

J. H. MAGEE.
COOKING STOVE OR RANGE.

Patented Dec. 1, 1896.

[illegible]

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UNITED STATES PATENT OFFICE.

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COOKING STOVE OR RANGE.

SPECIFICATION forming part of Letters Patent No. 572,265, dated December 1, 1896.

Application filed January 13, 1896. Serial No. 575,281. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MAGEE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Cooking Stoves or Ranges; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to improvements in cooking and heating stoves and ranges; and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described and then pointed out in the claim.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a longitudinal sectional elevation in line *ww* of Fig. 2. Fig. 2 is a sectional plan in line *xx* of Fig. 1. Fig. 3 is a transverse sectional elevation in line *yy* of Fig. 2. Fig. 4 is a fragmental transverse sectional elevation in line *zz* of said Fig. 2.

Like parts are designated by corresponding letters of reference in all the figures.

The object of this invention is the production of an efficient cooking and heating stove or range in which the gases of combustion are utilized in a manner to produce the very best results in heating the bake-oven and also enable the range being economically used for heating purposes. To attain these results I construct this range or cooking-stove substantially in the following manner, to wit:

A in the drawings represents the fire-pot, and B the ash-chamber, of any cooking stove or range.

C is the bake-oven. In this bake-oven there is, as now usually made, a bottom plate placed a sufficient distance above the bottom D of the stove to produce a flue or passage underneath said bottom plate for the gases of combustion, division-plates in such flue or passage being supplied to divide the same into several channels. This construction does not, as I have ascertained by experience,

utilize the heat to the best advantage, and I therefore construct the lower portion of said bake-oven of a series of angular tubes *EE'E''*, placed horizontally upon the bottom D of the 55 bake-oven. Of these tubes those marked *E E''*, being the outer tubes, have in one of their ends an opening *e*, communicating with the downdraft or diving flues *F F'* by their openings *f f'* in the vertical division-plate G, 60 while the central angular tube *E'* has also an end opening *e'*, communicating with the uptake or ascending flue *F''* by an opening *f''*. The two outer angular tubes *E E''* have on their opposite sides an opening *a a'*, respectively, while the central tube *E'* has oppositely-disposed openings *a''*, communicating with the openings *a a'* in the side tubes, so that the gases of combustion entering the ends 65 of the tubes *E E''* from the diving-flues *F F'* pass through these tubes *E E''* and thence through the openings *a a' a''* to the central angular tube *E'* and finally through its end opening *e'* to the ascending flue *F''* and to the stove-pipe in the usual manner. These angular 75 tubes are surrounded on all sides by ribs or corrugations *b*, which increase the radiating-surface of said tubes to a considerable extent. They are also provided on their under side with downwardly-projecting feet *c*, resting upon the bottom plate D of the stove and enabling adjustment being made in such a manner (by filing or grinding off on said feet) that these tubes will rest firmly upon said 85 bottom plate without resorting to means for fastening them thereto. By the introduction of these supporting-feet *c*, I also produce spaces *c'* underneath the tubes, which permit air entering these spaces to be heated and to ascend in the spaces *c''* between the adjacent 90 angular tubes and the front and rear plates *H H'*, respectively, and thereby to contribute toward heating the interior of the bake-oven C.

When it is desired to use the stove or range 95 as a heater, the door or doors in the bake-oven (not shown) are left open and registers I, placed in the side plate J or in both the side plates J K, respectively, opened, when cold air will enter through said registers I and 100 passing the angular tubes *E E' E''* be heated and ascend and pass out of the bake-oven C

through the doors thereof, thereby utilizing the heat to the greatest possible extent.

The angular tubes E E' E'' fit the longitudinal space between the division-plate G and the back-plate H of the fire-box A and ash-chamber B a close fit, so that no means for fastening these angular tubes within the bake-oven are required. It is therefore evident that in order to clean the interior of these angular tubes from deposits of dust and ashes accumulating therein they may be readily lifted out of the bake-oven C and replaced therein in a few moments of time and with the greatest of ease. By removing these angular tubes access is also had to the lower portion of the diving and ascending flues and deposits removed therefrom through the openings *f f' f''* in the vertical division-plate G.

The angular tubes E E' E'' may be produced in the process of casting, either entire, *i. e.*, each tube cast by coring, so as to produce an integral tube, or they may be composed of plates secured together in a manner well known to manufacturers of stoves and ranges. They may also be made from sheet metal formed up in a suitable manner at the pleasure of the manufacturer.

It will now be observed that by the introduction of the angular tubes in the lower portion of the bake-oven I have increased the heating-surface and thereby the heating capacity manifold over that heretofore attained, inasmuch as the four sides of each tube radiating heat contribute toward heating the interior of the bake-oven, while the cost of production of a stove in accordance with my invention has not been increased to any extent, if at all.

It will be further observed that instead of making the tubes E E' E'' angular or oblong in cross-section they may be made round or oval without departing from the scope of my invention. I have selected the oblong contour with flat sides as the one giving me the greatest heating and radiating surfaces within the space available for their location and that any other contour will not produce as large a heating-surface. So may these radiating-tubes be used in any and all the various styles of cooking stoves and ranges now being made with but very slight modifications.

Having thus fully set forth my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

In a cooking-stove, the combination, with the diving and ascending flues, of the bake-oven, a series of angular tubes removably resting upon the bottom plate of the stove and communicating with the diving and ascending flues by their rear ends, and with each other with their side openings, and a register in the lower part of the side plates communicating with the bake-oven, said angular tubes having their exterior surfaces ribbed or corrugated and their bottom sides provided with feet, as and for the object set forth.

In testimony that I claim the foregoing as my invention I have hereunto set my hand in the presence of two subscribing witnesses.

J. H. MAGEE.

Witnesses:

CENTIE S. STARK,
WM. O. STARK.