

No. 717,097.

Patented Dec. 30, 1902.

O. J. HOLMES & W. R. HAMPDEN.

STOVE.

(Application filed Feb. 24, 1902.)

(No Model.)

Indentors,
Oscar J. Holmes
Bellevue R. Hampden
Dewey Strong & Co. atty

UNITED STATES PATENT OFFICE.

OSCAR J. HOLMES AND WELLESLEY R. HAMPDEN, OF SAN FRANCISCO,
CALIFORNIA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 717,097, dated December 30, 1902.

Application filed February 24, 1902. Serial No. 95,413. (No model.)

To all whom it may concern:

Be it known that we, OSCAR J. HOLMES and WELLESLEY R. HAMPDEN, citizens of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Stoves; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to improvements in stoves in which the vapors from the fire-box pass in circuitous passage either around the oven or fire-box; and its object is to provide means for supplying air at suitable points to effect proper combustion.

It consists of the parts and the constructions, arrangements, and combination of parts which I will hereinafter describe and claim.

Figure 1 is a vertical longitudinal section of a range, showing the application of our invention. Fig. 2 is a plan view of the same. Fig. 3 is a transverse vertical section on line *ww*, Fig. 2.

Figs. 1 and 2 show our invention applied to a range, wherein A represents the casing or shell in which is disposed the fire-box 2 and oven 3. From the fire-box the vapors may pass either across the top of the oven and out through the damper 4 and directly to the stovepipe, as when the fire is first started or the oven is not to be used, or may pass down through the narrowed chamber 5 through ports 6 in the horizontal partition 7 of the chamber, thence beneath the oven and upward at the rear thereof through the passage 8. The top of the latter is partly covered over by a plate 9, terminating short of the front or oven door side of the stove. A partition 10 extends transversely across the top of the oven, provided with a damper 11. The heated products of combustion issuing from the contracted outlet of the flue 8 pass across the top of the oven through the passage 12, thence downward, as at 13, along the opposite side of the oven, and thence into the stovepipe 14, as indicated by the arrows. Thus when the dampers 4 and 11 are closed the heat is distributed over five of the six sides of the oven to obvious advantage. However, it has been found that the gases generated in the fire-box will not be fully consumed if dependence is placed solely on the

draft drawn in through the grate, as in ordinary stoves, for the supply of oxygen. Accordingly we have provided a means of supplying air to the unconsumed gases in the combustion-chamber 5. This means is here shown as a perforated pipe 15, disposed just in rear and near the upper edge of the back wall of the fire-box. This pipe extends completely across the stove and is open at either end, so that air may be drawn in readily from the outside. The result is noted as the vapors from the fire-box are generated more rapidly and become more heated, for passing downwardly into the combustion-chamber 5 they are there commingled with the inflowing air and tenons of flame are seen apparently to issue from the perforations 16 in the pipe.

The plate 7 serves to retard the vapors and allow proper commingling and combustion before the highly-heated products finally issue from the ports 6 and pass thence around the oven.

By closing damper 4 and opening damper 11 all the heat is distributed over the top surface of the stove, the distribution being aided by means of the partition 10.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A stove having a fire-box, a final outlet for products of combustion, and an oven, said stove having passages extending down along the front of the oven and beneath the same and thence upwardly along the front of the oven and beneath the same and thence upwardly along the back, said back passage closed at the top except for an outlet near the side of the stove opposite the final outlet.

2. A stove having a fire-box, a final outlet for products of combustion and an oven, said stove having passages leading along the front of the oven and beneath the same and upwardly along the back, means for closing the top of the back passage except for an outlet near the side for the oven opposite the final outlet whereby the products from the back passage are directed transversely across the oven toward the final outlet, and means proximate to the final outlet and located near the center of the oven for directing the products

from the top of the oven downwardly along one side of the oven and thence upwardly along said side to the outlet.

3. A stove having a fire-box and oven, and
5 having passages extending along the front, rear and bottom of said oven, a plate extending horizontally across the top of the rear passage from the final-outlet side of the stove to a point short of the opposite side, for directing
10 the products of the rear passage transversely across the top of the oven toward the final outlet, and said stove having, also, a passage at one side of the oven opposite the entrance to the latter for directing the prod-
15 ucts downwardly and thence upwardly along this side of the oven to the point of final discharge.

4. A stove having an oven with passages extending along the front, bottom, back, top
20 and one side thereof, a partition in the top passage between opposite ends of the oven, and a plate extending across the back passage from one side of the stove to a point

short of the other side for directing the products of the rear passage transversely across
25 the top of the oven.

5. A stove having a fire-box and an oven said stove having passages surrounding the vertical and horizontal walls of the oven, a plate within the front passage near where
30 said passage joins the lower horizontal wall of the oven said plate extending between the front of the oven and the back of the fire-box, and having openings in its front edge, said plate designed for retarding the vapors
35 in this front passage to effect intimate commingling, and an air-supply located at the top of the front passage proximate to the upper rear wall of the fire-box.

In witness whereof we have hereunto set
40 our hands.

OSCAR J. HOLMES.

WELLESLEY R. HAMPDEN.

Witnesses:

S. H. NOURSE,

JESSIE C. BRODIE.