No. 752,844. PATENTED FEB. 23, 1904.

W. R. KINNEAR.

MEANS FOR PROVIDING ZINC IN RADIATORS.

APPLICATION FILED SEPT. 8, 1903.

NO MODEL.

Fig. 1.

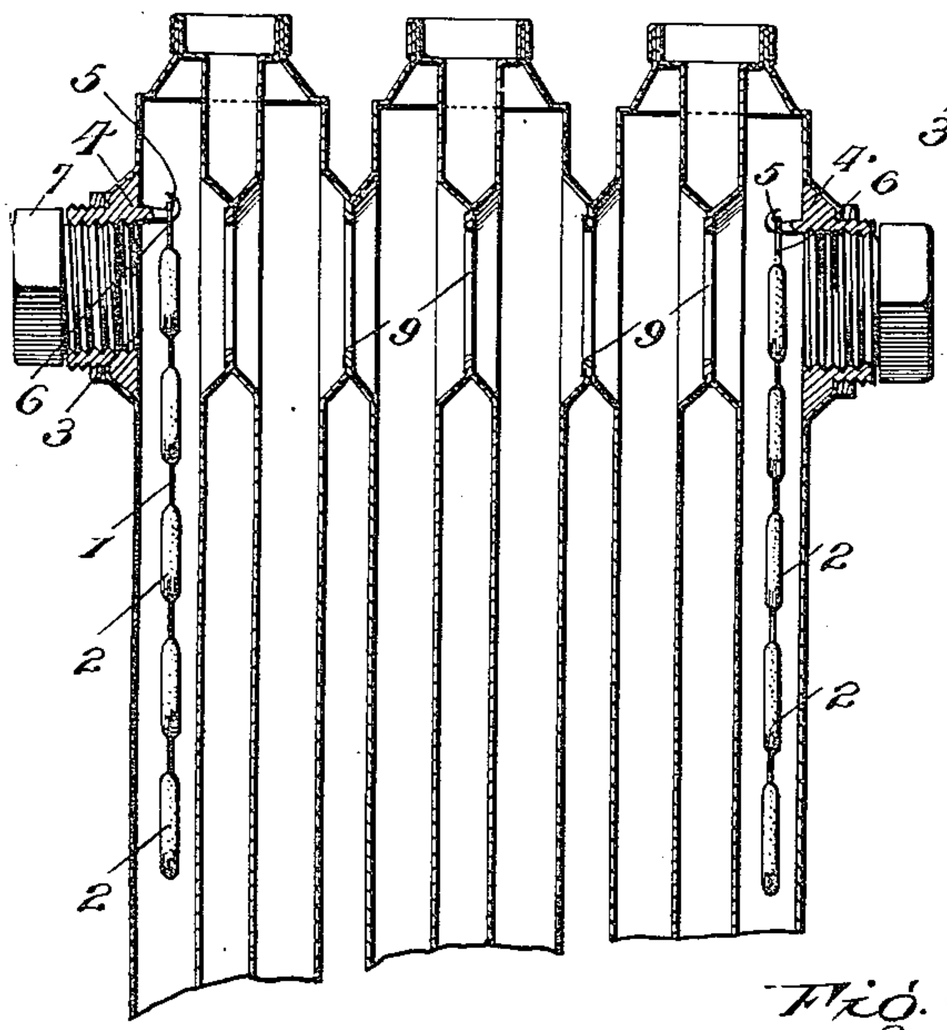


Fig. 2.

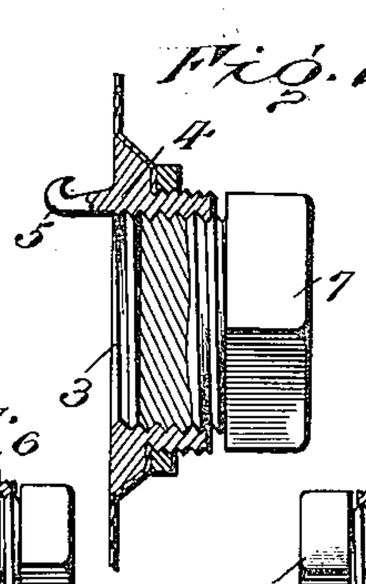


Fig. 3.

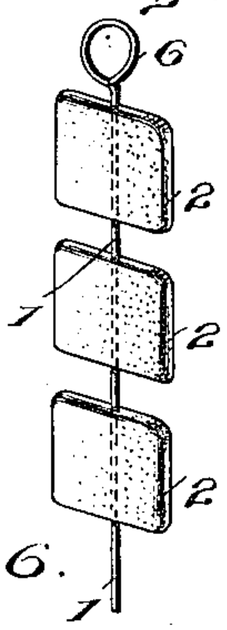


Fig. 4.

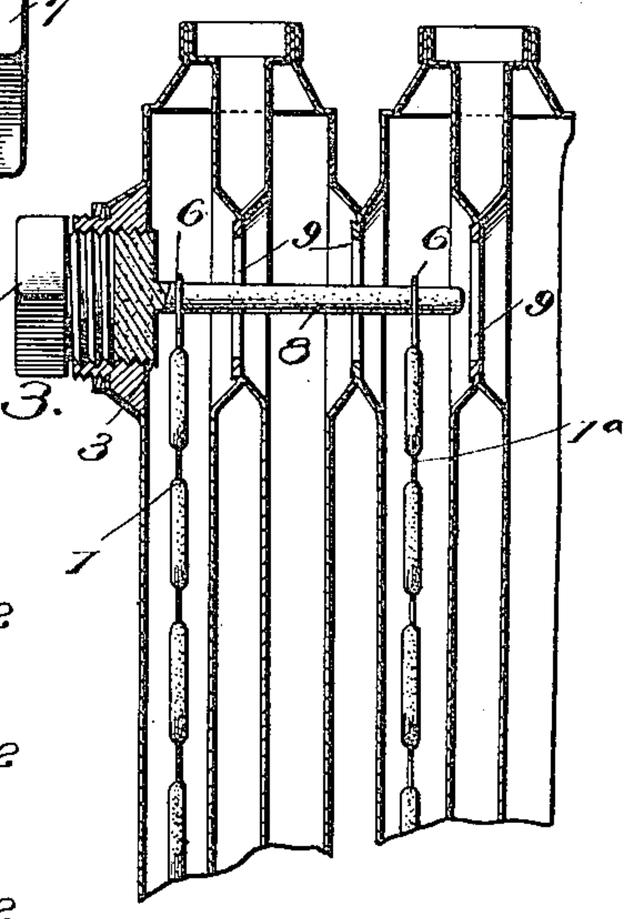
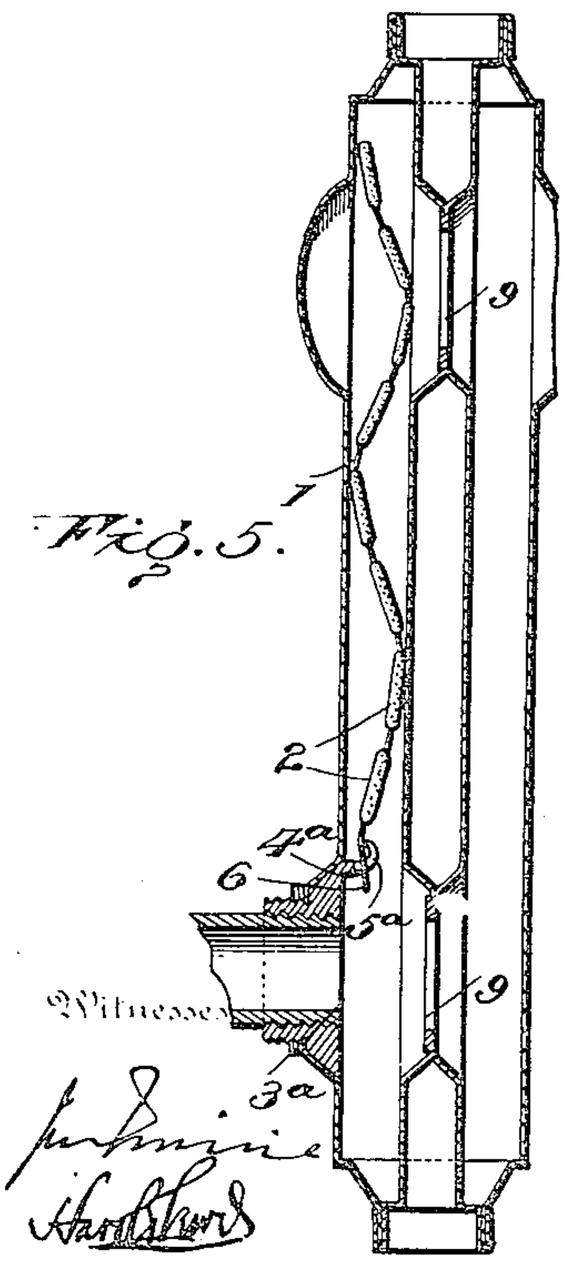


Fig. 5.



Witnesses:

Fig. 6.

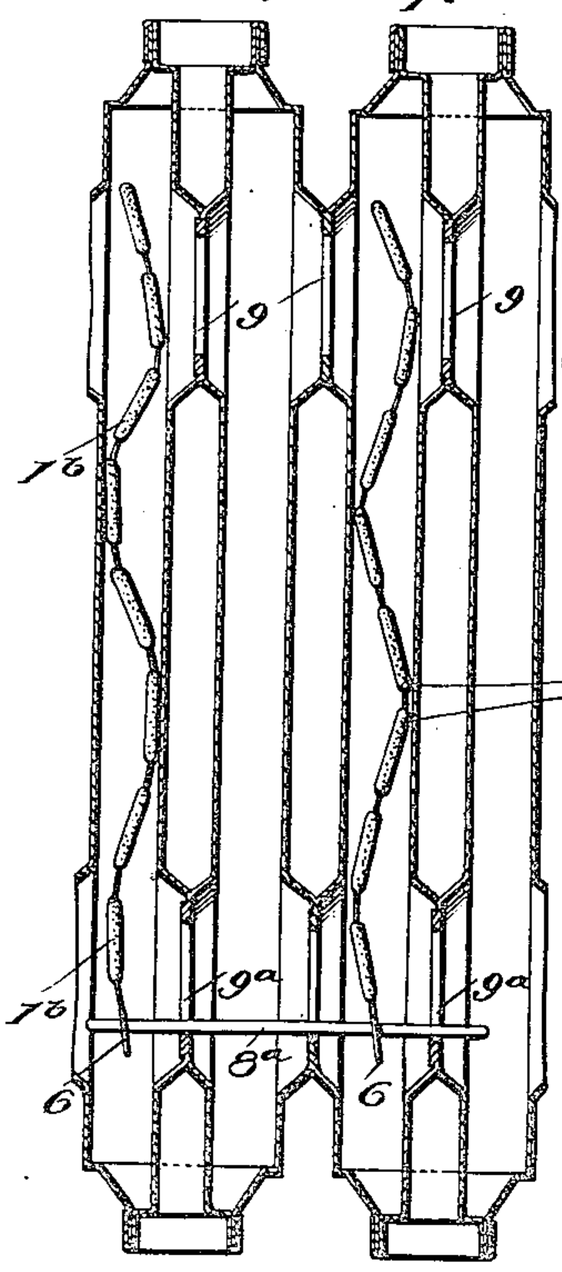
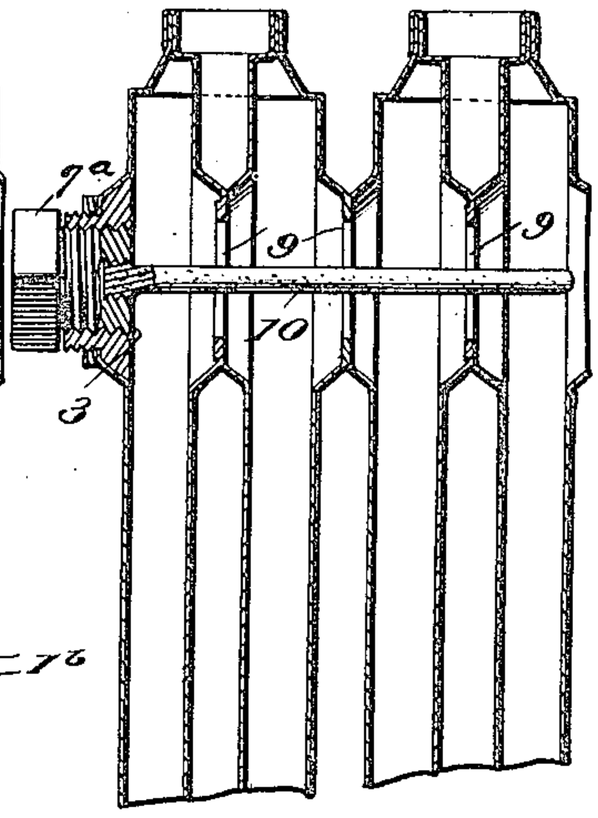


Fig. 7.



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Attorneys

No. 752,844. Patented February 23, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM RAYMOND KINNEAR, OF NEW YORK, N. Y.

MEANS FOR PROVIDING ZINC IN RADIATORS.

SPECIFICATION forming part of Letters Patent No. 752,844, dated February 23, 1904.

Application filed September 8, 1903. Serial No. 172,423. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM RAYMOND KINNEAR, a citizen of the United States, residing at New York, in the county of New York, State of New York, (whose post-office address is No. 141 Broadway, New York, N. Y.,) have invented certain new and useful Means for Providing Zinc in Radiators, of which the following is a specification.

In the manufacture of sheet-metal radiators for steam and hot-water heating corrosion may become a serious problem when the metal used is steel or iron.

The object of my invention is to provide a simple and effective means of supplying zinc to radiators which will have the effect of preventing corrosion.

In carrying out my invention I provide zinc in suitable form, and preferably support it in one or more of the openings through which circulation is established in the radiator or similar openings in the end units, which are ordinarily closed when the radiator is in use. The zinc may be in various forms—such, for instance, as in a series of blocks mounted on a wire to be hung within the radiator or a zinc rod to be inserted transversely through the circulating-openings therein. In the form of zinc blocks mounted on a rod it offers the advantage of providing for convenient selection of the quantity appropriate to the interior surface of the radiator.

In providing closures for the openings in radiators or radiator units constructed of sheet metal it is necessary to introduce a thimble of heavier metal, which is suitably connected with the body of sheet metal at the opening, and in carrying out my invention I support zinc from this thimble or filling-piece. This may be done by hanging the zinc in suitable form from the thimble or filling-piece or by supporting it from the plug, which is screwed or otherwise inserted into the thimble or filling-piece.

In the accompanying drawings, which illustrate some of the numerous ways in which my invention can be carried out, Figure 1 is a vertical sectional view of a radiator composed of three units to which one form of my present invention is applied. Fig. 2 is a detail view, on an enlarged scale, showing the support for the zinc units. Fig. 3 is a detail view, on an enlarged scale, of a group of zinc units adapted to be introduced into a radiator. Fig. 4 is a sectional view of a portion of a radiator, showing another method of supporting a group of zinc units therein. Figs. 5 and 6 are sectional views of radiator units, showing further modifications of means for supporting zinc units in a radiator. Fig. 7 is a sectional view of a plurality of units, showing another method of supplying zinc to radiators.

According to the first part of my invention I provide a supporting rod or wire 1, upon which may be mounted cubes or other shaped blocks 2, of zinc, corresponding in number to the inner surface of the radiator to be protected and the time for which it is desired to have the protection last without necessitating replacing the zinc. These blocks of zinc may be conveniently mounted on the supporting-rod by casting them thereon or in any other suitable manner, the rod being preferably of copper or some other metal which will not be destroyed under the conditions to be met with within the radiator. This series of zinc blocks is to be introduced through one of the openings of the radiator—such, for instance, as the opening 3—with which each unit is formed in constructing it, or a number of these series of zinc blocks may be introduced through openings on different sides of the radiator. When so introduced, they may simply be allowed to stand in the radiator by the rigidity of the rod upon which they are mounted, or preferably they may be supported in the radiator.

In Fig. 1 the thimble 4 of the opening 3 is provided with a hook 5, upon which the series of blocks of zinc is supported by a loop 6 in such a way that the chain or series of zinc blocks hangs vertically in the water or steam chamber of the radiator.

According to Fig. 4 the cap 7, which closes the opening 3, carries a rod which extends transversely from the cap 7 through the opening 3 and the circulating-openings 9 of the radiator, and has supported upon it the zinc

rod 1. This means of support provides for introducing a rod 1^a in one or more of the interior chambers of the radiator.

According to Fig. 5 the zinc rod 1 is supported from a hook 5^a, formed on a lower thimble 4^a of the radiator-opening 3^a.

According to Fig. 6 the series of zincs 1^b are supported from a rod 8^a, that is simply introduced through and rests upon the walls of the lower circulating-opening 9^a of the radiator and supports the rods 1^b vertically above it.

According to the form shown in Fig. 7 a cap 7^a carries a rod 10, which is itself formed of zinc and extends transversely through the circulating-openings of the radiator and affords the desired protection to the interior walls. The zinc rod 10 may be supported from the cap 7^a in any suitable manner, and this construction presents in common with the construction shown in Fig. 4 a cap supporting the rod and the zinc supported from said rod, the whole being mounted on the thimble or filling-piece of the opening. Obviously the zinc portion of the rod 10 can be connected in any suitable manner with the cap 7^a—such, for instance, as by screw-threads or by having a rod extend from the cap and having a tubular piece of zinc placed over the same.

Having thus described my invention, the following is what I claim as new therein:

1. In combination with a radiator composed of units and provided with an opening and means for closing the same, a rod supported by the said closing means and extending transversely of the radiator units and a metal structure of different material from the metal of the radiator supported by the rod and extending longitudinally of the radiator units.

2. In combination with a radiator, having an opening, and a removable metallic cap or plug closing said opening, a zinc rod projecting inwardly from said opening, supported by said cap or plug and electrically connected with the radiator thereby.

3. In combination with a radiator composed of units and having an opening and metallic means for closing same, a rod supported by and electrically connected with the radiator through said closing means, extending transversely of the radiator units, and an elongated zinc structure suspended on said rod extending longitudinally of the radiator units.

4. In combination with a radiator composed of units and provided with an opening and means for closing same, a rod supported by said closing means and extending transversely of the radiator units, and a metal structure electronegative to the metal of the radiator supported by said rod and extending longitudinally of the radiator units.

The foregoing specification signed this 31st day of August, 1903.

WILLIAM RAYMOND KINNEAR.

In presence of—

HERVEY S. KNIGHT,

J. GREEN.