H. S. GASKILL.

FLUSHING VALVE.

APPLICATION FILED AUG. 27, 1907.

900,997. **Patented Oct. 13, 1908.**

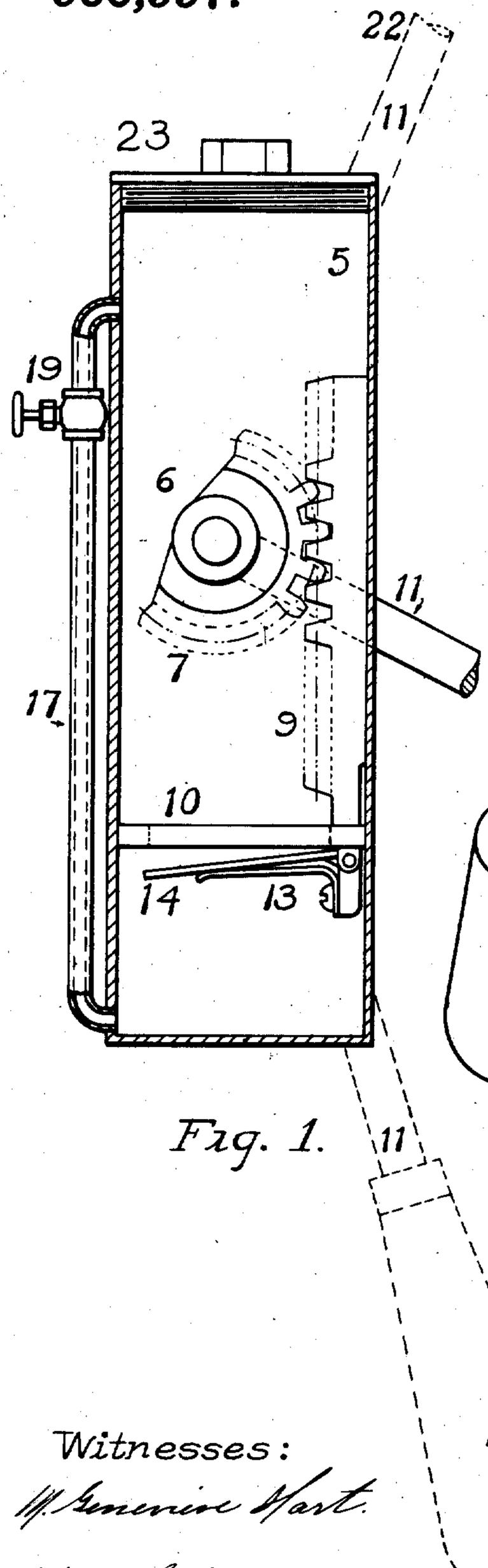

Fig. 1.

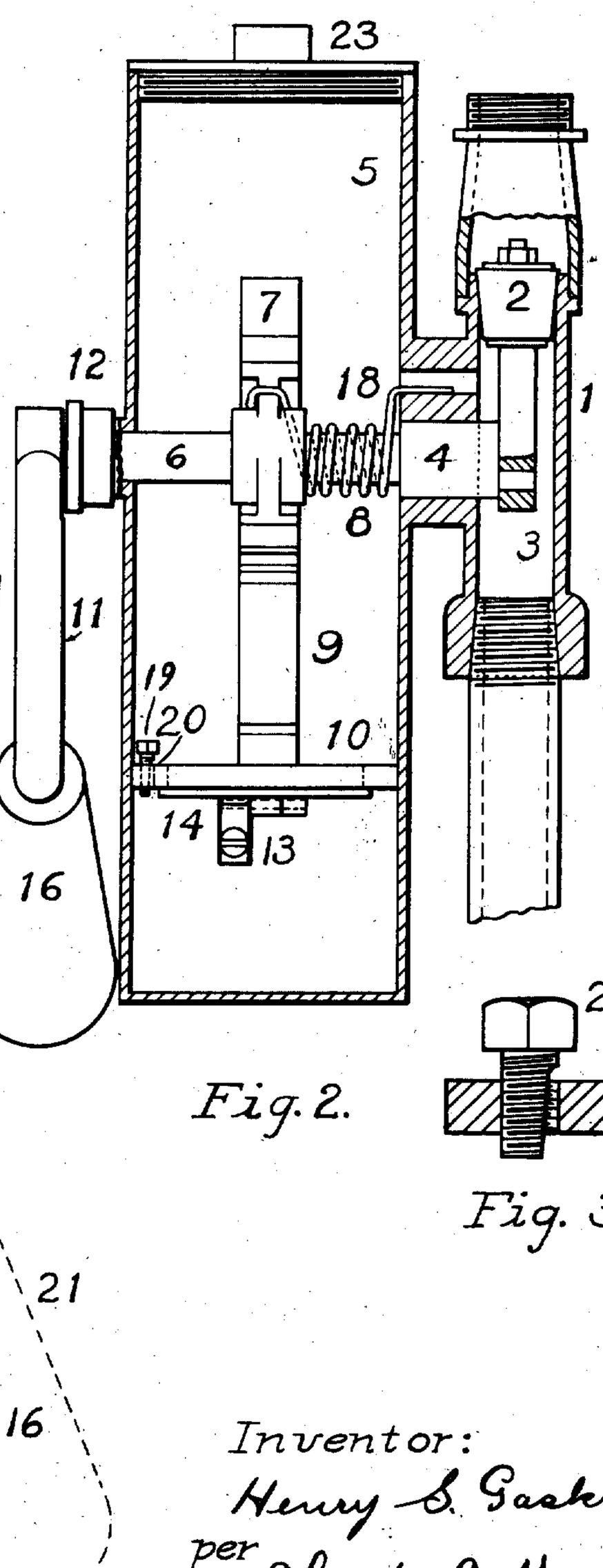

Fig. 2.

Fig. 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY S. GASKILL, OF LANSING, MICHIGAN.

FLUSHING-VALVE.

No. 900,997. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed August 27, 1907. Serial No. 390,309.

To all whom it may concern:

Be it known that I, HENRY S. GASKILL, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented a new and useful Improvement in Flushing-Valves, of which the following is a specification.

My invention relates to direct pressure flushing valves and its object is to make a valve which will entirely dispense with the necessity of a tank and in which the amount and duration of the discharge will be readily controlled and the device be reliable and efficient in operation. I attain these purposes by the means set forth in the accompanying drawings in which

Figure 1 is a vertical section at right angles to the operating shaft. Fig. 2 is a vertical section through the center of operating shaft. Fig. 3 is a detail of one form of the adjusting mechanism for regulating the rate of closing of the flushing valve.

Similar numbers refer to similar parts in the different drawings.

In the drawings, 1 is the water pipe, the opening in which is closed by the valve 2 which may be of any ordinary preferred type. In the drawings, what is known as the "Fuller cock" is employed. The stem 3 of this valve is connected to a pin in a shaft 4 so that the valve will be closed and opened by the revolution of the shaft 4. Attached to the side of the pipe 1 is a dash pot 5 communicating with the pipe 1 below the valve 2 by an opening 18, for the admission of water from the pipe 3 into the dash pot 5. A piston 10, operated by a rack 9 and sector 7, the latter being mounted on the shaft 6 which controls the motions of the valve 2, closely fits the interior of the dash pot. In this piston is an opening closed by a valve 14 which is kept closed by a spring 13 or other suitable means. A tube 17 connects the upper and lower parts of the dash pot 5, permitting the water to pass from one side to the other of the piston 10 when the valve 14 is closed. It is evident that instead of a tube 17 a hole 20 may be formed in the piston 10, or the piston itself may be made to fit the interior of the dash pot with sufficient looseness to permit the water to pass it, but I do not consider this last form so desirable as it does not admit of the exactness of regulation of the other constructions. A regulating screw 19 is inserted in the tube 17 or in the opening 20 if that is employed, for the purpose of controlling the size of the opening and consequently, the rate of descent of the piston 10. While the weight of the handle 16 and lever 11 combined with the pressure of the water on the valve 2 are ordinarily sufficient to force down the piston 10 and close the valve 2, a spring 8 of any desired construction, in this case a spiral spring, may be employed to assist in producing this effect.

The operation of the device is as follows: Supposing the parts to be in the position shown in Fig. 1. As the handle 16 is raised from position 21 to position 22, a vacuum will be formed below the piston 10 which will open the valve 14, thus filling the chamber below the piston 10 with water. At the same time the revolution of the shaft 6 will open the valve 2 permitting the water to escape through the pipe 3. As soon as the handle 16 is released, however, its weight with the weight of the handle bar 11, and the pressure of the water on the valve 2, assisted by the spring 8 if that is employed, will tend to revolve the shaft 6 and thus close the valve 2. This action will be resisted by the water below the piston 10 which can only descend as rapidly as the water can escape through the opening 20 or the pipe 17, which may be adjusted to any desired rapidity by the screw 19, thus placing the quantity of water discharged under the fullest degree of control. A cap 23 closes the upper end of the dash pot so as to prevent the escape of water by overflow, but the opening 18 being below the valve 2, the water in the dash pot 5 will not be under pressure and so will have little tendency to escape. The shaft 6 passes through a stuffing box 12 to prevent leakage at that point.

I claim as my invention and desire to secure by Letters Patent:

1. In a flushing valve, the combination of a supply pipe, a valve mounted in said supply pipe and adapted to be closed by the pressure of the water in said supply pipe, a dash pot mounted at the side of said supply pipe, and provided with an opening connecting said supply pipe below said valve with the upper part of said dash pot and means for securing the coöperative action of said valve and the piston of said dash pot, substantially as shown and described.

2. In a flushing valve, the combination of

a supply pipe, a valve mounted in said supply pipe and adapted to be closed by the pressure of the water in said supply pipe, a dash pot secured to one side of said supply pipe and provided with an opening connecting said supply pipe below said valve with the upper part of said dash pot, a horizontal shaft passing through the upper part of said dash pot and into said supply pipe below said valve, a toothed segment mounted on said shaft engaging with a rack attached to the piston of said dash pot, means secured to the said shaft within said dash pot for operating said valve, a crank secured to the end of said shaft within said supply pipe, and a connecting rod connecting said valve to said crank, substantially as shown and described.

3. In a flushing valve, the combination of a supply pipe, a valve mounted in said supply pipe and adapted to be closed by the pressure of the water in said supply pipe, a dash pot secured to one side of said supply pipe and provided with an opening connecting said supply pipe below said valve with the upper part of said dash pot, a horizontal shaft passing through the upper part of said dash pot and into said supply pipe below said valve, a toothed segment mounted on said shaft engaging with a rack attached to the piston of said dash pot, a crank secured to the end of said shaft within said supply pipe, and a connecting rod connecting said valve to said crank, substantially as shown and described.

4. In a flushing valve, the combination of a supply pipe, a valve mounted in said supply pipe and adapted to be closed by the pressure of the water in said supply pipe, a dash pot secured to one side of said supply pipe, provided with an adjustable passage connecting the portion of said dash pot below the piston with the portion above and having an opening connecting said supply pipe below said valve with the upper part of said dash pot, a horizontal shaft passing through the upper part of said dash pot and into said supply pipe below said valve, a toothed segment mounted on said shaft engaging with a rack attached to the piston of said dash pot, a crank secured to the end of said shaft within said supply pipe, and a connecting rod connecting said valve to said crank, substantially as shown and described.

5. In a flushing valve, the combination of a supply pipe, a valve mounted in said supply pipe and adapted to be closed by the pressure of the water in said supply pipe, a dash pot secured to one side of said supply pipe provided with an adjustable passage connecting the portion of said dash pot below the piston with the portion above and having an opening connecting said supply pipe below said valve with the upper part of said dash pot, a horizontal shaft passing through the upper part of said dash pot and into said supply pipe below said valve, a toothed segment mounted on said shaft engaging with a rack attached to the piston of said dash pot, a crank secured to the end of said shaft within said supply pipe, a connecting rod connecting said valve to said crank, and means for revolving said shaft upon its axis, substantially as shown and described.

6. In a flushing valve, the combination of a supply pipe, a valve mounted in said supply pipe and adapted to be closed by the pressure of the water in said supply pipe, a dash pot secured to one side of said supply pipe provided with an adjustable passage connecting the portion of said dash pot below the piston with the portion above and having an opening connecting said supply pipe below said valve with the upper part of said dash pot, a horizontal shaft passing through the upper part of said dash pot and into said supply pipe below said valve, a toothed segment mounted on said shaft engaging with a rack attached to the piston of said dash pot, a crank secured to the end of said shaft within said supply pipe, a connecting rod connecting said valve to said crank, and a spring adapted to revolve said shaft upon its axis in such manner as to assist the pressure of the water to close said valve, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY S. GASKILL.

Witnesses:
ALEXANDER COHEN,
MARY SQUIRE COBB.