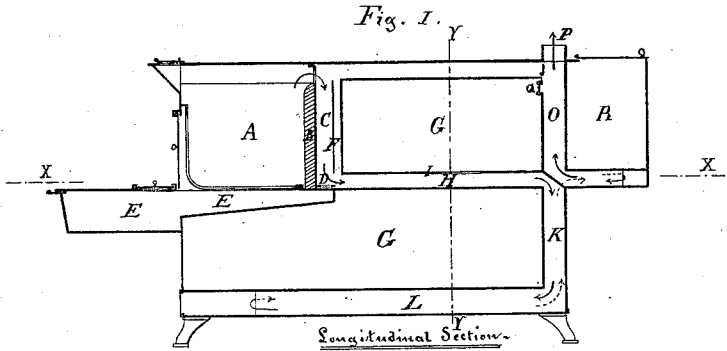


THOMSON & HURSH

Cooking Stove.

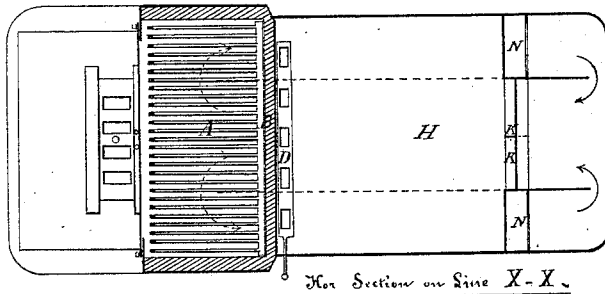
No. 108,211.

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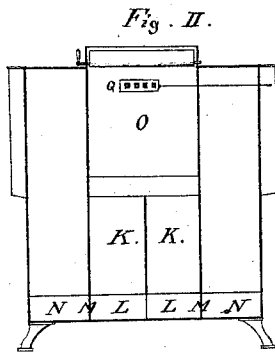


Longitudinal Section-

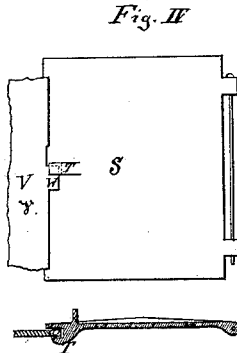
Fig. III.



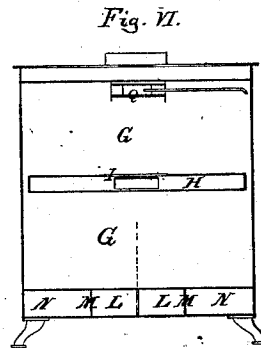
Hor Section on Line X-X.



Back End View with
Water tank removed.



Cross Section of Oven Door.



Section at
Line Y-Y. fig. 1.

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Letters Patent No. 108,211, dated October 11, 1870.

IMPROVEMENT IN COOKING-STOVES.

The Schedule referred to in these Letters Patent and making part of the same

We, EDGAR L. THOMSON and ABRAHAM HURSH, of the city and county of Philadelphia, and State of Pennsylvania, have invented certain Improvements in Cooking-Stoves, of which the following is a specification.

The object of our invention is the creation and manufacture of a cooking-stove that shall utilize, to the maximum extent, the fuel used and the heat generated therein; that shall furnish an oven adapted to baking, boiling, frying, roasting, broiling, and other culinary operations, and so arranged and constructed as to banish all odors, steam, gas, and other emanations, produced or collected therein, into the open air, and effectually prevent their escape into the apartment or building in which the stove is used; that shall provide a cooking apparatus, simple in construction, tidy, odorless, efficient, compact, symmetrical, safe, comprehensive, expeditious in operation, substantial, and economical, being easily managed, cleaned, and repaired, and capable of being handled and transported to any destination, however remote, without liability of breakage or fracture of its parts.

In the accompanying drawing—

Figure 1 is a longitudinal vertical section of a cooking-stove made on the plan of our invention.

Figure 2 is a rear view of the same with the water-tank removed.

Figure 3 is a horizontal section of the same on the line *x x*.

Figure 4 shows the mode of fastening the oven-door.

A represents the magazine or fire-box, of any approved shape and capacity, and lined with fire-brick, or otherwise suitably protected, and so arranged and constructed that the hearth can be detached, at will from the stove-body, when required for transportation, repairs, or any other purpose.

B is the rear wall or inner side of the fire-box, and consists of an upright or angular perforated plate, grate, or equivalent device, through which the heated air passes from the fire-box into the hot-air chamber C.

D is a sliding or drop-damper, at the bottom of the air-chamber, through whose instrumentality coal, ashes, dirt, and other matter accumulating in the hot-air chamber, may be discharged into the ash-pit E.

F is the partition between the hot-air chamber and the oven G, and consists of metal plates, of proper form and dimensions, so placed, relatively to each other, as to converge to a point of contact at their lower extremities.

To protect the contents of the oven from excessive heat, the interval or cavity between the partition plate may be charged or filled with ashes, plaster, or any suitable non-conducting substance.

H is a flue, tube, air-space, or conduit, for the eflux, inlet, and circulation of the heated air from the

hot-air chamber into the oven, and which also serves to divide the oven into sections or compartments, wherein the operation of cooking can be performed simultaneously or separately, as may be desired, and an interval or vacant space may exist between the inlet-flue and the door and side plates of the oven, so as to allow the circulation of heated air from one compartment to the other.

The heated air radiates and is diffused from the inlet-flue, and raises the temperature in the several compartments to any requisite degree.

I is a griddle-hole or aperture in the top of the inlet-flue, having a movable cover, that may be displaced whenever desired, for the purpose of expediting the operation of cooking, by admitting into the oven an increased volume of heated air. This annular opening gives ready access to the interior of the inlet-flue, when it becomes necessary or desirable to cleanse the same, or to remove any obstruction or foreign matter therefrom, or to inspect its condition, or make repairs.

A kettle, pan, or other culinary utensil, may, if required, be inserted in the aperture, and the process of boiling, frying, roasting, or broiling may thus be effected with celerity, neatness, and economy.

The interior lower surface of the inlet-flue may be lined with cement, or be suitably coated, to prevent heat of too great intensity from entering the lower compartment of the oven, for which purpose, and likewise to arrest or impede the circulation or passage of ashes, dust, or other matter, through the inlet-flue, the inner surface of the lower plate or section of such flue may be checkered or fabricated with ledges, ribs, or flanges, intersecting or touching each other, at proper angles, by which arrangement the cement or coating will be securely retained in place, and a smooth, uniform surface will be given to the lower section of the inlet-flue.

The inlet-flue terminates or merges in the conduits K K, which it meets, intersects, or joins at the rear end of the lower compartment of the oven.

Into these conduits the current of heated air from the inlet-flue passes, and courses downward to the horizontal flue L, which traverses the bottom of the oven to its front, at which point the heated air is deflected or diverted around the flue-strips M into the reverse eduction-flue N, which rests on the bottom plate of the stove.

Through the reverse eduction-flue the heated air is transmitted to the rear end of the stove, whence it is conducted by the vertical outlet O to the orifice or vent P, and ascends through the chimney-pipe to the atmosphere.

A water-tank, R, of any suitable form and capacity, may be formed, incorporated, or affixed at the rear end of the stove, having its upper surface level with

the top of the stove, and extending downward to a point opposite or adjacent to the junction of the inlet-flue with the conduits K K.

O is a vertical outlet-flue, within the stove at its rear end, that serves to impart heat to the water-tank or boiler, and educts the smoke, vapor, and gases into the open air through the chimney-pipe, into which it discharges.

The water-tank may be fitted to receive one or more boilers, and its contents may be drawn out through a faucet, or in any other suitable manner.

In the rear end of the upper compartment of the oven is a damper, Q, through whose agency the odors, steam, gas, and exhalations, generated in the oven, are expelled or discharged into the vertical outlet O, and carried through the chimney-pipe into the open air.

If desirable, the oven may be so formed, arranged, and constructed as to project forward beneath the fire-box, on a line with the front of the ash-pit, and one or more vertical induction-flues, or their equivalents, may extend from the bottom of the hot-air chamber to one or both of the conduits K K, and discharge therein the heated air thus derived and conducted from the hot-air chamber.

The induction-flue or flues would, under such arrangement, bisect the lower compartment of the oven, and thereby create an additional compartment, in which the operation of cooking could be performed.

S is the inner side of the oven-door, on the front of which, at or near the center, is cast or affixed a lug, T, on whose face is a vertical groove, U.

On the jamb or outside stove-plate V projects a lug, W, having a sloping or angular face.

The oven-door, upon closing, is slightly raised, by a knob on the outside, and the lug T, in part, passes over the lug W in an oblique direction, and the door is fastened by the interlocking of the lug W in the groove U. The door, to be opened, is slightly raised, as in closing, by which movement the two lugs become disengaged and detached, whereby the door is unfastened.

By this mode of locking the oven-door, its outer edges are closely and firmly compressed against the jamb or outside stove-plate, and the oven is, in consequence, made air-tight. This arrangement, more-

over, supercedes the use of right and left-hand oven-doors, commonly used on cooking-stoves; by our method, on the contrary, the oven-doors can be used indiscriminately on either side of the oven, thereby avoiding the delay, inconvenience, and annoyance to which persons using cooking-stoves are frequently subjected upon the injury or fracture of an oven-door, which requires the substitution of a new one.

Cooking-stoves, constructed on the plan of our invention, may be fabricated of any approved design, size, shape, materials, ornamentation, and finish, and may be adapted to burn hard or soft coal, wood, coke, peat, or other suitable fuel.

We expressly disclaim any originality or right to the exclusive use of a griddle-hole in the bottom of an oven, and likewise the application of a water-boiler, water-back, or its equivalent, to a cooking-stove, as the same have long been known and used.

We claim as our invention—

1. The combination of the rear wall or inner side of the magazine or fire-box B, the partition F, the intermediate air-space between the wall B and the partition F, the damper D, and the ash-pit E, or their several equivalents, arranged, constructed, and operating in the manner and for the purposes substantially as described.

2. The combination of the partition F, the inlet-flue H, the griddle-hole or aperture I, the damper Q, the conduits K K, the horizontal flue L, the flue-strip M, the reverse eduction-flue N, the outlet O, and the orifice or vent P, and their several equivalents, arranged, constructed, and operating in the manner and for the purposes substantially as described.

3. The combination of the magazine or fire-box A, the hot-air chamber C, the oven G, bisected by a transverse flue that conducts, diffuses, and circulates heated air from the hot-air chamber throughout each compartment of the oven, and the water-tank R, fabricated, arranged, and operating in the manner and for the purpose substantially as described.

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Witnesses:

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