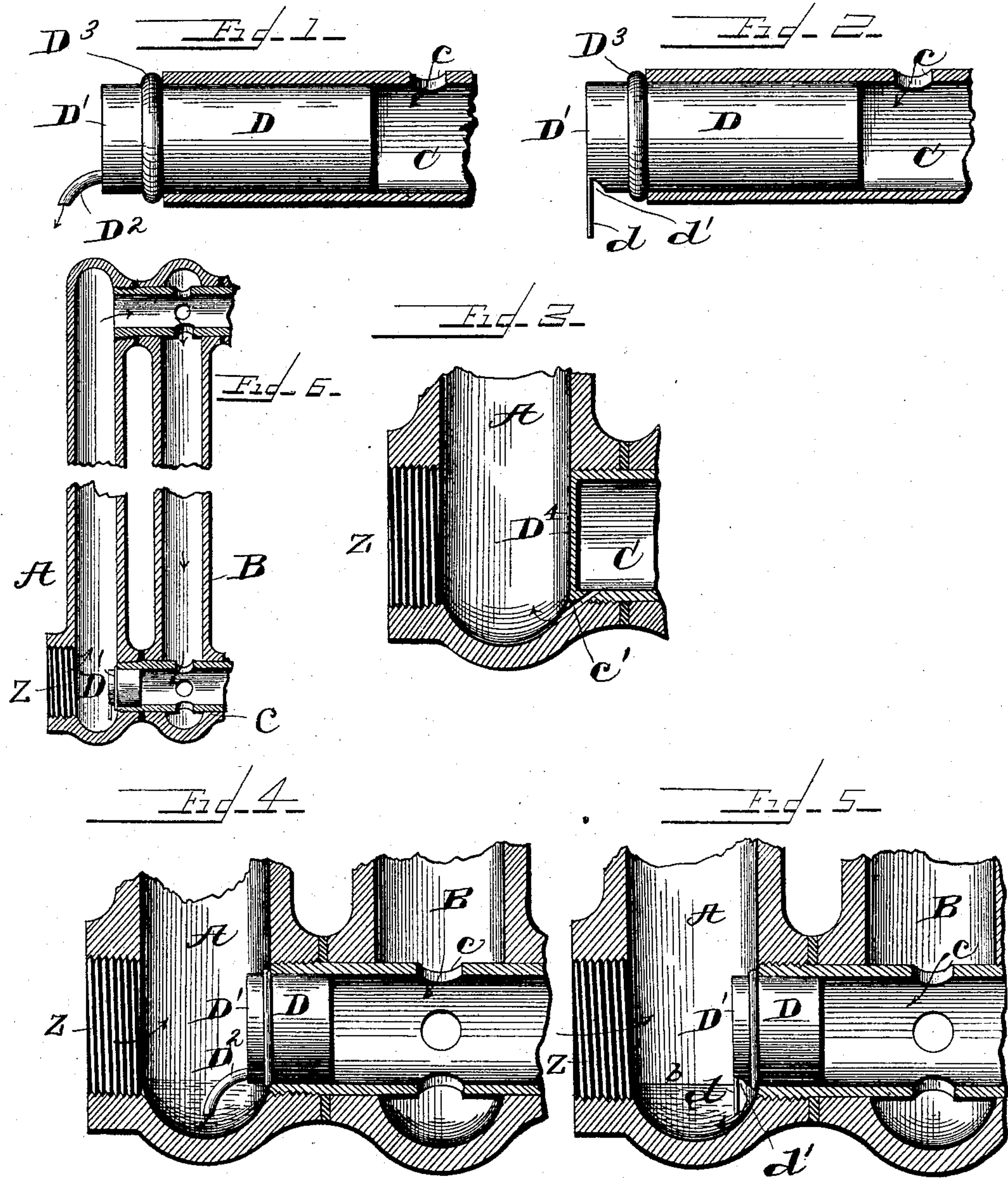


(No Model.)

W. E. LANDON.
RADIATOR.

No. 486,480.

Patented Nov. 22, 1892.



Witnesses
G. A. Taubenschmidt
M. Lorian

Inventor
William E. Landon
By Edwin S. Clarkson
his Attorney

UNITED STATES PATENT OFFICE.

WILLIAM E. LANDON, OF PHILIPSBURG, ASSIGNOR TO JAMES E. HUGHES, OF PITTSBURG, AND LEWIS N. IRELAND, OF ALLEGHENY, PENNSYLVANIA.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 486,480, dated November 22, 1892.

Application filed September 19, 1891. Serial No. 406,181. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. LANDON, a citizen of the United States, residing at Philipsburg, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in Radiators; 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.

My invention relates to positive-acting radiators such as is shown in my patent, No. 457,649, issued August 11, 1891. In the above patent I show a swinging check-valve in the lower connecting-pipe as a baffle to prevent the steam from entering said pipe and to allow the water of condensation to flow out. The objection to the swing check-valve shown in my patent is that the water of condensation rusts the same, thus preventing the valve from working properly, as it "sticks" sometimes on account of said rust.

Now it is the object of my present invention to provide instead of the check-valve claimed in my patent a baffle adapted to fit into the end of the lower connecting-pipe, the outer end of said baffle being closed, and a bent pipe projecting downward from the bottom of the same to below the water-line in the first tube or section of the radiator; or the baffle may have the outer end closed and be provided with a depending portion to project below the bottom and also below the water-line, and a perforation near the outer end of the lower connecting-pipe behind the baffle will be sufficient to allow the water to flow out, or the baffle itself may be perforated. If it is desired, I may plug up one end of the lower connecting-pipe and have a small aperture near the outer end of the pipe on the lower side to allow the water of condensation to flow out. Either of the above forms of baffle may be used, as the main object of my invention is to prevent the steam or hot water from entering the lower perforated connecting-pipe, thereby forcing it up the first tube or section to the top of the radiator, where it

enters the top connecting perforated pipe and is distributed therefrom equally in all of the tubes or sections of the radiator. This baffle not only forces the heating medium to the top of the radiator, but at the same time allows the water of condensation to flow out of the end of the lower perforated connecting-pipe and thus down the supply-pipe. This construction is obviously for "one-pipe work," and with these objects in view my invention consists of the parts and combination of parts as will be hereinafter more fully set out.

In the drawings, Figure 1 is a side elevation of a baffle in the connecting-pipe, the latter being in section. Fig. 2 is a similar view of another form of baffle. Fig. 3 is a detail section of one end of the connecting-pipe, having its end plugged and provided with a small aperture. Fig. 4 is a detail view of two sections of a radiator, showing the baffle in Fig. 1 in position. Fig. 5 is a similar view showing the baffle in Fig. 2 in position. Fig. 6 is a sectional view of two loops of a radiator, showing the baffle in position.

A represents the outer section of tube of the radiator, and B the next adjacent tube. These tubes or sections A and B are connected together by means of the perforated connecting-pipe C, as is fully described in my Letters Patent hereinbefore referred to. The pipe C has small openings *c* to allow the water of condensation to pass from the tubes or sections into the perforated pipe C.

In Fig. 4 the baffle D is composed of a short tube which fits snugly into the pipe C. This tube D is of course open at its rear end and closed at its outer end by means of the plate D'. This plate D' has a small aperture in which is secured one end of a bent pipe D², which extends below the water-line in the bottom of the first section of the radiator. D³ is a rib or flange extending entirely around the baffle-tube, so as to prevent the baffle from being pushed too far in the pipe C.

In Fig. 5 the baffle-tube is similar to that shown in Fig. 1, with the exception that the plate D' extends down past the tube proper D, as at *d*, and below the water-line. In this

instance the baffle-tube is provided with a small aperture d' , through which the water of condensation flows out of the pipe C.

In Fig. 3 I drill or cast or in any other manner form a small hole c' in the lower part of the pipe C, the outlet of which is below the water-line in the first section of the radiator. The outer end of the pipe C in this instance is closed by a plate D^1 . It may be closed by a plug or in fact in any desirable manner.

It is obvious that my radiator is a direct one, or what is known to the trade "a one-pipe work." The steam enters the inlet Z and strikes against the baffle-plate and is thereby deflected upward, as indicated by the arrows. Passing up this first section it enters the perforated distributing-pipe (not shown) at the top, and passing through the perforations in said pipe is distributed evenly in all of the sections composing the radiator, the water of condensation falling into the pipe C, as fully described in my patent hereinbefore mentioned, and passes out through the opening in the baffles, thence to the source of heat.

The bulb on the lower part of the section A is always filled with water of condensation up to the line on which the steam enters.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with two radiator-sections having perforated connecting-pipes to establish communication, of a baffle-tube with one end closed, provided with a duct to establish communication between the first and second section at the bottom, substantially as described.

2. The combination, with two radiator-sections, of a baffle-tube having one end closed and provided with a duct D^2 and the rib D^3 , said duct establishing communication between the first and second sections, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. LANDON.

Witnesses:

C. U. HOFFER,
ALFRED MAYER.