H. HUBERT & E. FRY.

BEER PIPE CLEANER.

APPLICATION FILED APR. 12, 1911.

1,039,405. **Patented Sept. 24, 1912.**

Fig. 1.

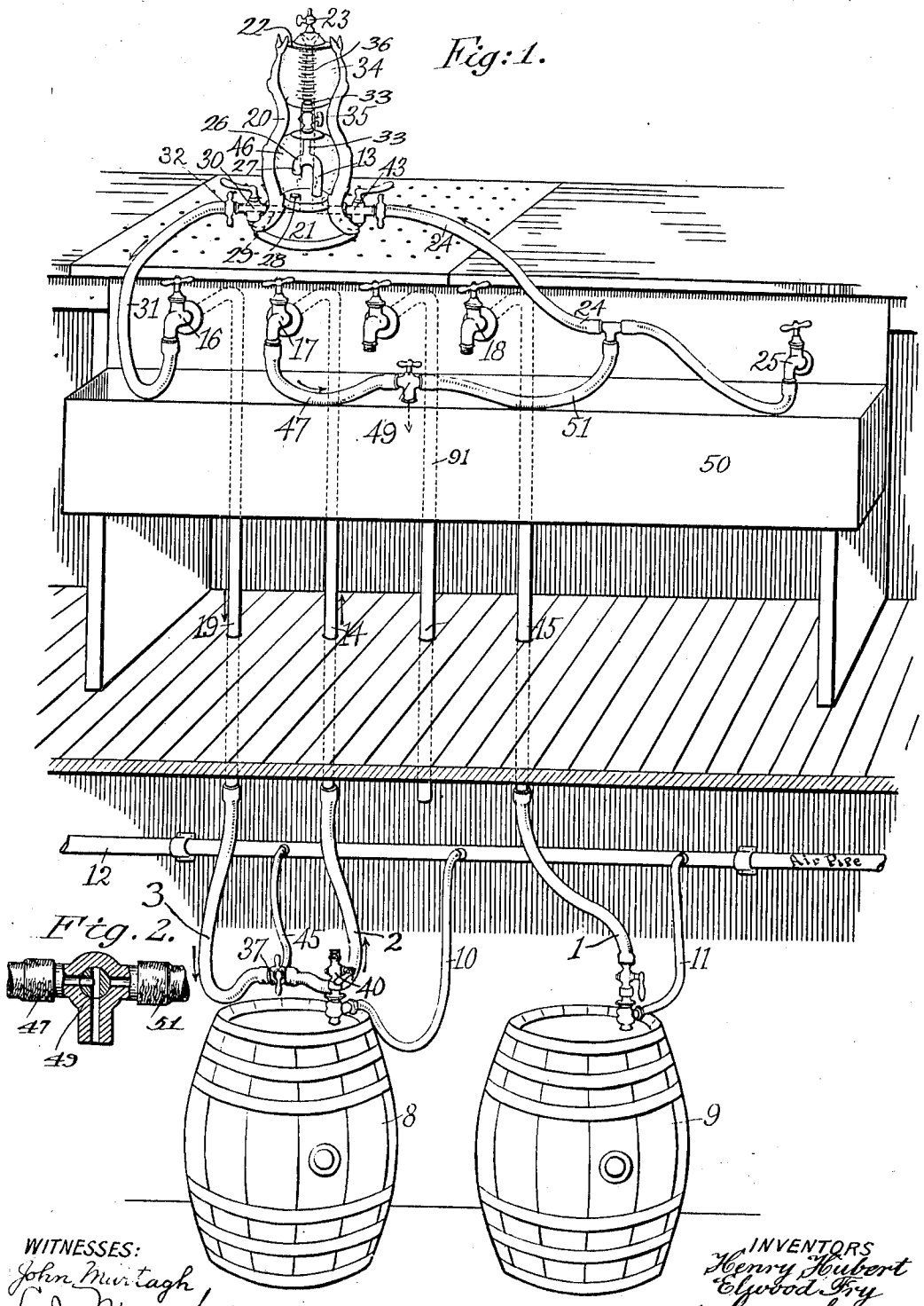

Fig. 2.

WITNESSES:
John Murtagh
L. J. Murphy

INVENTORS
Henry Hubert
Elwood Fry
by Goepel & Goepel.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY HUBERT AND ELWOOD FRY, OF NEW YORK, N. Y.

BEER-PIPE CLEANER.

1,039,405. Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed April 12, 1911. Serial No. 620,643.

To all whom it may concern:

Be it known that we, HENRY HUBERT and ELWOOD FRY, citizens of the United States, residing in New York, in the State of New York, have invented certain new and useful Improvements in Beer-Pipe Cleaners, of which the following is a specification.

Hitherto in the art of dispensing beer it was usual to connect the beer kegs with an air-pressure tank, the object of which was to place the beer in the kegs under an air-pressure sufficient to cause the discharge of the beer at the faucets, which are usually above the kegs. This method requires the use of a considerable amount of piping, which by use becomes coated with a deposit of slimy matter. The formation of this deposit requires frequent cleaning, and hitherto means have been proposed which comprise an ordinary hand-pump connected with one faucet, which causes the discharge of the cleaning fluid at the other faucet, the pipes being disconnected from the kegs and suitably connected with each other. This system has many obvious disadvantages.

The present invention has for its object to provide means which will not possess these disadvantages, and which enables the employment of air in cleaning the pipes.

The invention comprises an apparatus for cleaning beer-pipes, embodying a mixing or circulating vessel, a vessel connected therewith and adapted to contain a cleaning compound, which may be delivered into the circulating vessel and there mixed with water, and suitable connections whereby the mixture thus produced is conveyed into the pipes to be cleaned, and therein agitated by and mixed with air under pressure, and thence discharged.

In the accompanying drawings, Figure 1 is a perspective view showing the beer-pipe and air-pipe connections, and Fig. 2 is a transverse section through a three-way valve employed, showing also in elevation its connections.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, and more particularly to Fig. 1, the heads of the beer-kegs 8, 9 are connected with the air-pipe circuit by pipes 10 and 11, which communicate with the supply-pipe 12 of compressed-air. The kegs are connected by pipes 14 and 15 to the faucets which are usually above the kegs. Pipes 15, 91, 14 and 19 show beer pipes which may be used at any time for conducting beer when properly connected by means of flexible tubes 1, 2 and 3 with the barrels. In the drawings, the pipe 15 is shown as connected with barrel 9 and air pipe 11, while pipe 91 is idle, and pipes 14 and 19 are being cleaned by the means proposed. The barrel 8 is connected with an air pipe 10, while the air pipe 12 is connected by a flexible tube 45 to the valved union 37. The ends of tubes 2 and 3 are connected by means of the valved union 37. A greater number of air pipes may be used but these are not shown in the drawings. These parts are well known. Hitherto it was usual to disconnect the pipes 14 and 15 from the kegs and connect their free ends with each other and apply a pump connected with a water-supply to one of the faucets, say 17. On the operation of the pump and injection of the water in the faucet 17 and its passage with the cleaning fluid therein contained through the pipes 14 and 15, the soiled water would be ejected from the other faucet 18. Then the pump would be disconnected and connected with the faucet 18, whereby the soiled water would be ejected from the faucet 17.

Our improved apparatus consists of a vessel for the cleaning solution which is supported on a standard or supporting frame 20 secured to a base-plate 21 and extending upwardly. The upper end of the standard supports a top-plate 22 which is provided with a valve 23 which may be readily opened or closed by the operator. Intermediate this top-plate and the base-plate two globes or vessels 34, 46 are arranged, the lower one of which is in communication with the water-supply pipe 24 controlled by the valve 25. The pipe 13 of the lower vessel extends inwardly in an inverted U-shaped end 26 having its free end 27 projecting downwardly toward the base-plate 21. Approximately below the end 27 an outlet opening 28 is arranged which is connected with a pipe 29 having a valve 30, which valve 30 is connected by means of a hose 31 and suitable coupling 32 with the beer faucet 16. Extending upwardly from the U-shaped member 26 is a pipe 33 which communicates with the inner part of the upper vessel 34 and which is controlled by a valve 35. The upper vessel is graduated, as shown, by lines 36, and the object of the upper vessel is to contain the cleaning compound, the

amount contained in the globe between the different graduations representing the amount necessary for the cleaning of the pipes for a certain number of kegs. For the passage of the cleaning compound into the lower vessel 46 it is necessary that the upper valve 23 and the intermediate valve 35 be opened, when the cleaning solution flows from the upper vessel to the lower vessel through the pipe 33. In the lower vessel it is mixed with the fluid or water passing through the pipe 26 and out of the lower end 27, and by the continued flow of the water the same and the compound are circulated and considerably agitated in the lower vessel. This is essential so as to bring about the intimate mixing of the compound with the water. The vessels 34, 46 are made of glass or other suitable transparent material, and are connected with the base-plate as also with the top-plate 22 in such manner as to be waterproof, we having found that cement and rubber washers are advantageous in combining these parts.

The transparency of the circulating vessel enables the operator to see to what extent the pipes have been cleaned, and the graduated upper vessel provides a definite control of the amount of cleaning fluid per barrel or keg, and thereby the apparatus provides means of cleaning the beer-pipes in an exact and scientific manner in contrast with the unsystematic and objectionable means used hitherto.

The operation of our improved device is as follows: When it is desired to clean the beer-pipes 14 and 19 for example, these pipes are disconnected from the beer-outlets of the kegs and are connected with each other by the valved union 37, which is connected by a flexible tube 45 to the air pipe 12. The valve 40 controlling the air in the keg 8 has been closed so as to prevent the waste of air. The hose 45 having one end connected with the union-joint is connected at its other end with the air-pressure pipe 12, whereby the air-pressure will when permitted force itself into the beer-pipes. The apparatus is then connected by means of the hose 31 with one faucet, and the other pipe 13 of the apparatus is connected with the water-supply faucet 25. The valve 23 at the top of the upper globe is opened so as to permit the free vent of air, and thereupon the faucet 25 is opened and also the valves 30 and 43 whereby the water flows into the circulating vessel 46. Substantially simultaneously the valve 35 is operated and the cleaning compound in the upper vessel 34 is permitted to flow by the pipe 33 into the U-shaped pipe 26 and lower vessel, and there mixed with the water therein, and flow around the circulating vessel, to be intimately mixed with the water. After agitation of the water and the compound in the vessel 46, the so-prepared water flows out of the opening 28 in the lower part of the vessel, through the pipes 29 and 31 through the faucet 16, beer-pipe 19, union-joint 37, beer-pipe 14, and out the other faucet 17 into a hose 47 connected with the water supply-pipe 24 and having between the faucet and the pipe 24 a three-way stop-cock 49 from which the water is discharged into the sink 50. As soon as the water containing the cleaning-compound commences to issue from the outlet 49, the air-valve 37 is given a quick operation, whereby a small quantity of air under pressure is momentarily forced into the cleaning-fluid contained in the beer-pipes. The sudden entry of this quantity of air, and its sudden discontinuance, severely shock and agitate the fluid in the pipes, and aid greatly in the dislodgment of the slimy coating adhering to the pipes. The operation may be repeated a number of times, but ordinarily one or two quick opening and closing operations of the valve 49 are sufficient to so agitate the cleaning-fluid in the pipes as to produce the desired cleaning effect. The air permitted to enter immediately rises in the water, and aids by its presence the breaking up of the matter adhering to the pipes. The shock and agitation of the water, and the cleansing effect of the air bubbles in the liquid, extend not only through the pipe at the discharge side of the valve 49, but also through the pipe 19 to a sufficient extent as to be of value. After the injections of air are discontinued, all the air is swept, with the cleaning fluid and the removed coating matters, out of the outlet 49. In order to cause further agitation of the water in the pipes, the valve 49 may at any time be turned from the discharging position (Fig. 2) into such position as to connect the pipes 47 and 51, and close the outlet channel of the valve 49. When this is done, the liquid from pipe 47 meets the fresh water supply in pipe 51, thereby arresting the circulation and agitating the water in the entire circuit. This may be repeated as often as desired, until the water flows clear from outlet 49, or until the supply of cleaning-compound in the vessels is exhausted. It is preferable, before admitting any air into the pipes, to permit the cleaning-fluid to stand therein for a short time in order to secure its chemical action on the pipe-coating. This is accomplished by shutting the tap 25 on the first appearance of discharge from the outlet 49. When the chemical action has been permitted for the desired time, air is admitted at the union-joint, either before or after opening tap 25, but preferably thereafter, in the manner described, whereby the mechanical action of the water on the pipe-coating is obtained.

One of the advantages of our improved beer-pipe cleaner and method of operation is

that large expense is saved in the operation of the device. Especially is this true because our improved device can be operated without in any manner interfering with the contents of the keg, as the keg may be disconnected while still partially filled, so that there is no loss or waste of beer.

One embodiment of the invention has been described, but it is obvious that changes may be made in the construction without departing from the spirit of the same.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. An apparatus for cleaning beer-pipes, comprising a mixing-vessel, a vessel for the cleaning-solution connected therewith, a valved pipe connecting the mixing-vessel with a source of water under pressure, a valved pipe connecting the mixing-vessel with one of the dispensing faucets, a hose for the lower end of each beer-pipe to be cleaned, a source of air under pressure, a valved union, a pipe connecting said union with said air-supply, a discharge-cock, and a pipe connecting the opposite dispensing faucet with said discharge-cock.

2. An apparatus for cleaning beer-pipes, comprising a mixing-vessel, a vessel for the cleaning solution, a valved pipe connecting said vessels, a valved pipe connecting the mixing-vessel with a source of water under pressure, a valved pipe connecting the mixing-vessel with one of the dispensing faucets, a hose for the lower end of each beer-pipe to be cleaned, a valved union, a pipe connecting said union with a source of air under pressure, a three-way discharge-cock, a pipe connecting said discharge-cock with the opposite dispensing faucet, and a pipe connecting said discharge-cock with the water-supply-pipe.

In testimony, that we claim the foregoing as our invention, we have signed our names in presence of two subscribing witnesses.

HENRY HUBERT.
ELWOOD FRY.

Witnesses:
JOHN MURTAGH,
L. J. MURPHY.