W. B. SNOW.

STEAM-RADIATOR.

No. 181,992. Patented Sept. 5, 1876.

Fig. 2.

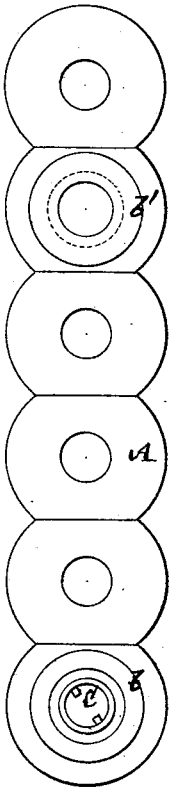


Fig. 1.

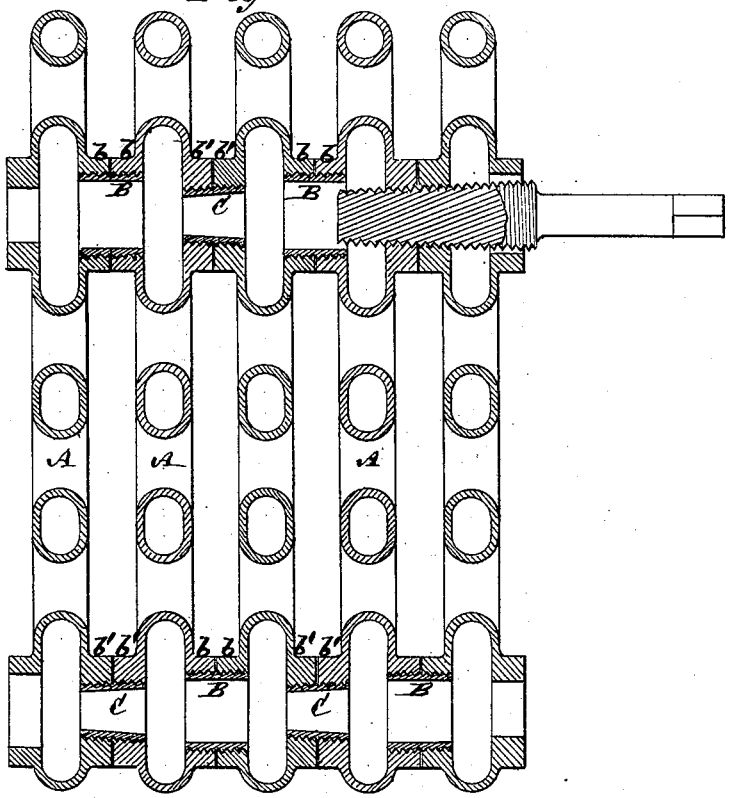


Fig. 3.

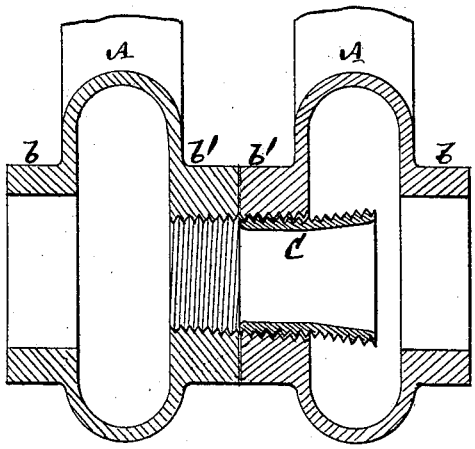
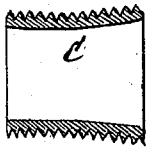


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM B. SNOW, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **181,992**, dated September 5, 1876; application filed August 16, 1876.

To all whom it may concern:

Be it known that I, WILLIAM B. SNOW, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Joints for Steam-Radiators and other sectional steam structures; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention, while applicable to sectionally-constructed steam-boilers, is more particularly designed to be applied to steam-radiators constructed in hollow sections, arranged side by side, and united at or near their opposite ends by hollow screw-joints or nipples.

The invention consists in a novel mode or means of uniting the sections together, whereby construction is economized and a tight joint is secured at or between the several sections.

Figure 1 represents a vertical section of a steam-radiator in the course of being fitted or having its sections united together, and Fig. 2 an end view of the same. Fig. 3 is a sectional elevation, upon a larger scale, of two adjacent radiator sections, in part, in the course of being united by a hollow taper nipple; and Fig. 4, a longitudinal section of such hollow taper nipple detached.

A A are the independent hollow sections or uprights of the radiator, in communication above and below for the purpose of establishing a circulation through them. The general contour of these sections may be that of a series of rings mounted one upon and in communication with each other, whereby a very efficient radiating surface is obtained, and a freedom of independent expansion and contraction of the several sections, without breaking or injuriously straining the joints which unite them, is secured. Said sections, however, may be of any other suitable form. The sections are fitted together alternately above and below by means of cylindrical or approximately-straight hollow screw-nipples B, onto which the opposite end of each alternate section is screwed after said nipples have been duly secured or screwed within the adjacent sections. Sockets *b* on the sides of the sections serve to give a bearing or hold for the screw-nipples, and to form a joint when the sections are screwed up. Other sockets, *b'*, at the opposite ends of the sections, serve a similar purpose, but in connection with a different construction of screw-nipples, as hereinafter described. The screw-nipples B may have either right or left handed screw-threads on them, but they are not designed to be used as independent right and left hand screw-connections, that, being rotated, draw the sections together against surfaces or projections on said connections, but, on the contrary, the adjacent ends of the sockets *b* of the sections A are brought close up to each other by the screwing of each succeeding section onto the nipple B of the preceding one, such mode of connection being alternately made above and below, as regards the several sections. This secures a tight joint, as well as a cheap one, and the joints at the other ends of the sections are made equally secure, and are very efficiently and economically constructed. Thus the sections A are connected with each other alternately above and below, at the junction of the sockets *b'*, during the building up of the radiator, or after the sections have been united with each other, as hereinbefore described, by means of tapering hollow screw-nipples C, of a less diameter than the nipples B, so as to readily pass through the latter or through the sockets *b*, which receive the nipples B. These tapering nipples C are made to fit correspondingly-tapering screw-threads cut in the interior of the sockets *b'*, so that, when screwed to their places, they hold the adjacent sockets *b'* closely together. The interior of the sockets *b'* are first reamed out to the required taper and then cut by a screw-tap introduced through the other sockets *b*, which are of a sufficiently larger interior diameter to admit of this, as also to admit of the insertion through them of the tapering nipples C. The arrangement of the tapering nipples and the tapering screw-threaded holes which they fit may either be all in the same direction or in reverse directions, and their screw-threads be either right or left handed, also said nipples be entered either alternately or otherwise above and below from opposite ends of the radiator.

The nipples C it is preferred to make slightly free in their middle, or, in other words, of a slightly concave form, in direction of their

length, as shown in Figs. 3 and 4, so that when screwed to their places, they will be compressed at their opposite ends, whereby a closer joint is obtained. Various devices may be used for screwing these nipples to their places, and their ends or interior surfaces be specially constructed to provide for the ready manipulation of them.

I claim—

The hollow sections A A, united at or near their opposite ends alternately and respectively by means of cylindrical or approximately-straight screw-nipples B and tapering screw-nipples C, of a less diameter than the interior of the sockets which receive the nipples B, substantially as and for the purposes herein set forth.

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