

(No Model.)

E. P. WAGGONER.

VENT PLUG FOR STEAM RADIATORS.

No. 386,670.

Patented July 24, 1888.

Fig. 1.

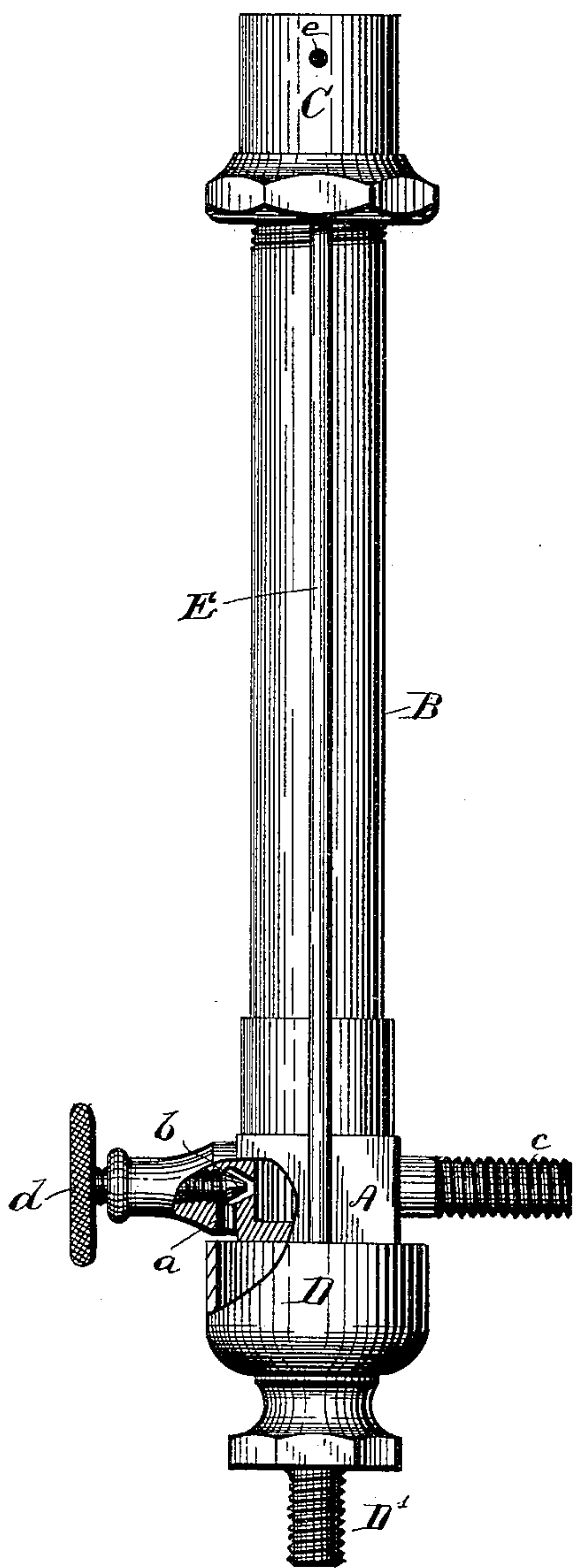
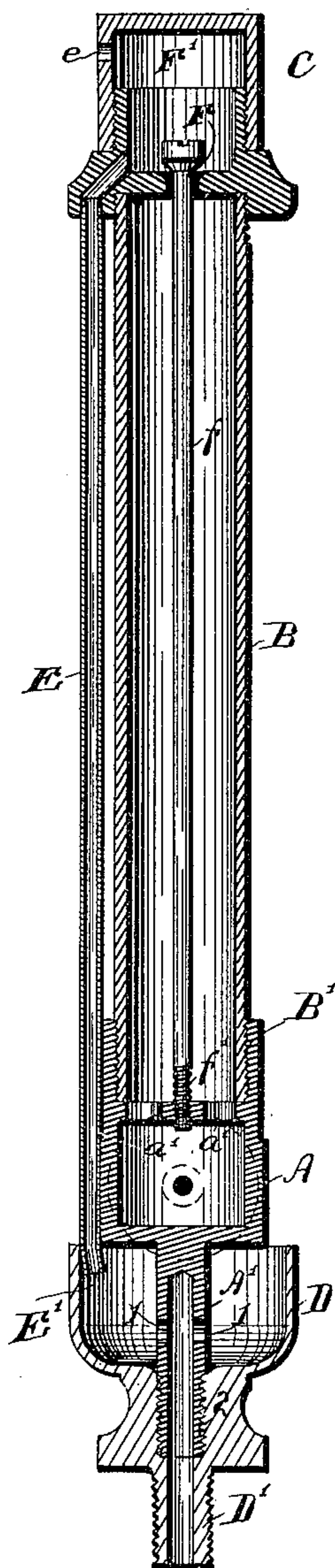


Fig. 2.



WITNESSES:

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EDWARD P. WAGGONER, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF TO THE PIERCE, BUTLER & PIERCE MANUFACTURING COMPANY, OF SAME PLACE.

VENT-PLUG FOR STEAM-RADIATORS.

SPECIFICATION forming part of Letters Patent No. 386,670, dated July 24, 1883.

Application filed November 23, 1887. Serial No. 255,982. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. WAGGONER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and
5 useful Improvements in Vent-Plugs for Steam-Radiators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in
10 vent-plugs for steam-radiators, and the object is to provide a vent-plug which, while sufficient water is permitted to escape from the radiator within the room to moisten the atmosphere of the room, all leakage upon the floor
15 or carpet from the radiator is prevented; and to this end the invention consists in a vent-plug for steam-radiators having a drip-cup connected therewith to receive the water of condensation and return the same through suitable pipe-connections.

It also consists in the combination of a positive and automatic vent connected by a suitable casing with a drip-cup and drip-tubes, and
25 also in the detail construction and arrangement of the parts, all as hereinafter more fully described, and pointed out in the claims.

In specifying my invention reference is had to the accompanying drawings, forming a part of this specification, in which, like letters indicating corresponding parts in all the views—
30

Figure 1 is an elevation of my improved vent-plug for steam-radiators, a portion of the metal being removed for the purposes of illustration, the said figure illustrating the general
35 features of construction and arrangement of the parts, looking at the same from the exterior. Fig. 2 is a transverse vertical section taken through the center, illustrating the interior construction and arrangement of the
40 parts.

In the example of my invention which I have illustrated in the annexed drawings I have shown the same applied to what is termed a
45 "combined positive and automatic vent-plug for steam-radiators" of the class described in my application of January 17, 1887, Serial No. 254,571.

A represents the positive vent-plug, provided with the air and steam discharge or escape *a*,

the screw-valve *b*, with the finger-piece *d*, and
50 the screw-plug *c*, by means of which the device is secured to the steam-radiator, all of these parts being substantially the same in construction as the like parts illustrated in my
aforesaid previous application.

Depending from the positive plug A is a
55 hollow screw-threaded stem, A', as best shown in Fig. 2, the said stem being provided with openings 1 1 and the screw-thread 2, the purpose of which will be presently explained.

The positive plug A is provided with a
60 screw-threaded socket above the valve *b*, into which the threaded end B' of the casing B screws, and the said casing B serves as a steam and air connection from the positive plug A
65 to the chamber F' in the automatic vent-plug, which has a valve, F, leading from the said chamber F' into the casing B, and a rod, *f*, provided with screw *f'* at the lower end thereof into a threaded seat in the head of the
70 positive valve-casing A.

The head of the positive valve A is provided with openings or passages *a'*, leading from the interior chamber of the positive vent
A into the casing B, affording egress of the
75 steam and air from the positive vent into the automatic vent.

Thus far in describing my improvement the parts coincide substantially with the construction of the combined positive and automatic
80 vent-plug described in my prior application, with the exception of the depending hollow screw-threaded stem A', which I have just described.

Beneath the exit or passage *a* of the positive vent A, I provide the drip-cup D, which
85 has a screw-threaded socket in its base, the thread of which coincides with the screw 2, formed on the depending hollow stem A' of the positive vent-plug A, and the said drip-cup D is secured to the positive vent-plug A,
90 as shown in the drawings, by simply screwing the same to the screw-threaded hollow depending stem A' of the positive vent-plug.

It will be observed that the discharge from
95 the positive vent-plug of air and steam through the passage or exit *a* enters the drip-cup D, which is located immediately beneath

the same, and that therefore the water of condensation is caught in the drip, and thereby prevented from escaping and falling onto the floor or carpet where the radiator is located.

5 In order to utilize the water of condensation for moistening the air of the room, it is desirable to retain some water in the drip-cup; hence I provide the hollow stem A' with openings 1 1, located at a point above the bot-
10 tom of the drip-cup, as best shown in Fig. 2, leading from the drip-cup into the passage within the stem A', which leads into a corresponding passage in the stem D' through the base of the drip-cup, from whence the water
15 of condensation is carried off through suitable pipe-connections secured to the stem D'. Thus it will be observed that the water of condensation is contained in the drip-cup until the same reaches the openings 1 1, whence the
20 surplus escapes through the openings, passing through the passage in the stems and into the escape-pipe.

In order to carry the water of condensation from the automatic vent valve to the drip-
25 cup, I provide the drip tube or pipe E, which is connected at its upper end to the chamber F' and leads from thence to the drip cup. The lower end, E', of the pipe E extends into the drip-cup D and discharges therefrom.

30 The automatic vent-valve is provided with the usual cap, C, and has an air escape, e, as shown in the drawings.

By the described construction and arrangement of the parts a very efficient combined
35 positive and automatic vent-plug is formed, since the device is simple in construction and very effective in operation. I do not, however, restrict my invention to a combined positive and automatic vent-plug, since it is
40 obvious that the positive vent-plug and the drip-cup co-operate without the automatic vent-valve and form a very efficient device for the desired purpose; and it is also obvious that the cup may be employed in connection
45 with an automatic vent-plug without using the combined feature. Neither do I restrict my invention to the specific manner in which the parts are connected, since the same may be changed at will without departing from the
50 principle of my invention.

The operation of my improved vent-plug for steam-radiators will be apparent upon a consideration of the foregoing and a reference to the drawings.

55 In the example illustrated, which forms my preferred plan of construction, the vent plug is connected to the steam-radiator by means of the screw-plug c, Fig. 1, and the screw-valve b is operated by the thumb-piece d
60 when the steam of the radiator is turned on, and the escaping steam and air, together with

the water of condensation which has accumulated in the radiator, are forced into the drip-cup D, the surplus thereof passing off through the openings 1 1 in the stem A', and from
65 thence carried off through suitable pipe-connections. When the radiator is vented, the valve b is closed by turning the thumb-piece d, and the automatic vent is then brought into
70 action. When the same is in operation, the pipe or tube E carries off the water of condensation from the chamber F' in the automatic vent, discharging the same in the drip-cup D, and thus the escape of water from the
75 vent on the floor or carpet of the apartment where the radiator is located is entirely prevented without in any manner marring the efficiency of the vent for moistening the air of the room, and the device is compact,
80 slightly, and durable.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a vent for steam-radiators, the combination, with a positive vent-plug formed with
85 a vent escape-passage and an automatic vent-plug also provided with an escape-passage, of a drip-cup secured to the lower end of the device beneath the ends of both escape-passages,
90 substantially as shown and described.

2. The combination, in a vent-plug for steam-radiators, of a positive vent-plug having passages for steam and air and an escape-passage opening through the side of the shell
95 above the drip-cup, an automatic vent-plug mounted on the positive one, a drip pipe connected to the automatic vent-plug on the exterior of the casing, and a drip cup on the
100 positive vent-plug to receive the drip from both of them, substantially as and for the purpose set forth.

3. A positive vent plug provided with a depending screw-threaded hollow stem and an escape passage opening through the shell at one side of said stem, in combination with a
105 drip-cup secured to said stem, the stem being provided with openings some distance above the bottom of the cup leading through the hollow screw-threaded stem of the positive vent-plug, and a corresponding passage
110 through the base of the drip-cup, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 29th day
115 of October, 1887.

EDWARD P. WAGGONER.

Witnesses:

FREDERICK H. GIBBS,
E. C. CANNON.