S. G. McFARLAND.

Flushing-Cistern for Water-Closets.

No. 228,264. Patented June 1, 1880.

Fig. 1.

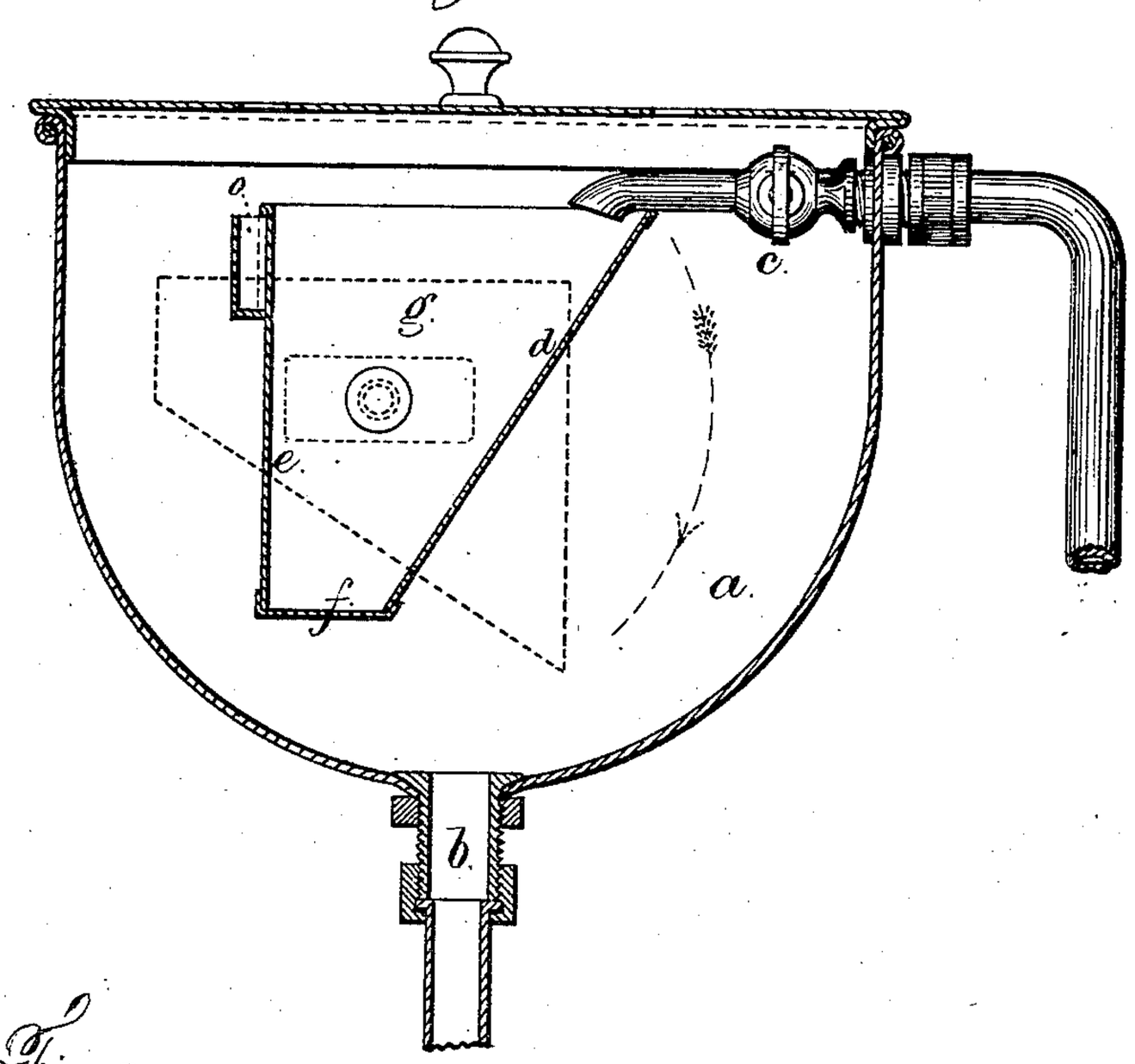
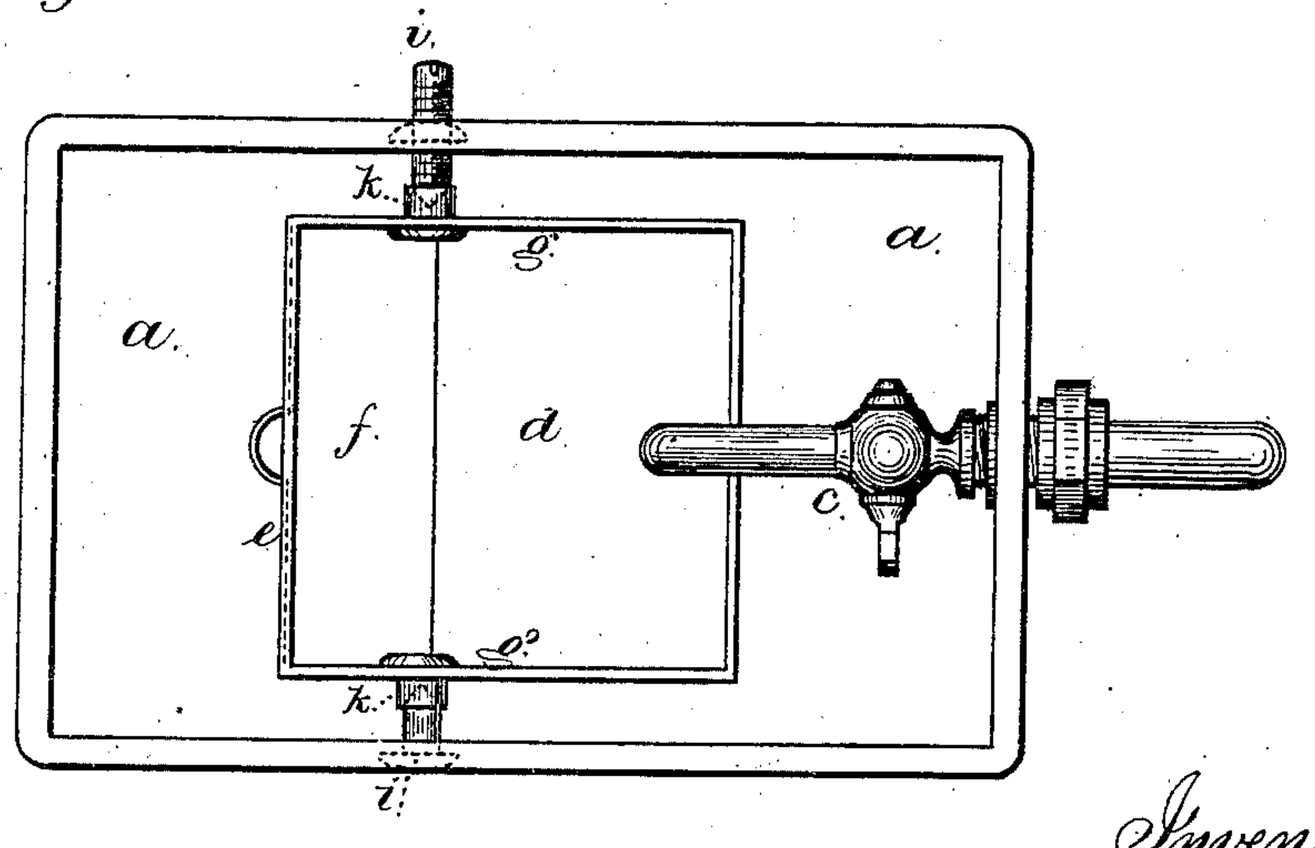


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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FLUSHING-CISTERN FOR WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 228,264, dated June 1, 1880.

Application filed February 9, 1880.

To all whom it may concern:

Be it known that I, SAMUEL G. McFARLAND, of Newton, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Flushing-Cisterns for Water-Closets, of which the following is a specification.

Water-closets have heretofore been provided with an elevated cistern from which the water is allowed to flow periodically. In some cases the water is drawn off by a siphon, and in other cases the supply-water has been allowed to run into a pivoted bucket that has tipped by the accumulated water and discharged its contents into the cistern, and from that it has flushed the closet. In this case the bucket has been held in the position for receiving the water by a stop, and also comes into contact with a second stop when it is tipped for discharging the water, and was liable to turn back before the water was entirely discharged in consequence of the rebound when the bucket tipped and came into contact with the second stop.

My invention relates to a peculiar construction of tipping bucket that insures the entire delivery of the water and the return of the bucket to its normal position and dispenses with a second stop. I make the bucket of a wedge shape, the upper open end being the widest. One side of the bucket is nearly vertical, the other side is at an inclination, and the pivots are at the ends. The upper edge of the nearly-vertical side is weighted. In the normal position the bucket stands with its top edge level, or nearly so, and the water running into it tends to hold it firmly in its place until the accumulation of water above the pivots and upon the inclined side causes an increased weight at one side sufficient to tip the bucket and discharge the contents, and in so doing the bucket turns nearly upside down and then swings back to place.

In the drawings, Figure 1 is a vertical section of the flushing-cistern, and Fig. 2 is a plan of the same.

The cistern-vessel *a* is of a suitable size and shape to receive the flushing-bucket. The rounded bottom for this vessel, as shown, is preferred. From this cistern *a* the pipe *b* leads to the water-closet, urinal, sink, drain, or other article that is to be flushed periodically. The pipe and cock *c* supply a regulated quantity of water, that runs continuously and according to the quantity supplied, so the closet will be flushed at longer or shorter intervals of time.

The tipping bucket is preferably of metal. It has an inclined side, *d*, a nearly-vertical side, *e*, a bottom, *f*, and ends *g*. The pivots *i i* are preferably pointed screws, passing through the ends of the cistern *a* into countersunk holes in the blocks *k*, upon the ends *g* of the tipping bucket. These blocks *k* are located so that they are near the center of gravity of the tipping bucket, the preponderance of weight always, however, being at the bottom of the bucket, so that when empty the bottom of the bucket will be downwardly and the open upper end will be in position to receive water from the supply *c*.

As water runs into the bucket the weight thereof below the center of gravity tends to hold the bucket firmly against the cock *c* or other stop, and as the water rises the weight at the inclined side gradually increases in proportion until there is sufficient preponderance of weight to cause the bucket to tip and turn in the direction indicated, and assume the position shown by dotted lines, and pour all the water out into the cistern *a*, after which the bucket returns by the superior weight of the bottom into the normal position for receiving water.

I prefer to make the bucket of cast metal, and to facilitate the adjustment or balancing I provide a recess at *o*, near the upper edge of the vertical side *e*, into which can be introduced red lead or other material to whatever extent is necessary for so balancing the bucket that it swings freely and turns over to empty itself, and then rights itself when empty.

I am aware that tipping buckets have before been used, and that they have been wider at the top than the bottom, and that solid and hollow pivots have been used for the same; but stops have always been employed, and these produce concussion on the bucket and more or less rebound, that tends to return the bucket too soon, before it has time to entirely empty. My bucket is constructed, as aforesaid, so as to avoid the use of stops.

I claim as my invention—

In a water-closet cistern, an automatic tipping bucket that is free to swing without being limited by a stop when discharging its contents, and in which the bucket is shaped as set forth, and swings on pivots slightly above the center of gravity, as and for the purposes specified.

Signed by me this 5th day of February, A. D. 1880.

SAMUEL G. McFARLAND.

Witnesses:
WILLIAM G. MOTT,
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