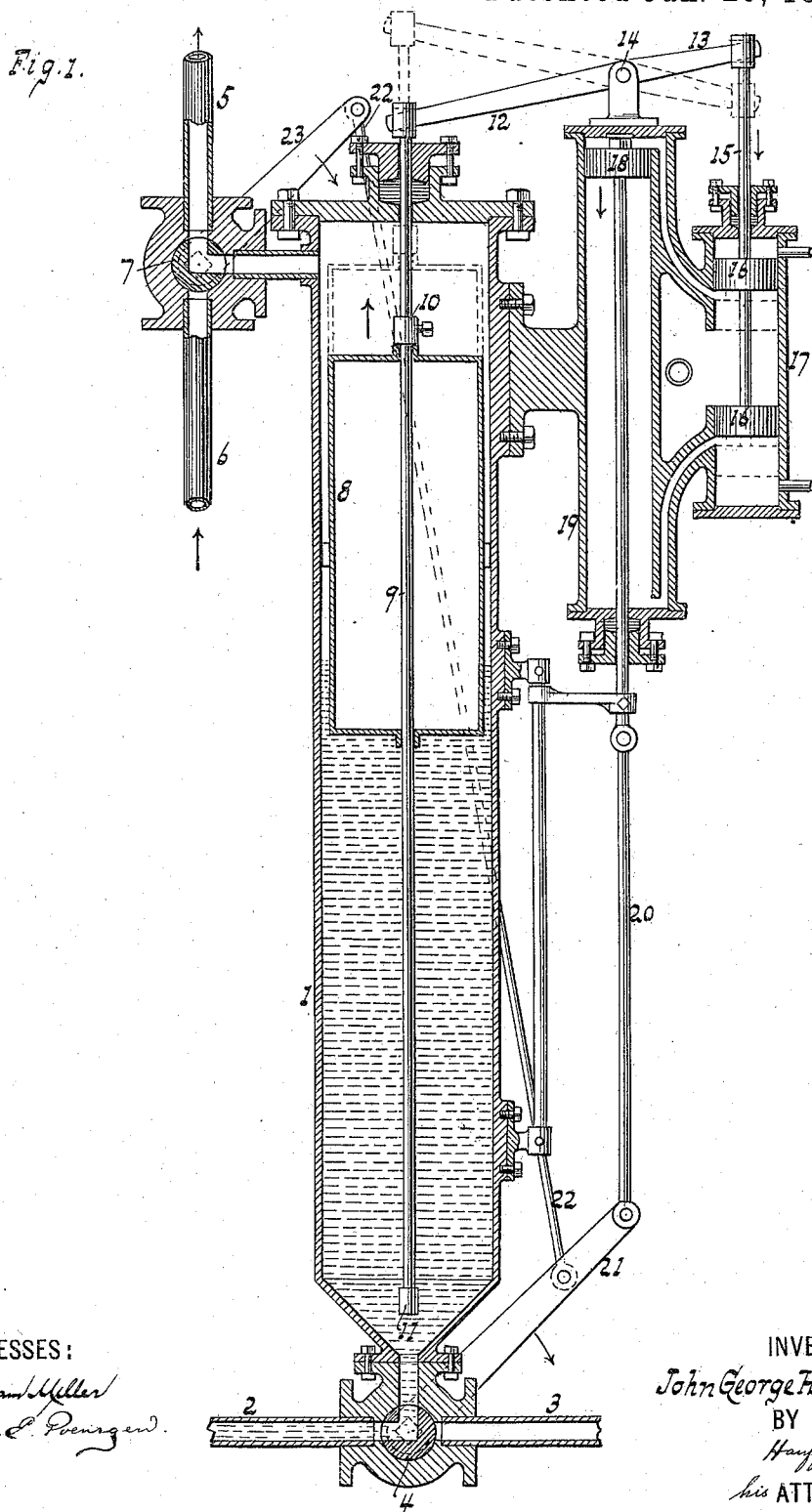


J. G. HERMES.

MECHANISM FOR DISCHARGING WATER OR OTHER FLUIDS.

No. 533,355.

Patented Jan. 29, 1895.



(No Model.)

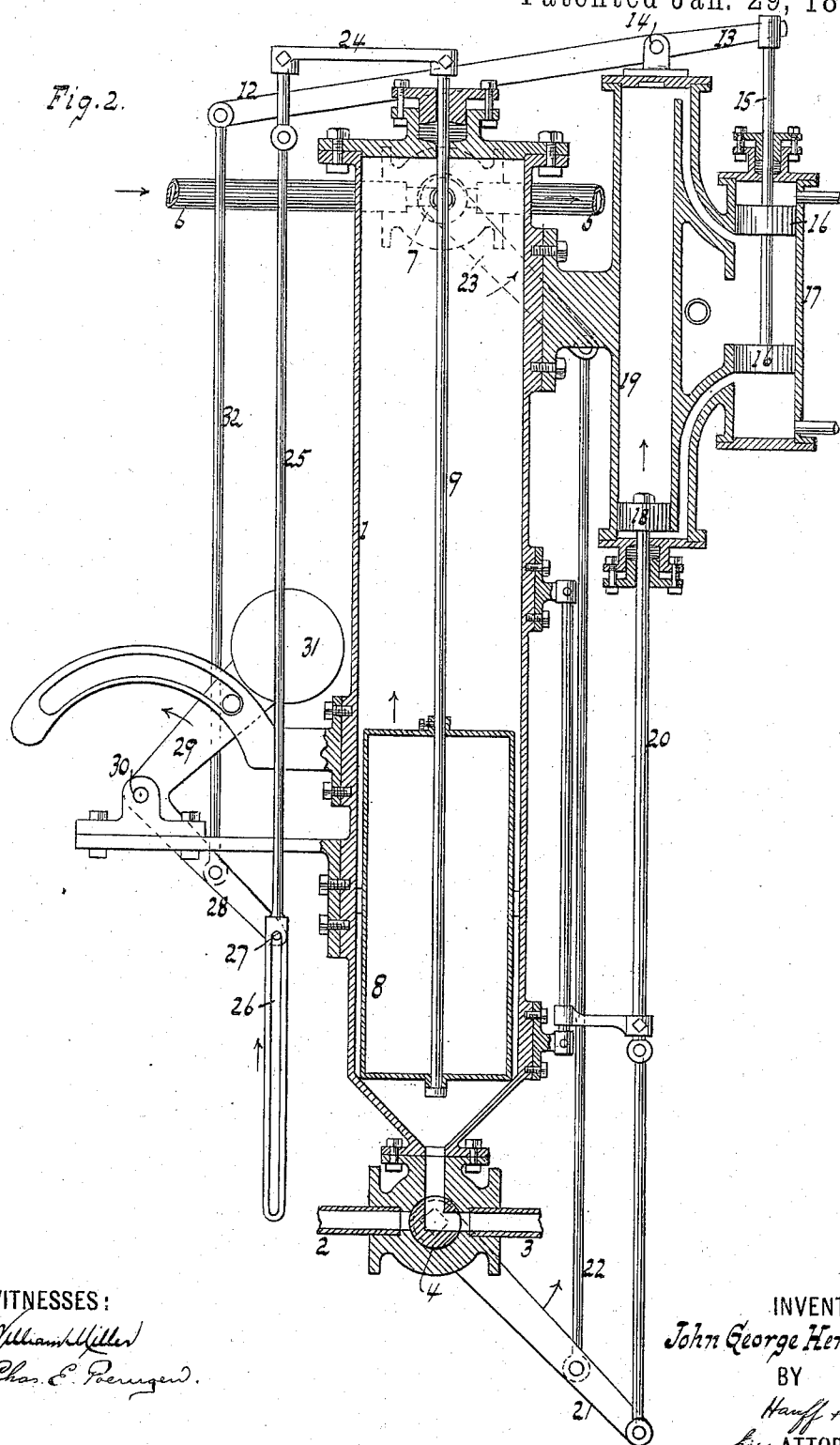
2 Sheets—Sheet 2.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN GEORGE HERMES, OF MOUNT VERNON, NEW YORK.

MECHANISM FOR DISCHARGING WATER OR OTHER FLUIDS.

SPECIFICATION forming part of Letters Patent No. 533,355, dated January 29, 1895.

Application filed September 13, 1894. Serial No. 522,927. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEORGE HERMES, a citizen of the United States, residing at Mount Vernon, in the county of Westchester and State of New York, have invented new and useful Improvements in Mechanism for Discharging Water or other Fluids, of which the following is a specification.

This invention relates to mechanism serviceable for discharging or drawing off water or other fluids from pipes or conduits such for example as the waste pipe of toilet basins, bath tubs, water closets and the like, and the invention resides in the novel features of construction set forth in the following specification and claims and illustrated in the annexed drawings, in which—

Figure 1 shows a sectional elevation of the device. Fig. 2 is a sectional elevation of a modification.

In the drawings the number 1 indicates a fluid receptacle having passages or conduits forming a fluid inlet 2 and an outlet 3. A two way cock 4 being suitably shifted will alternately close and open the inlet and outlet. The receptacle 1 has also passages or conduits forming an exhaust 5 and a pressure supply or entrance 6 communicating with a suitable source of pressure such as a steam boiler or a pump. The waste or utilized steam from a steam engine for example can be made to supply pressure to the entrance 6. A two way valve 7 being suitably shifted will alternately close and open the exhaust and the pressure entrance.

In the receptacle 1 is a float 8. When the inlet 2 is open the entering fluid will raise the float 8 and the exhaust 5 being at the same time open will allow the air or pressure above float 8 to exhaust so that the float can rise easily. When the inlet 2 is closed and outlet 3 open, the fluid in receptacle 1 can escape and the float 8 will fall. The exhaust 5 at the same time being closed and pressure entrance 6 opened, the pressure entering receptacle 1 will force the fluid toward outlet 3 so as to effectively discharge the contents of receptacle 1.

The float 8 in rising and falling slides along a rod 9 and alternately strikes one of the stops 10 and 11 so that the float 8 will shift the rod 9 back and forth. The rod 9 connects with a

lever 12 and 13 fulcrumed at 14 and connecting with stem 15 of valve 16 in valve chest 17. The piston 18 in cylinder 19 connects by rod 20 with the valve 4 or its arm 21. The valve 4 connects by rod or connection 22 with valve 7 or its arm 23. When the float 8 has risen to its highest point it has struck stop or shoulder 10 so as to shift rod 9 with lever 12, 13 and valve 16 so that the pressure entering cylinder 19 will shift piston 18 and rod 20 to actuate the valve 4 for closing the inlet 2 and opening the outlet 3 after which the contents of receptacle 1 can discharge through outlet 3. At the same time the link 22 has been actuated by the movement of valve 4 to actuate valve 7 for closing the exhaust 5 and opening the pressure inlet 6. The entering pressure forces the fluid toward outlet 3 so as to empty receptacle 1. When the float 8 has reached its lowest position it has struck the shoulder or stop 11 so as to shift rod 9 with valve 16 back and cause piston 18 to actuate valve 4 so that outlet 3 is closed and inlet 2 opened. At the same time the valve 7 has closed the pressure entrance 6 and opened exhaust 5 so that fluid can freely enter through inlet 2 to refill the receptacle. The float 8 it will be noticed thus acts as a valve actuator for effecting a shifting of the valves 4 and 7.

The valve chest 17 is connected as well known to a boiler or pressure supply so that as the valve 16 is shifted the pressure will reciprocate the piston 18.

By connecting the inlet 2 with the waste pipe such as that of a wash basin or water closet basin, the waste water is forced to enter receptacle 1 through inlet 2 and to be discharged from the receptacle through outlet 3.

As the pressure acting through inlet 6 and on piston 18 may be obtained from steam the device is applicable on steam vessels or other places where steam pressure is employed.

In the modification shown in Fig. 2, the float 8 instead of being made to slide along rod 9 is fixed to said rod so that the rod moves continually with the float. This rod is provided with a cross head 24 to which is secured a rod 25 connected by slot and pin connection 26 and 27 with an arm 28 of lever 28, 29 fulcrumed at 30 and weighted at 31. The link 32 connects lever 28, 29 with lever 12, 13. The pin and slot connection allows the float 8 with rod

9 to nearly reach the extreme of their movement in either direction before the action of the float will swing lever 28, 29 to shift arm 29 with weight 31 back and forth. The shifting or swinging of the lever 28, 29 will actuate link 32 and lever 12, 13 so as to shift valve 16 as before, the consequent reciprocations of piston 18 shifting valves 4 and 7 as stated.

In Fig. 2 the valves 4 and 7 are shown as about to be shifted to close outlet 3 and entrance 6 and to open inlet 2 and exhaust 5, at which moment the float 8 is about to begin rising.

A practical application of the device would be for example in case a wash basin or the like is placed below the water line of a vessel or below the sewer line in a building, then the receptacle 1 being placed below said basin or other object would receive the waste water therefrom through inlet 2 and when the receptacle 1 is filled the inlet 2 would be automatically closed and outlet 3 opened as seen, so that the contents from receptacle 1 discharge through outlet 3 which latter may be a pipe leading up above the water line or into the sewer.

What I claim as new, and desire to secure by Letters Patent, is—

1. A fluid receptacle provided with passages forming respectively a fluid inlet and outlet and an exhaust and a pressure entrance, a float arranged in said receptacle and interposed between said passages, a cylinder provided with a valve, a piston in said cylinder, valves for said inlet and exhaust passages actuated by said piston a rod connecting said

valves and a rod or connection actuated by said float and operating the cylinder valve, substantially as described.

2. A fluid receptacle provided with passages forming respectively a fluid inlet and outlet and an exhaust and a pressure entrance, a float arranged in said receptacle and interposed between said passages, a cylinder provided with a valve, a piston in said cylinder, a valve for the inlet and outlet actuated by said piston, a valve for the exhaust and pressure entrance, a rod directly connecting said valves and operating to move them simultaneously, and a rod or connection actuated by said float and operating the cylinder valve, substantially as described.

3. A fluid receptacle provided with passages forming respectively a fluid inlet and outlet and an exhaust and a pressure entrance, a float arranged in said receptacle and interposed between said passages, a slotted rod or connection actuated by said float, a weighted lever engaged by the slotted end of said rod and actuated thereby at the end of its reverse movements, a cylinder provided with a valve actuated by said weighted lever, a piston in said cylinder, and valves for said passages actuated by said piston, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN GEORGE HERMES.

Witnesses:

WM. C. HAUFF,
E. F. KASTENHUBER.