

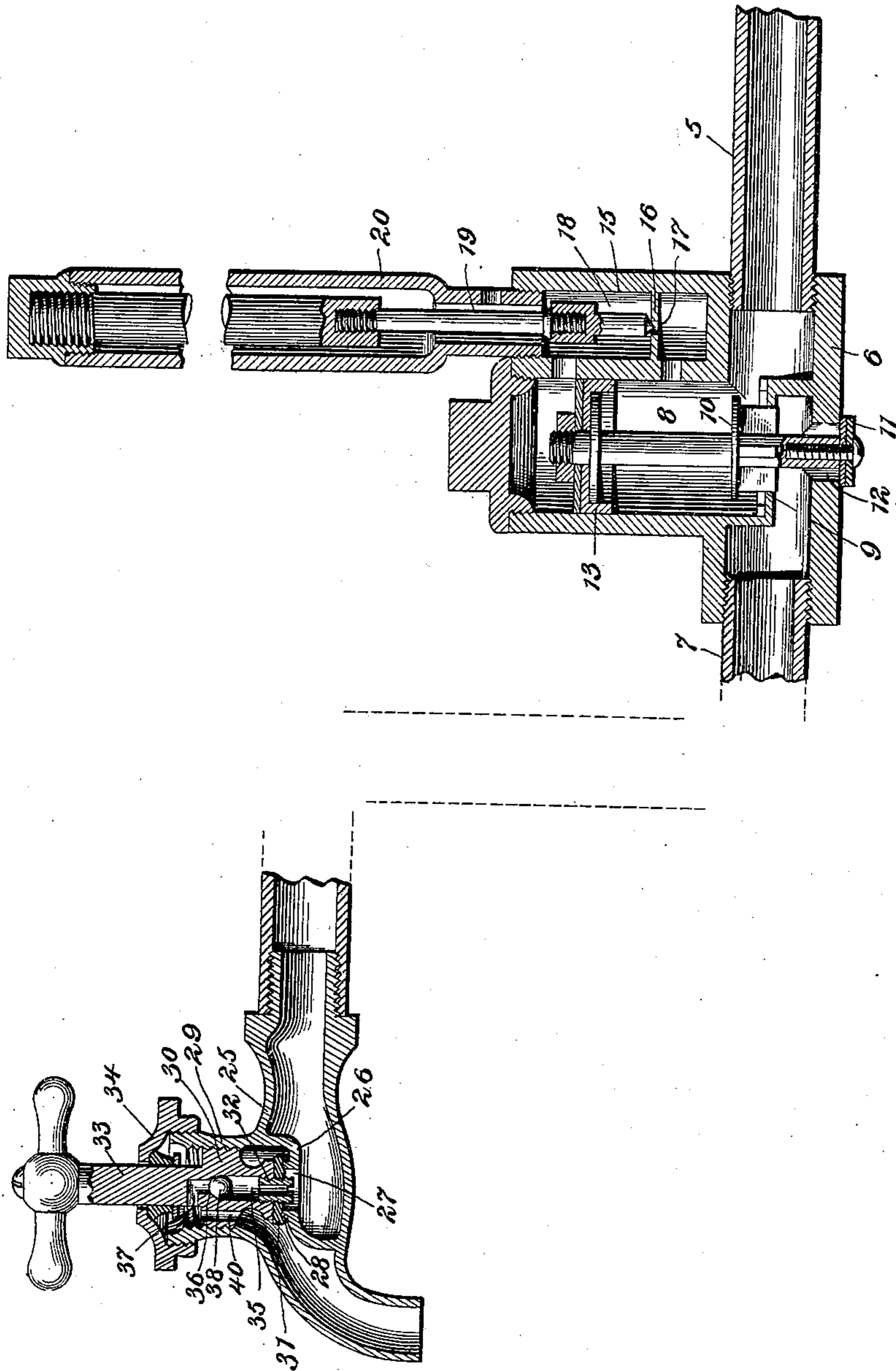
No. 641,308.

Patented Jan. 16, 1900.

R. F. LINDSEY.
FAUCET.

(Application filed Aug. 21, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

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FAUCET.

SPECIFICATION forming part of Letters Patent No. 641,308, dated January 16, 1900.

Application filed August 21, 1899. Serial No. 727,956. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. LINDSEY, a citizen of the United States, residing at Greenville, in the county of Greenville and State of South Carolina, have invented a new and useful Faucet, of which the following is a specification.

This invention relates to water-supply systems, and more particularly to a faucet adapted thereto, although it includes the combination, with an automatic cut-off and drain valve, of a faucet having an air-inlet valve which is operable under the influence of the cut-off and drain valve, the object of the invention being to provide, in a system including a drain-valve, means for admitting air to the system to permit the drainage thereof, and thus prevent freezing, a further object of the invention being to combine this feature in a faucet adaptable for the ordinary uses.

In the drawing forming a portion of this specification there is shown a vertical section of an automatic cut-off and drain valve in a system including a faucet involving this invention.

In the drawing, 5 represents a supply-pipe leading to a casing 6, and from which leads a service-pipe 7. This casing 6 is provided with a valve-chamber 8, at the lower end of which is a valve-seat 9, adapted to receive a valve 10, having a stem extending above and below the valve, the lower end of said stem being provided with a second valve 11, adapted to close an opening 12 in the bottom of the casing and communicating with the pipe 7 when the valve 10 is in its seat. That portion of the stem above the valve 10 is provided with a piston-head 13, which fits closely and is adapted for reciprocation within the chamber 8, said chamber having direct communication at all times with the pipe 5.

A supplemental valve-chamber 15 is provided, with a transverse diaphragm 16, provided with a valve-opening 17, adapted to receive a valve 18, carried by a thermostatic rod 19, fixed to an extension 20 of the supplemental casing. This rod is adapted to expand when heated and close the opening 17. The supplemental chamber communicates with the chamber 8 above the piston-head 13

and the diaphragm 16 and has a second communication below said piston-head and diaphragm. Thus under normal temperatures the rod 19 will be expanded and will close the valve-opening 17 to prevent the passage of water to the chamber 8 above the piston-head 13, and hence the pressure of water from the pipe 5 and within the chamber 8 will be upon the under surface of the head 13 and will normally hold the valve 10 from its seat and permit passage of water to and through the pipe 7, the valve 11 at the same time being held to close the opening 12. If now the temperature falls to a sufficient degree, the rod 19 will contract to open the opening 17, permitting the passage of water above the piston-head 13 to balance the pressure upon the lower side of the piston-head, when the valve 10 will be seated and pressure within the pipe 7 will be cut off. At the same time the valve 11 will move from the opening 12, and if air be admitted to the pipe 7 the water will run from the pipe and through the opening 12, and thus drain the system.

In order to admit air to the system to permit drainage, there is provided a faucet which may be supplied at one or more points of the system, and should be at the top of every vertical section of pipe in the system. This faucet consists of a casing 25, having a diaphragm 26, in which is an opening 27, provided with a valve-seat 28, the passage of water through the faucet being upwardly and through the opening 27.

As is usual in this construction of faucet, the casing 25 has a cylindrical extension 29 in vertical alinement with the opening 27 and interiorly threaded for the reception of a plug 30, to the lower end of which is fixed a valve 31, of fiber or other suitable material, held in position by means of a screw 32, the plug 30 being provided with a stem 33, extending upwardly therefrom and through a suitable stuffing-box in a cap 34 in threaded engagement with the exterior surface of the cylindrical extension 29. In this instance a central longitudinal passage 35 is formed in the lower end of the plug and has its upper end contracted to form a valve-seat 36, from which said passage is continued to enter the stem 33, whence it is continued laterally and opens

outwardly of the stem just above the plug, as shown at 37, the stem having a lesser diameter than the plug. Within the broadened portion of the passage 35 is disposed a spherical valve 38, adapted to enter the valve-seat and to prevent the passage of water upwardly and through the passage. The valve 31 is held in position through the medium of a hollow screw 32 in threaded engagement with the lower end of the passage 35 and through which access to the passage is had. The lateral extension 37 of the passage opens into the inclosure of the cylindrical extension 29, and communicating also with this inclosure is a vertical perforation 40, formed through the plug. With this construction it will be seen that when the plug is at the lower limit of its motion to seat the valve 31 no water will flow through the opening 27 and the valve in the passage 35 will be closed, this continuing so long as there is pressure in the system. When, however, the pressure within the pipe 7, with which the faucet is connected, is removed through the medium of the cut-off and drain valves above described or in any other desired manner, the valve 38 will drop, thus permitting the passage of air inwardly of the mouth of the faucet through passage 40, and thence to passage 35 through the screw 32, and so into the system to take the place of the water, which may be drained from any desired point. Thus it will be seen that by setting the thermostatic bar in the proper position it may be caused to operate its valve just above the freezing temperature to cut off the pressure within the system controlled thereby and that the faucet will then permit access of air and the drain-valve to operate to free the system of water and prevent freezing.

It will be readily understood that in practice the faucet may be employed in connection with any means for cutting off the pressure and for draining the system, and also

that the air-inlet may be employed in connection with a valved faucet, a check-valve, or other similar device of any specific construction, and that the materials and proportions may be varied without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. In a water-supply system, the combination with a service-pipe, automatic cut-off having connected oppositely-opening cut-off and drain valves, of which the latter is exposed at one side to service-pressure, a piston connected with said valves for simultaneous operation and permanently exposed at one side to supply pressure, valve mechanism for controlling inlet and exhaust ports in communication with the piston-cylinder at the opposite sides of the pistons, and a thermostatic rod for controlling said valve mechanism, and an air-inlet for the pipe having a valve adapted to close the inlet under the influence of pressure within the pipe, and to open the inlet when pressure is removed.

2. A faucet comprising a casing having a valve-seat therein, a valve having a stem in threaded engagement with the casing above the seat, said valve being adapted for engagement with the seat, a chamber in the casing above the threaded portion of the stem, a passage in the stem communicating with said chamber and with the casing beyond the valve-seat, an inwardly-opening valve in said passage, and a passage through the stem communicating with said chamber and with the discharge end of the casing.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT F. LINDSEY.

Witnesses:

J. ROSS COLHOUN,
THEODORE DALTON.