T. F. HEMMICH.
Hot-Air Heater.

No. 217,794. Patented July 22, 1879.

Fig 1

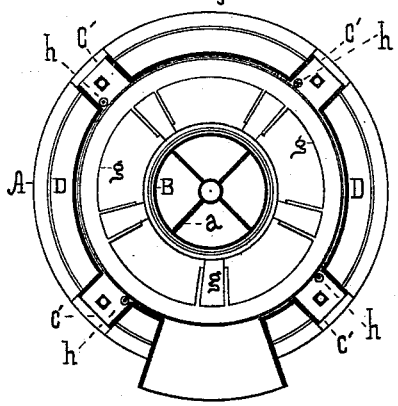


Fig 2

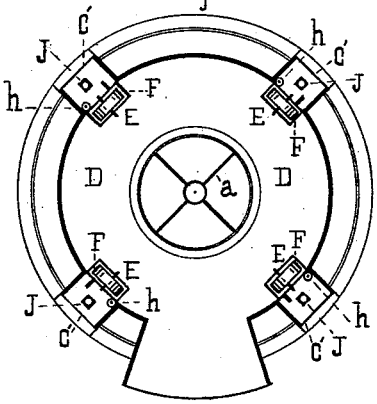


Fig 3

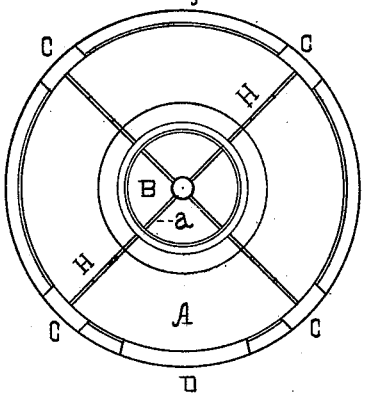


Fig 4

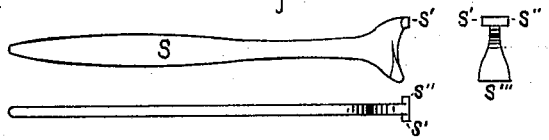
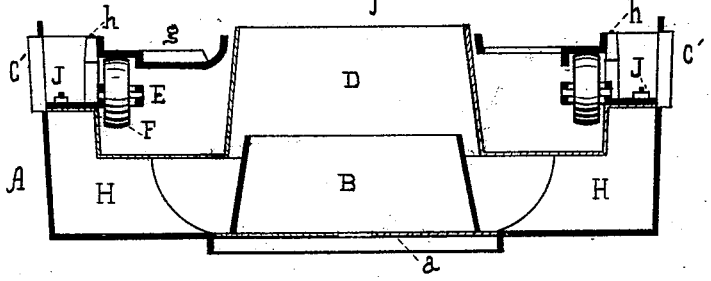


Fig 5



Witnesses
Frank P Kinsey
Frank Hartman

Inventor
Thomas F Hemmich
Per Thomas P Kinsey
Atty

UNITED STATES PATENT OFFICE.

THOMAS F. HEMMICH, OF READING, PENNSYLVANIA.

IMPROVEMENT IN HOT-AIR HEATERS.

Specification forming part of Letters Patent No. **217,794**, dated July 22, 1879; application filed June 4, 1879.

To all whom it may concern:

Be it known that I, THOMAS F. HEMMICH, of the city of Reading, county of Berks, State of Pennsylvania, have invented a new and useful Improvement in Hot-Air Heaters, of which the following is a specification.

This improvement is more particularly related to the hot-air furnace patent, No. 171,281, issued to myself and Elias Fritz, Sr., on the 21st day of December, A. D. 1875; and consists in the addition of a central cold-air-director cone, B, at the base of the central air-passage, D′, and concentric with the same, and so arranged as to leave an annular space between the exterior of the directing-cone B and the interior of the central air-passage, D′, which causes the air from the cold-air flue to pass direct without counter-current between the inner wall of the fire-pot, and thus become more thoroughly heated than under the patent of December, 1875.

I have also made a change in the mode of supporting and guiding the grate-frame, by which it is better retained concentric with the outer and inner walls of the fire-pot, and facility is given for repairs when renewals are necessary. This I attain by making embrasures C in the periphery of the wall-ring A, and attaching pockets C′ to the periphery of the ash-pit D, which will, when dropped into the embrasures C of the wall-ring A, form an opening from the exterior into the ash-pit D, this opening being kept closed by a sliding door when the furnace is in operation.

On the floor of the pocket C′, I place a plate, E, having seats for the vertical roller F, and a pillar with a stud for the horizontal roller *h*. The grate-frame *g* rests upon the rollers F and against the rollers *h*, and is thus kept in place free to revolve. The roller-plate is secured to the pocket-floor by the bolt J, and can be renewed by removal through the sliding door of the pocket C′.

I have also changed the mode of rotating the grate-frame *g*, dispensing with the rack-and-pinion gear and substituting therefor the spanner S, constructed, as shown, with a curved end, provided with teats S′ and S″, and a broadened face, S‴. To rotate the grate-frame *g* with this contrivance, the spanner S is placed against the periphery of the grate-frame, with one of the teats, S′ or S″, on the inside of the upper ledge of the frame; then, pulling the spanner-handle in the direction of the broad face S‴, a bite is obtained and a movement given to the frame. Thus, by a series of gripes the frame can be revolved in either direction, as the teat S′ or S″ may be used.

Figure 1 is a plan of the wall-ring A, with the ash-pit D, deflecting-cone B, and grate-frame *g* in place. Fig. 2 is the same plan with the grate-frame *g* removed, showing the ash-pit D, pockets C′, supporting-rollers F, and the guiding-rollers *h*, with securing-bolt J. Fig. 3 is a plan of the wall-ring A, with cone B, showing supporting ash-pit ledges H, spider *d*, and openings or embrasures C. Fig. 4 is a plan, side elevation, and end view of the rotating spanner S, showing teats S′ and S″, with broadened surface S‴. Fig. 5 is a sectional elevation through the center of Fig. 1, showing the position of the parts and their relation to each other.

Similar letters refer to similar parts.

Having described my improvement, what I claim, and desire to secure by Letters Patent, is as follows, to wit:

1. In an annular hot-air furnace, the air-director cone B, in combination with the central air-induction passage, D′, as shown and described.

2. The base or wall ring A, constructed with openings C, for the reception of pockets C′ of ash-pit D.

3. In combination with the ash-pit D, the pockets C′, for the reception of the double roller-plate E, as shown and described.

4. The double roller-plate E, with vertical roller F and horizontal roller *h*, in combination with ash-pit D and grate-frame *g* of an annular hot-air heater, for the purpose described.

5. The spanner S, having the curved and widened end S‴ and teats S′ S″, in combination with the upwardly-projecting flange or ledge of the grate-frame *g*, for the purpose specified.

6. The wall-ring A, ash-pit D, director-cone B, rollers F and *h*, with supporting-plate E, and grate-frame *g*, combined and used for the purpose specified and shown.

THOS. F. HEMMICH.

Witnesses:

JAMES R. KENNEY,

FRANK P. KINSEY.