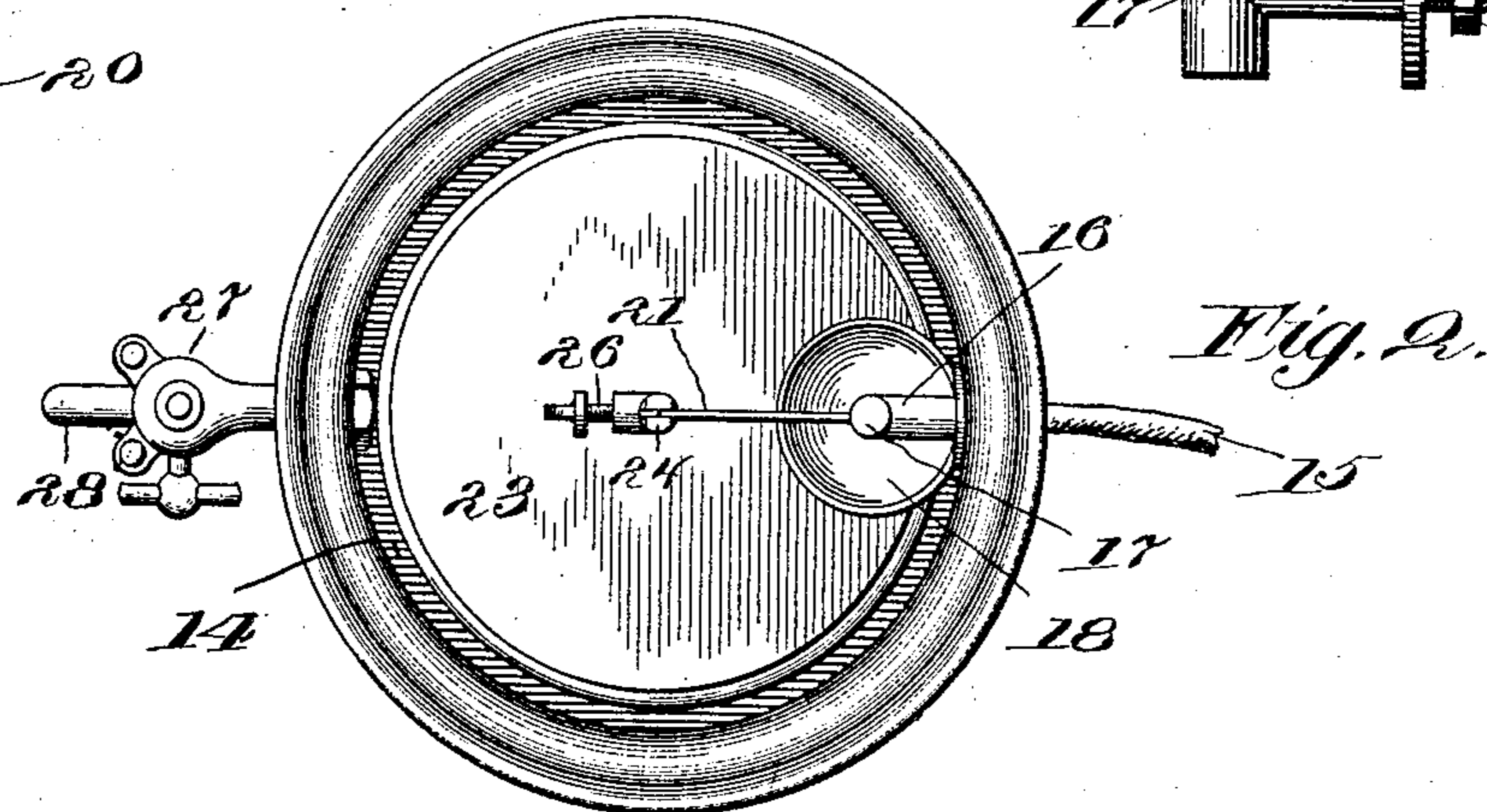
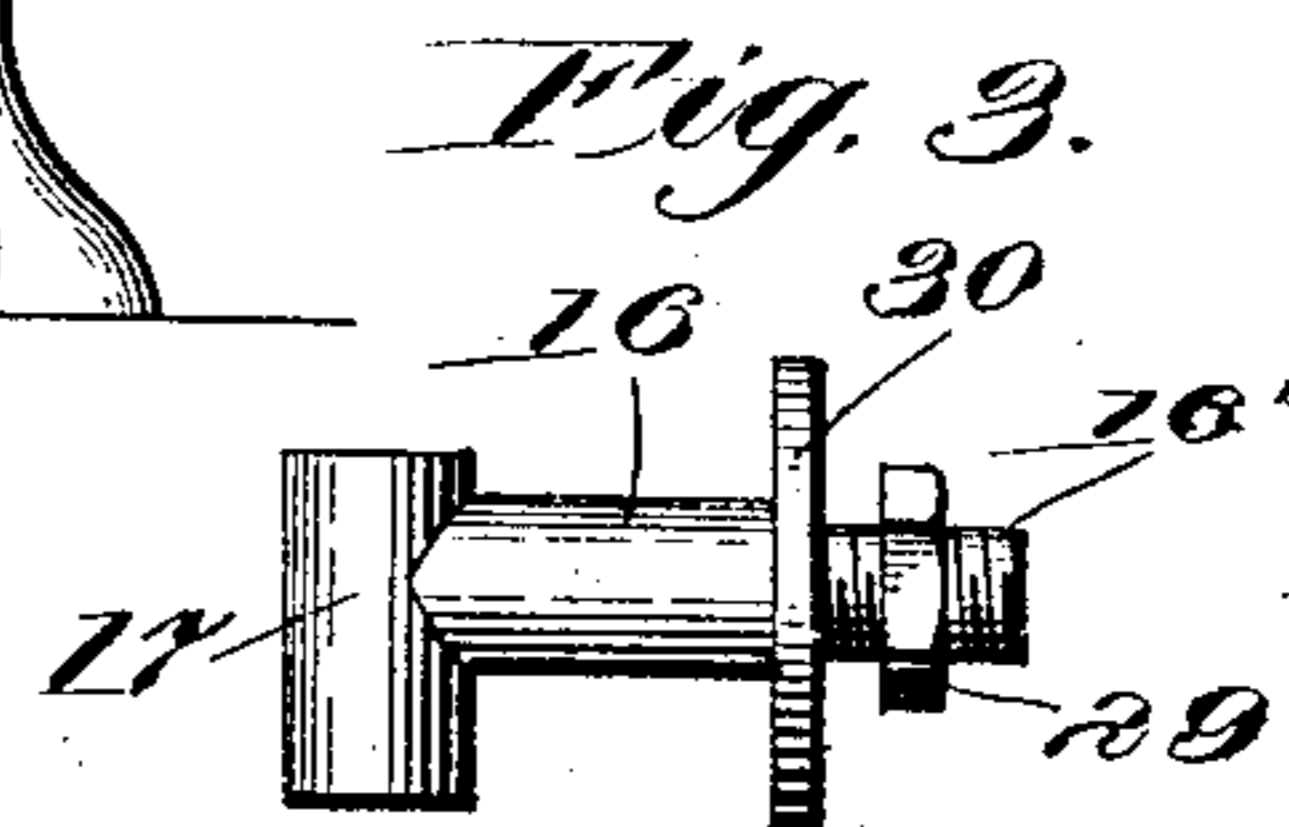
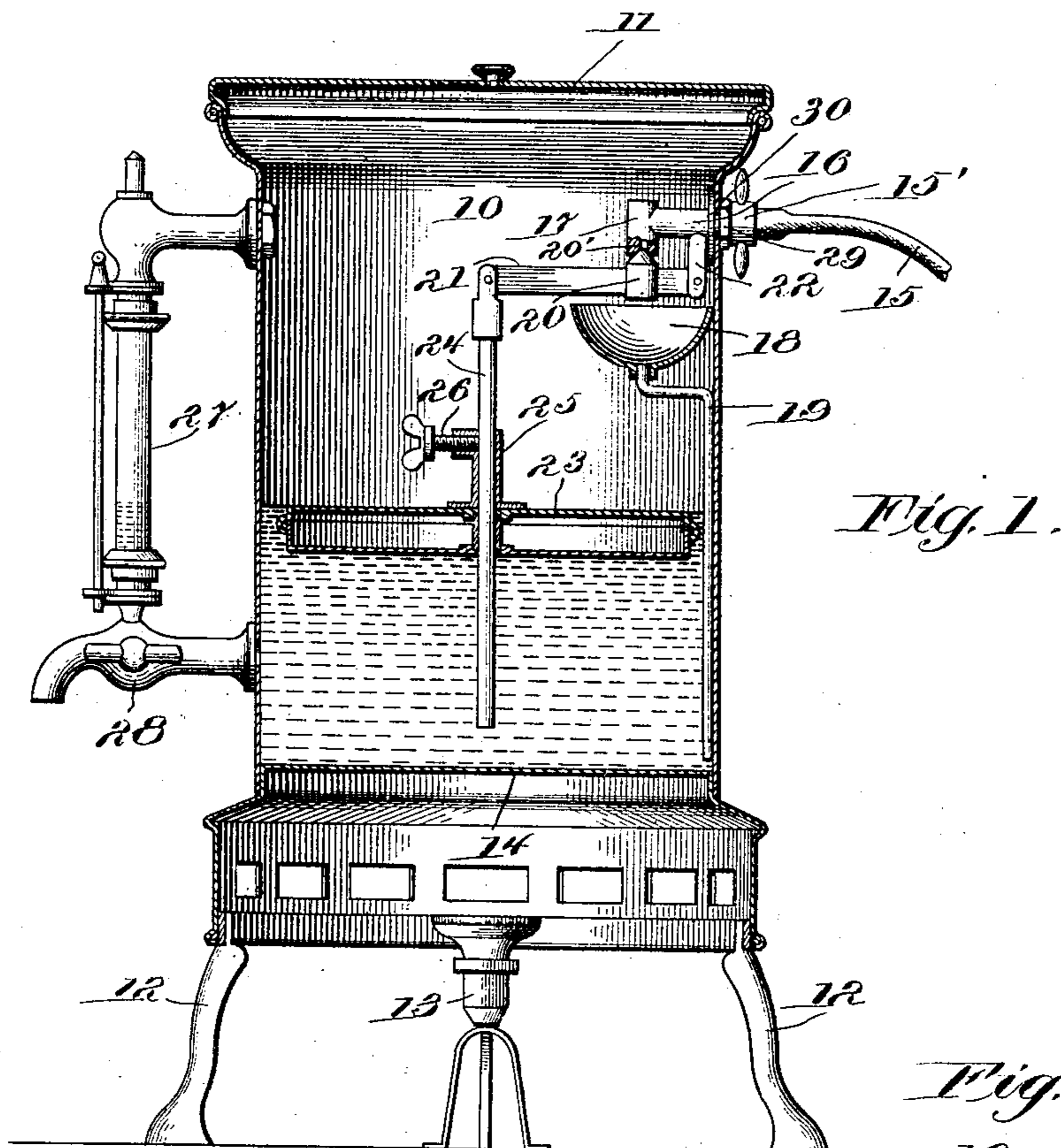


No. 771,399.

PATENTED OCT. 4, 1904.

F. O. SODERSTROM.
AUTOMATIC WATER URN.
APPLICATION FILED OCT. 24, 1901.

NO MODEL.



Witnesses:
H. S. Gaither
Helen L. Peck

Inventor:
Frank O. Soderstrom
by Wm. B. Bell
his Attorney.

UNITED STATES PATENT OFFICE.

FRANK O. SODERSTROM, OF CHICAGO, ILLINOIS.

AUTOMATIC WATER-URN.

SPECIFICATION forming part of Letters Patent No. 771,399, dated October 4, 1904.

Application filed October 24, 1901. Serial No. 79,857. (No model.)

To all whom it may concern:

Be it known that I, FRANK O. SODERSTROM, 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 Automatic Water-Urns, of which the following is a specification.

This invention relates particularly to urns in which a supply of water or other liquid is maintained for dispensing various kinds of drinks; and its primary object is to automatically replenish the liquid-supply within the urn as it is drawn off, so that the supply may be maintained at a substantially uniform level at all times; and a further object of the invention is to provide an adjustment for the automatic feeding devices whereby a greater or less quantity of liquid may be maintained, as required.

The invention can be applied to liquid-tanks of many different kinds; but I have found it especially useful in connection with an urn of the character illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of an urn embodying the invention. Fig. 2 is a top plan view thereof with the lid of the urn removed. Figs. 3 and 4 are detail views.

Referring to the drawings, in which like numerals of reference denote corresponding parts in the several figures, 10 designates a tank which is shown to be provided with a lid 11 and mounted on legs 12, so that a burner 13 or other suitable source of heat may be arranged beneath its bottom 14 for heating the liquid in the tank. When the tank is used for supplying hot water, it may be connected by a flexible pipe 15 or any other kind of pipe to any service-pipe for supplying water to the tank under city or other pressure. The flexible pipe 15 is connected by a coupling 15' to the threaded end 16' of a pipe-section 16, secured in the side of the tank near the top thereof and provided at its inner end with an upright or elbow 17, which discharges the water under the city pressure downwardly into a cup 18, which is connected at its bottom with a pipe 19, located close to the side wall of the tank and discharging at the bottom thereof. To automatically regulate the

supply of water entering the tank, I provide a loose check-valve 20, of suitable construction, on the horizontal lever 21, which is pivoted at one end to a support 22, suspended from the pipe 16, adjacent to the side of the tank, and having its other end located approximately at the middle of the tank and carrying a float 23. The loose valve is slotted to fit loosely on the horizontal lever, and the projection of its point into the valve-seat 20' in the elbow 17 holds it in place. This construction prevents the valve from entering the valve-seat at the wrong angle and insures a perfect seating of the valve at all times. The float is mounted on a stem 24, which is swiveled at its upper end to the lever 21, so that the float will always be in horizontal position, and this float is provided with a collar 25, through which operates a set-screw 26 to engage the stem for securing the float on the stem at whatever position may be desired, according to the quantity of water to be maintained in the tank. The tank is provided with a water-gage 27 and a discharge-faucet 28, this faucet being preferably connected with the tank at a distance above the bottom in approximately the manner shown in Fig. 1, so that the coldest water in the tank may not always be drawn therefrom.

It has been customary heretofore to provide urns of the character herein described of comparatively large size, so that they can be filled with liquid in sufficient quantity to maintain a constant supply, the tank being generally filled and refilled, as occasion requires. In this way a considerable amount of heat is constantly required to keep the comparatively large quantity of liquid hot, and if the heat-supply is not turned off at night the liquid in the tank is apt to become exhausted, with the result that the bottom of the tank is burned out and the usefulness of the urn destroyed. By my invention it will be observed that I maintain a constant supply of liquid in the tank in a quantity determined by the location of the float, so that it is unnecessary to provide a large tank or to fill the tank or to constantly maintain a high degree of heat, as the float can be adjusted on the stem to maintain in the tank at all times a quantity of liquid

which can by a little experiment be found to satisfy the demand at all times, and as a comparatively small quantity of liquid is maintained in the tank, which, however, is constantly maintained, a less degree of heat is necessary to keep the liquid at the desired temperature. It will also be observed that the liquid-feed is automatically regulated so that the supply of liquid in the tank will be constantly maintained irrespective of whether the liquid is being drawn off through the faucet or vaporized under the continued application of heat, and thereby all liability of the liquid-supply becoming exhausted, which would result in the destruction of the tank, is avoided.

An urn embodying my invention of small size may be employed in places where a large-size urn without automatic feed has been employed, because the water is replenished and heated as fast as it is drawn, and the float is so constructed that it can be easily and quickly adjusted at any time to provide a greater or less supply of liquid in the tank as increasing or decreasing demand may make desirable.

I prefer to attach the discharge-faucet to the tank at a distance from the bottom thereof, so that the coldest water may not be drawn at all times, the float of course being set above the faucet-opening.

The water entering the tank is discharged through the check-valve into the cup 18 and led by a pipe to the bottom of the tank, so that the fresh and cold water entering the tank will be discharged at the bottom of the tank beneath the hot water therein, which naturally rises to the top, whereby the cold water is prevented from mixing directly with the hot surface water in entering and is conveyed to the bottom, so that the heat will have the greatest effect on the cold water at once.

The invention may be used for maintaining

a supply of hot water for dispensing liquid refreshments or for other purposes, or the source of heat may be dispensed with and the invention employed for simply maintaining a constant supply of cold water or other liquid, in which case the faucet would preferably be located at the bottom of the tank.

I do not limit myself to any particular construction of the tank nor to the use of any special burner or to the application of the heat in any special manner, as it is obvious that these may be changed in many respects without departing from the spirit of the invention.

The pipe-section 16 is removably fastened to the tank by means of a lock-nut 29, which is arranged to clamp said section to the side of the tank between itself and a flange or shoulder 30 on the section, whereby the pipe-section and the float can be readily removed from the tank for cleaning the tank and the working parts and for other purposes.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of a liquid-tank, an inlet-pipe entering said tank near the top thereof and discharging downwardly, a valve-seat at the discharge end of said pipe, a lever pivoted at one end adjacent to the side of the tank, a stem swiveled to the other end of said lever at or about the middle of the tank, a float adjustably secured on said stem, a check-valve slotted to fit loosely on said lever and engage the seat on the inlet-pipe, a cup supported beneath the discharge end of the inlet-pipe, and a pipe connected to the bottom of said cup and discharging into the bottom of the tank.

FRANK O. SODERSTROM.

Witnesses:

J. M. ALROW,
WM. O. BELT.