(No Model.)

A. P. RUMELY.

PIPE CLEANER.

No. 572,724. Patented Dec. 8, 1896.

Fig. 1.

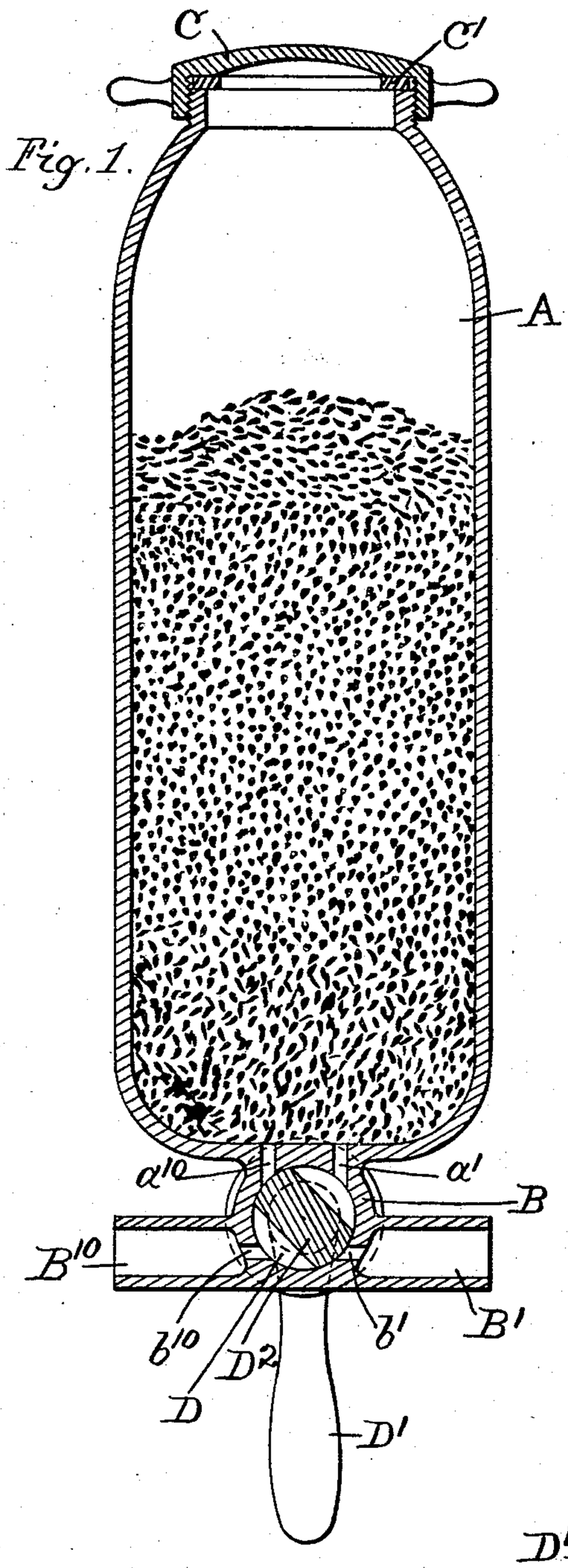


Fig. 2.

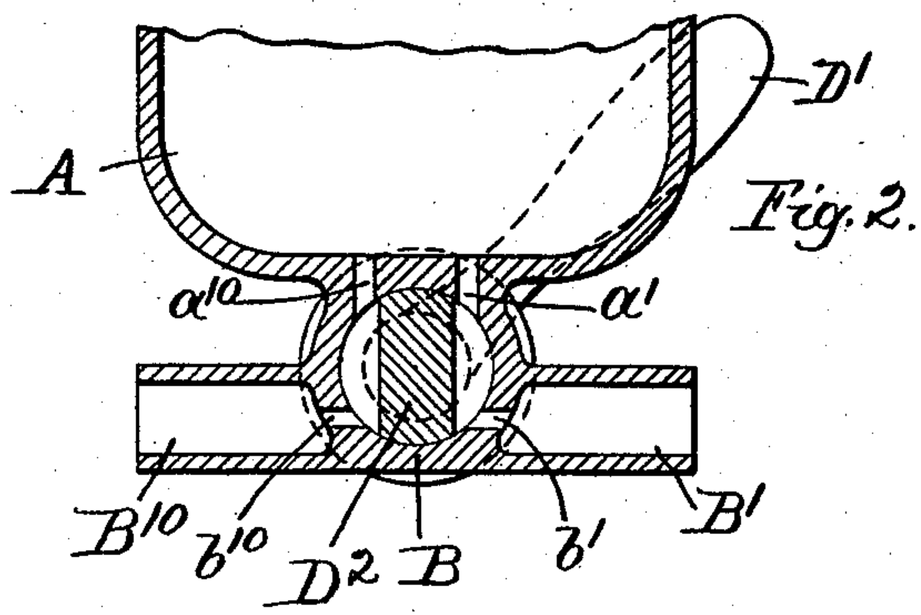


Fig. 3.

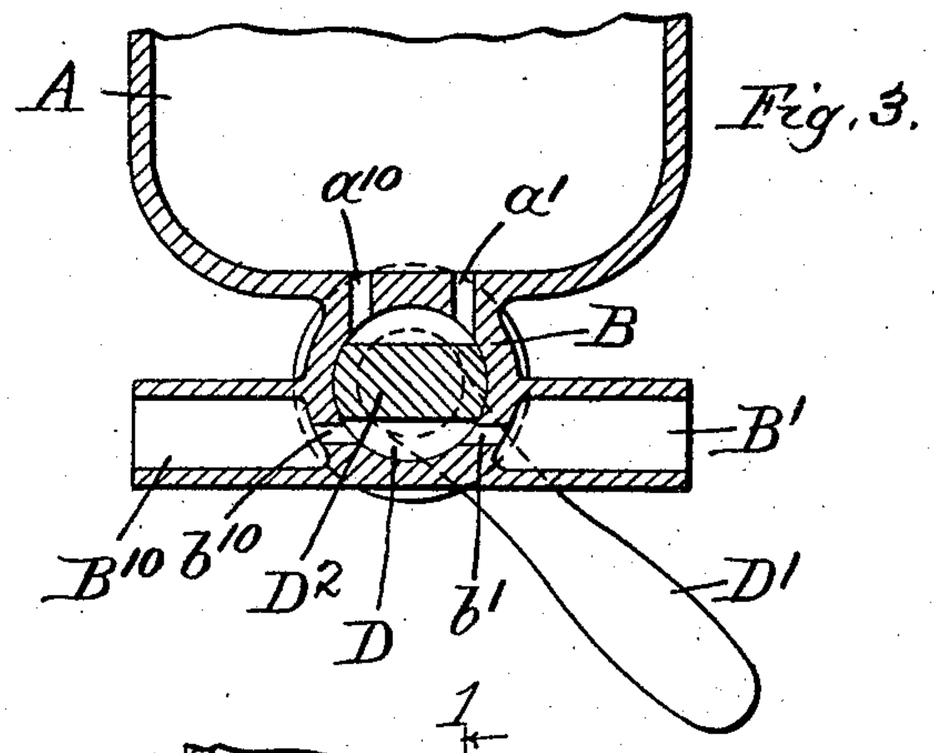
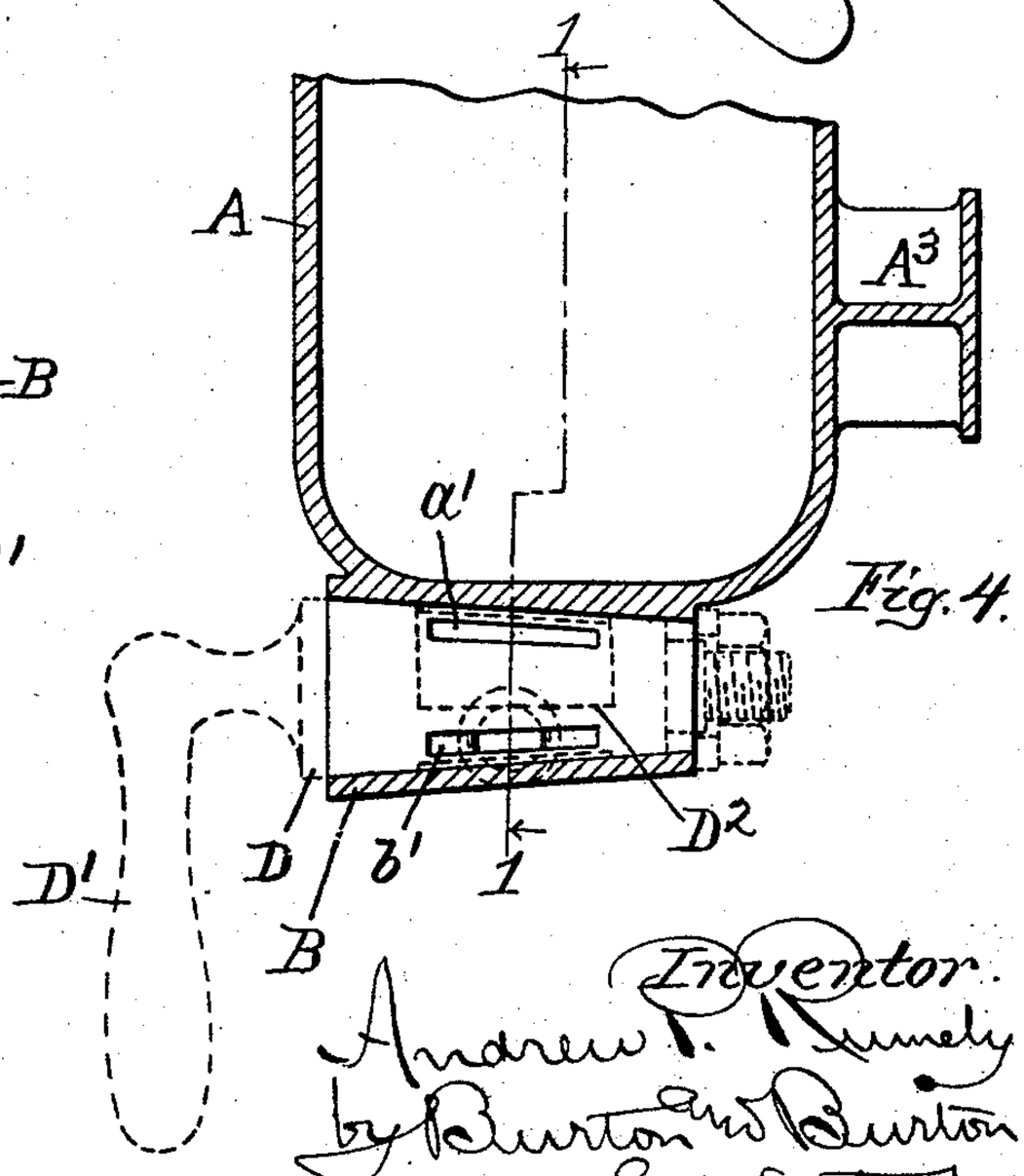


Fig. 4.



Witnesses.
E. T. Wray.
Jean Elliott

Inventor.
Andrew P. Rumely
by Burton and Burton
his Attys.

UNITED STATES PATENT OFFICE.

ANDREW P. RUMELY, OF CHICAGO, ILLINOIS.

PIPE-CLEANER.

SPECIFICATION forming part of Letters Patent No. 572,724, dated December 8, 1896.

Application filed April 6, 1896. Serial No. 586,298. (No model.)

To all whom it may concern:

Be it known that I, ANDREW P. RUMELY, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in a Pipe-Cleaner, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved device for cleansing pipes which become foul with the material which is passed through them and require cleansing without disconnection. It is contrived especially for the purpose of cleansing pipes used to convey malt liquor from the cask, keg, or tank to the faucet where it is drawn, such pipes being commonly arranged in extended coils within a cooling-chamber, so that the liquor may be delivered at the faucet cool; and this invention belongs to the specific class of devices for this general purpose which are adapted to be permanently located in connection with the pipe system to be cleansed and which are brought into use by operating the valves which control the passage of the cleansing-currents.

In the drawings, Figure 1 is a vertical section of my improved cleaner as at the line 1 1 on Fig. 4, the controlling-valve being shown in position shutting off the water, as when the device is out of use. Fig. 2 is a detail section corresponding to the lower part of Fig. 1, showing the valve seated in position to permit the chemical cleansing-current to pass to the pipes. Fig. 3 is a similar view showing the valve seated in position to admit a clear-water rinsing-stream. Fig. 4 is a detail section at right angles to the sections shown in the other figures through the lower part of the chamber and valve-seat, the valve being shown in dotted lines.

A is a receptacle for a suitable chemical adapted to cut the foul matter from the pipes and cleanse the same, sal-soda being the material commonly employed and intended to be represented in the drawings. This receptacle is formed integrally with the valve-body B at the lower end and is closed by a cap C, provided with a water-tight bushing or gasket C′ at the top. The valve-body B is formed and bored properly to receive a tapering plug D, having an elbow-handle D′, and provided with the usual means of securing it on its seat. The plug is cut away at opposite sides of its tapering body, leaving a symmetrical medial segment D^2, as seen in Figs. 1, 2, and 3, equal segments being cut off from opposite sides by parallel planes. As a matter of convenience, for reasons which will hereinafter appear, the segment D^2 left standing and constituting the operative valve portion of the plug extends at an angle of forty-five degrees to the direction of the handle D′. This is a matter of great convenience, but the construction might be otherwise in special instances. From the valve-chamber or plug-seat in the body B four ports extend, opening ninety degrees apart in the circumference of the seat, these ports being oblong, as best seen in Fig. 4, so that the circumferential extent of the opening is small compared with the capacity of the port.

In practice the circumferential extent of the seat occupied by each port should not be more than about one-twelfth of the entire circumference, and it may be much less, as shown in the drawings. Two of these ports, a' and a^{10}, lead up through the bottom of the chamber A, and the other two, b' and b^{10}, lead, respectively, to the pipe-nipples B′ and B^{10}. It will be seen that when the plug stands in the position shown in Fig. 1 the water is shut off entirely, whether it enters through B′ or B^{10}, and it is immaterial which way the device is connected, each nipple being adapted to serve either as the inlet or as the outlet. When, however, the plug is set as shown in Fig. 2, with its segment-web D^2 extending vertically and seating at one edge between the ports a' and a^{10} and at the other between the ports b' and b^{10}, the water entering through B′, for example, passes by way of the port b' and the port a' into the chemical-chamber A, which will be filled with water thereby, and passes out from said chamber through the ports a^{10} and b^{10} to the pipe system connected with the nipple B^{10}, said pipe system carrying the chemical elements necessary to properly cleanse the pipe. When the cleansing process has continued for a sufficient length of time, the plug being set as shown in Fig. 3, with its segment-web D^2 extending horizontally and seating at

one edge between the ports a' and b' and at the other edge between the ports a^{10} and b^{10}, the water-current passes directly from B′ through the port b', past the plug on the under side and through the port b^{10} into the pipe system connected with the nipple B^{10}. It will be noticed that in this rinsing action the chemical-chamber is entirely cut off from the rinsing-current of water, and the water that passes in this rinsing-current is therefore certain to be absolutely free from the chemical and adapted thereby to perfectly rinse the pipes. It will be noticed that the water may be shut off at four positions of the valve, corresponding to the two vertical and the two horizontal positions of the valve-handle, and that at the oblique positions of the handle, which correspond to the vertical positions of the valve-segment D^2, water may pass, two of said oblique positions permitting it to pass through the chemical-chamber and the other two, alternating therewith, permitting it to pass directly as a rinsing-current through the ports b' and b^{10}.

The mode of use of the device most likely to be adopted and least likely to involve mistake is that shown in the drawings, wherein the valve-handle, hanging down crosswise of the run of the pipe, as indicated by the direction of the two nipples B′ and B^{10}, gives shut-off position. The handle being thrown up to the position shown in Fig. 2 and opening in front of the lower end of the chemical-chamber gives the position affording the chemical current through said chamber, and being thrown down to the position shown in Fig. 3 gives the position at which the current takes the lower path, as indicated by the lower position of the handle, and passes through b' and b' for rinsing.

A^3 is a transversely-webbed boss or bracket extension, integral with the chamber at the rear thereof, adapted to secure the device in upright position against the wall.

I do not limit myself to producing the portways or water-passages by which the water traverses the plug by cutting away the opposite sides of the plug, although this is the simplest method and results in the easiest remembered order of action in setting the plug-handle for the various purposes, and I therefore claim it specifically; neither do I limit myself to making the ports which lead into the bottom of the chemical-chamber vertical and the ports which lead into the water connections horizontal, as shown in the drawings, although that is the preferred construction because easiest produced in the casting, for which reason I design to claim it specifically.

I claim—

1. In a pipe-cleaner, a chemical-chamber and a valve-body or plug-seat adjacent thereto, having two pipe connections and having two pairs of ports, both individuals of one pair leading into the chemical-chamber and the individuals of the other pair leading to the pipe connections respectively; a valve or plug seated and adapted to rotate in said valve-body, having portways and a seating-surface which are relatively arranged so that the plug at one position separates the two pairs of ports from each other, and at another position separates the individuals of each pair from each other, and at the third position closes one individual of each pair.

2. In a pipe-cleaner, a chemical-chamber and a valve-body or plug-seat adjacent thereto, having two pipe connections and having two pairs of ports, both individuals of one pair leading into the chemical-chamber and the individuals of the other pair leading to the pipe connections respectively; and a rotating valve or plug seated in said valve-body and having two portways symmetrically situated with respect to an axial plane through the plug, and adapted in one position of the plug to communicate one with an individual of each pair of ports, and the other with the other individual of each pair, one of said portways being adapted at another position of the plug to communicate with both individuals of the second pair.

3. In a pipe-cleaner, the chemical-chamber having the valve-body or plug-seat adjacent thereto and rigid therewith, said valve-body having four ports leading from the seat, two of them being parallel and leading into the chemical-chamber, the other two being parallel and at right angles to the first two and leading to the water connections respectively; and the plug seated in said body having two portways adapted to register one with one individual of each pair and the other with the other individual of each pair of ports, and to be rotated to cause one of said portways to register with both individuals of the second pair.

4. In a pipe-cleaner, a chemical-chamber and a valve-body or plug-seat adjacent thereto and rigid therewith, said plug-seat having two water-pipe connections and having two pairs of ports, one pair of said ports leading into the chemical-chamber, and the individuals of the other pair leading out to said water-pipe connections respectively; a rotating valve or plug seated in said valve-body or plug-seat and cut away at opposite sides to make its thickness at such reduced portion not greater than the distance between the individuals of said pairs of ports, and adapted at will to be seated in position to separate the ports leading to the chemical-chamber from the ports leading to the water connections, or to be seated between the individuals of both said pairs of ports, or to be seated over one port of each pair.

5. In a pipe-cleaner, in combination with the chemical-chamber and the valve-body or plug-seat at the bottom thereof, said valve-body having two ports leading from the plug-seat into the bottom of the chemical-chamber, and two additional ports leading laterally to suitable water connections; a rotatable valve

or plug seated in the plug-seat, and cut away at opposite sides to make its thickness at the reduced portion not greater than the distance between the individuals of the said pairs of ports, said valve having a handle oblique to the planes at which said plug is cut away: substantially as set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 28th day of March, 1896.

ANDREW P. RUMELY.

Witnesses:

CHAS. S. BURTON,

JEAN ELLIOTT.