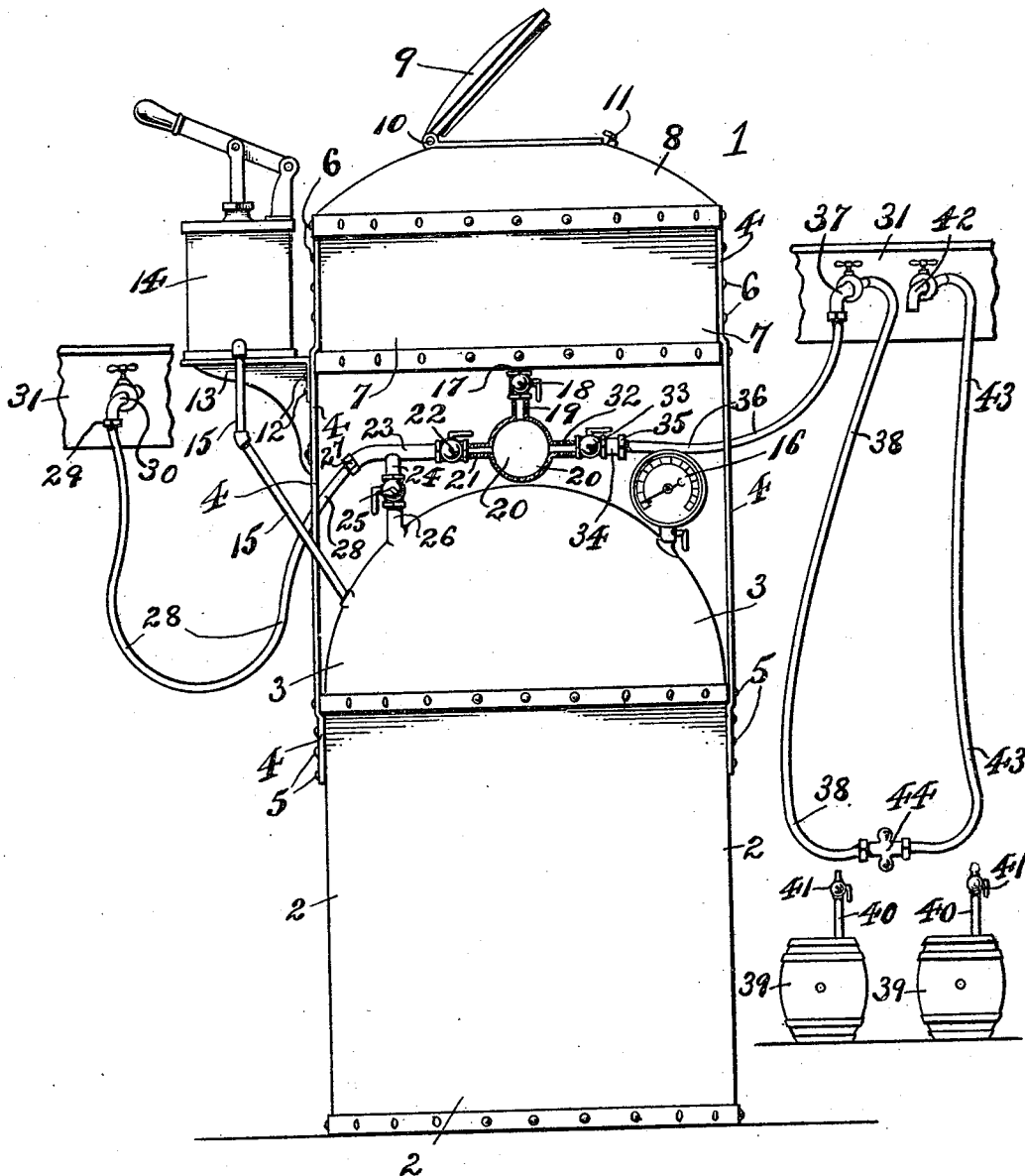


W. A. HALL.
 PIPE CLEANING APPARATUS.
 APPLICATION FILED FEB. 21, 1908.

949,891.

Patented Feb. 22, 1910.



Attest:
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UNITED STATES PATENT OFFICE.

WILLIAM A. HALL, OF NEW YORK, N. Y., ASSIGNOR TO HALL'S PERFECT BEER PIPE
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PIPE-CLEANING APPARATUS.

949,891.

Specification of Letters Patent.

Patented Feb. 22, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM A. HALL, subject of the Emperor of Germany, residing at 206 Broadway, New York city, in the county of New York and State of New York, have invented new and useful Improvements in Pipe-Cleaning Apparatus, of which the following is a specification.

The present invention relates, generally, to improvements in cleaning apparatus; and, this invention has reference, more particularly, to a novel cleaning apparatus, which is particularly adapted for use with the systems of piping through which such liquids as beer, or the like, are conducted, and is used for the purpose of forcing a cleaning compound or liquid with water through the pipes for cleaning the same.

The invention has for its principal object to provide a novel cleaning apparatus of the general character herein set forth, which is very simple in its construction, very easy to operate, and thorough in its cleansing operations.

A further object of this invention is to provide a cleaning apparatus of the general character herein set forth, by means of which a cleaning compound or liquid may be accurately measured, and then combined with a stream of water taken from the ordinary water main or bar faucet, and forced through the beer piping system by means of the ordinary water-pressure, assisted and reinforced by the injection of air under pressure.

A still further object of this invention is to provide a cleaning apparatus for beer-pipe systems, and the like, said apparatus being provided with a reservoir or container adapted to store a quantity of cleaning compound or liquid, and a measuring device connected with said reservoir or container adapted to measure out a proper quantity of said cleaning compound or liquid required for a given amount of work, and means whereby said measuring device may be connected with the water-main or bar-faucet and with the beer-pipe-systems, and, furthermore, an air-reservoir connected operatively with the water inlet of said measuring device, and a pump for supplying and compressing the air in said air-reservoir.

Other objects of this invention not at this time more fully set forth will be clearly understood from the following detailed description of the same.

With the various objects of the present invention in view, the said invention consists, primarily, in the novel cleaning apparatus hereinafter set forth; and the invention consists, furthermore, in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, all of which will be more fully described in the following specification, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which the figure therein shown represents a semi-diagrammatic side elevation of the novel cleaning apparatus embodying the principles of the present invention, and illustrating how the same is connected with the water-main or bar-faucet and the beer-pipe system; the measuring-device connected with the cleaning compound or liquid reservoir being shown in vertical section.

Characters of reference are employed to indicate the various parts of the apparatus.

Referring now to the said drawing, the reference character 1, indicates the complete cleaning apparatus embodying the principles of the present invention, the same comprising a suitable air-tank or reservoir 2, preferably of cylindrical form and provided with the dome-top 3, a plurality of suitably disposed standards 4, secured to said air-tank or reservoir 2, by means of rivets 5, or other said standards extending in an upward direction. Secured to the upper or free ends of said standards 4, by means of the rivets 6 or any other suitable means, is a reservoir or container 7, of any suitable form or material, said reservoir or container 7, being adapted to contain a supply of cleaning compound or liquid. This said reservoir or container 7 is, furthermore, provided in its upper end or side 8 with a cover-member 9, preferably hinged to said upper end or side 8 by means of the hinge-connection 10. A latch or lock-member 11

is also arranged upon the said upper end or side 8 of the reservoir or container 7 and is adapted to retain the said cover-member in its closed relation with the said upper end
 5 or side 8. Secured to one of the said standards 4 by means of rivets 12, or any other suitable fastening means, is a bracket or shelf member 13 adapted to support a pump 14 secured by any suitable means thereto.
 10 In the drawing the pump 14 is represented to be a hand-pump, but it will be clearly understood that the pump 14 may be replaced by a power-pump without departing from the scope of the present invention.
 15 The said pump 14 is connected by means of a pipe or air conduit 15 with the air-tank or reservoir 2, and is adapted to force the air into said tank or reservoir 2, and compress the same therein. The said air-tank
 20 or reservoir 2, is provided with a pressure-gage 16 adapted to register and indicate the amount of air-pressure within the said air-tank or reservoir 2.

The reservoir or container 7 is supplied
 25 at its bottom end with an outlet pipe 17 to which is secured a cleaning compound inlet-valve 18; this inlet-valve 18 is connected with the intake-pipe 19 of a cleaning compound or liquid measuring-device 20. The
 30 said measuring-device 20 is preferably made globular in form, and of glass, or other transparent material, although it will be clearly understood that any material may be used for the same measuring-device 20, such as
 35 metal or other opaque material if desired. The said measuring-device 20 is provided at one side with a water and air intake-pipe 21, the same being provided at its free-end with an intake-valve 22. Connected with the said
 40 intake-valve 22, is a short section of T pipe 23 provided with the downwardly extending member 24, to the free-end of which is secured an air valve 25 which is connected with the air outlet-pipe 26 of the said air-tank or reservoir 2. The free end of said
 45 T pipe 23 is provided with a union member 27, of any suitable construction, by means of which a hose or pipe section 28 may be attached thereto. The other or opposite end
 50 of this hose or pipe section 28 is attached by means of a union-member 29 to the water-main or bar-faucet 30 of the bar 31. The said measuring-device 20 is furthermore provided, upon the side opposite the water
 55 and air intake-pipe 21, with an outlet-pipe 32 having secured to the free end thereof an outlet-valve 33, the said outlet-valve 33 being further provided with a short nipple or pipe 34 to which is attached by means of
 60 a union 35, of any suitable construction, a hose or pipe section 36, the free or opposite end of which is secured by means of a suitable union to a beer-faucet or tap 37, upon the bar 31. The said beer-faucet or tap 37
 65 is connected with a hose or pipe section 38

which leads down to the cellar, or other place where the beer, or the like, is stored in the barrels 39, and the said hose or pipe section 38 is connected, when used to draw the beverage, with the outlet-pipe 40 arranged in the said barrel 39, this said outlet-pipe 40 being provided with a shut-off valve 41. In like manner the adjoining beer-faucet or tap 42 is connected by means of the hose or pipe section 43, to another of the barrels 39 by means of the outlet-pipe 40 provided with its shut-off valve 41, operatively connected therewith.

When it is desired to cleanse the beer-pipe system, the hose or pipe sections 38 and 43 connected with their respective beer-faucets or taps 37 and 42, respectively, are disconnected from the outlet-pipes 40 of the barrels 39, after the said shut-off valves 41 of the said outlet-pipes 40 have been closed. The detached ends of the said hose or pipe sections 38 and 43 are joined together by means of a coupling 44, after this has been done the cleaning apparatus is ready to perform its operation.

The mode of operation of the said cleaning device embodying the principles of the present invention is as follows: First: The water and air intake-valve 22 is closed, as is also the outlet-valve 33, and then the cleaning compound inlet-valve 18 is opened to allow a supply of cleaning compound or liquid to flow, from the reservoir or container 7, containing the same into the measuring-device 20, until the same is filled with a sufficient quantity of the compound or liquid required to clean out the beer-pipes connected with the apparatus. Then the compound inlet-valve 18, is closed, the water and air intake-valve 22 and the outlet valve 33 of the measuring device 20 are then opened, the water-main or bar-faucet 30 is turned on and the water then flows through the pipe or hose section 28 into the T pipe 23, through the intake-valve 22, through the measuring-device 20 carrying with it the cleaning compound or liquid contained therein, and thence through the outlet-valve 33 into the hose of pipe connection 36 secured to the beer-faucet or tap 37, passing through the same, and circulating through the joined hose or pipe sections 38 and 43 and out through the beer-faucet or tap 42, thereby carrying with it all the impurities and foreign substances which have become lodged in the beer-pipe-system and thoroughly cleansing the same.

As the water-pressure from the water-main is rarely high enough to produce a swift cleansing stream through the beer-pipe system it is necessary to increase the same. To do this the valve 25 is opened to allow the escape of the air held under pressure in the air-tank or reservoir 2, the said air passing through the air outlet-pipe 26 and the valve

25 into the downwardly extending member
24 of the T pipe 23, there joining the water
and accelerating its flow through the beer-
pipe system, in a manner clearly to be under-
stood from an inspection of the drawings.

From the foregoing description of the
present invention, it will be understood that
I have devised a very simple and effective
cleaning apparatus adapted for the purposes
hereinabove set forth, which requires little
care or trouble in operating, but which
thoroughly cleanses the pipe systems and
keeps the same in perfect sanitary condition.

I am aware that changes may be made in
the general arrangements and combinations
of the devices and parts, as well as in the
details of the construction of the same,
without departing from the scope of the
present invention, as defined in the claims
which are appended to this specification.
Hence, I do not limit my invention to the
exact combinations and arrangements of the
devices and parts as described in the fore-
going specification, and as illustrated in the
accompanying drawings, nor do I confine
myself to the exact details of the construc-
tion of any of the said parts.

I claim:

1. In a cleaning apparatus, for pipe sys-
tems, or the like, the combination, with an
air-tank or reservoir, of a cleaning com-
pound reservoir or container provided with
a measuring-device connected therewith,
means adapted to connect said measuring-
device with a water supply and said air-tank
or reservoir, and means adapted to connect
said measuring-device to the pipe systems,
or the like, to be cleansed, substantially as
and for the purposes set forth.

2. In a cleaning-apparatus for pipe-sys-
tems, or the like the combination with an
air-tank or reservoir of a plurality of stand-
ards secured thereto, a cleaning compound
reservoir or container provided with a
measuring-device connected herewith se-
cured to and supported by said standards,
means adapted to connect said measuring-
device with a water-supply and said air-
tank or reservoir, and means adapted to con-
nect said measuring-device to the pipe sys-
tems, or the like, to be cleaned, substantially
as and for the purposes set forth.

3. In a cleaning-apparatus for pipe sys-
tems, or the like, the combination with an air-
tank or reservoir of a plurality of standards
secured thereto, a cleaning compound reser-
voir or container secured to and supported
by said standards, a measuring-device pro-
vided with an intake-pipe and an inlet-valve,
connected with the bottom of said cleaning
compound reservoir or container by means
of a pipe connection, means adapted to con-
nect said measuring-device with a water
supply and said air-tank or reservoir, and
means adapted to connect said measuring-

device to the pipe systems, or the like, to be
cleaned, substantially as and for the pur-
poses set forth.

4. In a cleaning-apparatus for pipe sys-
tems, or the like, the combination with an air-
tank or reservoir, provided with a pressure-
gage, of a plurality of standards secured
thereto, a cleaning compound reservoir or
container secured to and supported by said
standards, a measuring-device provided with
an intake-pipe and an inlet-valve, connected
with the bottom of said cleaning compound
reservoir or container by means of a pipe
connection, said measuring-device being
further provided with a water and air in-
take-pipe and intake-valve, a T pipe pro-
vided with a downwardly extending pipe
member connected with said intake-valve, an
air-valve connected with said downwardly
extending pipe-member, said air-valve being
connected to an air outlet pipe of said air-
tank or reservoir, a pipe or hose connection
secured to said T pipe by means of a union,
said pipe or hose connection being adapted
to be connected with a main water-supply,
and means for connecting said measuring-
device to the pipe systems, or the like, to be
cleaned substantially as and for the purposes
set forth.

5. In a cleaning apparatus for pipe sys-
tems, or the like, the combination with an
air-tank or reservoir, provided with a pres-
sure-gage, of a plurality of standards se-
cured thereto, a bracket or shelf secured to
one of said standards, an air-pump support-
ed upon said bracket or shelf, said air-pump
being connected with said air-tank or reser-
voir by means of a pipe or air-conduit, a
cleaning compound reservoir or container
secured to and supported by said standards,
a measuring-device provided with an intake-
pipe and an inlet-valve, connected with the
bottom of said cleaning compound reservoir
or container by means of a pipe-connection,
said measuring-device being further pro-
vided with a water and air intake-pipe and
intake-valve, a T pipe provided with a
downwardly extending pipe-member con-
nected with said intake-valve, and air-valve
connected with said downwardly extending
pipe-member, said air-valve being connect-
ed to an air outlet-pipe of said air-tank or
reservoir, a pipe or hose connection secured
to said T pipe by means of a union, said
pipe or hose-connection being adapted to be
connected with a main water-supply, and
means for connecting said measuring-device
to the pipe systems, or the like, to be cleaned,
substantially as and for the purposes set
forth.

6. In a cleaning-apparatus for pipe sys-
tems, or the like, the combination with an
air-tank or reservoir provided with a pres-
sure-gage, of a plurality of standards se-
cured thereto, a bracket or shelf secured to

one of said standards, an air-pump supported upon said bracket or shelf said air-pump being connected with said air-tank or reservoir by means of a pipe or air-conduit, a
 5 cleaning compound reservoir or container secured to and supported by said standards, said cleaning compound reservoir or container being provided with a cover-member, an outlet-pipe 17 connected with the bottom
 10 of said cleaning compound reservoir or container, and inlet-valve 18 connected with said pipe 17 and the intake-pipe 19 of a measuring-device 20, a water and air intake-pipe 21 connected with one side of said
 15 measuring-device 20, an intake-valve 22, a pipe 23 provided with a downwardly extending pipe member 24, an air-valve 25 connected with the downwardly extending member 24 and air outlet pipe 26 connecting said
 20 air-valve 25 and the said air-tank or reservoir, a hose or pipe connection 28 connected to said pipe 23 by means of a union 27, and a union-member 29 upon the free end of said
 25 pipe or hose connection 28, an outlet-pipe 32, provided with an outlet-valve 33, con-

nected with the opposite side of said measuring-device 20, a nipple 34 connected with said outlet-valve 33, a hose or pipe connection 36 secured to said nipple 34 by means of a union 35, said hose or pipe connection being provided with a union upon its free end, substantially as and for the purposes set forth. 30

7. An apparatus of the class described comprising a main tank provided with top and bottom chambers, an air pump in communication with the bottom chamber, a water pipe provided with two valves, and devices forming a communication between the top chamber of the main tank and said
 35 pipe, between said valve, and a communication between the top chamber and the bottom chamber in said tank. 40

In testimony, that I claim the invention set forth above I have hereunto set my hand
 45 this twentieth day of February 1908.

WILLIAM A. HALL.

Witnesses:

LUDWIG POLL,
 EMIL ENGELS.