

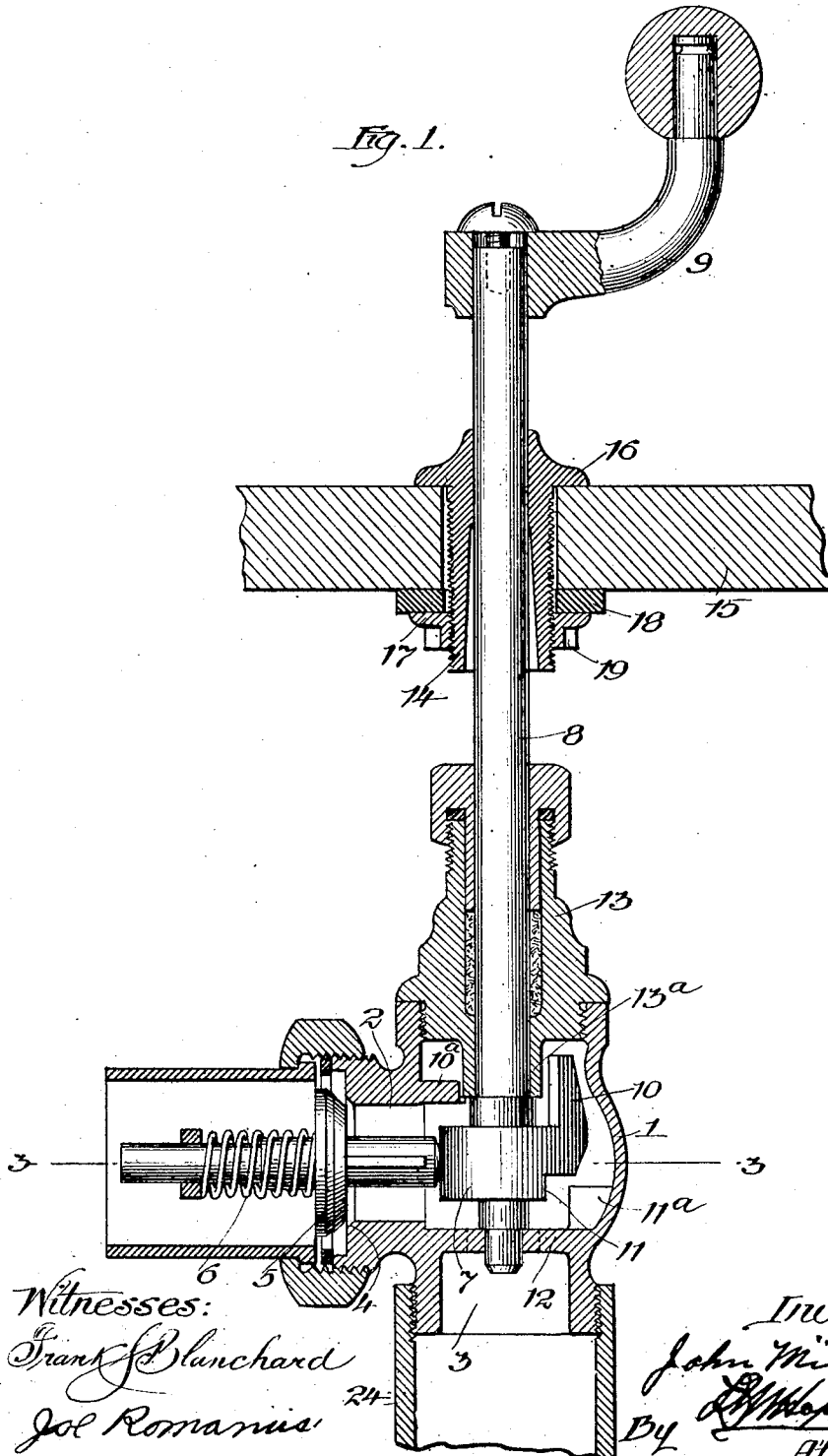
J. MILLER.
VALVE DEVICE.

APPLICATION FILED JULY 20, 1908.

943,837.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.



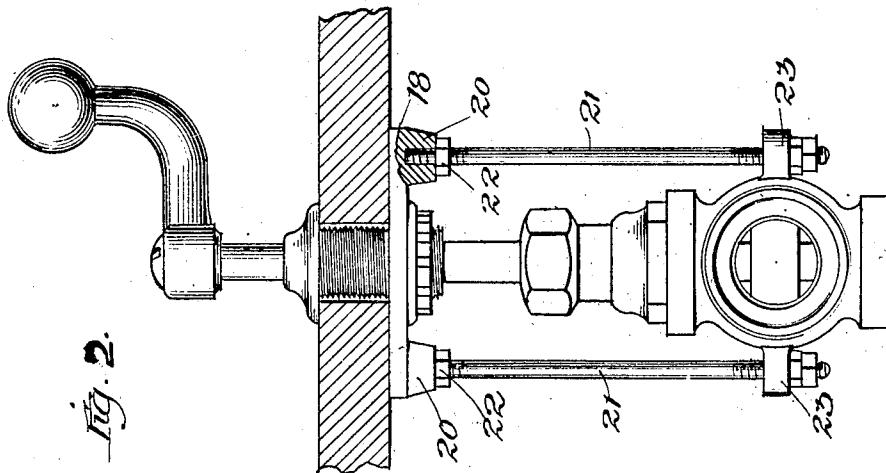
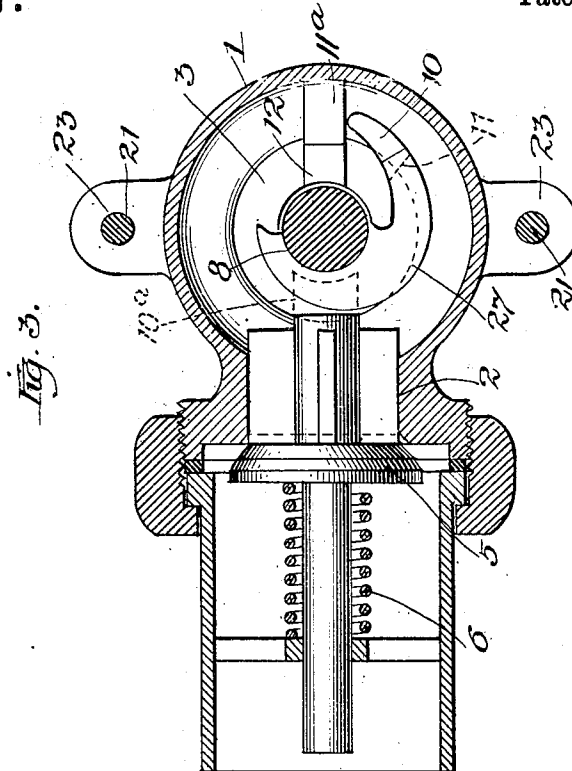
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Witnesses:
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Joe Romanus

Inventor:
John Miller
By *[Signature]*
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UNITED STATES PATENT OFFICE.

JOHN MILLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO JAMES B. CLOW & SONS, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

VALVE DEVICE.

943,837.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed July 20, 1908. Serial No. 444,429.

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 Valve Devices, of which the following is a specification.

One object of the invention is to provide improved means for opening a valve which is normally held to its seat by means of a spring, and to this end a rod is arranged at right angles to the valve stem and an eccentric is arranged on the rod in position to engage the valve stem.

Another object of the invention is to provide means for permitting expansion and contraction of the various parts of the valve device without injury, and to this end the valve casing is supported by rods extending from a slab or other primary support so that the valve casing and the valve-operating rod move independently of said support.

The invention consists in the features of novelty that are hereinafter described with reference to the accompanying drawings, which are made a part hereof, and in which:

Figure 1 is a vertical central section of a valve device embodying the invention. Fig. 2 is an elevation thereof on a smaller scale.

Fig. 3 is a horizontal section, full size, on the line 3—3, Fig. 1, with the eccentric in plan.

The valve casing, 1, has an inlet port, 2, and an outlet port, 3. The inlet port is surrounded by a valve seat, 4, to which is adapted a valve, 5, seating with the flow of the water and held normally seated, by a coiled spring 6. The stem of the valve is guided by suitable means and its inner end projects into the chamber of the casing, 1, in position to be engaged by an eccentric 7, carried by a valve rod, 8, having a handle, 9, for turning it. The pitch of the eccentric is such that by turning it through less than a half-circle (say 155°) in one direction or the other, it will fully open or fully close the valve as the case may be. Its pitch is also such that it will remain in whatever intermediate position it is stopped, and hold the valve in corresponding position—wholly or partly open. The movement of the eccentric in one direction is limited by the contact of shoulders on

lugs 10 and 10^a carried by the eccentric and casing, respectively, and in the other direction by shoulders 11 and 11^a, the former of which is formed directly on the eccentric, while the latter is formed by a lug carried by the casing.

The valve rod is without threads. At its lower end it is supported and guided by a spider 12, in the outlet port 3, and at the upper side of the casing it passes through a stuffing box 13. The screw cap or plug which carries the stuffing box is provided on its under side with a sleeve 13^a which surrounds the rod and projects downward far enough to act as a stop for engaging the eccentric and preventing its upward movement far enough to disengage it from the valve stem. Above the stuffing box the valve rod passes through a sleeve, 14, secured to a slab, 15, or other support. The upper end of the sleeve is provided with a flange, 16, which bears upon the top surface of the slab and is threaded on its exterior to receive a nut, 17, a plate, 18, being interposed between the nut and the under side of the slab. With this arrangement, when the nut is turned up, for which purpose it is provided, at 19, with a noncircular portion for receiving a wrench, the plate will be firmly clamped against the underside of the slab or support and the sleeve will be firmly secured in place in its opening through the slab. The plate has on its under side two tapped bosses, 20, and into these are screwed the threaded upper ends of two supporting rods, 21, lock nuts, 22, being turned onto the rods and into engagement with the bosses. The lower portions of the rods pass freely through perforated lugs, 23, on opposite sides of the casing, and below these lugs adjusting nuts, 24, are turned onto the rods for supporting the casing at the desired position with relation to the slab or support. The advantage of this construction and arrangement of the parts is that they are allowed perfect freedom of movement relatively to each other and are, therefore, not liable to break or bind.

The improved valve device may be used for various purposes but is especially adapted for hydrotherapeutic baths in which they

are subjected to sudden changes in temperatures which are sometimes not only sudden but also both sudden and extreme.

The entire valve device is subject to bodily up and down movement due to the expansion and contraction of the waste pipe, 24, with which the outlet port 3 communicates, and this expansion and contraction is so considerable that it frequently breaks the slab when the valve device is rigidly attached thereto. It is for this reason that the valve is freely movable on the rods 21, and the valve rod 8 is capable of moving endwise through the sleeve 14.

The sudden changes in the temperature of the water passing through the valve casing produces sudden relative changes in the sizes, proportions, or relative positions of the several parts, due to their unequal expansion or contraction, and extreme changes due to these causes produce a considerable disturbance or alteration in the relations of the parts frequently resulting in their breakage, distortion, or other damage or injury which will prevent or materially interfere with the proper operation of the valve device.

It is, of course, known that an eccentric is one form of cam and I desire to have it understood that the present invention is not limited to this particular form. On the contrary a cam of any form that will accomplish the desired result is within the scope of the invention.

What I claim as new is:

1. A valve device having, in combination a casing, a valve, a valve-stem, a valve-rod located at right angles to the valve-stem, an eccentric carried by the valve-rod and engaging the valve-stem, a primary support having an opening through which the valve rod passes, freely, so as to be freely end-wise movable therein, and means interposed between the primary support and the casing for supporting the latter, the primary support and casing being independent of and movable relatively to each other.

2. A valve-device having, in combination, a casing, a valve, a valve-stem, a valve-rod located at right angles to the valve-stem, an eccentric carried by the valve-rod and engaging the valve-stem, stops for limiting the movement of the eccentric in each direction, a primary support, means interposed between the primary support and the casing for supporting the latter, said supporting means being movable relatively to one of the two parts between which it is interposed and said primary support and casing being independent of and movable relatively to each other.

3. The combination with a primary support, of a valve device having a casing, said primary support and casing being independent

of and movable relatively to each other, and means interposed between the primary support and casing for supporting the latter, said supporting means being supported by the primary support and movable relatively to one of the two parts aforesaid between which it is interposed, whereby the relative movement of the primary support and casing is permitted.

4. The combination with a primary support, of a valve device having a casing, said primary support and casing being independent of and movable relatively toward each other, and means interposed between the primary support and casing for supporting the latter, said supporting means being supported by the primary support and movable relatively to one of the two parts aforesaid between which it is interposed, whereby the relative movement of said primary support and casing is permitted.

5. The combination with a primary support of a valve device having a casing, said primary support and casing being independent of and relatively movable both toward and from each other and means interposed between the primary support and casing for supporting the latter, said supporting means being supported by the primary support and movable relatively to one of the two parts aforesaid between which it is interposed, whereby the relative movement of said primary support and casing is permitted.

6. The combination with a primary support, of a valve device having a casing said primary support and casing being independent of and movable relatively to each other, and rods connecting the primary support and casing, said rods being movable relatively to one of the parts which they connect, whereby the relative movement of the primary support and casing is permitted.

7. The combination with a primary support, of a valve-device having a casing provided with perforated lugs, rods extending from said primary support, and passing loosely through said lugs and means carried by said rods for engaging the undersides of said lugs, whereby the valve-device may move relatively to said rods and relatively to the primary support.

8. The combination with a primary support of a valve device, having a casing, said primary support and casing being independent of and movable relatively to each other, a valve rod projecting from the valve casing, the primary support having an opening through which said valve rod passes freely so as to be freely movable endwise therein, rods connected to and depending from the primary support, said casing having perforated lugs through which said rods pass freely and nuts turned onto the rods and engaging the under sides of the lugs.

9. The combination with a primary support having a plate, of a valve device having a casing said plate and casing being independent of and movable relatively to each other, said valve device having also rods depending from said plate and engaging the valve casing for supporting it, said rods and valve casing being movable relatively to each other and a valve rod projecting from the casing, the plate having an opening through which said valve rods pass freely, so as to be freely movable therein, longitudinally.

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