

R. BEZVODA.
RADIATOR.
APPLICATION FILED OCT. 23, 1915.

1,210,265.

Patented Dec. 26, 1916.

Fig. 1.

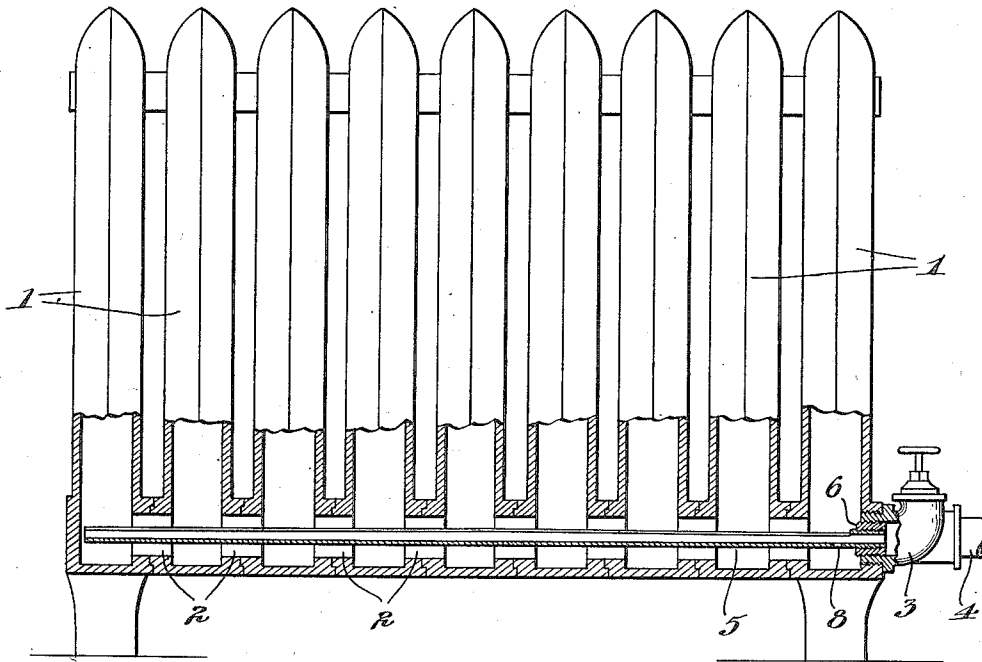


Fig. 2.

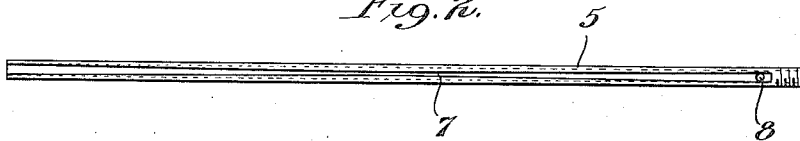


Fig. 3.

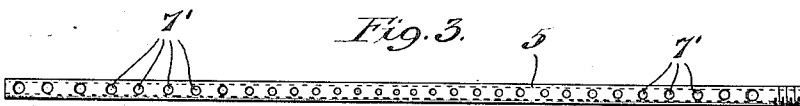
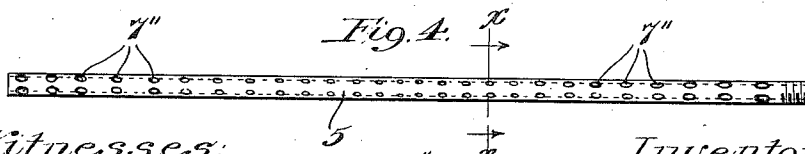


Fig. 4.



Witnesses:

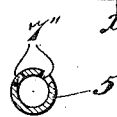
H. D. Bull.
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Inventor,

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by *Joshua H. Jones*
his Attorney.

Fig. 5.



UNITED STATES PATENT OFFICE.

RUDOLF BEZVODA, OF CHICAGO, ILLINOIS.

RADIATOR.

1,210,265.

Specification of Letters Patent.

Patented Dec. 26, 1916.

Application filed October 23, 1915. Serial No. 57,462.

To all whom it may concern:

Be it known that I, RUDOLF BEZVODA, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Radiators, of which the following is a specification.

My invention relates to improvements in radiators, and has for its object the production of an attachment for radiators which will insure uniform distribution of the heating fluid through the coils of the radiator.

A further object is the production of an attachment as mentioned, which will be of simple construction and efficient in use.

Other objects will appear hereinafter.

With these objects in view, the invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which,

Figure 1 is a side elevation of a radiator with the lower portion thereof in section, to which is applied an attachment embodying the invention, Fig. 2 is a top plan view of the form of the attachment shown in Fig. 1, Figs. 3 and 4 are views similar to Fig. 2 of slightly modified forms of the attachment, and Fig. 5 is an enlarged section taken on line $x-x$ of Fig. 4.

The preferred form of construction, as illustrated in the drawing, is applied to a steam radiator of the type consisting of a plurality of vertical coils 1 which are arranged side by side and securely connected together, the lower ends of said coils being in open communication through passages 2. Inlet to the radiator is controlled by a valve 3 arranged at one end thereof in alinement with the openings 2, the steam supply pipe 4 communicating with said valve, as shown.

The attachment constituting the subject matter of this application is embodied in an elongated pipe 5 arranged in the lower ends of coils 1, said pipe being substantially co-extensive with the radiator and passing through the openings 2, as clearly shown in Fig. 1. The rearward end of pipe 5 is connected with the valve 3 by means of a reducer 6, the arrangement being such that, in the operation of the radiator, the steam or

heating fluid supplied through the valve 3 will be introduced into the pipe 5 and thence into the coils 1.

The pipe 5, in the preferred form of the attachment is formed at its upper side with a longitudinally extending slot 7 through 60 which the steam is permitted to pass from said pipe into the coils 1.

It has been found in the operation of steam radiators, that upon the first introduction of steam to the radiator, the latter will generally clog with cold air except at the coils close to the inlet to the radiator, and that it frequently takes considerable time to force this cold air from the coils so as to permit of the circulation of steam therethrough. With the pipe 5, however, slotted at its upper side to allow for the escape of steam therefrom, the steam introduced to the radiator will not all be discharged first into the first coil, as is now the case, and then find its way to the succeeding coil, but with the provision mentioned, the steam will be supplied to all coils simultaneously, thus resulting in uniform circulation of steam through all coils, with the result of more readily and effectually permeating the cold air in the radiator with the hot steam supplied.

In order to secure exact uniformity in the supply of steam to the various coils of the radiator, the slot 7 is formed of restricted width at its center, the same gradually increasing in width toward the end of the pipe. It has been found through experiment, that the steam which is introduced to the radiator moves very rapidly adjacent the inlet, the same decreasing in velocity toward the center of the radiator, partly because of backing up. For this reason, the slot 7 is made wide adjacent the inlet in order to compensate for the rapidity of movement of the steam and reduced in width at the center of the radiator in order to compensate for the accumulation of steam at the center. The slot is again widened toward the left hand end of the pipe since the supply of steam as the same reaches the remote end of the radiator is materially decreased and through widening of said slot at this point, this decrease in quantity is compensated for. Hence, with the formation of the slot 7 as described, it has been found that uniformity in the supply of the steam to the various coils of the radiator is insured.

The forms shown in Figs. 3 and 4 are practically the same as the form shown in Fig. 2, except that in these forms a plurality of perforations is provided in the pipe instead of a single slot, said perforations being of graduated size corresponding with the form of slot 7, as shown.

In Fig. 3, a single line of perforations 7' is provided whereas in the form shown in Fig. 4, two lines of perforations 7'' are provided. The operation of each, so far as effecting uniform distribution of the steam to the coils of the radiator, is precisely the same as the form first described.

Formed in the under side of the pipe 5, adjacent the inlet end thereof, is a drain opening 8 through which the water of condensation is permitted to pass in the draining of said water from the radiator, as will be readily understood.

While I have illustrated and described the preferred forms of construction for carrying my invention into effect, these are capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and

modifications as come within the scope of the appended claim.

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

The combination with a radiator comprising a plurality of vertical coils in open communication with each other at their lower ends; an inlet for the heating fluid communicating with the lower ends of said coils at one end of the radiator; and a pipe communicating at one end with said inlet and extending into the lower ends of said coils, said pipe being coextensive with the length of the radiator and having a longitudinally extending opening at its upper side for the escapement of the heating fluid, said opening being restricted at the middle of said pipe and enlarging gradually toward the ends thereof, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RUDOLF BEZVODA.

Witnesses:

JOSHUA B. H. POTTS,
HELEN F. LILLIS.