No. 799,120. PATENTED SEPT. 12, 1905.

B. A. WAY.

RADIATOR.

APPLICATION FILED JAN. 3, 1905.

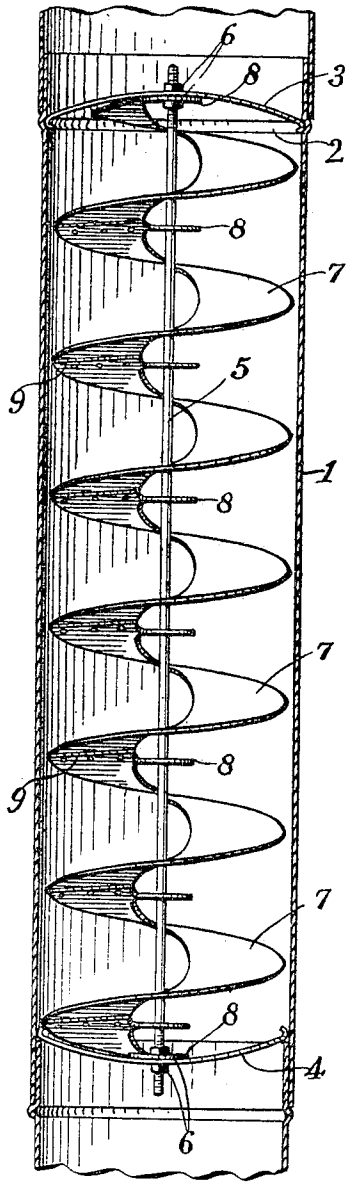


Fig. 1.

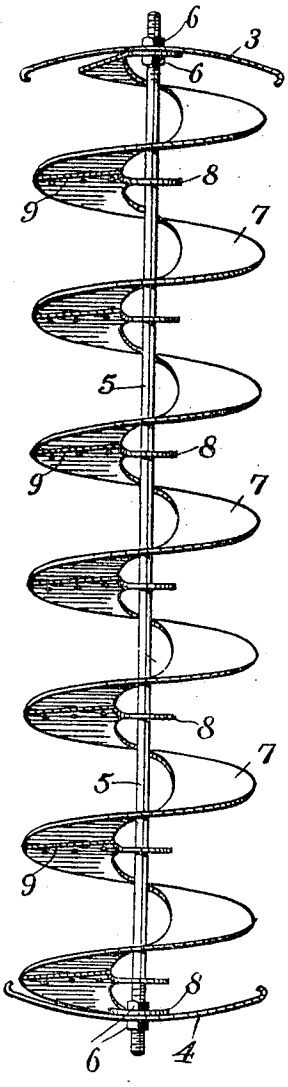


Fig. 2.

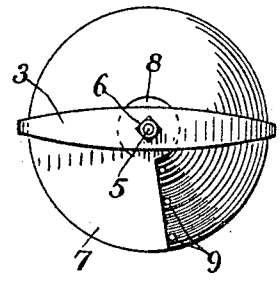


Fig. 3.

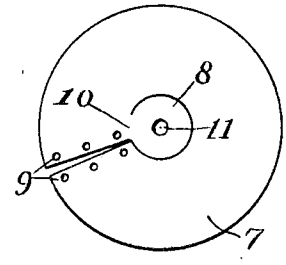


Fig. 4.

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RADIATOR.

No. 799,120. Specification of Letters Patent. Patented Sept. 12, 1905.

Application filed January 3, 1905. Serial No. 239,387.

To all whom it may concern:

Be it known that I, BERT A. WAY, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, 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 improvements in radiators; and its object is to provide a device that may be readily inserted in any ordinary stove or furnace pipe, to provide means for supporting the same in place within the pipe, to provide means for adjustment of the device, and to provide the same with various new and useful features hereinafter more fully described, and particularly pointed out in the claims.

My device consists, essentially, of a spiral arranged with its surface radial to its axis and its outer edge adjacent to the inner surface of the pipe, a rod in the axis of this spiral, supporting-strips on one or both ends of the rod and adapted to engage the inner concave surface of the bead in the pipe, and thus support the rod, adjustable nuts on the rod whereby the spiral may be adjusted, and disks at intervals attached to the spiral and having axial openings to receive the rod, as will more fully appear by reference to the accompanying drawings, in which—

Figure 1 represents my device in elevation and arranged in an ordinary stove or furnace pipe, which pipe is shown in vertical section; Fig. 2, an elevation of my device detached; Fig. 3, a plan view of the same, and Fig. 4 a detail of one of the sheet-metal blanks to form a portion of the spiral and one of the disks.

Like numbers refer to like parts in all of the figures.

1 represents a portion of an ordinary stove or furnace pipe; 2, the concavo-convex bead in the same.

3 is a curved flexible strip having its opposite ends bent downward and adapted to engage the concave inner surface of the bead 2, and thus be supported thereby, and also provided with a central opening to receive the upper end of a rod 5, supported within the axis of the pipe. This strip 3 being arched tends to spread as the weight supported thereby depresses its middle, and thus is securely retained in the bead 2, and at the same time it will readily spring and slide into the pipe. Near the lower end of the rod 5 is another similar strip 4, which may be suitably adjusted to engage the upper end of the next section of pipe below. This lower strip may be omitted and the device will be operative.

7 is a spiral structure, preferably of sheet metal, surrounding the rod 5, having its axis coincident therewith and its surface radial to its axis. This spiral is preferably formed of a series of blanks, as shown in Fig. 4, in which the central portion 8 is severed in circular outline to form a central disk except a small portion of its circumference, as at 10. This circular portion is centrally perforated, as at 11, to receive the rod 5 and is twisted in its connecting portion 10 to adjust it in a plane at right angles to the axis of the spiral. The outer portion 7 of the blank is divided radially, preferably near the connection portion 10, and is perforated and riveted to the next adjacent section at the respective sides of the division and also formed spirally, as shown in the drawings. When assembled, the end disks 8 and the respective strips 3 and 4 are clamped between adjustable nuts 6 near the respective ends of the rod.

The device as shown in Fig. 2 can be sold as an article of manufacture and readily inserted in any stove or furnace pipe. When so inserted, the disks 8 will retard and deflect the central portion of the current passing through the pipe, and the spiral portion 7 will give the current a spiral and centrifugal motion, whereby the heat will be rapidly transmitted through the pipe, and thus increase the radiation therefrom. It will also be noted that the spiral plate will expand radially as its axial dimension is reduced. It can thus by adjusting the nuts on the rod be expanded longitudinally and inserted in a pipe and then expanded radially within the same, and thus made to securely engage the inner surface of the pipe. It may thus be supported in place without the supports 3 or 4; but I prefer to use them as being more secure.

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

1. In a radiator of the class described, the combination of a rod, a spiral surrounding the rod and with its surfaces radial thereto, and means for adjustably attaching the spiral to the rod, whereby the spiral may be expanded or contracted both longitudinally and radially.

2. In combination with the pipe of a stove or furnace a rod in the axis of the pipe, a spiral surrounding the rod, and arranged at a distance therefrom and with its surfaces radial thereto, disks at intervals on the rod and extending within the central opening of the spiral, and means for attaching the ends of the spiral to the rod.

3. The combination of a rod, a pair of adjustable nuts on the rod, a spiral surrounding the rod and having one end inserted between the nuts, and means for attaching the other end of the spiral to the rod.

4. The combination of a rod, a spiral surrounding the rod and attached thereto, and an arched support attached to the rod, and adapted to engage the concave side of the bead in the pipe of a stove or furnace.

5 The combination of a spiral having an open central passage, disks at intervals and extending transversely across said central passage and also attached to the spiral and means for supporting the spiral within a pipe.

6. The combination of a spiral having an open central portion, disks attached thereto at intervals and having central openings, a rod in the said openings, a curved support for the rod, and adjustable nuts on the rod and engaging the end disks and the support.

7. The combination of a spiral having an open central passage, disks at intervals in said passage and attached to the spiral, a rod extending through the axis of the disk, flexible supports on the ends of the rod and adjustable nuts on the rod and engaging the end disks and the supports.

8. As an article of manufacture, a spiral adapted to expand or contract both radially and longitudinally and also adapted to be inserted in a stove or furnace pipe.

9. As an article of manufacture, a spiral having a central longitudinal opening, disks at intervals attached to the spiral and extending within said opening, and in planes at right angles to the axis of the spiral and means for supporting the spiral within a stove or furnace pipe.

10. In combination with a pipe having an internally-concave bead, a support engaging the bead and supported thereby, and a spiral attached to the support and having its surfaces at right angles to its axis.

11. In combination with a pipe having an internally-concave bead, a support engaging the bead and supported thereby, a rod attached to the support, a spiral having an axial opening surrounding the rod, disks attached at intervals to the spiral and arranged transversely of said opening and also having central openings for the rod, and means for attaching the ends of the spiral to the rod.

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

BERT A. WAY.

Witnesses:
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