

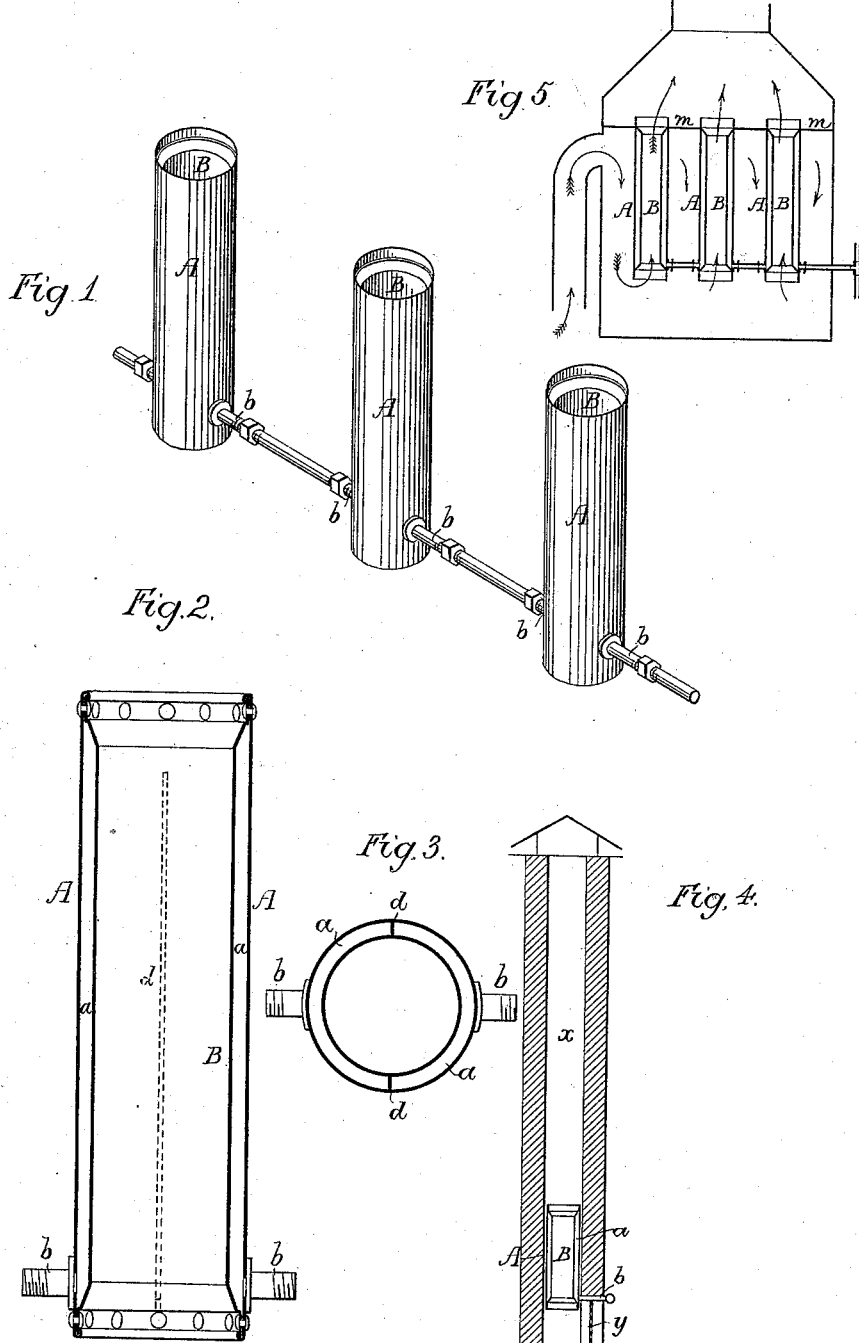
(No Model.)

P. GORMLY & L. BRIDGE.

STEAM RADIATOR.

No. 263,167.

Patented Aug. 22, 1882.



Witnesses:
Harry D. Drury
James J. Tobin

Inventors:
Patrick Gormly
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by their Attorneys
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UNITED STATES PATENT OFFICE.

PATRICK GORMLY AND LEWIS BRIDGE, OF PHILADELPHIA, PA.

STEAM-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 263,167, dated August 22, 1882.

Application filed June 5, 1882. (No model.)

To all whom it may concern:

Be it known that we, PATRICK GORMLY and LEWIS BRIDGE, both citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Steam-Radiators, of which the following is a specification.

The object of our invention is to construct a sheet-metal radiator intended to replace the cast-iron or pipe radiators now generally used in steam-heating, our improved radiator being cheaper, lighter, and more effective as regards radiation than those constructed in the ordinary way.

In the accompanying drawings, Figure 1 is a perspective view of a connected series of our improved radiators; Fig. 2, an enlarged sectional view of one of the radiators; Fig. 3, a sectional plan; Fig. 4, a view of another form of our improved radiator adapted to serve as a ventilator; and Fig. 5, a sectional view, showing a series of radiators in a closed casing.

Ordinary cast-iron or pipe radiators such as are now generally used in steam-heating are objectionable on account of their weight, size, and expense, and with the view of overcoming these objections we propose to make a radiator of sheet metal in the following manner.

The radiator comprises two tubes, A B, preferably cylindrical, and of either iron, copper, or brass.

The inner tube, B, is less in diameter than the outer tube, but is flared and riveted to the outer tube, A, at each end, so that the two tubes inclose an annular space, *a*, which is the steam-space of the radiator, heat being radiated from the outer surface of the tube A and from the inner surface of the tube B, which is open at both ends, so as to permit a free circulation of air through the same.

Secured to and projecting from opposite sides of the tube A, near the lower end of the same, are two necks or branches, *b b*, each threaded for attachment to a steam-pipe by means of an ordinary swiveled nut or coupling.

When a series of radiators thus constructed are coupled together, as shown in Fig. 1, the steam passes in succession through them,

and in order to insure a circulation of steam throughout the entire steam-space of each radiator we arrange within said space, between the inlet and outlet branches, opposite transverse partitions, *d d*, Fig. 3, these partitions extending from the bottom to within a short distance of the top of each space, as shown by dotted lines in Fig. 2.

We propose to use the improved radiator as a ventilator, in which case we locate it in the lower end of a flue, *x*, adjacent to a register, *y*, and connect it to a steam-pipe in the room to be ventilated, the air heated by the radiator rising in the flue *x* and inducing a ventilating current therein. Such a radiator need be provided with only one branch *b*, as shown.

A series of our improved radiators may be placed within a casing having a horizontal partition, *m*, located in respect to the radiators as shown, so that the cold air is compelled to take a circuitous course, and is therefore highly heated before being allowed to escape. (See Fig. 5.)

A radiator constructed in accordance with our invention is extremely light, presents an extended surface for radiation, and can be constructed even of such metals as brass and copper at less expense than an ordinary cast-iron or pipe radiator having the same amount of radiating-surface.

The double tube, with the branch or branches *b*, forms a compact self-contained structure which can be easily transported and readily attached to any convenient steam-supplying pipe.

We are aware that sheet-metal steam-boxes have been combined with inlet and outlet pipes, and with casings through which air was caused to pass in contact with the steam-boxes. Hence we do not claim broadly a sheet-iron radiator. The simple tubes secured together at the ends and having laterally-projecting coupling-pipes, however, we consider a cheaper and more compact device than any of those with which we are familiar.

We claim as our invention—

1. A steam-radiator comprising two sheet-metal tubes, A B, connected at the ends, inclosing an annular steam-space, *a*, and pro-

vided with one or more laterally-projecting branches, *b*, near one end, as set forth.

2. The combination of the outer tube, A, the inner tube, B, flared at the ends and riv-
5 eted to the tube A, and the laterally-project-
ing branch or branches *b*, as set forth.

In testimony whereof we have signed our

names to this specification in the presence of
two subscribing witnesses.

PATRICK GORMLY.
LEWIS BRIDGE.

Witnesses:

HARRY DRURY,
HENRY HOWSON, Jr.