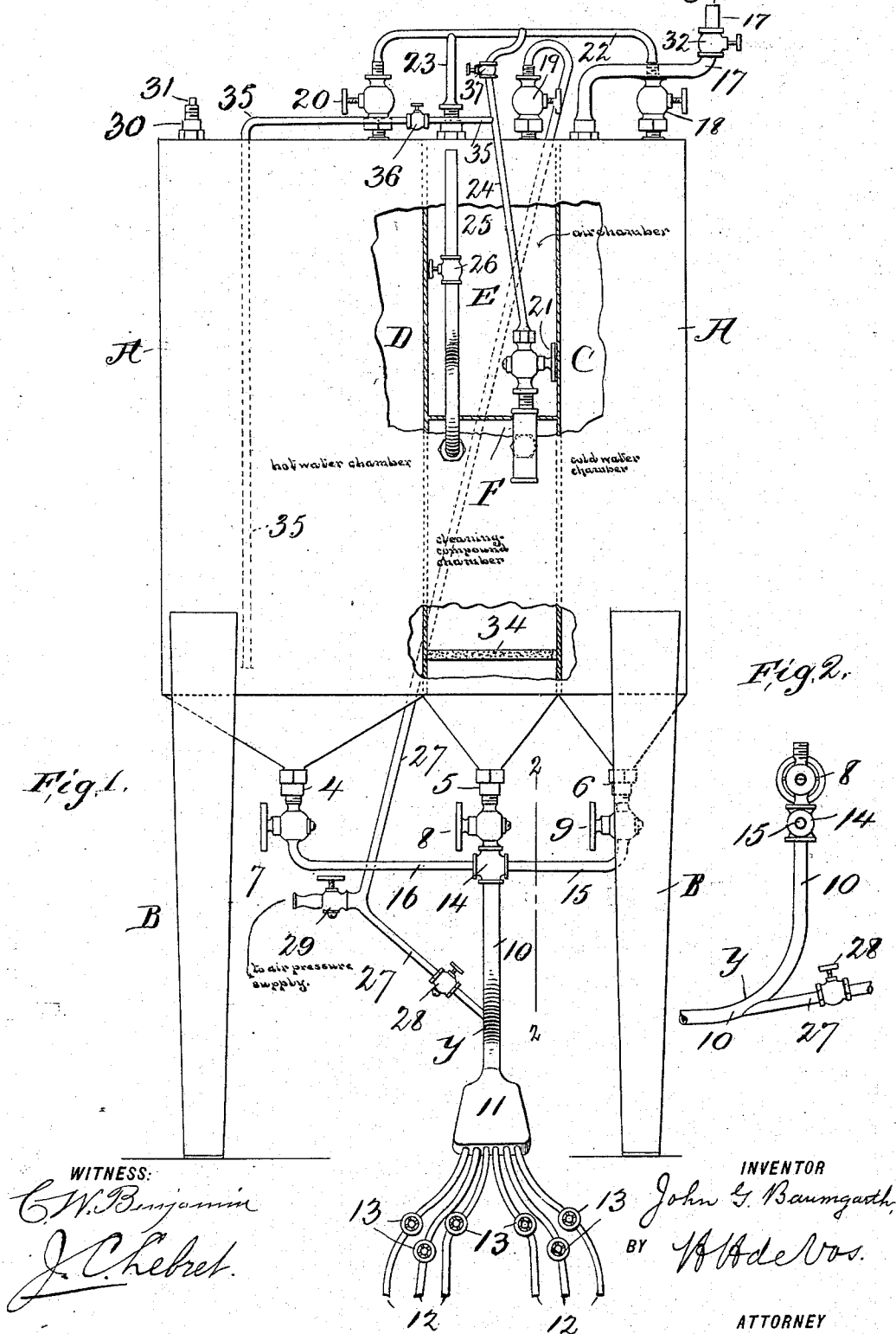


(No Model.)

J. G. BAUMGARTH.
APPARATUS FOR CLEANING BEER PIPES.

No. 565,591.

Patented Aug. 11, 1896.



UNITED STATES PATENT OFFICE.

JOHN G. BAUMGARTH, OF BROOKLYN, NEW YORK.

APPARATUS FOR CLEANING BEER-PIPES.

SPECIFICATION forming part of Letters Patent No. 565,591, dated August 11, 1896.

Application filed April 2, 1896. Serial No. 585,858. (No model.)

To all whom it may concern:

Be it known that I, JOHN GEORGE BAUMGARTH, a citizen of the United States, and a resident of Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Apparatus for Cleaning Beer-Pipes, &c., of which the following is a specification.

The object of my invention is to provide an apparatus of a new and improved form, of simple and cheap construction, which may be operated by unskilled labor, by which beer-pipes or other pipes of similar character which it is desired to clean from sediment or dirt collected therein may be quickly, cheaply, and easily cleaned; and to that end my device consists of a cold-water chamber, an air-chamber, a cleaning-liquid chamber, a hot-water chamber, a pipe connected with the air-chamber and with an air-pressure supply, and pipes connecting the various chambers, one with the other, and a plurality of out-flow-pipes for connection with the pipes to be cleaned, adapted to be brought into communication with either or all of the chambers, and means for regulating the flow from the various chambers, although it is not to be understood that the invention is limited to a device or apparatus necessarily comprising at once all the devices or parts before mentioned, for the invention consists in certain various combinations or arrangements of such devices and parts, and the construction of certain devices and parts, all substantially as hereinafter fully described, set forth, and claimed. Such apparatus or device is fully shown and described in the following specification, of which the accompanying drawings form a part, wherein similar letters and numerals of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1 is a front view and elevation of my improved apparatus for cleaning beer-pipes, a portion of the front wall being broken away in order to show the interior arrangement thereof; and Fig. 2 is a side view in section of a certain portion of the main out-flow-pipe with air-eduction pipes in position therein, the view being in section on the line 2 2 of Fig. 1 looking from the right.

Referring to the drawings, the reference-

letter A designates the receptacle of my improved beer-pipe-cleaning apparatus, which is preferably formed of sheet metal or any other suitable material, and is preferably of rectangular form and of any desired height, usually of about three feet, and such receptacle A is preferably supported by four legs B. The interior of the receptacle A is divided into a cold-water chamber C, located on one side of the same, the hot-water chamber D, located upon the other, while the central longitudinal compartment is divided into an upper air-pressure chamber E and a lower cleaning-compound chamber F. Each of these chambers is preferably provided with an inverted pyramidal bottom ending in suitable pipe connections 4, 5, and 6, to which are secured suitable stop-cocks 7, 8, and 9. In direct communication with the stop-cock 8, which forms the outlet for the cleaning-compound chamber, is a pipe 10, which ends at the bottom in a chamber 11, to which are connected a plurality of small pipes 12, usually six in number, as shown, each of which is provided with a suitable stop-cock 13. The pipe 10 is connected with the cock 8 by means of a T-coupling 14, and the T-coupling is connected with the cock 9 at the bottom of the cold-water chamber C by a pipe 15 and with the cock 7 at the bottom of the hot-water chamber D by a pipe 16.

In communication with the cold-water chamber C is a suitable inflow-pipe 17, adapted to be brought into communication with a hydrant or other water-pressure-supply source in any desired manner, and in communication, respectively, with the cold-water chamber C, with the air-pressure chamber E, and with the hot-water chamber D, at the top, are suitable stop-cocks 18, 19, and 20, and in communication with the cleaning-compound chamber F is a similar cock 21. Forming a communication between the cocks 18 and 20 is a pipe 22, also in communication with the air-pressure chamber E by means of a suitable pipe 23, and with the stop-cock 21 of the cleaning-compound chamber F by means of a suitable pipe 24, and communicating with the cleaning-compound chamber F is a suitable filling-pipe 25, provided with a suitable stop-cock 26, through which pipe 25 the desired cleaning compound may be introduced

into the chamber F. In communication with the stop-cock 19 at the top of the air-pressure chamber E is a suitable air-pipe 27, which preferably passes down behind the receptacle 5 A and enters the pipe 10, as shown in Fig. 2 at the point marked y, at substantially the angle shown, so that the direction of the flow of whatever fluids are passing through the pipes is substantially the same, and that the 10 flow of the fluid through the pipe 27 will accelerate and assist the flow of the fluid passing through the pipe 10. Adjacent to its junction with the pipe 10 the pipe 27 is provided with a stop-cock 28, and between the 15 stop-cock 28 and the stop-cock 19, preferably at the point shown in Fig. 1, is a stop-cock 29, adapted to be brought into communication, by means of a rubber tube or other suitable conduit, with any suitable air-pressure 20 supply.

The operation of the apparatus is as follows: The beer-pipes having been disconnected at both ends, the apparatus is placed in position, preferably above the upper ends 25 of such beer-pipes. The pipes 12 are connected with the beer-pipes, preferably by means of rubber tubing. The pipe 17 is connected with the hydrant or other suitable water-pressure supply. The hot-water chamber D is filled with hot water through the orifice 30, which is then closed with a plug 31, provided with an air-vent, or such hot-water 30 chamber D may, if desired, be brought into communication by a suitable pipe with a hot-water-pressure supply. The stop-cock 29 is 35 then connected with an air-pressure supply, usually with the beer-pump ordinarily used for keeping up pressure in the beer-casks, and the receptacle F is filled, by way of the pipe 40 25, with any suitable cleaning compound, solid or liquid, which will dissolve and clean out the sediments or scales which are deposited or formed upon the interior of the pipes by the action of the beer thereon, and this cleaning 45 material is usually, but not necessarily, of a liquid form. All the stop-cocks being closed, the stop-cocks 13 of so many of the pipes 12 as are in communication with the beer-pipes to be cleaned are opened, the water 50 from the hydrant, in communication with the pipe 17, is opened, and water admitted to the chamber C, and the stop-cock 9 being then opened the water flows from the chamber C through the cock 9 and pipes 15 and 10, to 55 the pipes 12, and through them to the beer-pipes, which it flushes out.

If for any reason the water-pressure should not be sufficient, as soon as the chamber C has been filled with water the valve of the hydrant is closed and the air-pump set to work 60 to pump air under pressure into the air-chamber E, and as soon as the pressure therein has reached the required point indicated by a suitable pressure-gage (not shown) connected to the air-chamber, the stop-cock 18 65 is opened and the air under pressure passing

up through the pipes 23 and 22 and down into the chamber C will cause the water to flow out through the pipes 15 and 10 and through the beer-pipes with great force. Of course 70 when it is desired to use the apparatus where water under pressure is not available, the water will have to be inserted through the pipe 17 and the cock 32 closed before the air under pressure is admitted to the chamber C by 75 the opening of the stop-cock 18. After the water has thoroughly cleaned the foreign substances from the pipes and comes therefrom comparatively clean, the stop-cock 9 and also the stop-cock 18, if the air-pressure has been 80 used to force the water through the pipes, are closed, and the stop-cocks 8 and 21 are opened and the air-pump is again set to work generating pressure in the chamber E. As soon as this is done the pressure of the air in the 85 chamber E as it is forced down through the pipe 24 into the chamber F will force the fluid cleaning compound in the chamber F down through the stop-cock 8 and pipe 10, and through the pipes 12 into the beer-pipes, 90 and as soon as the cleaning compound begins to flow from the farther end of such beer-pipes the cocks at their farther end are closed or the ends of such pipes plugged, and such compound is allowed to remain in the pipes 95 for a few moments and for a sufficient time for the cleaning compound to act upon the sediment or scales in the pipe and loosen and dissolve the same, and as soon as the cleaning compound has remained in the pipes a 100 sufficient length of time to thoroughly dissolve and loosen the foreign substances therein the stop-cock 8 and the stop-cock 21 are closed and the stop-cocks 7 and 20 are opened. As soon as this is done the pressure of the air 105 forces the hot water in the chamber D down through the pipes 16 and 10 and through the beer-pipes and flushes out the loosened sediment and the cleaning compound, and, if desired, after the hot water has washed the pipes 110 out they may be further flushed with cold water from the chamber C, as hereinbefore described. In the case of the fluids from any of the chambers, the flow thereof may be accelerated and assisted, even when the air- 115 chamber E is in communication with the chamber from which the fluid is flowing, by the opening of the cock 28 and the permitting of the air to flow under pressure through the pipe 27 into the pipe 10, so as to have an 120 ejecting and injecting effect upon the fluid flowing through the pipe 10. In some cases instead of a fluid cleaning compound, as before stated, a cleaning compound in the form of a solid dissolvable in water, such as sal 125 soda, or any dissolvable cleaning compound may be inserted in the chamber F, and in such case such chamber F is preferably provided at the bottom with a filtering-plate of porous earthenware or other suitable filter- 130 ing-diaphragm 34, which will permit of the free passage of water under pressure there-

through, but which will prevent the passage of any of the solid cleaning compound. In such case, and where the cleaning compound is solid, the chamber F, when it is desired to force the cleaning compound into the beer-pipes, is brought into communication with the chamber C by opening the cocks 18 and 21, and water being admitted under pressure through the pipe 17, as hereinbefore described, such water will be forced up through the cock 18 and pipes 22 and 24, and down through the solid cleaning compound, where it will dissolve and take up a sufficient quantity thereof to act upon the pipes, and will then, holding this cleaning compound in solution, be forced down through the filtering-diaphragm 34 and through the pipes 10 and 12 into the beer-pipes.

If it is desired to use hot water for dissolving the solid cleaning compound, the pipe 35 is connected with the hot-water receptacle D and extends nearly to the bottom thereof and communicates at its upper end with the pipe 24, and in such case the pipe 35 is provided with a stop-cock 36 and the pipe 34 with a smaller cock 37. In such cases, the cock 37 being closed and the cocks 36 and 21 open and the air-pump forming pressure in the air-chamber E, the air passing up through the pipes 23 and 22 and down through the cock 20 will force the hot water in the chamber D up through the pipe 35 and down through the pipe 24 into the chamber F, whence it will pass, as hereinbefore described, to the beer-pipes, taking up in its passage a certain portion of the solid cleaning compound.

It is evident that the said apparatus may be used for cleaning pipes other than beer-pipes, and that many modifications in the construction, combination, and arrangement of the several parts of my improved beer-pipe-cleaning apparatus, other than those mentioned herein, may be made without departing from the scope of my invention, and I do not limit myself to the particular form of construction thereof herein shown and described, or, in fact, to any particular form; but,

Having now particularly described my said invention, its construction and operation,

what I claim, and desire to secure by Letters Patent, is—

1. In an apparatus of the class described, the combination with a receptacle C, of a receptacle F for containing a cleaning compound, a hot-water receptacle D, an air-chamber E having suitable connections with the chambers, C, D and F, means for filling the receptacles C and D with water, a plurality of pipes 12 adapted to be brought into communication with the receptacles C, D and F, by way of a suitable pipe or pipes provided with suitable valves or cocks, and means for causing pressure within the air-chamber E, substantially as shown and described.

2. In a device of the class described, a pipe or pipes adapted to be brought into communication with the beer-pipes to be cleaned, chambers C and D, in communication with the pipe or pipes adapted to be brought into communication with the beer-pipes, a cleaning-compound chamber F, an air-pressure chamber E, stop-cocks 20 and 18, and a pipe 22 forming a communication between the chambers C and D, a pipe 23 forming a communication between the pipe 22 and the chamber E, a pipe 24 forming a communication between the pipe 22 and a stop-cock 21 in communication with the chamber F, a stop-cock 19 in communication with the chamber E, an air-pipe 27 in communication with the stop-cock 19, a stop-cock 7 in communication with the chamber D through a pipe 16, a stop-cock 9 in communication with the chamber C and with the pipe 15, a stop-cock 8 in communication with the receptacle F, and a T-coupling 14 forming a communication between the pipes 16 and 15 and the cock 8, a pipe 10 forming a communication between the pipes 12 and the T 14, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 31st day of March, 1896.

JOHN G. BAUMGARTH.

Witnesses:

J. C. LEBRET,
O. BLOCK.