5 Drawing Figures





SEWER CONNECTION

BACKGROUND OF THE INVENTION

At the present time, there is an ever-increasing number of people using trailers, campers, and the like; and progressively larger numbers of "trailer courts" are being erected to accommodate these vehicles for relatively short stays that might extend from a single night to a few days—as distinguished from those "trailer parks" that cater to long-range or permanent guests. The short-time courts therefore have slightly different problems; particularly in relation to connections to sewage facilities.

Whereas the permanent type parks have permanent type sewage connections between the vehicles and the sewage systems of the park, the temporary type courts have temporary slip-on or clamp-on types of sewage connections; and these temporary type connections are not particularly bothersome at the time of making connections, but they do introduce a number of problems at the time of disconnecting the vehicle's sewage piping from the court sewage system—and this situation arises with great frequency in the temporary type trailer courts.

It therefore becomes desirable to provide an improved sewage connection for connecting and disconnecting the sewage systems of the vehicles in the parks particularly of the temporary type trailer courts.

OBJECTIVES AND DRAWINGS

It is therefore the principal objective of the present invention to provide an improved sewer connection.

It is another objective to provide an improved type of sewer connection, particularly for the temporary type trailer court.

It is still another objective of the present invention to provide an improved sewer connection that is easy to use.

It is a further objective of the present invention to provide an improved sewer connection that may be easily maintained.

It is a still further objective of the present invention to provide an improved sewer connection that may be easily restored to an acceptable condition.

The attainment of these objects and others will be realized from a study of the following description, taken in conjunction with the drawings of which

FIG. 1 shows a partially cross-sectional elevational view of the disclosed sewer connection in its raised state;

FIG. 2 shows a partially cross-sectional elevational view of the disclosed sewer connection in its "lowered" state;

FIG. 3 shows an enlarged cross-sectional view of the hinging arrangement;

FIG. 4 shows a cross-sectional top view of a portion of the piping;

FIG. 5 shows a partial cut-away top view of the disclosed sewer connection.

INTRODUCTION

It is well known that most vehicles of the trailer or camper type have a waste tank that permits the use of the sink and sewage facilities of the vehicle for a limited period of time; after which the waste tank must be emptied. There are a number of locations where such waste tanks may be readily emptied; and the trip resumed. On

the other hand, the operators of the vehicle may want to park overnight, or longer, in a trailer court that provides showers, fishing facilities, laundry washing facilities, etc., as well as tank-emptying facilities.

As indicated above, the hook-on of the vehicle sewage system to an external sewage system is not difficult; often involving merely the sliding-on of a flexible tubing over an open ended pipe. However, when the sewage systems are to be disconnected, there is the problem of satisfactorily draining the sewage hose of the vehicle. Since the vehicle sewage system generally terminates in a flexible hose with helical convolutions that provide the flexibility, and since the vehicle sewage hose usually lies on the ground, the hose may accumulate sewage that is not completely drained out. Therefore, during the disconnecting procedure, an appreciable volume of sewage may drain from the vehicle's sewage hose onto the ground and surroundings of the court. If this spillage is not quickly and completely cleaned up (which may be difficult because of ground absorption) the result may be an unsightly area, and objectionable odor, a health problem, and possibly a citation from health officials.

DISCLOSURE

The disclosed invention overcomes the above problem in the following manner. FIG. 1 shows the disclosed sewage connection 10 as being connected to the outlet pipe 11 of an external sewage system having a sewage system trap 12; the external sewage system generally being buried underground. The disclosed sewage connection 10 is illustrated as comprising a bowl 13 having relatively steeply sloped sides; bowl 13 being formed of suitable material—such as fiberglass, steel, etc.—that is preferably rustproof, corrosion proof, has a suitable strength, etc. Ordinarily, the disclosed sewer connection 10 is partially buried in the ground.

The output piping comprises a "windowed" tubular sleeve 14 having the lower end thereof coupled to the outlet pipe 11; or, alternatively, integral therewith—the lower end of the sleeve 14 having a plurality of windows 16 cut through the walls thereof. Windows 16 are preferably positioned as close as possible to the bottom of bowl 13, for a reason to be discussed later.

In FIG. 1, the coupling pipe 15 comprises an intermediate pipe 17 that is slidably positioned inside the sleeve 14; so that the intermediate pipe 17 may slide longitudinally within the sleeve 14. It is therefore preferable that pipes 14 and 17 be made of a suitable material that will permit the desired sliding movement, and will not rust or corrode in such a manner as to bind.

The coupling pipe 15 further comprises a right angled elbow 18 whose lower end is coupled to the upper end of intermediate pipe 17. The coupling 18 between pipes 14 and 17 must be leak proof; but may take a number of forms in order to provide different effects. For example, coupling 19 may be a simple permanently threaded connection; in which case it provides a fixed angular orientation between the elbow 18 and the intermediate pipe 17. Alternatively, coupling 18 may be of a rotational type; in which case the elbow 18 may rotate 360° relative to the intermediate pipes 17. Another alternative will be discussed later.

FIG. 1 shows the coupling pipe 15, i.e., the elbow 18 and the coupled intermediate pipe 17—to be in a "raised" position. (Note that the lower end 21 of the intermediate pipe 17 is illustrated as being above the

tops of the windows 16—i.e., unblocking the windows.) While the coupling pipe 15 is in its raised position, it is readily available for the attaching of the sewer hose (not shown) of a vehicle; and this is accomplished as follows. The hood 22 is pivoted open on hinge 23; thus exposing the end of elbow 18 for attachment of the vehicle's sewage hose—as by being slipped-on, clamped-on, or the like.

When the vehicle's sewage system has been attached, the coupling pipe 15 is now lowered to its "lowered" position as illustrated in FIG. 2 by sliding the intermediate pipe 17 downward in the sleeve 14. It will be noted that when the coupling pipe 15 is in its lowered position, the bottom portion of the intermediate pipe 17 now blocks the windows 16.

The hood 22 has a U-shaped opening or tunnel 25 that accommodates the vehicle's sewage hose when the hood 22 is closed.

With the sewer connection 10 in its lower position as shown in FIG. 2, the sewage from the vehicle may now flow directly from the sewage system of the vehicle into the external sewage system of the trailer court.

When the vehicle is ready to leave, the sewer systems are disconnected as follows. The hood 22 is opened; and the vehicle sewer hose is drained as much as possible into the directly connected sewage system of the court. The coupling pipe 15 is now raised to its raised position; and the vehicle's sewer hose is then disconnected from the elbow 18. Any additional drainage from the sewer hose of the vehicle is now collected by the bowl 13, rather than by the ground in that area; and drains off through the now-unblocked windows into the sewage system of the court. At this time, the operator of the vehicle closes hood 22, stores his sewer hose, and is ready to drive off.

The operator of the court, at his convenience, opens the hood 22; and assures himself that the coupling pipe 15 has been raised to its raised position so that the windows are unblocked. For convenience a bail-like handle 24 is provided to facilitate the raising operation; the handle to be described later. It should be noted however that if per chance the inlet piping had not been raised to unblock the windows, the handle 24 permits the operator's hand to remain well above the level of any spillage that may have collected in bowl 13, and to still facilitate the raising of the coupling pipe 15 to its raised position.

As soon as the coupling pipe 15 is raised by either the operator of the vehicle or the operator of the car, this action unblocks the windows 16; and the spillage quickly runs through the windows 16 into the external sewage system 11. With the hood 22 open, and with the inlet piping 15 in its raised position to unblock the windows 16, the operator of the court now flushes the interior surfaces of bowl 13 using a standard water hose. In this way, all excess sewage or spillage is quickly flushed past the trap 12, and into the external sewage system. Thus, the area is cleaned; and is immediately receptive for a new occupant.

The Angular Orientation:

Ordinarily, careful parking permits the vehicle's sewer hose to approach the sewer connection at a predetermined angle. Unfortunately, an inexperienced driver may have difficulty parking his vehicle; and this improper parking may result in having his sewer hose approach the sewer connection from an undesired direction. In order to obviate a need for repeated reposi-

tioning of the vehicle, the disclosed sewer connection provides the following accommodation for angular orientation.

As indicated above, the intermediate pipe 17 is longitudinally slidable in the fixedly positioned sleeve 14; and if smooth sliding surfaces are used on the interior surface of the sleeve 14 and on the exterior surface of the intermediate pipe 17, the intermediate pipe 17 may also assume any desired angular orientation relative to the non-rotatable sleeve 14. Therefore, the opened end of elbow 18 may point in any direction from which the sewer hose approaches.

Moreover, as indicated in FIG. 3, one hinge plate is attached to the hood 22 proper; and the other hinge plate is attached to a ring 26 that encircles the top of bowl 13, that is angularly rotatable around the top of bowl 13—being held in place by a suitable ring guide 27. Thus, the entire hood 22 may have its angular orientation changed, so that its opening 25 may correspond to the direction of the elbow 18.

In this way, the vehicle may approach in any direction; and may still properly attach its sewer hose to the disclosed sewer connection 10.

The Handle:

It was pointed out above that coupling pipe 15 was to be lowered and raised; and it will be realized that the coupling pipe 15 must be held in its raised position for the cleaning and hosing-out operation. One easy way to achieve this result is by means of a bail-like handle 24 which is a generally U-shaped wire configuration whose ends are bent inward toward each other in a perpendicular manner. The intermediate pipe 17 has a pair of diametrically opposite holes therein for receiving the bent ends of the bail-like handle 24. Thus, handle 24 may be used for raising and lowering the coupling pipe 15. It has been found convenient to form a "T" or an "I" shaped guide slot 29 at diametrically opposite sides of the sleeve 14; and to insert the bent ends of the handle 24 through these slots into the holes of the intermediate pipe 17. Furthermore, the ends of the upper bar of the T or the I slot (whichever may be used) are given a downward "detent" slant, as indicated.

The handles 24 are used for the raising operation as follows. As the top of the U-shaped handle 24 is lifted, its bent ends lift the intermediate pipe 17 and its coupled elbow 18; the bent ends of the handle moving to the top of the vertical portion of the guide slot 29. The bail-like handle 24 is then given a slight angular twist, placing the bent ends of the handle 24 at respective ends of the upper bar of the slot 29. Now, the handle is allowed to drop slightly; and the bent ends of the handle seat themselves in the downward-slanted detents of the upper slot bar. Thus, the coupling pipe 15 has been raised, and is held in the open-window raised position.

It will be noted that the twist of the handle may be either clockwise or counter clockwise; thus producing a minor angular orientation that will accommodate slight deviations of improper parking of the vehicle.

When the coupling pipe 15 is to be lowered, the bail-like handle is raised from the detents, and twisted to a centered position; and the weight of the elbow and the intermediate pipe—plus hand pressure on the handle, if necessary—causes the coupling pipe 15 to settle to the bottom of the bowl 13; thus closing windows 16 of the sleeve 14. It will be noted that the length of the bottom bar of slot 29 permits the coupling pipe 15 to be twisted either clockwise or counter clockwise thus

5

again permitting a minor angular adjustment for accommodating improper parking of the vehicle.

FIG. 4 shows a cross-sectional view of the bent ends of the handle 24, shows how these bent ends engage holes in the intermediate pipe 17, and shows how the bent ends fit into the guide slot 29 of the sleeve 14.

FIG. 5 shows a cut-away top view of the disclosed sewer connection 10 indicating the sleeve 14, the elbow 18, the hinge 23, the handle 24, the hood tunnel 25, and the ring guide 27.

I claim:

1. In a sewage disposal unit permanently connected to an underground sewer line in an area where a vehicle containing a sewage discharge hose will be parked, said unit being connectable to said discharge hose to connect the same with said sewer line, the improvement comprising:

- a bowl sunk into the ground with its top edge substantially flush with the ground;
- an outlet pipe having one end connected to the bottom of said bowl at the lowest point thereof, the other end of said outlet pipe being connected to the underground sewer line;
- a tubular sleeve projecting upwardly from the top end of said outlet pipe, said sleeve having large apertures formed in the walls thereof closely adjacent the bottom of said bowl;
- a coupling pipe telescopically disposed within said tubular sleeve and slidable therein between upper and lower positions, said coupling pipe projecting above the top end of said sleeve and having an

6

elbow bend forming a laterally projecting, open-ended nozzle to receive the end of the sewage discharge hose on the vehicle, said coupling pipe being normally positioned at said lower position with the bottom end of the coupling pipe covering said apertures in said sleeve when the unit is in operation and is receiving sewage from the vehicle; and

means for elevating and locking said coupling member in said upper position when said discharge hose is to be disconnected from said nozzle, whereby said apertures are opened to allow any sewage spilled into said bowl during the disconnect operation to be hosed down through the apertures into the sewer line.

2. A sewage disposal unit as in claim 1, wherein said means for elevating and locking said coupling pipe comprises a handle attached to the coupling pipe and projecting laterally therefrom, said handle passing through a slot in said tubular sleeve, and said slot including vertically spaced, horizontal locking portions connected by a vertical portion; said handle being manipulated to pass through said vertical slot portion and into one of said horizontal locking portions to move said coupling pipe from one of its positions to the other.

3. A sewage disposal unit as in claim 1, wherein said coupling pipe is rotatable through 360°, and said bowl is covered by a lid that is also rotatable through 360°, said lid having an opening in one side thereof through which said discharge hose passes.

* * * * *

35

40

45

50

55

60

65