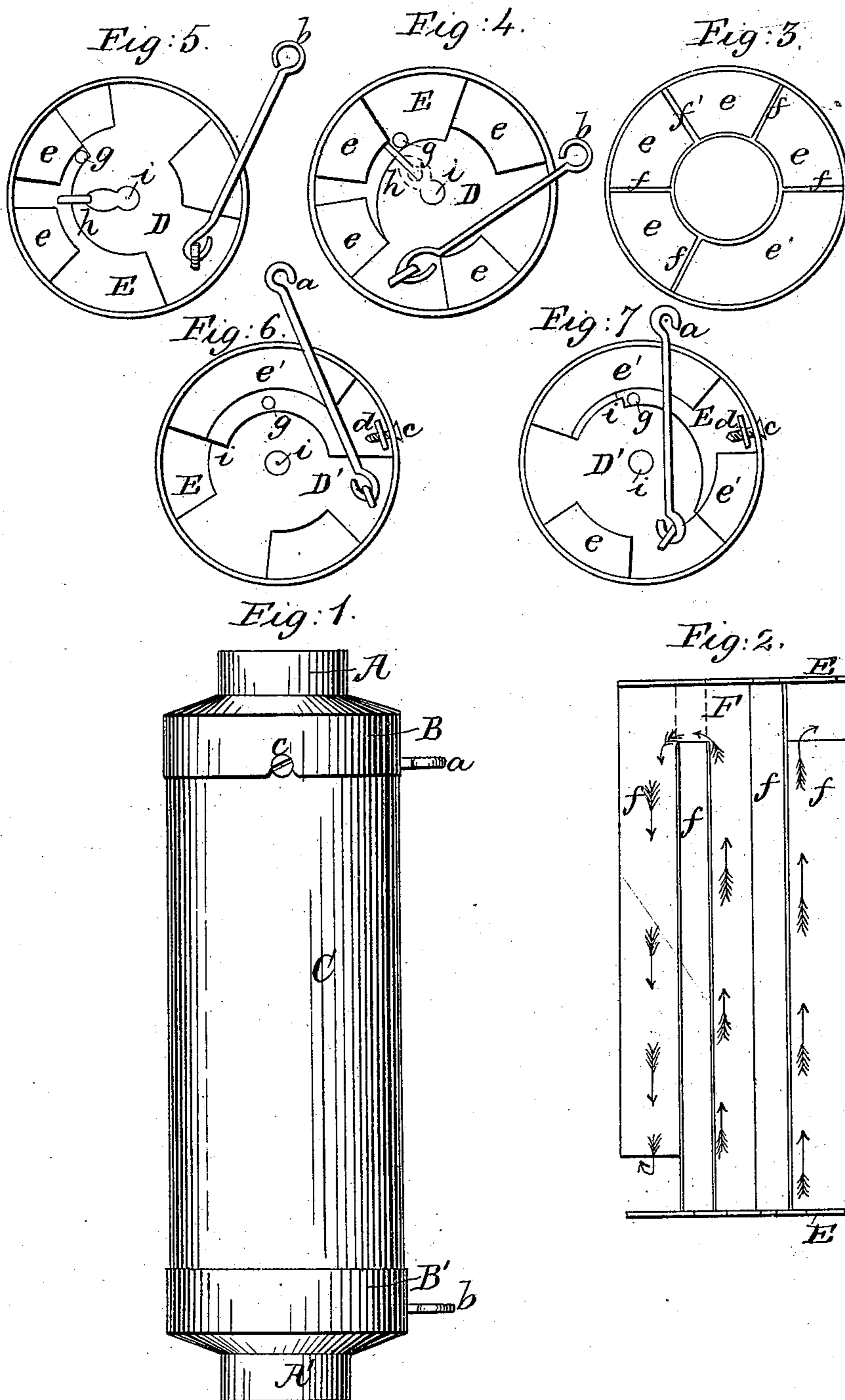


J. B. HYZER.
Heat Radiator Attachment.

No. 44,197.

Patented Sept. 13, 1864.



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UNITED STATES PATENT OFFICE.

JACOB B. HYZER, OF JANESVILLE, WISCONSIN.

IMPROVEMENT IN HEAT-RADIATOR ATTACHMENTS.

Specification forming part of Letters Patent No. 44,197, dated September 13, 1861.

To all whom it may concern:

Be it known that I, JACOB B. HYZER, of the city of Janesville, in the county of Rock and State of Wisconsin, have invented a new and Improved Mode of Constructing and Operating a Heat-Radiator; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, like characters referring to like parts in each figure.

The nature of my invention consists, first, in constructing a heat-radiator in parts, so that it can be readily taken apart and cleaned of all deposited obstructions; second, in constructing a heat-radiator in such a manner that the heat at all times and under all circumstances shall be confined to the outer or radiating surface; third, in using radial plates secured to an inner drum of a heat-radiator, and so arranged, in combination with corresponding dampers, as to form either a direct draft through the radiator or by diving-flues confine the heat to the outer radiating-surface, at the option of the operator; fourth, in so constructing and arranging the dampers of a heat-radiator, when combined as herein described, as to secure perfect control of the heat.

To enable others skilled in the mechanic arts to make and use my invention, I will proceed to describe its construction and operation, by referring to the drawings, in which—

Figure 1 is an elevation. Fig. 2 is an elevation of that part between the dampers, having the outside radiating-case removed. Fig. 3 is a cross-section showing the number and arrangement of the radial plates. Figs. 4 and 5 are cross sections taken just below the lower damper, the former showing its position when open for a direct draft, and the latter when closed for a radiating or for a reduced draft. Figs. 6 and 7 represent a cross-section taken just above the top of the top damper. The latter shows its position when open for a direct or for a reduced draft, and the former when closed for a radiating draft.

A A' in Fig. 1 represent the smoke-pipe, above and below the radiator. B B' are movable caps. *a b* are damper-rods. C is the outside radiating-case.

D D' in Figs. 4, 5, 6, and 7 are dampers.

E in Figs. 2, 4, 5, 6, and 7 are damper-heads.

In order to secure a direct draft through the radiator, the bottom damper is to be put in the position shown by Fig. 4, thus opening all four of the flues *e*. The top damper is to be put in the position shown at Fig. 7, opening the flues *e e'*, as there shown. For a reduced draft, the lower damper is to be put in the position shown at Fig. 5, while the upper one remains as described, and shown at Fig. 7.

In order to secure a radiating draft, the lower damper-rod, *b*, Fig. 4, is to be drawn out, as shown at Fig. 5, until the projection on the damper D comes in contact with the pin *g* in the head E. The upper damper-rod, *a*, is also to be drawn out until the openings *e* are closed, leaving only the large opening *e'* unclosed. The heat will now enter the lower openings, *e*, each side of the long radial plate *f'*, Figs. 2 and 3, and take the course indicated by the arrows shown at Fig. 2, first ascending the radiating-flues first entered, and then by diving-flues returning to the bottom of the same and then again ascending to the top of the radiator through one common flue for discharge, by this means retaining the heat until radiated into the room.

In order to cleanse the radiator of soot or other deposited impurities, it is to be detached from the smoke-pipe at the points A A', and the caps B B' removed from the ends of the radiator; then remove the screw *c*, Figs. 1, 6, and 7, from its connection with the ear *d*, attached to the head E of the radiator, and slide the inside (represented by Fig. 2) out of the outer case, C, Fig. 1, when all obstructions and impurities can be readily removed from the several parts and then reunited and returned to its proper place.

I am aware that various devices for radiating heat have been invented and used with varying success. I do not, therefore, claim a heat-radiator, irrespective of the manner of constructing or operating it; but

I do claim and desire to secure by Letters Patent—

1. The combination of an outside radiating-case with an inside radiating-cylinder with stationary radial and radiating plates, arranged as described, and combined with the dampers to secure an upward, direct, full, or reduced

draft, when used substantially in the manner herein set forth and described.

2. The application and combination of ascending and descending hot-air flues, regulated by dampers, as described, to form a heat-radiator for the purpose of radiating heat generated from any source and introduced into

the radiator in the manner and for the purpose set forth and described.

JACOB B. HYZER.

Witnesses:

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