

No. 781,345.

PATENTED JAN. 31, 1905.

W. R. KINNEAR.
RADIATOR.

APPLICATION FILED FEB. 27, 1904.

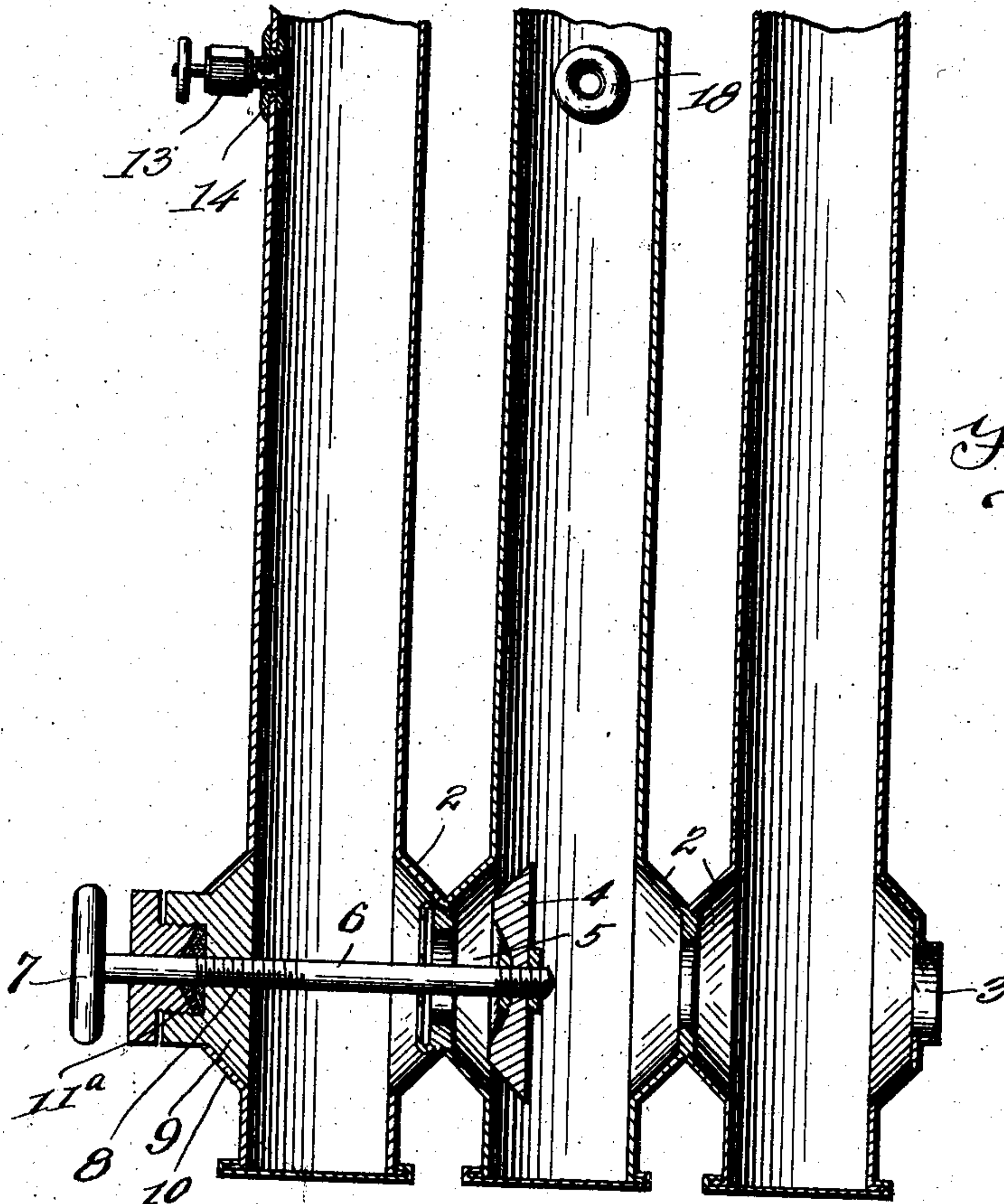


Fig. 1.

Fig. 2.

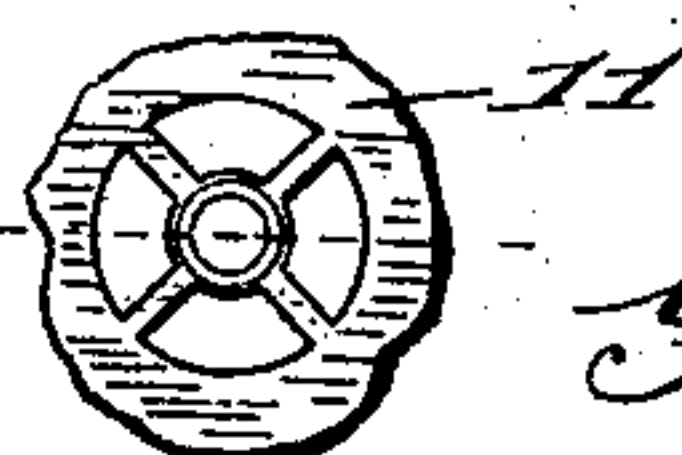


Fig. 3.



Fig. 4.

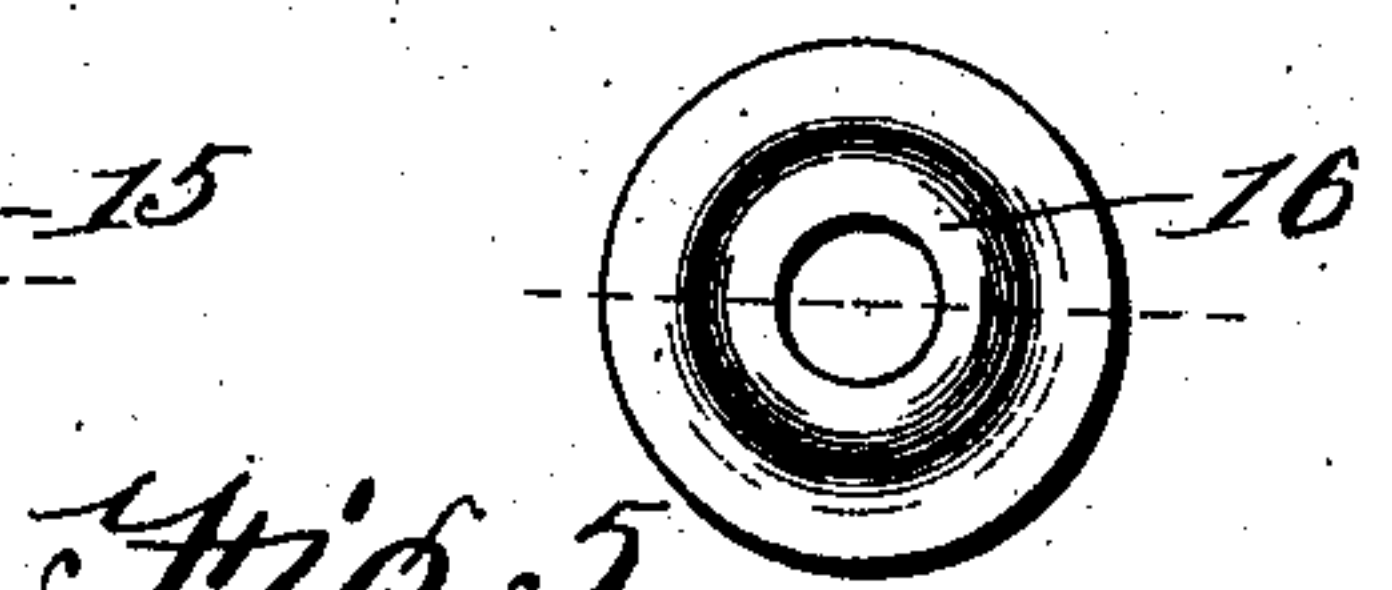
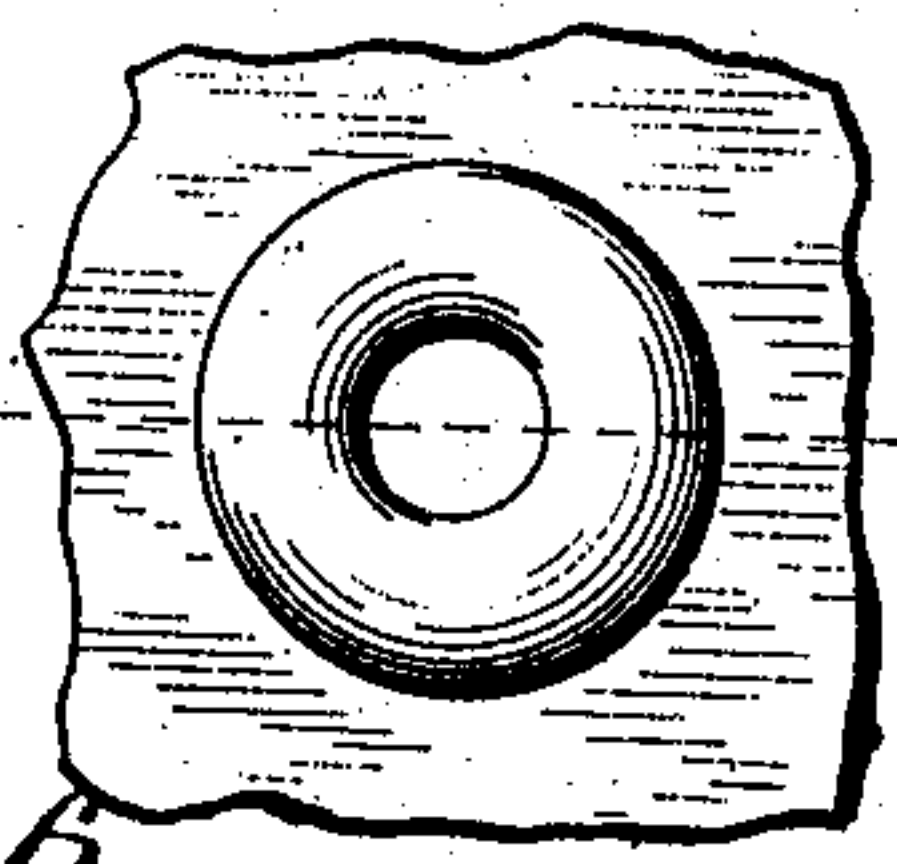


Fig. 5.



Fig. 6.



Inventor

W. R. Kinnear
By Knight Bros
Attorneys

Witnesses

James Kinney
W. H. Linn

UNITED STATES PATENT OFFICE.

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

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 781,345, dated January 31, 1905.

Application filed February 27, 1904. Serial No. 195,638.

To all whom it may concern:

Be it known that I, WILLIAM R. KINNEAR, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Radiators, of which the following is a specification.

This invention relates to radiators, and more particularly to steam-radiators.

It has for its object to provide a means by which one or more of the radiator units may be cut off from the steam-supply, whereby the radiating-surface of the radiator may be controlled.

Other objects and advantages will be described in the following specification and will be particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical section of a radiator, showing an embodiment of my invention mounted therein. Fig. 2 is a vertical section of the spider. Fig. 3 is a plan view of the spider, and Figs. 4, 5, and 6 are vertical sections and plan views of the air-valve-attaching thimble employed in my radiator.

Referring more particularly to the drawings, 1 indicates a sheet-metal radiator the units of which are secured together at their lower ends by means of bosses 2. Steam engineers of the present day are going back to the old plan of employing a single-pipe system—that is, a system in which the steam-feed pipe also serves as the return-pipe for the condensed vapors—and therefore I have shown but one steam-inlet 3 for my radiator.

In one of the units between the inlet 3 and the last unit I mount a frusto-conical valve 4, which seats in one of the bosses 5 and is operated by means of a rotary valve-stem 6, which is rigidly secured to the valve, extends through the radiator and through the end wall of the last unit, and is provided with a hand-wheel 7 for moving it to and from its seat.

The valve-stem is screw-threaded at 8 and works through a bushing 9, fitted in a boss 10 in alinement with the connecting-bosses 5. Suitable packing 11^a is provided around the stem 6 and in the bushing.

To center the stem 6, a spider 11 is pro-

vided and is held in its proper place in the boss by being formed at its edges into the connecting-seam 12 between the adjacent bosses of the units.

In the end unit I mount as in the ordinary radiator an air-valve 13 by means of an internally-threaded thimble 14. This thimble is formed from a circular sheet-metal blank 15, Fig. 4, stamped to provide a central perforated boss 16, Fig. 5, which is inserted into a perforation in the sheet-metal radiator. Then presses are employed to compress this device, so that it is prevented from spreading and takes the form shown in Fig. 6, minus the screw-threads 17, which are then made. By reason of the compression of the metal a stronger foundation is obtained for the threads. This thimble is claimed in my co-pending application filed February 27, 1904, Serial No. 195,637.

On the side of the last unit between the valve 4 and the inlet 3 I provide an air-escape 18, similar to that on the last unit so that when the valve 4 is closed an escape is provided for the air in advance of the valve.

I have shown and described one embodiment of my invention; but I desire it to be understood that I may make various changes in form, proportion, and minor details without departing from the spirit or sacrificing any of the advantages of my invention.

Having thus described my invention, what I claim is—

1. In a radiator composed of a plurality of units connected by bosses at their lower ends, a valve for opening and closing the connection between two of the units, and seating in one of the bosses.

2. The combination of a radiator comprising a plurality of units connected together by bosses at their lower ends, a valve for opening and closing the connection between the two units, seating in one of said bosses, and means permitting the escape of air upon both sides of said valve.

3. The combination of a radiator comprising a plurality of units connected together by bosses at their lower ends, a valve for opening and closing the connection between the two units, seating in one of said bosses, a

stem for the valve extending to the exterior of the radiator, and a spider positioned in the boss connection and supporting the stem.

4. In a sheet-metal radiator, the combination with a plurality of units, and bosses struck up from the units near their lower ends and connected together, of a valve closing and opening the connection between two of the units, a valve-stem extending from the

valve through one of the end walls of the radiator, and a spider for supporting the valve and stem, formed at its edges into the connecting-seam of one of the bosses. 10

WILLIAM R. KINNEAR.

In presence of—

W. M. HOOD,

CLARENCE DE W. ROGERS.