No. 847,456. PATENTED MAR. 19, 1907.

E. D. BARNES.

RADIATOR VENT ATTACHMENT.

APPLICATION FILED OCT. 14, 1905.

Fig. 1.

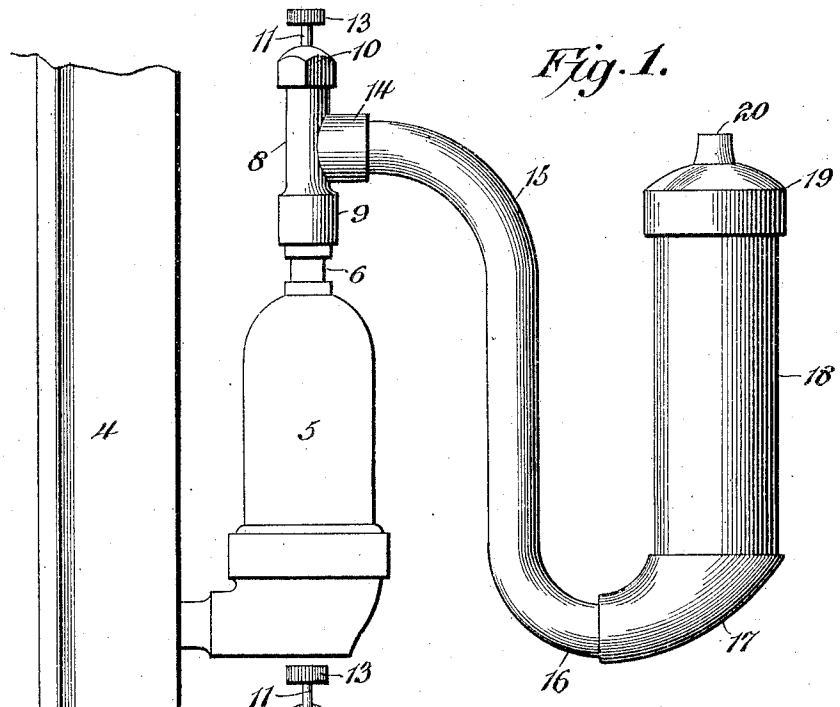


Fig. 3.

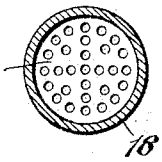
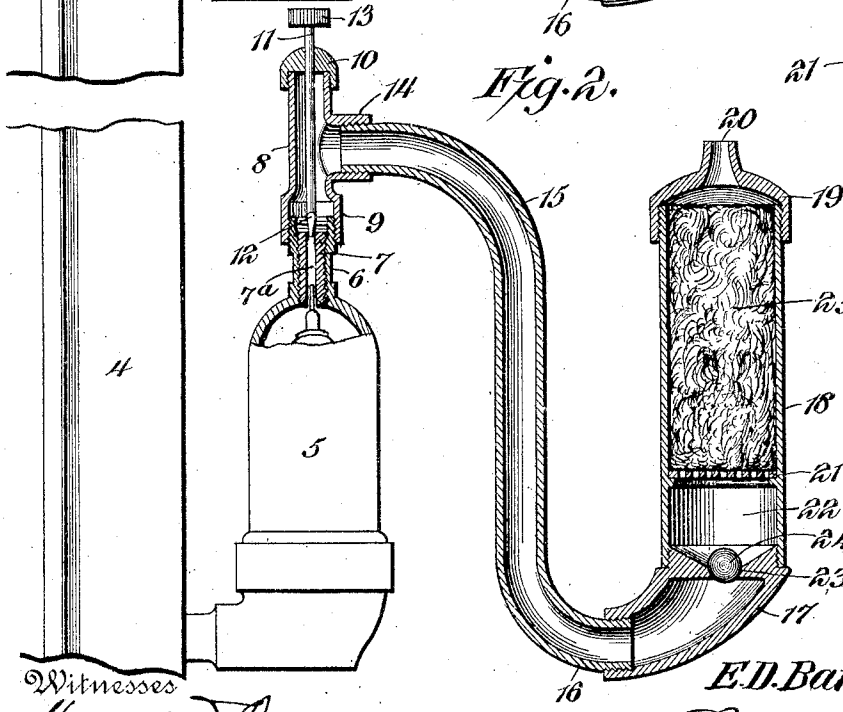


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

EMMET D. BARNES, OF TRAVERSE CITY, MICHIGAN.

RADIATOR VENT ATTACHMENT.

No. 847,456. Specification of Letters Patent. Patented March 19, 1907.

Application filed October 14, 1905. Serial No. 282,786.

To all whom it may concern:

Be it known that I, EMMET D. BARNES, a citizen of the United States, residing at Traverse City, in the county of Grand Traverse and State of Michigan, have invented a new and useful Radiator Vent Attachment, of which the following is a specification.

This invention relates more particularly to means for permitting the escape of air from a radiator when steam is turned into the same.

One of the principal objects is to provide novel means of a simple nature that is readily applicable to any well-known type of radiator, said means permitting the free escape of air from and preventing its ingress into the radiator when a partial vacuum is formed therein.

Another object is to provide muffling means which permit the escape of air without noise, and, furthermore, to provide an attachment which may be applied to an ordinary vent, said attachment having means whereby the valve mechanism of such vent may be conveniently adjusted without the necessity of removing the attachment.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of the attachment applied to a radiator. Fig. 2 is a longitudinal sectional view through the same. Fig. 3 is a cross-sectional view through the casing.

Similar reference-numerals designate corresponding parts in all the figures of the drawings.

A portion of a radiator is shown in the accompanying drawings and is designated 4, said radiator being provided with a well-known form of vent device 5, which includes an upstanding outlet-stem 6, having an adjusting-screw 7 threaded thereinto. This screw is provided with the usual outlet-channel 7^a, operating in a manner well understood to those skilled in the art. The structure in this particular is not important and may be varied as desired.

The attachment forming the subject-matter of this invention is constructed as follows: A nipple 8, substantially in the form of a T-coupling, has one end 9 interiorly threaded to screw upon the stem 6, the opposite end being provided with a cap 10, in which is rotatably mounted an actuating screw-driver stem 11, said stem extending longitudinally through the nipple and having a head 12 that is adapted to engage in the slot of the adjusting-screw 7. An actuating-wheel 13 is located on the exterior end of the stem for turning the same. To the intermediate boss 14 of the nipple is secured the upper end of a downwardly-extending conduit 15, having an offset lower end 16 threaded into a coupling 17, said coupling flaring toward its outer end. An upstanding cylindrical casing 18 is screwed upon the outer end of the coupling 17 and carries a cap 19 at its upper end, which cap is provided with an outlet 20. A perforated partition 21 extends across the casing 18 between its ends, said partition defining the top of a water-chamber 22. A valve-seat 23, carried by and preferably forming a part of the upper end of the coupling 17, constitutes the bottom of the casing. A valve 24, preferably, though not necessarily of the ball type, is located in the water-chamber 22 and normally rests upon the valve-seat 23, said valve thus opening outwardly or upwardly. The casing 18 above the partition is substantially filled with muffling means, said means comprising a body 25 of any suitable porous material through which air can pass.

In use the device is attached to the outlet of the ordinary radiator-vent, as shown. Consequently it will be seen that air escaping through said vent must pass through the conduit 15 by the valve 24 through the muffler, finally escaping at the orifice 20. The outward passage of the air opens the valve, and the noise of said escaping air is prevented by the muffler. If, however, a partial vacuum should be formed in the radiator, the valve 24 will seat itself and thus prohibit the ingress of air. The device when in place will not interfere with the adjustment of the valve mechanism of the vent 5, for the actuating-stem 11 affords convenient means for adjusting the screw 7. Consequently it is not necessary to remove the device in order to adjust said screw.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention. For instance, the particular type of valve employed is not essential, and that illustrated may be substituted by

any other well-known form. Furthermore, the material of which the muffler is constructed may be anything found desirable for the purpose.

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

1. In a vent attachment for radiators, the combination with a nipple provided with means for attachment to a radiator vent device, of a downwardly-extending conduit connected to the nipple, an upstanding casing carried by the lower end of the conduit, and an upwardly-opening valve located in the casing.

2. In a vent attachment for radiators, the combination with a nipple provided with means for attachment to a radiator vent device having vent valve mechanism, of means mounted in the nipple for adjusting the vent valve mechanism of the device to which such nipple is applied, a downwardly-extending conduit connected to an intermediate portion of the nipple, an upstanding casing mounted at its lower end on the lower end of the conduit, and an upwardly-opening valve located in the casing, said casing having an outlet in its upper end.

3. A vent attachment including a nipple comprising a substantially T-coupling, one end of which is threaded to screw upon the valved vent device of a radiator, a cap on the opposite end of the vent attachment, a screw-driver stem journaled in the cap and adapted to be operated to adjust the valve mechanism of the vent device, and a valve-controlled conduit connected to the intermedate portion of the coupling.

4. A vent attachment including a nipple comprising a substantially T-coupling, one end of which is threaded to screw upon the valved vent device of a radiator, a cap on the opposite end of the vent attachment, a screw-driver stem journaled in the cap and adapted to be operated to adjust the valve mechanism of the vent device, and a conduit connected to the intermediate portion of the coupling.

5. In a vent attachment for radiators, the combination with a nipple having means for attachment to a radiator vent device having a vent controlling-valve, of means for adjusting the vent valve mechanism, carried by the nipple and projecting through the top of the same, a casing located at one side of the nipple and connected to an intermediate portion thereof, and a valve operating in the casing.

6. In a vent attachment for radiators, a casing having a water-chamber in its lower end and an outlet in its upper end, a valve-seat arranged in the water-chamber, an outwardly-opening valve located in the chamber and coöperating with the seat, muffling means arranged in the casing above the water-chamber, a downwardly-extending conduit having its lower end connected to the lower end of the casing, and a nipple carried by the upper end of the conduit and constituting means for attaching the same to radiator.

7. In a vent attachment for radiators, the combination with a nipple comprising a coupling, one end of which is arranged to be threaded upon a radiator vent device having a valve therein, of a screw-driver stem journaled in the nipple and arranged to engage the vent-valve, a downwardly-extending conduit having its upper end connected to the nipple, an upright casing secured to the lower end of the conduit, a perforated partition located transversely in the casing above its lower end, forming beneath the same a water-chamber, a valve-seat arranged in the water-chamber, an upwardly-opening valve operating in the chamber and coöperating with the valve-seat, a cap for the casing having an outlet, and a muffling body located in the casing and resting upon the partition.

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

EMMET D. BARNES.

Witnesses:
EDWIN S. PRATT,
SPRAGUE PRATT.