No. 639,589. Patented Dec. 19, 1899.

C. H. LAWRENCE.

CLOSET.

(Application filed July 5, 1898.)

(No Model.)

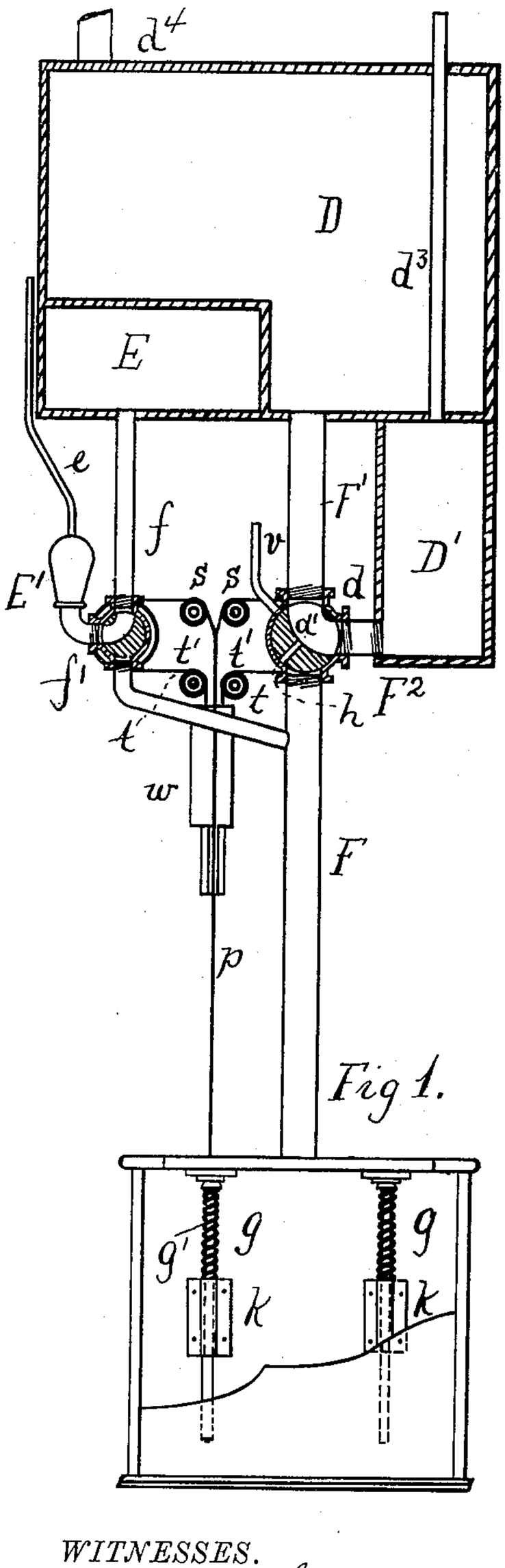

Fig 1.

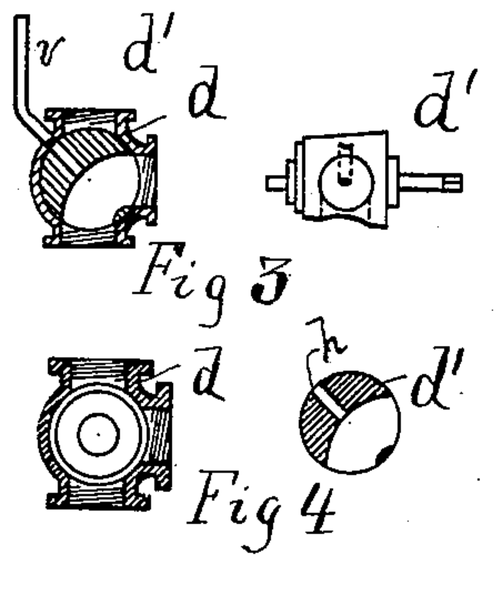

Fig 3

Fig 4

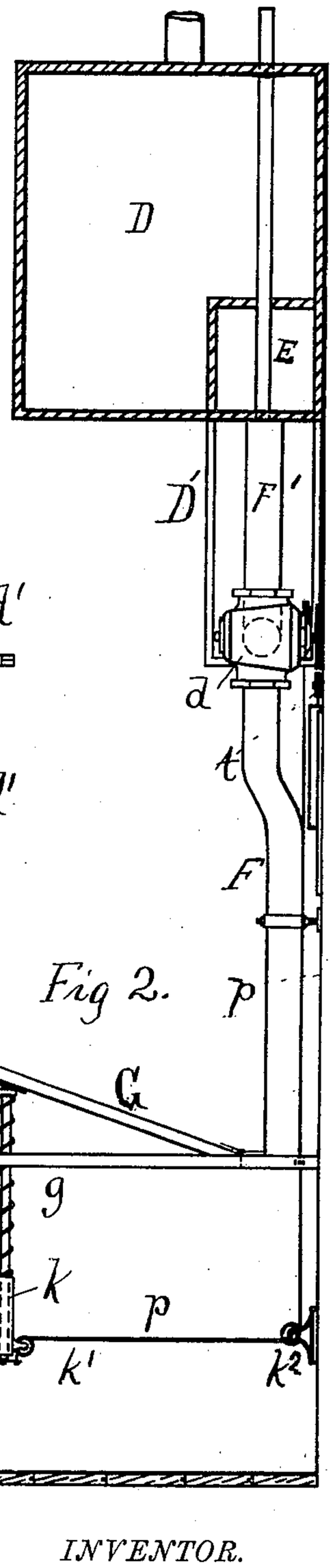

Fig 2.

WITNESSES.

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CLOSET.

SPECIFICATION forming part of Letters Patent No. 639,589, dated December 19, 1899.

Application filed July 5, 1898. Serial No. 685,138. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LAWRENCE, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Closets; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to closets for use on cars, and has for its object an improved form of water-closet arranged to flush the bowl with a quantity of water and a quantity of deodorizing fluid, the water and the fluid being mingled and delivered into the bowl together.

A further improvement relates to the catching and retention of the flushing-water and other contents of the bowl, which are retained in a properly-disposed tank, which is afterward emptied in such a way that none of the objectionable matter is dropped at stations or along the track.

In the drawings, Figure 1 shows a sectional elevation, the section being taken across the tanks in which water is stored and in which the disinfecting liquid is stored. Fig. 2 shows a vertical section taken from front to rear of the tank. Fig. 3 is a detail of the two-way valve used between the tanks. Fig. 4 is a detail of the valve-casing and a cross-section of the valve.

Water is furnished to the bowl from the tank D, which is located in the upper part of the car, and disinfecting liquid is furnished from the tank E, the liquid escaping from both the water-tank and the disinfecting-tank passing directly into the pipe F, which conducts them mingled to the bowl.

The amount of liquid discharged from the water-tank is a measured quantity equal to the contents of a small secondary tank D′, which occupies the relation of the ordinary flush-tank, and the liquid delivered from the disinfecting-tank is also a measured quantity, equal to the contents of the small secondary tank E′.

The valves of the two tanks are similar in construction and are similarly actuated and are actuated together by a single cord or pull. Preferably they are actuated by a cord which is drawn downward when the forward edge of the seat is depressed, and this actuation rotates the valve through which the liquids are discharged into the pipe F. These valves are both what are known as "two-way" valves and compose a casing *d*, in which there is a rotatable conical plug *d′*, and through the plug is a bent opening so arranged that when the plug is turned to the position shown in Fig. 1 the opening registers with the pipe-outlet from the main tank and the pipe-inlet into the auxiliary tank. With the valve *d* the registering is with the pipe F′ and with the pipe F^2, making a clear passage-way from the main tank D to the auxiliary tank D′. A similar two-way valve connects the pipe *f* with the pipe *f′* and furnishes a clear passage-way from the storage-tank E to the auxiliary tank E′. Externally both of these valves are furnished with a pulley or drum, to which is attached cords branching from the main pull-cord *p*, passing over sheaves *s*, and arranged to rotate the valve in one direction when the cord is pulled downward. Other cords *t t* reach from the opposite side of the same wheels over sheaves *t′* and to a weight W, and the tension of this weight serves to rotate the valves in the opposite direction when pressure or pull on the cord *p* is relieved.

Through the valve-casing *d* is a vent-hole, from which leads a vent-pipe *v*, and this registers with a hole *h* through the body of the valve *d′*. The large tanks are vented through the filling-pipes, the main tank D being vented and filled through the pipe d^4. The vent and filling pipe for the main tank E is not shown. The vent-pipe for the auxiliary tank D′ is d^3. The vent-pipe for the auxiliary tank E′ is *e*. All of these tanks must be properly vented in order that they may both fill and empty without air obstruction.

The vent-pipe *v* might be omitted without seriously affecting the usefulness of the device, but is generally found useful to furnish a free air-pressure above the water in the pipe F during the time the valve is turned to empty the auxiliary tank D′.

The seat G is normally held partially supported on spring-supported arms *g*, and the

lower end of each arm g passes through a guide k, on the lower end of which is a sheave k', over which passes the pull-cord p to the terminus of the lower end of the arm g. Another sheave k^2 shifts the direction of the cord p to a vertical, and from this point the cord p leads to the sheaves s s.

In operation with the front of the seat lifted, as shown in Fig. 2, the valve takes the position shown in Fig. 3, and whatever liquid there may be in the two auxiliary tanks D′ and E′ is discharged. As soon as the front end of the seat G is depressed, the valves are rotated to the position shown in Fig. 1 and the two auxiliary tanks fill from the main tanks D and E, to be emptied again as soon as the front end of the seat is allowed to be thrown up by the spring g'. There is thus employed a means for accurately measuring a definite quantity of each of the liquids to be used and a means for discharging that definite quantity of liquid at a single impulse through the bowl and into the tank C.

What I claim is—

1. In a closet, the combination of the main supply-tank, D, a flushing-tank D′, a pipe F′, adapted to connect the tank D, with the tank D′, a main tank E, arranged to contain a disinfecting fluid, a disinfecting flush-tank E′, a pipe f, adapted to connect the tank E, with the tank E′, a bowl A, a pipe F, adapted to connect said bowl with the flush-tank D′, a pipe f'' adapted to connect the pipe F, with the tank E′, two-way rotary valves, one of which is adapted to connect the tank D′, with the tank D, or to connect the tank D, with the pipe F, and the other of which is adapted to connect the tank E′, with the tank E, or the tank E′, with the pipe F, and means for rotating said valves simultaneously, substantially as and for the purpose described.

2. In a closet, the combination of the main supply-tank D, a flushing-tank D′, a pipe F′, adapted to connect the tank D, with the tank D′, a main tank E, arranged to contain a disinfecting fluid, a disinfecting flush-tank E′, a pipe f, adapted to connect the tank E, with the tank E′, a bowl A, a pipe F, adapted to connect said bowl with the flush-tank, D′, a pipe f', adapted to connect the pipe F, with the tank E′, two-way rotary valves, one of which is adapted to connect the tank D′, with the tank D, or to connect the tank D′, with the pipe F, and the other of which is adapted to connect the tank E′, with the tank E, or the tank E′, with the pipe F, a cord p, divided into two branches, one of said branches being adapted to rotate one of said valves, and the other branch being adapted to rotate the other of said valves, and means for readjusting said valves, substantially as and for the purpose described.

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES H. LAWRENCE.

Witnesses:
CHARLES F. BURTON,
VIRGINIA M. CLOUGH.