No. 767,450. PATENTED AUG. 16, 1904.

G. A. SODERLUND.

VALVE MECHANISM FOR BASIN OUTLETS.

APPLICATION FILED FEB. 16, 1903.

NO MODEL.

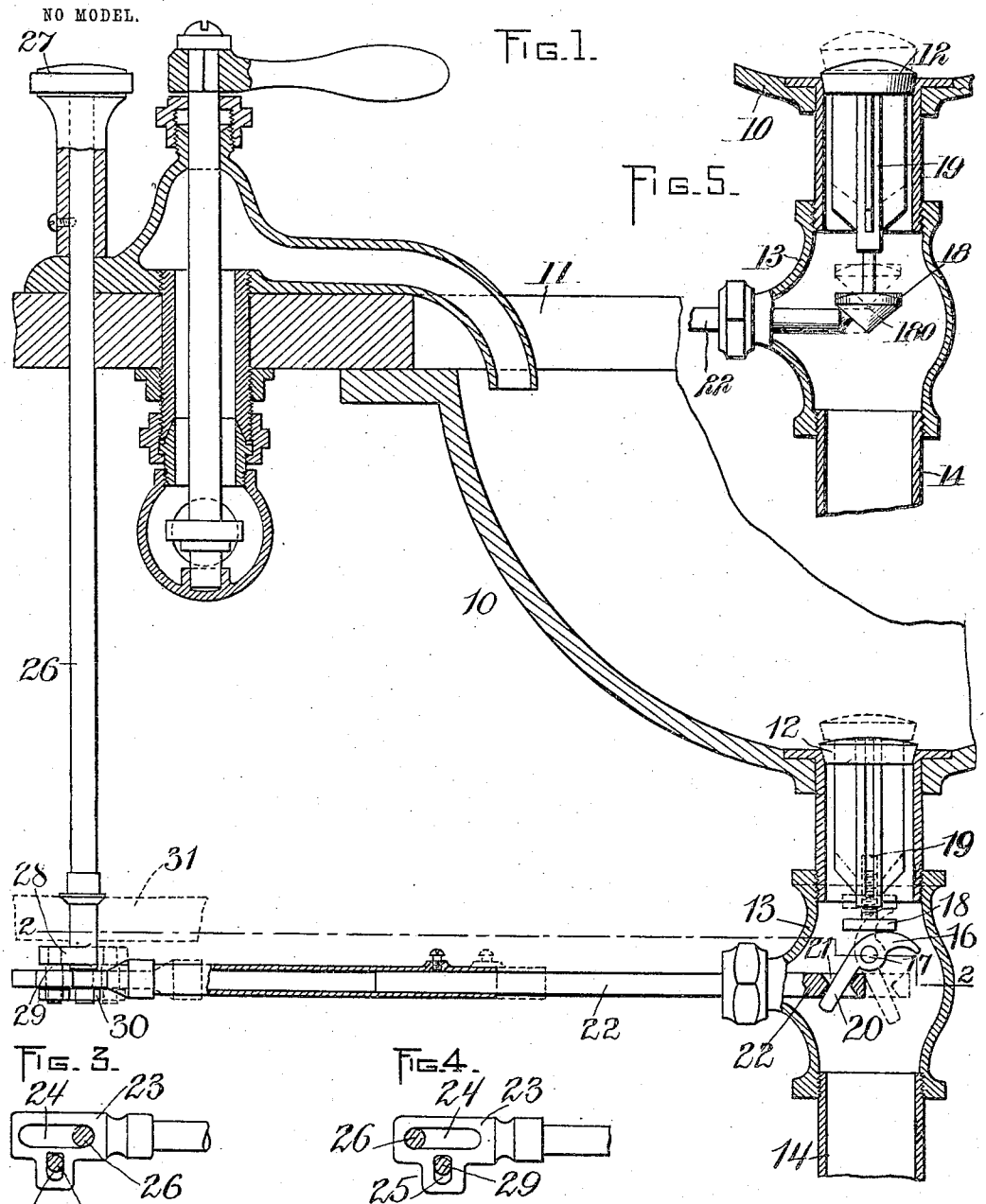

FIG. 1.

FIG. 5.

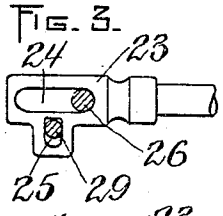

FIG. 3.

FIG. 4.

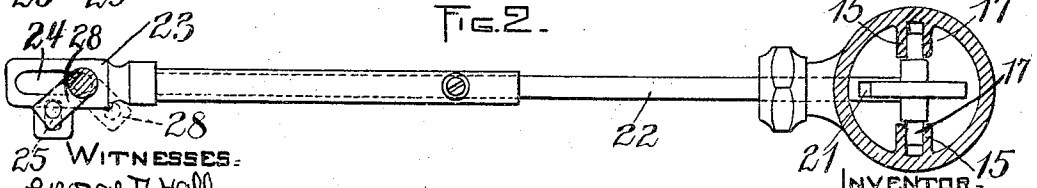

FIG. 2.

WITNESSES:
George H. Hall
E. Batchelder

INVENTOR:
G. A. Soderlund
by Wright Brown & Quinby
Attys.

No. 767,450. Patented August 16, 1904.

UNITED STATES PATENT OFFICE.

GUSTIVE A. SODERLUND, OF SOMERVILLE, MASSACHUSETTS.

VALVE MECHANISM FOR BASIN-OUTLETS.

SPECIFICATION forming part of Letters Patent No. 767,450, dated August 16, 1904.

Application filed February 16, 1903. Serial No. 143,574. (No model.)

To all whom it may concern:

Be it known that I, GUSTIVE A. SODERLUND, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Valve Mechanism for Basin-Outlets, of which the following is a specification.

This invention relates to means for controlling the outlet-valve of hand-basins and similar receptacles, and relates particularly to means for controlling that type of outlet-valve which comprises a reciprocating valve at the center of the bottom of the basin, although the invention may be applied to other forms or locations of valves.

The object of the invention is to provide an economical and easily-operated mechanism for the purpose stated, the parts of which mechanism may be easily assembled.

To these ends the invention consists in the construction and arrangement of parts substantially as hereinafter described and claimed.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation, partly in section, of the parts of a mechanism embodying my invention applied to the outlet-valve of an ordinary hand basin or bowl. Fig. 2 represents a section on line 2 2 of Fig. 1. Fig. 3 represents a detail section on line 3 3 of Fig. 1. Fig. 4 is a view similar to Fig. 3, but showing the parts in different relative positions. Fig. 5 represents a view similar to a portion of Fig. 1, showing a different embodiment of my invention.

The same reference characters indicate the same parts in all the figures.

The embodiment of my invention shown in Figs. 1 and 2 will be first described. An ordinary bowl is represented at 10, the top of the basin or washstand being indicated at 11. 12 represents a valve for controlling the outlet from the bowl, the said outlet communicating through a casing 13 with the discharge-pipe 14. Preferably cast integral with the inner walls of the casing 13 are pocket-lugs 15, diametrically opposite each other, said lugs being adapted to receive the ends of the shaft or studs 17 of a cam 16. The pockets or recesses in the lugs are open at the top, so that the cam and its shaft or studs may be readily dropped thereinto when the parts are being assembled.

The valve is shown as provided with an ordinary stem 19, the latter having a foot-piece 18 adjustably connected with its lower end, said foot-piece being adapted to bear upon the cam, so that when the latter is moved between the positions shown by full and dotted lines in Fig. 1 the valve will be raised and lowered through the medium of the foot-piece and stem. By adjusting the foot-piece 18 the amount of the opening of the valve may be adjusted. For instance, the amount of opening may be reduced by setting up the foot-piece to such an extent that when the valve 12 is seated said foot-piece will not bear upon the cam. Projecting downwardly from the shaft of the cam is an arm 20, said arm extending through an aperture 21 formed in the inner end of a rod 22, the latter being adapted to reciprocate in a bearing, preferably packed, formed in the side of the casing 13. The aperture 21 is contracted at the center and flares in opposite directions therefrom, so as to allow little or no lost motion between the rod 22 and the cam, although permitting the arm of the cam to assume different angles relatively to the rod. The rod 22 is adjustable in length, as by forming it in two sections, one having a sleeve portion fitting over the end of the other portion, and the two being secured together by a suitable screw. The outer end of the rod 22 is provided with a block or head 23, having a longitudinal slot 24 and a lateral slot 25.

An operating-shaft is shown at 26, said shaft extending up through the top of the basin and having an operating knob or handle 27, whereby said shaft 26 may be partially rotated. The lower end of the shaft 26 extends through the longitudinal slot 24 of the block 23, and said shaft is provided with an arm 28, having a downwardly-projecting pin 29 passing into the lateral slot 25 of the block 23. Suitable means, such as a holding nut or plate 30, secured to the extreme lower end of the shaft 26, serves to prevent the separation of the parts when connected at this point. The shaft

or rod 26 is also preferably adjustable in length, so that its lower end where connected with the outer end of the adjustable rod 22 may be brought into accurate alinement with the horizontal bearing formed in the side of the casing 13 for the rod 22. This enables the parts to be applied to the bowl in such a manner that there will be ample freedom of action for the rod 22.

It will now be readily understood that by means of the knob or handle 27 the shaft 26 may be rotated so as to carry the arm 28 from the position shown in Fig. 3 to that shown in Fig. 4, or vice versa. During such movement the head 23 is guided on the shaft 26 by means of the slot 24, while the pin 29, passing through the lateral slot 25, acts to reciprocate the head 23 and the rod 22 and oscillates the cam from the position shown in full lines in Fig. 1 to the position shown by dotted lines in said figure, or vice versa. It will be readily understood that a very slight movement of the knob 27 will suffice to open the valve to its full extent, said movement of the knob 27 being ninety degrees or less.

I have found in practice that the bearing afforded by the top 11 of the basin is sufficient to prevent any such lateral movement or deflection of the lower end of the shaft 26 as would interfere with the proper operation of the cam 16, since the connection of the parts is such that the friction is but very slight. I may, however, in some cases apply a guide-bearing 31 for the lower portion of the shaft 26, such as indicated by dotted lines in Fig. 1.

It will be observed that all the parts may be readily assembled, there being no screw-fittings either at the point of connection between the shaft 26 and the rod 22 or between the shaft 22 and the cam. The opening-and-closing movement of the valve is much more rapid than can be obtained where such movement is dependent upon the working of a screw. Moreover, the operation of the parts is much smoother and less liable to get out of order than is the case where gears are employed to convert motion from one shaft to another, since the teeth of said gears are liable to catch or stick.

In Fig. 5 I show a different embodiment of a part of my invention, in which the cam instead of being separate from the foot-piece 18, is a substantially conical projection 180 on the lower side of or below the foot-piece, said projection or cam bearing on the end of the rod 22. Said end is preferably conical or tapering and is in sliding contact with the cam 180. When the rod is in the position shown in full lines in Fig. 5, it permits the valve to rest by gravitation on its seat, and when the rod is moved to the position shown in dotted lines it raises the cam and valve.

The construction last described constitutes a part of the preferred embodiment of my invention on account of its simplicity and relative cheapness.

Owing to the fact that the rod 22 and shaft 26 are adjustable in length, the device is rendered simple in operation and easy of application to the particular location where it is desired for use. As has been stated, the adjustability of the shaft or rod 26, which in the embodiment of the invention shown in Fig. 1 may be by providing for vertical adjustment of the handle 27 upon the shaft 26, enables the rod 26 to be brought into alinement with its bearing, so that there will be no binding, and the longitudinal adjustability of the rod 22 enables it to be so fitted that the cam may be operated just far enough to hold the valve in elevated position when the handle 27 is released. As indicated by the dotted lines in Fig. 5, the rod 22 is designed to be advanced far enough so that the point of the conical projection 180 may rest upon the top of the rod, in which position the parts may be left as long as desired. It is to be understood that with the embodiment of the invention represented in Fig. 5 the adjustable rods 22 and 26 and their connections will be substantially the same as in the other form shown. In Fig. 1 the position of the cam 16 (indicated by dotted lines) is supposed to be such as will support the valve in elevated position even when the operator releases the handle 27.

I claim—

A device of the character specified, comprising an outlet-valve, a cam for actuating the valve, a rod adjustable in length and extending through the valve-casing and operatively engaged with the cam, the outer end of said rod having a head provided with a longitudinal slot and a lateral slot, and a shaft substantially at a right angle to the rod and having an arm provided with a pin extending through the lateral slot of the head of the rod, a portion of the shaft which is in alinement with its longitudinal axis extending through the longitudinal slot of the head of the rod for guiding the latter, means being provided for rotating the shaft to cause the pin carried thereby to reciprocate the rod through the medium of the said lateral slot.

In testimony whereof I have affixed my signature in presence of two witnesses.

GUSTIVE A. SODERLUND.

Witnesses:

R. M. PIERSON,

P. W. PEZZETTI.