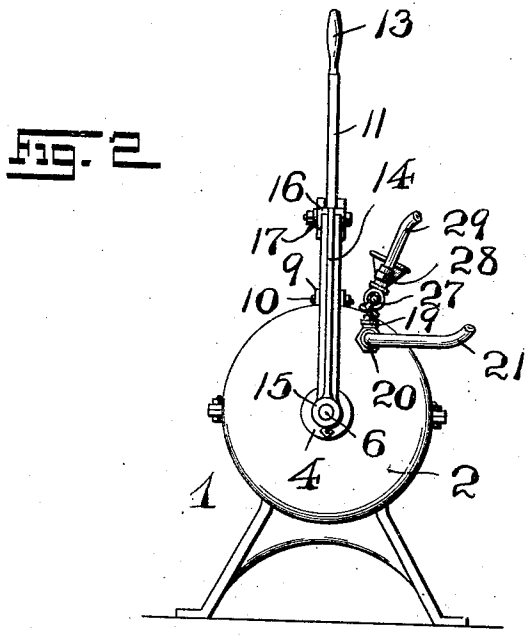
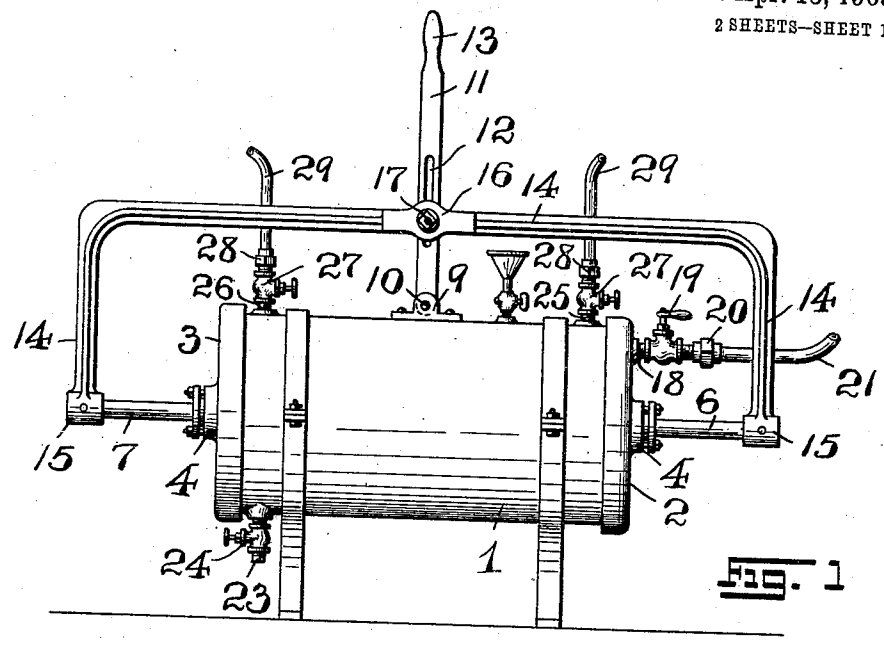


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 PIPE CLEANING APPARATUS.
 APPLICATION FILED MAR. 30, 1908.

918,091.

Patented Apr. 13, 1909.
 2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

JOHN W. ROCHE, OF ARLINGTON, NEW JERSEY.

PIPE-CLEANING APPARATUS.

No. 918,091.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. ROCHE, a citizen of the United States, residing at Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Pipe-Cleaning 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 characters of reference marked thereon, which form a part of this specification.

This invention relates, generally, to improvements in apparatus which are employed for cleansing and washing or flushing out systems of piping used for the conveyance of beer and other liquors.

The invention has for its principal object to provide a novel apparatus, of the general character hereinafter more fully set forth, which is very simple in its construction, is easily manipulated, and is especially adapted for the purpose of cleaning and washing or flushing out systems of piping through which beer or other liquors are ordinarily conveyed, and furthermore to provide a device which shall be most efficient in its operation.

A further object of this invention is to provide an apparatus comprising a cylinder which is provided with a plunger or piston, and means for producing a reciprocatory movement of the said plunger or piston, the said cylinder being adapted to be connected with the system of beer or other liquor-conveying pipes and also with the faucet of a water-pipe, the general arrangement of the devices and parts being such that water can be admitted into the cylinder upon one side of the plunger and piston, and then caused to pass from the cylinder into and through the system of piping, which is to be flushed out, back into the cylinder upon the other side of said piston or plunger, and thence, being emitted from the cylinder through an outlet connected therewith.

Other objects of this invention not at this time more particularly enumerated, will be clearly understood from the following detailed description of the same.

With the various objects of the present invention in view, the same consists, primarily, in the novel apparatus for cleansing out systems of piping, described herein; 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 particularly described in the following specification, and then finally embodied in the clauses of the claim which are appended to the said specification and form an essential part of the same.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of one form of apparatus embodying the principles of this invention; and Fig. 2 is an end elevation of the same. Fig. 3 is a diagrammatical representation, said view showing in section a pumping apparatus or device, and illustrating in connection therewith one method of connecting up the respective end-portions of the pump-casing or cylinder with the system of piping which is to be flushed out, and showing also one method of connecting one end-portion of the pump-casing or cylinder with the faucet of a water-pipe.

Similar characters of reference are employed in all of the above described views to indicate corresponding parts.

Referring now to the said drawings, the reference-character 1 indicates any suitably formed pump-casing or cylinder which is provided at its respective ends with suitable cylinder heads 2 and 3, each head being provided with a suitably formed stuffing box 4. Arranged within the said pump-casing or cylinder is a piston rod 5 which is suitably mounted in the said stuffing boxes, and has its respective end-portions 6 and 7 extending from said stuffing boxes and projecting beyond the respective cylinder-heads, substantially as shown. Within the said pump-casing or cylinder, and suitably mounted upon the said piston-rod, is a suitably constructed piston or plunger 8. Suitably secured upon the upper surface of the said pump-casing or cylinder, and at a point preferably midway between its respective ends or cylinder heads, is a suitably formed bracket or support 9 which is provided with a pivot-pin or pintle 10, a suitably formed lever or arm 11 having its lower end-portion secured to said pintle 10, and the said lever or arm 11 being formed with an elongated opening or slot as 12, and having a handle or hand-piece 13. Suitably connected with and secured to the respective end-portions 6 and 7 of the piston-rod 5 by means of the hub-like members or elements 15 is a yoke-like frame 14, said frame being

made with a centrally disposed perforated portion 16, and having a connecting pin 17 which extends into and is slidably arranged in the elongated opening or slot 12 of the previously mentioned arm or lever 11. It will thus be evident that a swinging motion of the said lever or arm, by means of the pivotal connection will readily produce a reciprocatory movement of the said yoke-like frame, and in consequence thereof, of the piston-rod and the piston within the pump-casing or cylinder.

Connected with one of the cylinder heads or other suitable portion of the pump-casing or cylinder, in any other suitable manner, is an inlet-pipe 18, in which may be arranged a shut-off valve or cock 19, the said pipe 18 being adapted to be detachably connected by means of a union 20 with a pipe 21 which in turn is attached to the faucet 22 of a suitable water-conveying pipe, as clearly shown. In its other end, the said pump-casing or cylinder is provided with an outlet-pipe 23, in which there is a stop-cock 24. Other pipes 25 and 26 are connected with the said pump-casing or cylinder, and are respectively located near the opposite end-portions of the cylinder heads of the said pump-casing or cylinder. Each of said pipes 25 and 26 are provided with suitably formed valves or stock-cocks 27, and may be detachably connected by means of the unions 28, and pipe-connections 29, with two faucets 30 of the pipes 31 of a beer-conveying system, or the like. During the cleansing, washing or rinsing out process, these last-mentioned pipes 31 are disconnected from the barrels or casks in which the beer or other liquor is contained, and said pipes are connected with each other by means of a suitable union 32, or in any other suitable manner, substantially as clearly shown in Fig. 3 of the drawings.

Having thus connected the said system of piping with the water-system and with the pump-casing or cylinder 1, the various valves or stop-cocks 19, 27, as well as the faucets 22 and 30, are opened, so that the water from the water-system will flow into one end of the pump-casing or cylinder and then through the pipe 25 into the system of piping which is to be cleansed or flushed out, the water finally flowing through the pipe 26 into the other end of the pump-casing or cylinder which it fills. Upon opening the valve or stop-cock 24 it can be readily determined when the cylinder or pump-casing has been completely filled with water on both sides of its piston by the continuous flowing of the water from the outlet-pipe 23. Upon closing the said valve or stop-cock 24 and also closing the faucet 22, the water which is contained in the pump-casing or cylinder can now be made to flow or move rapidly back and forth for some time through the system

of piping which is to be cleansed or washed out, by producing a reciprocatory action of the piston, as the lever or arm 11 is caused to be oscillated upon its means of pivotal connection with the pump-casing or cylinder. In this manner, a thorough and efficient rinsing action is produced, and by again opening the valve or stop-cock 24 and the faucet 22 all of the devices and parts can be finally flushed out and a perfectly cleansed system of piping will be the result. The pipes 29 are then disconnected from the beer-faucets 30, the union 32 being also removed from the pipes 31 whereupon the latter are again connected with the sources for supplying beer, or other liquors to the faucets 30, as will be clearly evident.

From the foregoing description of my present invention, it will be clearly seen that I have produced a simply constructed and efficiently operating apparatus which may be used for cleansing, washing or flushing out systems of piping, and which can be readily moved about from place to place, so as to be connected with any other system of piping.

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

I claim:

1. A pipe-cleaning apparatus comprising a casing or cylinder, means for connecting the same to a pipe-system which is to be cleansed, means for conducting a cleansing liquid into said cylinder, a piston-rod within said cylinder having its end-portions projecting from the respective ends of the cylinder, a piston mounted upon said rod, a yoke-shaped frame provided at its ends with hubs arranged and secured upon said projecting end-portions of the piston-rod, a bracket upon said cylinder, a pivotal pin mounted upon said bracket, a lever pivotally connected with said pin, said lever being provided with an elongated opening, and a pivot pin extending from said lever into the said opening, said pin being slidably arranged in said opening, substantially as and for the purposes set forth.

2. A pipe-cleaning apparatus comprising a casing or cylinder, an inlet-pipe connected with one end-portion of said cylinder, an outlet-pipe near the other end-portion of said cylinder, other pipes extending from said cylinder near the respective ends of the

5 cylinder, closing cocks in all of said pipes, means connected with said inlet-pipe for conveying a cleansing liquid into said cylinder, means connected with said other
10 pipes which extend from said cylinder near the respective ends of said cylinder for conducting said cleansing liquid from said cylinder into and through a pipe-system which is to be cleansed and back again into
15 the cylinder, a piston-rod within said cylinder having its end-portions projecting from the respective ends of the cylinder, a piston mounted upon said rod, a yoke-shaped frame provided at its ends with hubs
20 arranged and secured upon said projecting end-portions of the piston-rod, a bracket

upon said cylinder, a pivotal pin mounted upon said bracket, a lever pivotally connected with said pin, said lever being provided with an elongated opening, and a
25 pivotal pin extending from said lever into the said opening, said pin being slidably arranged in said opening, substantially as and for the purposes set forth.

In testimony, that I claim the invention
25 set forth above I have hereunto set my hand this 27th day of March, 1908.

JOHN W. ROCHE.

Witnesses:

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ANNA H. ALTER.