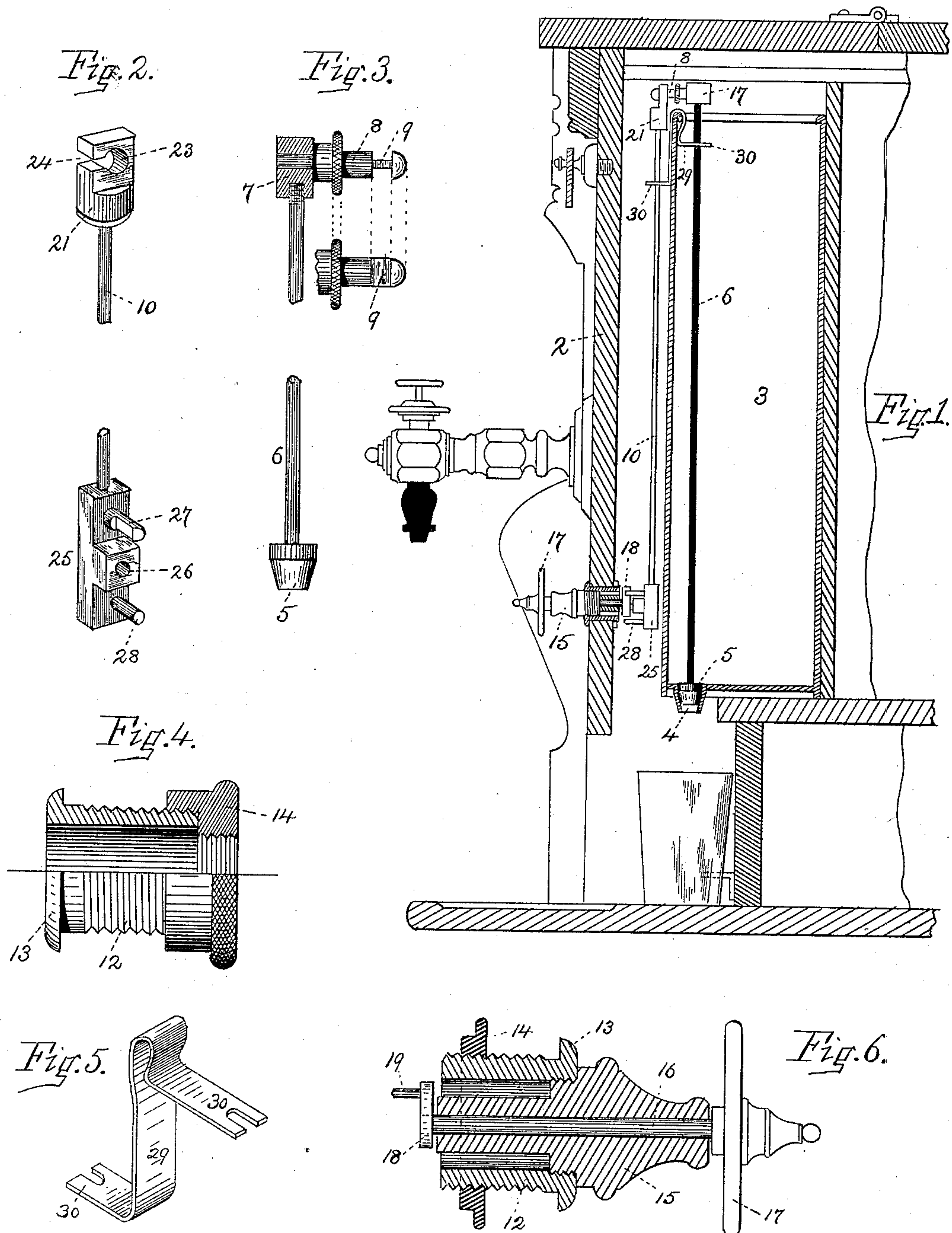


(No Model.)

A. D. PUFFER.
SODA WATER DRAFT APPARATUS.

No. 435,188.

Patented Aug. 26, 1890.



Witnesses.
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UNITED STATES PATENT OFFICE.

ALVIN D. PUFFER, OF MEDFORD, MASSACHUSETTS.

SODA-WATER-DRAFT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 435,188, dated August 26, 1890.

Application filed February 26, 1890. Serial No. 341,819. (No model.)

To all whom it may concern:

Be it known that I, ALVIN D. PUFFER, a citizen of the United States, residing at Medford, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Soda-Water-Draft Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in soda-water-draft apparatus, particularly that class which is provided with an interior group of removable sirup-cans, the valves of which are controlled exteriorly of the apparatus.

This invention further may be considered as relating to and as embodying improvements upon an invention of mine described in United States Letters Patent No. 418,223, issued on the 31st day of December, 1889. This patent contained novel features in the mechanical arrangement for operating the valves in the sirup-cans exteriorly of the apparatus, as likewise for disconnecting such mechanism, in order to readily remove the sirup-cans, should occasion require.

In the present instance I propose to embody certain features which relate directly to the several parts by which the valve is operated, whereby the several co-operating members are capable not only of ready disengagement, but can be removed separately without disturbing or disarranging the other parts connected therewith.

The drawings accompanying this specification represent, in—

Figure 1, a sectional elevation of the exterior portion, in part, of a soda-water-draft apparatus, showing the sirup-can, the valve, its valve-stem, the rod actuating the same, and the lever or handle by which the valve can be opened or closed. Fig. 2 is a perspective view of the actuating-rod for controlling the valve. Fig. 3 is an elevation of the valve and valve-stems. Fig. 4 is a modification in the arrangement for securing the bushing to the wall of the apparatus. Fig. 5 is a perspective view of the spring guide-plate.

Fig. 6 is a longitudinal section, enlarged, of the crank-shaft, its sleeve, and the removable bushing.

In said drawings, 2 represents the front wall or partition of a soda-water-draft apparatus, interiorly of which are arranged a group of removable sirup-cans, one of which is shown at 3. These are severally supplied with discharge-openings 4 at the bottom, and said openings are controlled by a valve 5. Attached to the latter is a valve-stem 6, surmounted by a metallic block 7, from which projects a pivotal arm 8, circular in cross-section. The arm, at a short distance from its end, is reduced to a flat web 9, leaving a hemispherical head or knob at the end. This construction is to permit the valve-stem and valve to be engaged with or separated from its connecting-rod 10, and thus permit the can to be taken out without disturbing the other elements by which the valve is operated to open or close.

Exteriorly and within the wall 2, and located, preferably, centrally with respect to the sirup-can front, is secured a bushing 12, flanged at 13, and exteriorly threaded to engage a nut 14, the latter being located on the inside and the flange on the outside of the wall 2. The outer portion of the bore of the bushing is slightly reduced in size and screw-threaded to engage a hollow sleeve 15. Within the latter is fitted a revoluble crank-shaft 16, furnished exteriorly with a hand-wheel 17, and interiorly and at the opposite extremity with a crank 18 and crank-pin 19. The diameter of the bore of the bushing is to be such that the crank can be withdrawn there-through. Thus, since the bushing is supposed to be a fixture, the sleeve can be unscrewed from it, and the shaft, the sleeve, and other parts attached can be removed for repairs, for replating, or otherwise.

To operate the valve by means of the crank-shaft and its hand-grasp, I have disposed an interconnecting element, termed the "actuating-rod." (Indicated at 10.) This is located outside of the can, and is removably connected at the upper end with the valve-stem by a head 21, which is transversely bored at 23 to admit the arm 8, and further apertured at 24. Interlocking of these parts is effected as follows: The aperture 24 is of a width equal

to the web 9 in thickness, or just sufficient to admit said web 9 flatwise within the bore 23.

When this is done, the arm is turned at right angles—or ninety degrees—and the engagement of the parts is completed. The lower end of the actuating-rod is connected to the crank-shaft by means of a metallic block 25, laterally bored at 26 to receive the crank-pin. This block is further provided with stop-pins 27 28, which limit the semi-rotation of the crank-shaft and prevent its revolution beyond two predetermined fixed points—viz., when the valve is fully open and when it is completely closed.

Upon reference to Fig. 1 it will be seen that the valve-stem and the actuating-rod straddle the wall of the sirup-can. In order to provide a guide and support and to steady both these parts in their reciprocating movements I have secured a spring-plate 29, which is held in place by its peculiar shape, and the inherent elasticity of the metal composing it, straddling the upper edge of the sirup-can. This plate is provided with projecting arms or guides 30, one inside the can for the valve-stem, the other outside for the actuating-rod.

In Fig. 4 a slight modification is shown in the manner of fastening the bushing to the wall of the apparatus—that is, the bushing is reversed in position. The nut in such event is made preferably ornamental, being located upon the front of the apparatus, while its central bore is screw-threaded to receive the sleeve which in Fig. 6 is attached to the bushing proper.

The operation of the several parts is as follows: The bushing is secured in place as a fixture and the sleeve screw-engaged with the bushing. The crank-rod is now in position, with the crank-pin entered within the hole 26 in the block at the lower end of the actuating-rod 10. This latter is interlocked with the valve-stem, as before explained, and the can is slipped into place. All that is now necessary in order to discharge the contents of the can is to partially turn the crank-shaft. By means of the crank-pin the actuating-rod is raised up and down any desired amount, as likewise the valve-stem. The axial motion of the crank-shaft is limited to two extremes. In one the crank-pin contacts with the upper stop-pin 27, the latter serving to check the axial motion of said shaft and thereby determine the position of the valve when open. The lower pin 28 serves, however, merely as a safety, since the valve is supposed to be on its

seat and fully closed before this latter stop-pin and the crank-pin meet.

By the arrangement herein shown the valve-stem can be separated from its actuating-rod. The sirup-can may then be easily lifted out; or, if preferred, these parts 6 10 may remain united, in which event the actuating-rod is then disengaged from the crank-pin, when the sirup-can may be removed. By means of the fixed bushing the sleeve can be unscrewed therefrom, and the latter, the shaft, and the crank, with its crank-pin, can be taken off without disturbing the can. It will be noticed that the crank-shaft is the exact length of its inclosing sleeve, the hand-wheel contacting against said sleeve at one end, the crank at the opposite end, thereby giving the crank a fixed determined position when the sleeve is screwed home.

What I claim is—

1. In combination with a tubular bushing inserted through a wall or partition, a tubular sleeve removably secured within its bore, a shaft extending longitudinally through said sleeve, the crank and crank-pin mounted at one end of said shaft, and the valve and connections operated by said crank-pin, the bore of the bushing being such as to permit withdrawal of the crank therethrough, substantially as described and stated.

2. In a soda-water-draft apparatus, the combination, with a removable sirup-can, its valve, and valve-stem, of the actuating-rod adapted to engage or disengage therewith, the stop-pins on said rod, and the operating crank-rod and its fixed sleeve, substantially as set forth and stated.

3. The combination, with a sirup-can, the valve, and valve-stem within the can, of the actuating-rod outside the can and separably united, as set forth, with the valve-stem, and the spring guide-plate which supports both the valve-stem and the actuating-rod, as and for purposes herein set forth.

4. In combination with a sirup-can, a removable spring guide-plate 29, adapted to straddle the edge of said can and provided with oppositely-projecting arms 30, formed from the extremities of said plate, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

ALVIN D. PUFFER.

Witnesses:

HORACE S. BASSETT,
H. E. LODGE.