

(No Model.)

J. E. ARMSTRONG.
COOKING STOVE.

No. 569,397.

Patented Oct. 13, 1896.

Fig. 1.

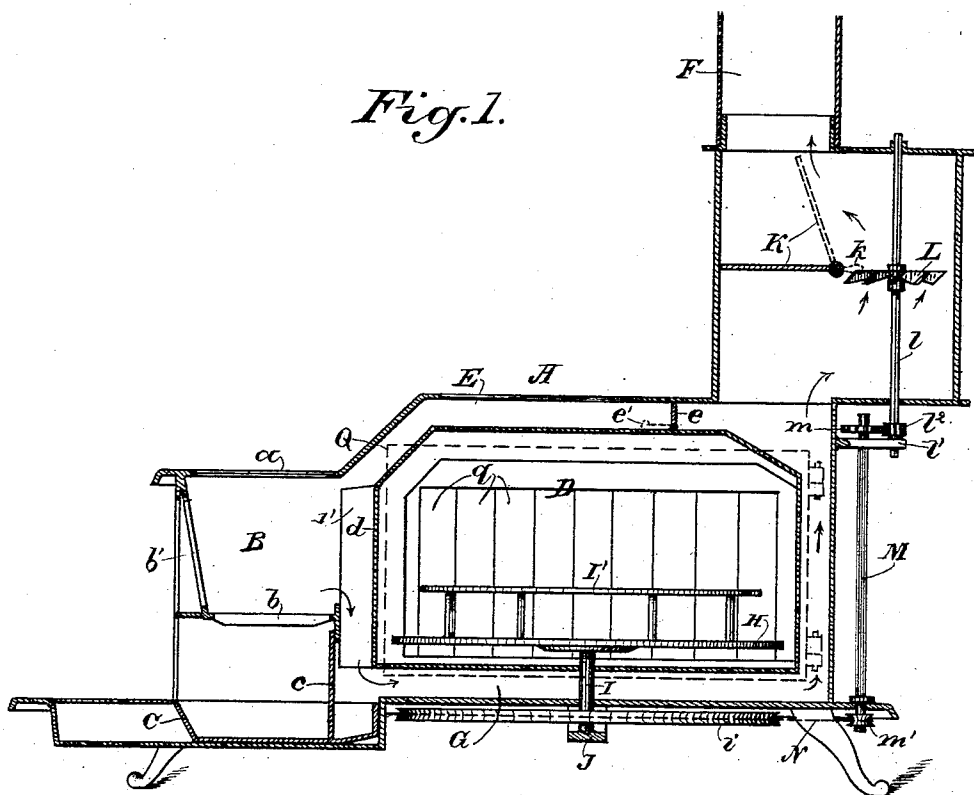
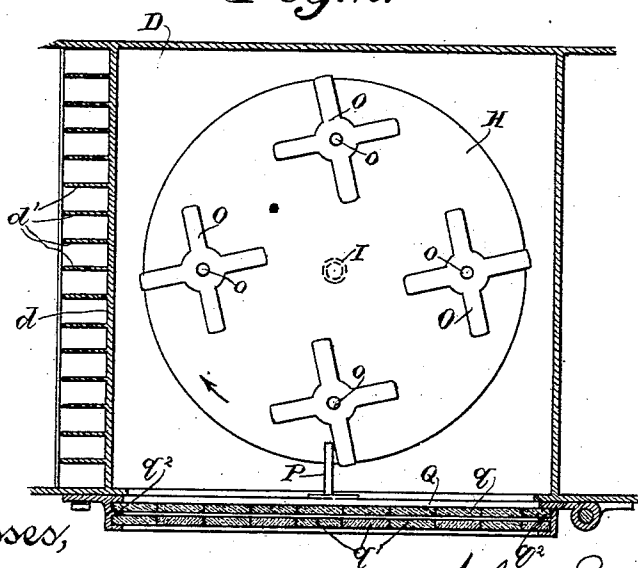


Fig. 2.



Witnesses,

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JOHN E. ARMSTRONG, OF SANTA CRUZ, CALIFORNIA.

COOKING-STOVE.

SPECIFICATION forming part of Letters Patent No. 569,397, dated October 13, 1896.

Application filed January 2, 1896. Serial No. 574,038. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. ARMSTRONG, a citizen of the United States, residing at Santa Cruz, county of Santa Cruz, State of California, have invented an Improvement in Cooking-Stoves; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of cooking-stoves; and it consists of the parts and the constructions and combinations of parts hereinafter described and claimed.

The general object of my invention is to improve the cooking-stove by improving the application of the heat to the oven and by providing for the equal application of the heat of the oven to the materials therein.

Special objects of my various improvements will appear in the course of the following description.

Referring to the accompanying drawings, Figure 1 is a vertical section of my stove. Fig. 2 is a horizontal section on a plane above the grate.

A represents generally the stove. In its front it has the fire-box B, the bottom of which is composed of the usual horizontal grate *b* and the front of the usual upright grate *b'*. Under the fire-box is the space for the ash-pan C, access to which is had through the removable front plates of the stove in the ordinary manner.

D is the oven of the stove. Above this oven is the usual passage E, leading directly from the upper portion of the fire-box to the stovepipe F, said passage being controlled by the usual cross-damper *e*, operated by an exterior handle *e'*. The front wall *d* of the oven forms the rear wall of the fire-box, and consists of a metallic plate without the intervention of any fireproof material. By this construction the heat of the fire-box is communicated directly to the front wall of the oven and a saving is thereby effected over the usual practice of having an intervening fire-wall. The fuel in the fire-box does not come in direct contact, however, with this front wall *d*, as said wall is provided or formed with forwardly-extending flanges or ribs *d'*, also of metal, which being heated will further increase the heat of said wall. The main object, however, of these flanges or ribs is to

provide entrances to a heat-passages G, which passes directly under the oven and thence up the other end of the oven and communicates with the stovepipe. The front of this passage is formed and bounded by an upright wall or partition *c* in the ash-pan, so that when said ash-pan is pushed into place this wall or partition closes in the front of the passage G, so that said front communicates with the spaces between the flanges or ribs *d'*. These entrances to this heat-passages are always open, as the fuel, as before stated, rests against the edge of the ribs or flanges, and any ashes which may fall down will find a place in the back of the ash-pan behind the wall or partition *c*. By this construction it will be seen that when the fire is first started and the damper *e* is opened the flames and products of combustion will pass through the upper passage E, as the most direct, to the stovepipe. When it is desired, however, to heat the bottom of the oven after the fire is well started, the damper *e* is closed and thus the flames and products of combustion are directed downwardly between the flanges or ribs *d'* and into and through the underlying passage G, and thence up at the other end of the oven to the stovepipe.

The top of the stove, instead of being level throughout, is dropped down, as shown at *a*, over the fire-box, so that said fire-box is comparatively shallow, thus bringing the heat close up to the top to thoroughly heat the griddles, and thus also providing for the downward entrances to the underlying passage G. Within the oven is mounted and adapted to rotate a plate H. Any suitable means may be employed to rotate this plate, so that the dishes set thereon will receive an equal amount of heat. This is necessary for the reason that as the front of the oven is very hot it would not do to allow the dish to remain stationary, although with a single dish this might be done, if desired. The better course, however, is to rotate it with the plate.

My invention contemplates as the best means of rotating the plate the construction and employment of an automatic mechanism, which is as follows: The plate is mounted upon a central shaft I, which extends downwardly through the bottom of the oven and through the bottom of the stove, and is sup-

ported in any suitable bearing underneath. The best form of bearing is one which is suspended from the stove, such as I have shown by J. Upon this shaft I, below the stove, is a large pulley *i*. The part heretofore designated as the stovepipe F is a comparatively capacious one of an elongated cross-section, the front portion of which and the most direct is over the exit-hole from the stove, and this portion is controlled by a damper K, adapted to be operated by an exterior handle *k*. This damper fills, however, only the front portion of the pipe, the back portion having fitted within it about level with the damper a fan-wheel L, which is mounted upon a shaft *l*, which extends downwardly through the bottom of the pipe and is journaled in a suitable bracket *l'*. Upon this shaft *l* is a pinion *l''*, which meshes with a pinion *m* on a vertical shaft M, extending down and having at its lower end a pulley *m'*, from which a belt N extends to the large pulley *i* on the shaft I.

When the fire is first lighted and the flames and products of combustion travel through the passage E, the damper K is opened and these products of combustion pass directly out into the chimney; but when the fire is well started the damper K is closed, and thus the products of combustion are diverted from the direct course, and coming in contact with the fan-wheel L rotate said wheel, and this rotation is communicated, through the power-transmitting connections described, to rotate the plate I within the oven. If desired, another plate, I', may be removably supported upon the plate I and, in fact, a series of such plates may be used, if desired.

When several articles are placed upon the plate I in the oven, such articles, for example, as pies, it is obvious that as these will be located around the edge of the plate they will be brought in very close proximity to the heated front wall *d* of the oven and this would have a tendency to burn one side of these articles if provision were not made for changing their position. This object is accomplished by mounting upon pivotal studs *o* the open-work shelves O, on which the pie-plates are supported.

P is a contact-arm set at any suitable position within the oven, here shown as being upon the door Q of said oven, and in such position that as the pivotally-mounted shelves O come around they will come in contact with said arm, and on account of the movement of the plate I will be turned to a certain extent, so that at every revolution the position of the pie-plates will be changed, and no bad effects will result from the heated front wall of the oven.

In order to observe the progress of the cooking in the oven, I provide the door Q with a window-light. This is arranged as follows: There are two layers of glass, the inner one, *q*, being separated from the outer one, *q'*, so as to leave an air-space between them, said separation being best effected by said layers

lying upon opposite sides of flanges *q''* of the door. These layers are formed in separate sections of comparatively narrow strips of glass, so that if one strip should become broken it can easily be replaced. By having two layers separated, as described, the glass is less likely to be cracked, the inner layer being the one which is most heated, but protected from cold drafts by the outer layer, which, not being so much heated, may receive the occasional cold drafts without injury.

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

1. In a cooking-stove, a fire-box and an oven, the front wall of the oven forming the back of the fire-box, said wall having upon its fire-box side the series of parallel forwardly-projecting ribs or flanges forming an open passage which communicates with a passage below the oven.

2. In a cooking-stove having a fire-box and an oven separated by a wall which forms the front of the oven and the back of the fire-box, a transverse series of parallel vertically-disposed flanges or ribs projecting forwardly from the fire-box side of said wall, and a heat-passage communicating with the lower ends of the spaces between said flanges or ribs and passing directly under the oven, and thence to the stovepipe.

3. In a cooking-stove having a fire-box and an oven separated by a wall which forms the front of the oven and the back of the fire-box, a transverse series of parallel vertically-disposed flanges or ribs projecting forwardly from the fire-box side of said wall, a heat-passage communicating with the lower ends of the spaces between said flanges or ribs and passing directly under the oven and thence to the stovepipe, and an ash-pan under the fire-box having a wall or partition forming the front of said underlying passage where it communicates with the spaces between the flanges or ribs.

4. In a cooking-stove having a fire-box and an oven separated by a wall, the vertically-disposed flanges or ribs extending forwardly from the fire-box side of the wall and dividing the oven from the fire-box, a heat-passage communicating with the lower ends of the spaces between said ribs or flanges, and passing directly under the oven and communicating with the stovepipe, and an ash-pan having a wall or partition forming the front of said passage where it communicates with the spaces between the ribs or flanges.

5. In a cooking-stove having a fire-box and an oven, the dropped top of said stove over the fire-box, the vertically-disposed forwardly-extending ribs or flanges on the wall dividing the fire-box from the oven, the upper damper-controlled passage to the stovepipe, and the lower heat-passage communicating with the fire-box and passing under the oven and thence to the stovepipe.

6. In a cooking-stove, the combination of a

rotatable plate within the oven, a stovepipe having a direct passage for the escaping products of combustion and an indirect passage, a damper in the direct passage for diverting
5 the products of combustion into the indirect passage, a fan-wheel within said indirect passage adapted to be operated by said products of combustion when diverted, and power-transmitting connections between said fan
10 and the rotating plate whereby the latter is operated.

7. In a cooking-stove, the combination of a rotatable plate within the oven, a stovepipe having a direct passage for the escaping products of combustion and an indirect passage,
15 a damper in the direct passage for diverting the products of combustion into the indirect passage, a fan-wheel within said indirect passage, adapted to be operated by said products of combustion when diverted, and power-transmitting connections between said fan
20 and the rotating plate whereby the latter is operated, consisting of a shaft on which said fan is mounted, a counter-shaft to which said fan is geared, a driving-shaft of the plate and a belt and pulleys by which the counter-shaft transmits motion to the driving-shaft of said plate.

8. In a cooking-stove having an oven and
30 heat-passages communicating with the fire-

box of the stove, a stovepipe having a direct and an indirect passage for the products of combustion, a damper within the direct passage adapted to divert the products of combustion to the indirect passage, a fan-wheel
35 within said indirect passage, a rotatable plate within the oven and power-transmitting connections between the fan-wheel in the stovepipe and the rotatable plate in the oven whereby the latter is operated.

9. In a cooking-stove, the combination of a rotatable plate within the oven, a fan-wheel in the stovepipe, a damper in said pipe for opening and closing a direct passage there-through, and directing the products of combustion against the fan-wheel, for operating
45 the latter, connections from the fan-wheel for operating the rotatable plate, revoluble shelves upon said plate, adapted to receive dishes and a fixed arm on the inside of the
50 stove-door with which the shelves are adapted to come in contact, to change their position at each revolution of the plate.

In witness whereof I have hereunto set my hand.

JOHN E. ARMSTRONG.

Witnesses:

H. G. INSEL,

W. A. COREY.