K. G. STENBERG.

DRAFT TUBE.

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954,898. Patented Apr. 12, 1910.

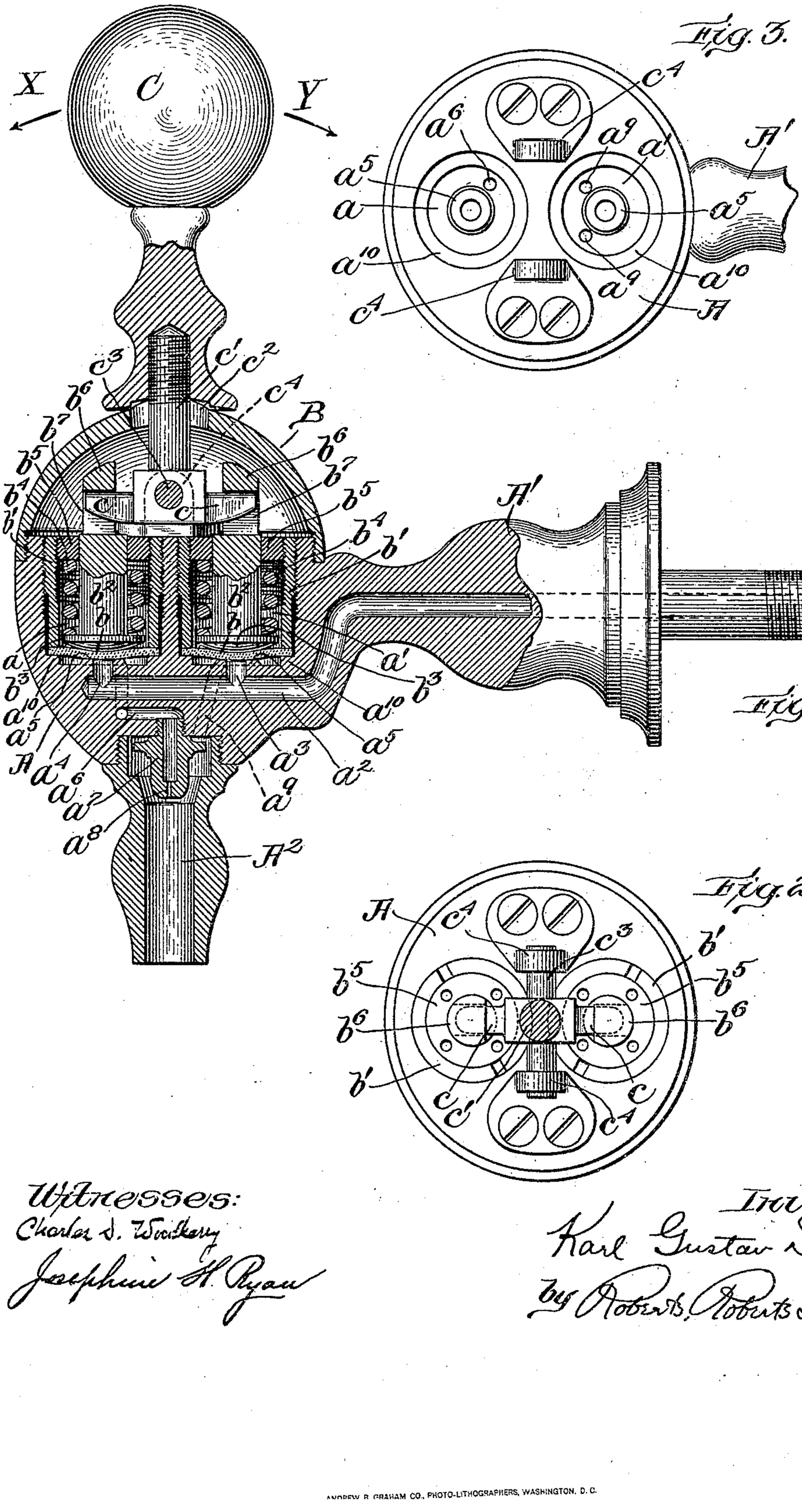

Fig. 1.

Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

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DRAFT-TUBE.

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To all whom it may concern:

Be it known that I, KARL GUSTAV STENBERG, a citizen of the United States, and resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Draft-Tubes, of which the following is a specification.

This invention relates to draft tubes such as are employed in soda fountains for charged or aerated liquids, and consists in improvements in the construction of draft tubes by which the liability of leakage is prevented, and the operation of the draft tubes is facilitated, and by which they can be readily assembled or taken apart when required.

In the accompanying drawings which illustrate one embodiment of a draft tube containing my invention,—Figure 1 is a vertical longitudinal section of such a draft tube; Fig. 2 is a top plan view of the lower member of the housing of my improved draft tube with the valves and valve operating parts in place; and Fig. 3 is a top plan view of said lower member of the housing with the valves and valve operating parts removed.

Referring to the drawings, A represents the lower part and B the upper part or cover of a separable housing, the latter being screwed on to the former as shown. The lower part A of the housing is made with a pair of cylindrical valve chambers a, a', arranged side by side.

A′ is a supply pipe adapted to be secured to the soda fountain or to a standard suitable to the purpose, and communicating with the source of supply of the aerated or charged liquid. An inlet passage a^2 connected with the supply pipe communicates by branches a^3, a^4 with the bottoms of the two valve chambers. Each valve chamber is provided with an annular valve seat surrounding the inlet opening as shown at a^5. Leading downward from the bottom of valve chamber a is an outlet passage a^6 provided at its delivery end with a jet nozzle a^7 terminating in a restricted jet orifice a^8. Leading downward from the bottom of valve chamber a', are a plurality of outlet passages a^9, independent of the outlet passage from the valve chamber a, and discharging into the delivery nozzle A^2 at the side of the jet nozzle a^7 which is also within the delivery nozzle A^2. The cross sectional area of the outlet passages a^9 is greater than that of the jet orifice a^8 for the purpose presently to be described.

Each valve chamber has therein a flexible diaphragm valve b made in the form of a disk and preferably of a suitable fibrous material. The diaphragm valves b rest at their peripheries upon the annular shoulders a^{10} provided around the bottom walls of the valve chambers, and when flexed or depressed in the direction of the inlet openings a^3 and a^4, engage the valve seats a^5. Each valve chamber is lined with a bushing b' which is screwed into the valve chamber and clamps the diaphragm valve b against the shoulders a^{10} on a line surrounding the ports of the inlet and outlet passages, said valves thus making a close pressure-resisting engagement with the walls of the chambers at the peripheries of the valves.

Within each valve chamber is a valve stem b^2 provided with a rounded head b^3 which bears against the top of the diaphragm valve b. A heavy coil spring b^4 surrounding each valve stem abuts at one end against the head b^3 and at the other end against an annulus b^5 which is screwed into the end of the bushing b' around the valve stem. The springs b^4 normally urge the valve stems, and consequently the diaphragm valves operated thereby, into closed position with the valves b seated upon the valve seats a^5 closing the inlet passages. These springs are of sufficient strength to resist the expected pressure within the inlet passages and normally to hold the valves closed. Each valve stem has an upward extension b^6 provided with a slot b^7.

In order to retract either of the valve stems as desired and consequently to open either of the valves independently of the other and so permit the discharge from the apparatus either through the jet orifice a^8 or the relatively large passages a^9 as desired, I provide a rocker, which is preferably a rocking lever in the form of an inverted T, the arms of which engage the slots b^7 at the tops of the valve stems, and the stems c' of which extend upward through a slot c^2 in the top of the cover B of the housing. This rocker is pivotally mounted on the top of the lower part A of the housing by means of the pivot pin c^3 which is supported in its ends in suitable lugs or brackets c^4 screwed

to the upper face of the housing part A. The handle C is secured to the end of the stem c' of the T-shaped rocker.

When the handle C is rocked in the direction of the arrow X, the right hand arm c of the rocker (as viewed in the drawings) will lift valve stem b^2 engaged thereby, thus permitting the valve b to rise from its seat, partly by reason of its own resiliency and partly assisted by pressure within the inlet passages, thereby permitting the delivery of the fluid through the outlet passages a^9. Obviously a larger number of passages a^9 than the two shown could be used if desired, or a single passage of sufficiently large cross sectional area to permit a gentle discharge of the liquid. During this movement of the handle it will be observed that the left hand arm c of the rocker plays idly in the slot b^7 of the left hand valve stem, thereby leaving the left hand valve and the passages controlled thereby undisturbed. Should it now be desired to send the liquid in a forcible jet through the jet orifice a^8, the handle C is rocked in the direction of the arrow Y, whereupon the left hand arm c of the rocker will retract the left hand valve stem b^2 thus opening the valve b which controls the passages a^4, a^6, the right hand arm c playing idly in the slot of its valve stem. When the handle C is released, in whichever direction it may have been rocked, the springs b^4 will of themselves bring it back to its central, inoperative position leaving both valves closed.

I claim:

1. In a draft tube, a separable, two-part housing, one part of which constitutes a valve casing, provided with a pair of valve chambers, and inlet and outlet passages communicating therewith, a valve in each chamber and a rocker mounted on said valve casing adapted to operate said valves one at a time, said rocker consisting of an inverted T pivotally mounted on the top of the lower part of the housing, the arms of the T connected at their ends with said valves, and the stem of the T extending upward, and the other part of which housing constitutes a cover provided with an aperture through which said stem of the T-shaped rocker extends, said cover wholly inclosing the arms of said rocker and their connections with said valves, whereby all of the working parts are inclosed within said separable housing.

2. In a draft tube, a housing, a pair of valve chambers in said housing, said housing provided with inlet and outlet passages communicating with said chambers, each chamber having a flexible diaphragm valve controlling the passage therethrough, a removable bushing threaded into each chamber, extending substantially the entire length thereof and clamping said diaphragm at its edge against the wall of the chamber, an annulus screwed into the top of said bushing, a headed valve stem passing through said bushing, a coil spring surrounding said valve stem and held under compression between said annulus and the head of the stem, and a rocker to lift said valve stems one at a time.

Signed by me at Boston, Mass., this 23rd day of October, 1909.

KARL GUSTAV STENBERG.

Witnesses:
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