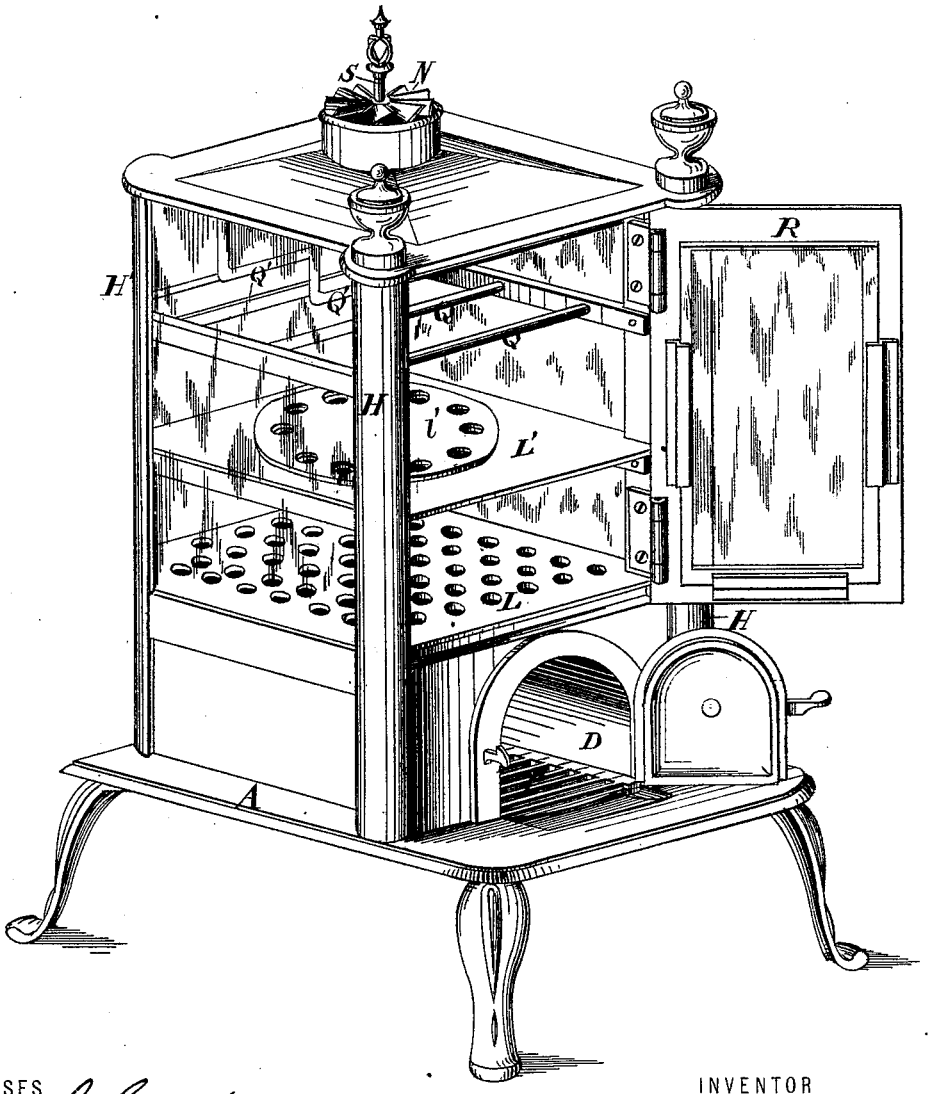
2 Sheets—Sheet 1.

J. M. CASE.

HEATING AND DRYING APPARATUS.

No. 195,794. Patented Oct. 2, 1877

Fig. 1.



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2 Sheets—Sheet 2.

J. M. CASE.

HEATING AND DRYING APPARATUS.

No. 195,794. Patented Oct. 2, 1877

Fig. 2.

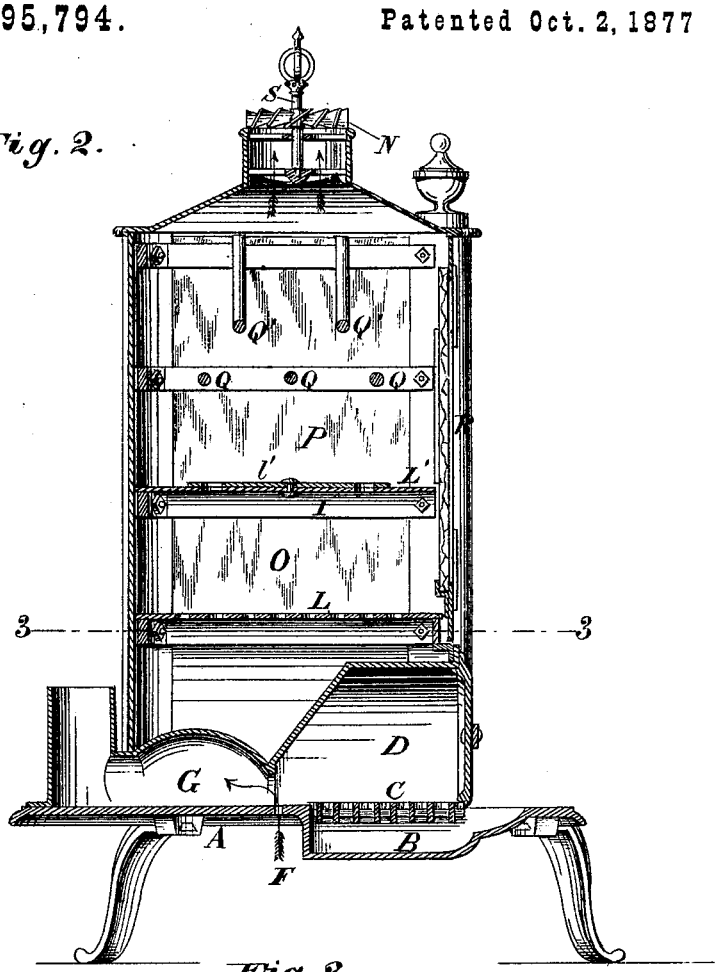
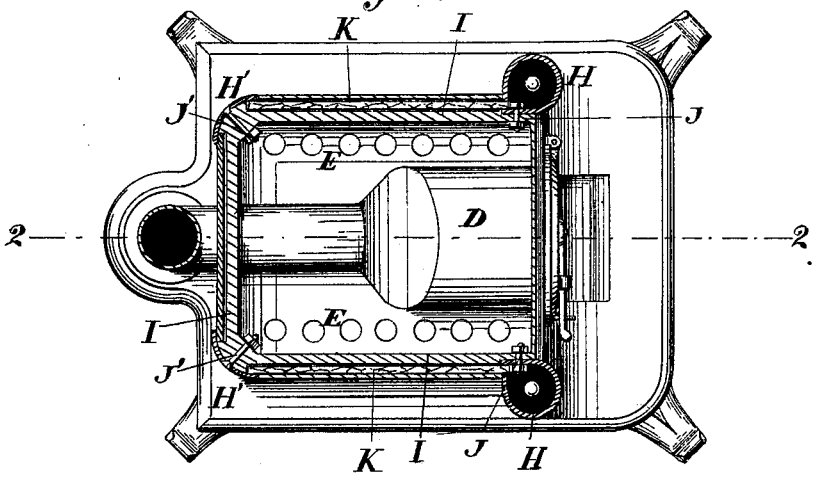


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN M. CASE, OF COLUMBUS, OHIO.

IMPROVEMENT IN HEATING AND DRYING APPARATUS.

Specification forming part of Letters Patent No. **195,794**, dated October 2, 1877; application filed April 14, 1877.

To all whom it may concern:

Be it known that I, JOHN M. CASE, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Combined Heating-Stove and Fruit and Clothes Driers, of which the following is a specification:

The object of my invention is to construct a heating-stove which shall be economical in the use of fuel, and which may be readily used for drying fruits, baking and warming articles of food, or drying underwear or children's clothing, and to so construct the same that it shall be ornamental, and very cheap in its construction of parts and mode of putting together.

It consists, first, in the construction of a frame-work, having ornamental corners, which may be formed from sheet metal, brass, or any ornamental material, being so constructed that by simply sliding in the side plates the body of the heater and drier is completed.

It consists, further, in the combination, with the heating and drying appliances, of air-ports, arranged as hereinafter described, to admit cold air from the bottom and discharge hot air at the top of the heater.

It consists, further, in the construction and application of an air-register wheel at the top of the heater in such a manner as to serve both as an ornament and to indicate by its motion the degree of combustion or heat in the furnace, as well as to produce a more complete draft and circulation of the heated air.

In the accompanying drawings, Figure 1 is a perspective view of the apparatus. Fig. 2 is a vertical section of the same on the line 2 2, Fig. 3. Fig. 3 is a horizontal section on the line 3 3, Fig. 2.

The base or platform A is best made of cast-iron, and is provided with an ash-box, B, and grate C, of any suitable form. Upon each side of this platform, near the sides of the furnace D, I form suitable orifices E for admitting cold air. Immediately back of the grate, and at a point where the unconsumed smoke escapes through its smaller orifice, there is formed in the platform an opening, F, for admitting air to the heated gases, which, by supplying oxygen, causes the unconsumed carbon to be ignited and to burn in the chamber G, and thus effect a more complete combustion. The corners of the frame H H H H′ are best made of sheet-brass or plated iron, to give the heater an ornamental appearance, and are bent in the forms indicated in Fig. 3. They are secured in their proper position by horizontal bands I I, which are bolted or otherwise secured at the corner-columns H H, as shown at J J, in Fig. 3, and to the rear corner-plates in H′ H′, as shown at J′ J′, leaving spaces between the bands and the opposite edges of the corner-columns and corner-plates sufficient to allow of the insertion of sheet-iron or glass K.

It will be seen that the frame thus constructed will allow of sliding in sheet-metal or glass panels, by which means the body of the heater is completed, making it very cheap in construction, and allowing any piece to be readily replaced in case of breakage or injury.

The bands I also serve as guideways or supports for the plates or shelves L L′ and rods M. Immediately above the furnace, I use a perforated plate or support, L, for articles being cooked or heated, and directly above this a register-plate, L′, so constructed that by the register *l′* the heated air may be confined within the oven O, or allowed to escape through the drying-chamber P and out through the register N. The office of the rods Q Q′ is to hang upon them clothing to be dried and for the support of suitable racks for drying fruit. The register-plate L′ is made adjustable, so that it may be readily removed in case the whole space between the perforated plate L and escape N is required for drying clothes.

The doors R are constructed and hinged in any suitable manner.

The furnace D is best constructed of cast-iron, and may be cast in one piece, being held in its position by suitable flanges projecting upward on both sides of the furnace, and made solidly upon and forming a part of the base A.

The front of the furnace is best made with a relatively large opening of circular form at the top, and contracting downward and inward, forming a half-funnel, having its smallest diameter at the point where the escaping gases come in contact with the atmosphere received through the orifice F. From this point the connecting flue or dome G is enlarged to allow of more heating-surface and a more complete combustion of the smoke.

The register-vane N is attached to a vertical shaft or pivot, S, and, being formed with oblique or spiral vanes or blades, is caused to rotate by the action of the escaping air. The velocity of this rotary motion will indicate the amount of heat or circulation passing through the apparatus. It also answers as an ornament, and by its rotation produces a more complete diffusion of the heated atmosphere through the room by reason of its location above the top of the casing, which causes it to distribute the air tangentially in a horizontal plane.

The space immediately around the furnace is best inclosed with sheet-iron. But above the furnace and in the drying-chambers the sides and door-panels may be made of glass, which admits of the articles being dried or baked to be seen at any time without opening the door or allowing the heat to escape.

In this construction of a combined heater and drier, it will be seen that it may be very cheaply made, while at the same time it will present an ornamental appearance, and, should any piece become injured by use, it may readily be duplicated at a small cost.

Having thus described my invention, the following is what I claim as new and desire to secure by Letters Patent:

1. The metallic frame body A H I, when constructed substantially as shown.

2. The combination of the metallic frame H I H′, constructed to form guides for the panels, with the side walls or panels K fitted to slide therein, substantially as herein shown.

3. The furnace D, constructed substantially as herein shown, in combination with the air-ports E, register-plate L′, and escape-port N.

4. The combination, with the frame A H J, furnace D, air-ports E, and hot-air chamber P, of the rotary distributing-vane N, located above the top of the casing, and serving to impart a tangential motion to the air, as described.

In testimony of which invention I hereunto set my hand this 31st day of March, 1877.

JOHN M. CASE.

Witnesses:
OCTAVIUS KNIGHT,
LE BLOND BURDETT.