J. MILLER.

MECHANISM FOR OPERATING THE OUTLET VALVES OF WASHBASINS, BATH TUBS, OR OTHER RECEPTACLES.

APPLICATION FILED JULY 20, 1908.

941,797. Patented Nov. 30, 1909.

3 SHEETS—SHEET 1.

Fig. 2.

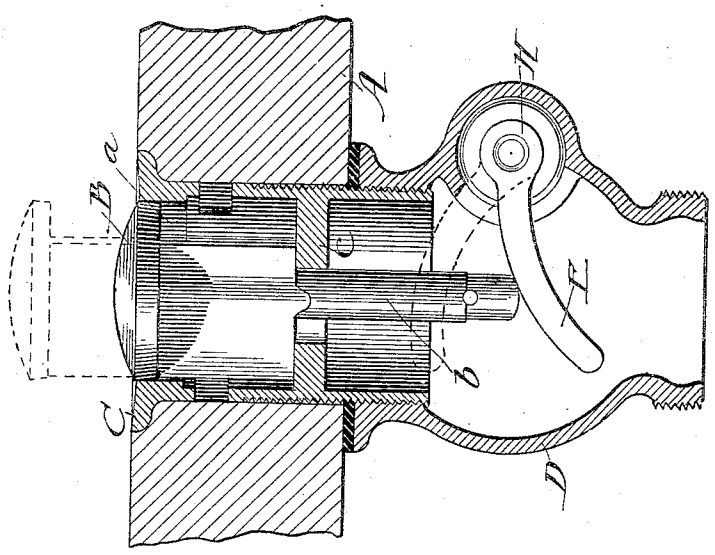

Fig. 1.

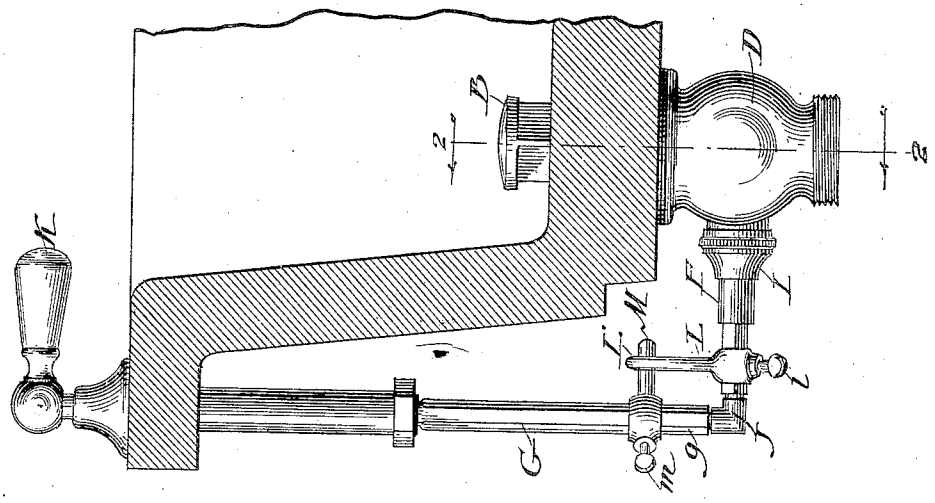

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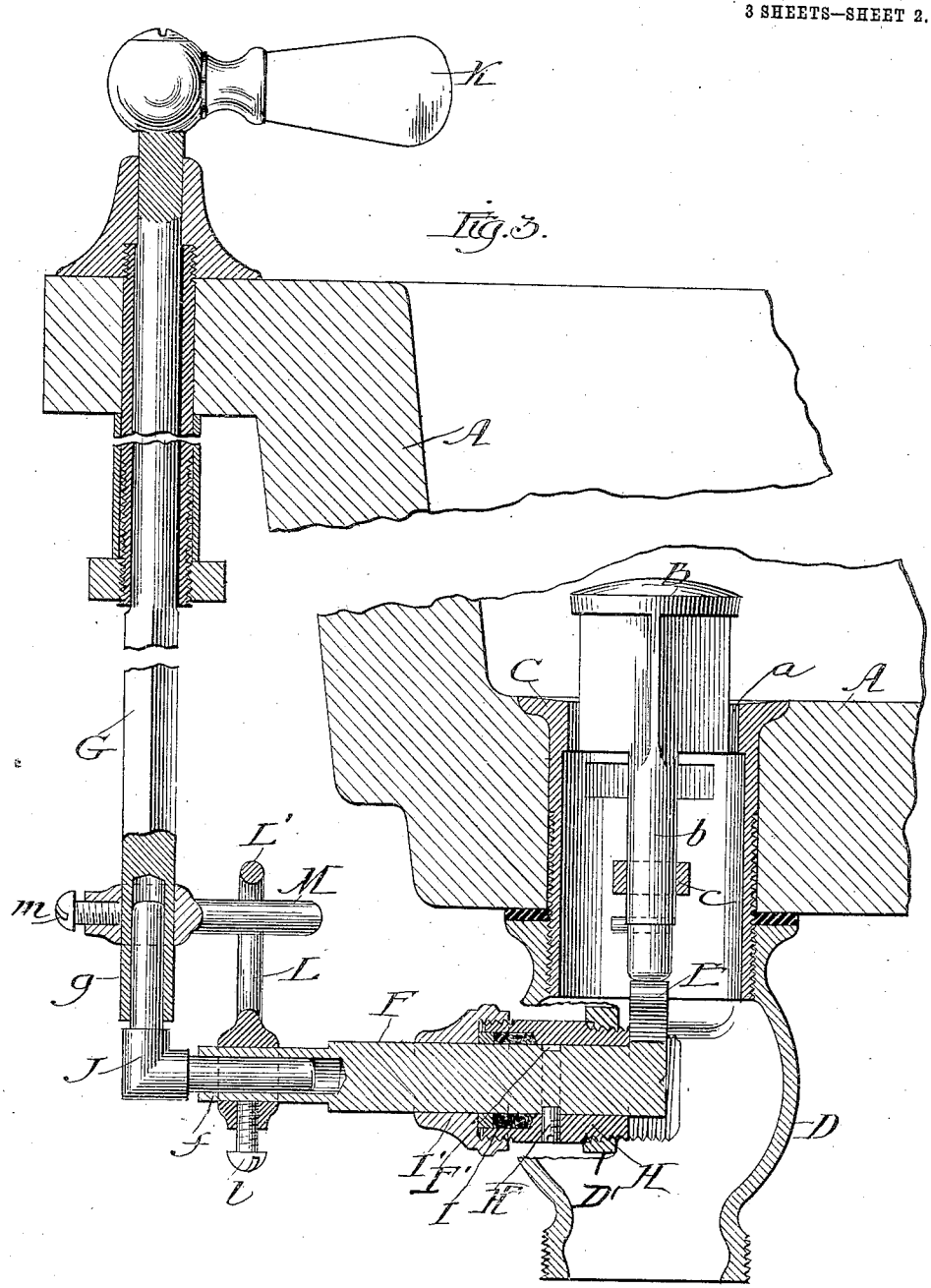
Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

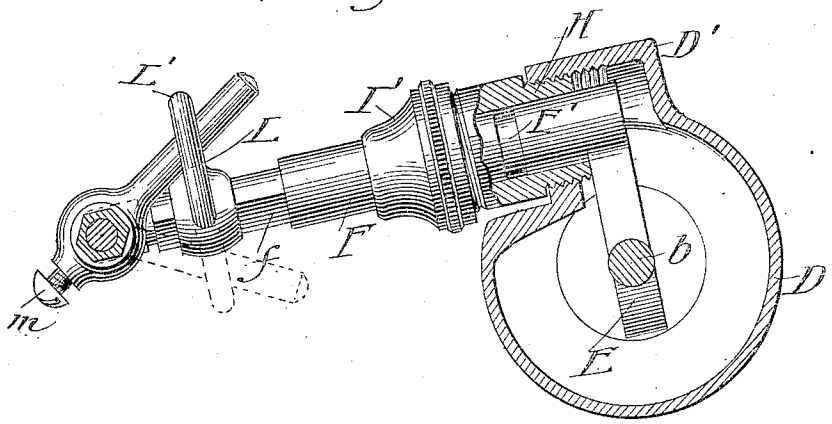
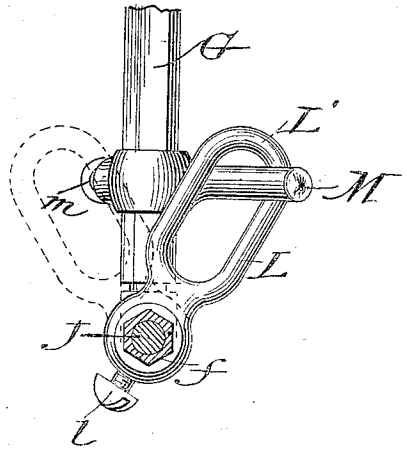


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR OPERATING THE OUTLET-VALVES OF WASHBASINS, BATH-TUBS, OR OTHER RECEPTACLES.

941,797. Specification of Letters Patent. **Patented Nov. 30, 1909.**

Application filed July 20, 1908. Serial No. 444,431.

To all whom it may concern:

Be it known that I, JOHN MILLER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanism for Operating the Outlet-Valves or Stoppers of Washbasins, Bath-Tubs, or other Receptacles, of which the following is a specification.

The present invention relates to the means for manipulating the valve, stopper or other device for controlling the outlet or discharge opening of a wash basin, bath tub or other receptacle, and has for its object the provision of improved means for that purpose.

To this end the invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part of this specification and in which:

Figure 1 is an elevation of a valve-operating device embodying the invention, a fragment of the receptacle being shown in section. Fig. 2 is a sectional elevation of the valve or stopper and its accessories, on the line 2—2, Fig. 1, looking in the direction of the arrow. Fig. 3 is an irregular vertical sectional elevation of a complete valve-operating device embodying the invention. Fig. 4 is an irregular horizontal sectional elevation thereof. Fig. 5 is a vertical sectional elevation showing certain details in the mechanism for transmitting movement from one to the other of the two valve-rod members.

A represents a fragment of a receptacle, which may be taken and considered as a wash basin, bath tub or any other receptacle having an outlet opening *a* adapted to be controlled—opened or closed—by a valve or plug B. The valve seats itself in the upper end of a sleeve or brushing C which occupies the discharge opening in the receptacle proper, and has a stem *b* which works through and is guided by a spider *c* carried by the bushing. The lower end of the bushing has threaded engagement with a bulbous fitting D from which the drain or discharge pipe (not shown) leads. The lower end of the valve stem is engaged by a laterally projecting (preferably curved or cam-shaped) arm E carried by one member F of a two-part valve-rod, the other member of which is shown at G. The end of the valve-rod member F which carries the arm E is cylindrical and occupies the cylindrical bore of a sleeve H, one threaded end of which is screwed into a threaded opening in one end of a lateral enlargement D′ on one side of the bulbous fitting D, the construction and arrangement of the parts being such that the arm E is radial with respect to the valve-stem *b* while the valve-rod member F is tangential to a circle concentric with said valve-stem. With this arrangement of the parts, if the valve-rod member F be turned about its axis in one direction the cam-shaped arm E will be elevated and, engaging the end of the valve-stem, *b*, will open the valve B and permit the contents of the receptacle to escape through the outlet opening, and if turned in the other direction the arm E will be lowered and seat the valve, thereby closing the outlet opening.

For the purpose of preventing the valve-rod member F from moving endwise, it is provided with a circumferential groove F′ and a screw H′ carried by the sleeve H projects into said groove so as to permit the valve-rod member F to revolve within the sleeve but prevent its endwise movement.

In order to prevent leakage past the valve-rod member F, the outer end of the sleeve H is countersunk to form a stuffing box for receiving a body of packing I and its outer end is externally screw threaded to receive a gland I′.

The valve-rod members F and G are, respectively, horizontal and vertical. Their extremities are adjacent to each other and each of them has formed in it a longitudinal socket for receiving the cylindrical arms, respectively, of a rigid right-angle elbow J. The arms of the elbow fit the sockets snugly but with sufficient looseness to permit rotary movement of each valve-rod member relatively to the elbow-arm which enters it, the object of the elbow and the socket-engagement of its arms with the valve-rod members, respectively, being to afford ample lateral support to the valve-rod members and brace each of them against the other. In order to thus support and brace the valve-rod members the engaging surfaces of said members and the arms of the elbow must be of ample longitudinal extent to produce this bracing and supporting ef-

fect, so that within the meaning of the term "elbow", as used in this specification, a short block with an opening extending completely through it for receiving one valve-rod member and a swivel engaging the other valve-rod member is now included. The member G is turned manually, whenever the valve B is to be manipulated, by means of a handle K suitably secured to its upper end, and the member F is turned by movement derived from the member G through the medium of arms L and M carried by the members F and G, respectively, and engaging each other at right angles. The arms L and M have eyes that fit polygonal portions *f* and *g* on the adjacent ends of the valve-rod members F and G, respectively, and are held in place thereon by set screws *l* and *m*, respectively, the advantage of the polygonal form of the ends of the valve-rod members being that it positively prevents any relative rotary moving or slipping of the arms relatively to the members of the valve-rod. One of these arms (say the arm L) comprises two branches or portions between which the other arm projects, so that when the manually controlled valve-rod-member, G, moves in either direction the valve-rod-member, F, is positively moved in a corresponding direction, thereby opening the valve or permitting it to close, according to the direction of movement of the valve-rod-member G. The outer ends or extremities of the parallel portions aforesaid are connected as shown at L′ so that the arm takes the form of a link. This formation has several advantages. One is that it prevents disengagement of the two arms and another is that it limits the relative movement of the two arms and consequently the amplitude of movement of the valve. This is evident because the closer the arm M is set to the closed end L′ of the arm L the less will be the amplitude of movement of the parts.

What I claim as new is:

1. In a device of the class described, the combination of a valve-rod comprising two members located at right-angles to each other, a rigid elbow interposed between said members and having two arms disposed at right-angles to each other, the arms of said elbow and the valve-rod members being slip-jointed together, longitudinally, the extent of the engaging surfaces of the slip-jointed parts being ample to afford lateral support to the valve-rod members, and means for transmitting movement from one to the other of said members.

2. In a device of the class described, the combination of a valve-rod comprising two members located at right-angles to each other, and with their extremities in proximity to each other, a rigid elbow interposed between said members and having two arms disposed at right-angles to each other, the arms of said elbow and the valve-rod members being slip-jointed together, longitudinally, the extent of the engaging surfaces of the slip-jointed parts being ample to afford lateral support to the valve-rod members, and means for transmitting movement from one to the other of said members.

3. In a device of the class described, the combination of a valve-rod comprising two members located at right-angles to each other, with their extremities in proximity to each other, each member having a socket in its extremity, a rigid elbow interposed between said members and having two arms which occupy said sockets, respectively, the engaging surfaces of said sockets and arms being of sufficient longitudinal extent to afford lateral support to the valve-rod members, and means for transmitting movement from one to the other of said members.

4. In a device of the class described, the combination of a valve, a valve-rod comprising two members located at right-angles to each other, a rigid elbow having two arms located at right-angles to each other said members and arms having socketed engagement with each other, arms projecting from the valve-rod members at right-angles thereto and engaging each other at right-angles, each of said arms having a polygonal eye and each of said valve-rod members having a polygonal portion occupying said eyes, respectively, and set screws for preventing the eyes from longitudinal displacement upon the valve-rod members.

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Witnesses:
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