No. 707,532.

G. J. ADAMS.

MEASURING FAUCET AND AUTOMATIC GRADUATE.

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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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Fig. 6.

Fig. 7.

Fig. 8.

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MEASURING-FAUCET AND AUTOMATIC GRADUATE.


Application filed August 24, 1908. Serial No. 728,571. (No model.)

To all whom it may concern:

Be it known that I, GEORGE JUSTIN ADAMS, a citizen of the United States, and a resident of Brooklyn, State of New York, have invented certain new and useful Improvements in Measuring-Faucets and Automatic Graduates, of which the following is a specification.

My invention relates to improvements in measuring-faucets; and the object of the invention is to provide a simple device which may be readily adjusted to deliver any desired quantity of liquid.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section through the measuring-cylinder and valve with the faucet removed. Fig. 2 is an enlarged detail view of the graduated portion or extension of the cylinder looking in the direction of the horizontal arrow. Fig. 3 is a section on line 3-3 of Fig. 1 looking down in the direction of the arrow in Fig. 1. Fig. 4 is a section on line 4-4 of Fig. 1 looking down. Fig. 5 is a section on line 5-5 of Fig. 2. Fig. 6 is an enlarged sectional view of the lower portion of the cylinder with the faucet attached thereto. Fig. 7 is a section on line 7-7 of Fig. 6. Fig. 8 is a section on line 8-8 of Fig. 6, and Fig. 9 is an enlarged detail view of the connection between the indicating-glass and the lower part of the cylinder. Fig. 10 is an enlarged detail view illustrating more clearly the displacement-plunger in the extension m.

In the drawings, A represents the faucet proper, which is provided with three passages or branches, as shown, a representing the branch which is connected with the source of supply, a' the branch leading to the measuring chamber or cylinder, and a'' the delivery branch. The flow of the liquid through the passage is controlled by a turning plug A', having a suitable operating-handle A'' and having also a suitable right-angled passage adapted on the proper turning of the plug to connect the passages a and a', whereby the measuring vessel will be filled, or to connect the passages a' and a'', whereby the measured portion of the liquid will be drawn off. I prefer to connect the devices which effect the measuring of the fluid to the faucet proper by a threaded collar B, having operating extensions B', by which it may be turned, and thus screwed upon or unscrewed from the threaded upper extension of the faucet proper, as clearly shown in Figs. 1 and 6. The measuring of the fluid takes place in a cylindrical vessel C, which is provided at its lower end with a valve-chamber D, which is preferably formed separate from the cylinder and is secured thereto by a suitable threaded clamping-thing D', having an annular shoulder engaging a corresponding annular shoulder d on the upper portion of the valve-chamber and having its threaded portion engaging exterior threads upon the contracted lower end of the cylinder. A packing-ring d is preferably placed between the valve-chamber and the contracted end of the cylinder. The inner surface of the said contracted end of the cylinder is also threaded, and into this threaded portion is screwed a hollow plug E, having a valve-seat e formed on its lower end, which coacts with the valve F within the valve-casing. The valve F has legs or projections f, which hold it elevated above the bottom of the valve casing or chamber and permit the liquid to flow freely past the valve up into the measuring-cylinder until the valve is lifted upwardly and closed in the manner hereinafter described. The valve has a tubular and slotted extension F', extending upwardly and guided by a plate or guide F2, and within this tubular extension is located the lower end of a rod G, which has pins or projections g, which prevent the relative turning of the rod and valve extension, while permitting a relative longitudinal movement of said parts, the whole forming a two-part valve-stem. The rod G passes upward through the cylinder and its cap C and into a slotted tubular extension H, carried by the said cap. Encircling this rod is a tube or sleeve I, which carries at its lower end within the measuring-cylinder a float I. At its upper end the sleeve is provided with a set-screw K, which passes through the slot h in the extension H and is adapted to clamp the rod and sleeve together at any desired point. The tubular extension H is provided ably provided with a series of graduations indicating the desired units of measurement and a pointer k', secured to a short sleeve l, interposed between the tubular extension H.
and the sleeve I, and through which short sleeve the set-screw passes.

From the above description it will be seen that when the turning plug is in the position of Fig. 6 the liquid to be measured will pass upward through the valve-chamber into the measuring-cylinder until it reaches the float, which it will gradually raise and with it the tubular sleeve I. As the sleeve I is connected with the rod G by the set-screw, the rod G will in its turn be raised, and when the limit of the movement between the rod G and valve-stem has been reached the valve will be lifted against its valve-seat and the supply of liquid cut off. The turning of the plug A' to bring the passages a' and a into communication will then at once cause the amount of liquid within the measuring-cylinder to be delivered, the supply from the passage a being cut off until the plug A' is returned to the position shown in Fig. 1.

It will be seen that by loosening the setscrew K and adjusting the sleeve I, and with it the float, up or down the inlet of the fluid to the measuring vessel or cylinder may be cut off at any desired point, and thus the faucet may be readily set to deliver any predetermined quantity of liquid.

I prefer to secure the head C' of the cylinder detachably to the body thereof in the manner shown in Fig. 3, so that access to the interior of the cylinder may be readily had. This consists in forming the rim of the cover with elongated openings C', made at one end than at the other, so that by rotation of the cover to bring the larger portions of the openings in line with the screw-heads it may be readily removed.

If desired, a glass gage may be used in connection with the measuring vessel. This is indicated at L and is supported by extensions or brackets M and M' from the cylinder, which have passages communicating, respectively, with the upper and lower ends of the glass tube. I may also provide a pointer or indicator N, carried on a rod or guide N'.

The lower passage m is engaged by a threaded spindle m', forming an extension of a plunger portion m', having a hand-wheel m'. A passage m" extends centrally of the threaded portion, terminating in a transverse opening m" in the plunger portion. The plunger portion is of less diameter than the plunger-chamber, as shown in Fig. 10. The movement of the valve-plunger m' in or out controls or balances the displacement of the liquid in the following manner: In measuring a liquid the float in the vertical cylinder will rise and is permitted to do so until the pointer attached to its central vertical rod indicates the desired amount to be measured on the scale when the faucet at the supply vessel is shut off. In case there is a slight excess or deficiency the horizontal tube attached at the lower end of the measuring-cylinder is brought into use. The plunger or valve m' within the tube, provided with a screw-threaded stem, is rotated by means of the hand-wheel either to the right or left, thus displacing more or less liquor, whereby its upper surface in the cylinder is raised or lowered. When the pointer on the vertical rod indicates the exact amount desired, by the working of the hand-wheel attached to the plunger the operator stops turning said hand-wheel, and he is able to see by the scale on the plunger-cylinder how much in excess or deficiency the quantity of liquid may have been. The adjustable pointer arranged to slide on the rod next to the vertical glass tube is now set at the place indicated by the height of the liquor in said tube and allowed to remain set during the subsequent measurements of liquor of the same quantity, thus acting as a check on the pointer first described. The holes shown in the plunger-rod permit any liquor remaining in the plunger-cylinder to escape should the plunger be thrust forward to its utmost limit.

Having thus described my invention, what I claim is—

1. In combination, the two-way faucet, a measuring vessel connected therewith, a valve controlling the passage of liquid from the faucet to the vessel, a slotted tubular extension above said vessel, a stem or rod extending upward from the valve through said vessel and into said tubular extension, a float within the vessel having an extension also extending into said tubular extension, means for adjustably securing said stem and float extension together, and a pointer connected with the float extension and contacting with a scale on the tubular extension, substantially as described.

2. In combination the two-way faucet, the measuring vessel connected therewith, the valve-chamber between said vessel and faucet, the valve in said chamber having an extension, the rod having a limited sliding connection with said extension, said rod extending up through the measuring vessel, the float within the vessel having an extension extending up in proximity to the said rod, and means for adjustably securing said rod and float extension together, substantially as described.

3. In combination the two-way faucet, the valve-chamber detachably connected thereto, the measuring vessel detachably connected with said valve-chamber, the valve located in said chamber and having a tubular extension extending up into said vessel, the tubular extension above said measuring vessel, the rod having its lower end seated in the valve and having a limited sliding movement therein, the upper end of said rod extending into the extension of the vessel, the float within the vessel having a tubular sleeve or extension extending upward above the vessel, and the set-screw passing through a slot in the extension of the and with adjustably securing said sleeve and rod together, substantially as described.
4. In combination, the two-way faucet, a measuring vessel connected therewith, a valve to close the opening to said vessel, a float connected with said valve, a tube arranged parallel to the vessel and connected therewith at top and bottom, said bottom connection including a plunger-chamber, a plunger working in said plunger-chamber, and an adjustable indicator adjacent to said tube, substantially as described.

5. In combination with the faucet having a two-way valve or plug, a measuring vessel connected therewith, a valve, interposed between said vessel and faucet, a float controlling said valve, a hollow extension at the lower part of said vessel and communicating with the interior thereof, a glass tube arranged parallel with the cylinder and having its lower end communicating with the interior of said extension and its upper end in communication with the upper portion of the vessel, and a displacement-plunger located in said extension, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GEO. JUSTIN ADAMS.

Witnesses:

BARBARA CAMBEIS,

OTTO MUNK.