Claims

1. A discharge control apparatus comprising:

a housing having a first end and a second end, the housing defining a channel extending between a first opening at the first end and a second opening at the second end for the passage of liquids therethrough;

a valve assembly coupled to the housing and disposed with the channel for reciprocating between an open position and a closed position, the valve assembly comprises two flaps forming a double-flap check valve, each of the two flaps being independently displaceable from the other of the two flaps between an open position and a closed position corresponding respectively to the open position and the closed position of the valve assembly and having a planar semi-circular shape;

a biasing mechanism coupled to at least one of the valve assembly and the housing for resiliently biasing the valve assembly towards the closed position; and

a seat structure formed within the channel of the housing wherewith the at least one flap abuts when in the closed position, the seat structure having a brace portion defining two apertures for the flow of liquid therethrough when the at least one flap is displaced towards the open position and being shaped and dimensioned to enable the at least one flap to extend over the two apertures to impede flow of fluids therethrough when the at least one flap is in the closed position, the brace portion being aligned with for shielding the biasing mechanism,

wherein the first end of the housing is couplable to an outlet of a storage tank for fluid communicating the first opening of the channel with the outlet such that flow of liquids from the outlet to the second opening of the channel is substantially impeded when the valve assembly is in the closed position and the biasing mechanism is adapted such that when pressure of liquids at the outlet is at least at a pre-defined pressure level, the valve assembly displaces from the closed position towards the open position to enable flow of liquids from the outlet and thereby discharge of at least a portion of liquids contained in the storage tank towards and out of the second opening of the housing.

2. The discharge control apparatus as in claim 1, each of the two flaps being independently displaceable from the other of the two flaps and having a planar semi-circular shape.

3. The discharge control apparatus as in claim 1, the biasing mechanism being at least one of a spring and an elastic band.

4. The discharge control apparatus as in claim 1, further comprising:

a bolt structure for anchoring the at least one flap to the housing and whereabout the at least one flap rotatably displaces between the open position and the closed position.

5. The discharge control apparatus as in claim 1, further comprising:

a coupling means for coupling the first end of the housing to the outlet of the storage tank.

6. The discharge control apparatus as in claim 1, the housing being elongated and formed with a substantially right-angle bend.

7. The discharge control apparatus as in claim 1, at least one of the housing and the valve assembly being formed from polyvinylchloride (PVC).

8. The discharge control apparatus as in claim 1, the housing being substantially cyclindrically shaped and having an internal diameter within the range of 110mm to 230mm and a thickness of between 5mm to 6.5mm.

9. A discharge control method comprising:

providing a storage tank for containing liquids with an apparatus comprising:

a housing having a first end and a second end, the housing defining a channel extending between a first opening at the first end and a second opening at the second end for the passage of liquids therethrough;

a valve assembly coupled to the housing and disposed with the channel for reciprocating between an open position and a closed position, the valve assembly comprises two flaps forming a double-flap check valve, each of the

two flaps being independently displaceable from the other of the two flaps between an open position and a closed position corresponding respectively to the open position and the closed position of the valve assembly and having a planar semi-circular shape, and the biasing mechanism being at least one of a spring and an elastic band;

a biasing mechanism coupled to at least one of the valve assembly and the housing for resiliently biasing the valve assembly towards the closed position, the first end of the housing is coupled to an outlet of the storage tank for fluid communicating the first opening of the channel with the outlet;

providing the storage tank with liquids, flow of liquids from the outlet to the second opening of the channel is substantially impeded when the valve assembly is in the closed position; and

a seat structure formed within the channel of the housing wherewith the at least one flap abuts when in the closed position, the seat structure having a brace portion defining two apertures for the flow of liquid therethrough when the at least one flap is displaced towards the open position and being shaped and dimensioned to enable the at least one flap to extend over the two apertures to impede flow of fluids therethrough when the at least one flap is in the closed position, the brace portion being aligned with for shielding the biasing mechanism; and

discharging at least a portion of the fluids contained in the storage tank when the fluids in the storage tank exceeds a pre-defined containment capacity, thereby causing the pressure of liquids at the outlet to be at least at a pre-defined pressure level, the biasing mechanism is adapted such that when pressure of liquids at the outlet is at least at the pre-defined pressure level, the valve assembly displaces from the closed position towards the open position to enable flow of liquids from the outlet and thereby discharge of at least a portion of liquids contained in the storage tank towards and out of the second opening of the housing.

10. The discharge control method as in claim 9, further comprising:

a bolt structure for anchoring the at least one flap to the housing and whereabout the at least one flap rotatably displaces between the open position and the closed position.

11. The discharge control method as in claim 9, further comprising:

a coupling means for coupling the first end of the housing to the outlet of the storage tank, wherein the housing is elongated and formed with a substantially right-angle bend.

12. The discharge control method as in claim 9, at least one of the housing and the valve assembly being formed from polyvinylchloride (PVC), and the housing being substantially cyclindrically shaped and having an internal diameter within the range of 110mm to 230mm and a thickness of between 5mm to 6.5mm.

13. A liquid storage system comprising:

a storage tank for containing liquids, the storage tank having an outlet and a pre-defined containment capacity;

a housing having a first end and a second end, the housing defining a channel extending between a first opening at the first end and a second opening at the second end for the passage of liquids therethrough;

a valve assembly coupled to the housing and disposed with the channel for reciprocating between an open position and a closed position, the valve assembly comprises two flaps forming a double-flap check valve, each of the two flaps being independently displaceable from the other of the two flaps between an open position and a closed position corresponding respectively to the open position and the closed position of the valve assembly and having a planar semi-circular shape, and the biasing mechanism being at least one of a spring and an elastic band; and

a biasing mechanism coupled to at least one of the valve assembly and the housing for resiliently biasing the valve assembly towards the closed position; and

a seat structure formed within the channel of the housing wherewith the at least one flap abuts when in the closed position, the seat structure having a brace portion defining two apertures for the flow of liquid therethrough when the at least one flap is displaced towards the open position and being shaped and dimensioned to enable the at least one flap to extend over the two apertures to impede flow of fluids therethrough when the at least one flap is in the closed position, the brace portion being aligned with for shielding the biasing mechanism,

wherein the first end of the housing is coupled to the outlet of a storage tank for fluid communicating the first opening of the channel with the outlet such that flow of liquids from the outlet to the second opening of the channel is substantially impeded when the valve assembly is in the closed position and the biasing mechanism is adapted such that when pressure of liquids at the outlet is at least at a pre-defined pressure level, the valve assembly displaces from the closed position towards the open position to enable flow of liquids from the outlet and thereby discharge of at least a portion of liquids contained in the storage tank towards and out of the second opening of the housing, pressure of liquids at the outlet is at least at a pre-defined pressure level when the liquid contained in the storage tank exceeds the pre-defined containment capacity.