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I. J. MARSH.
REEL OVEN.

APPLICATION FILED OCT. 22, 1904.

2 SHEETS—SHEET 2.

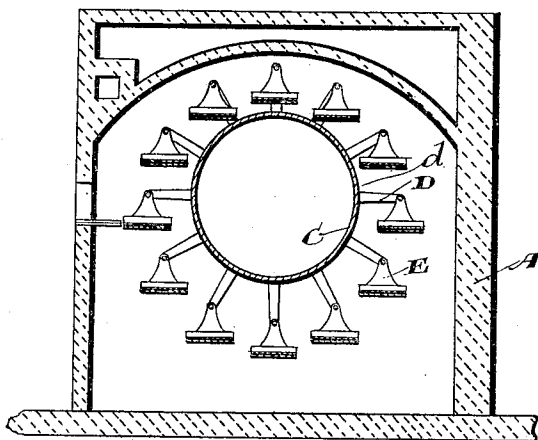


Fig. 2.

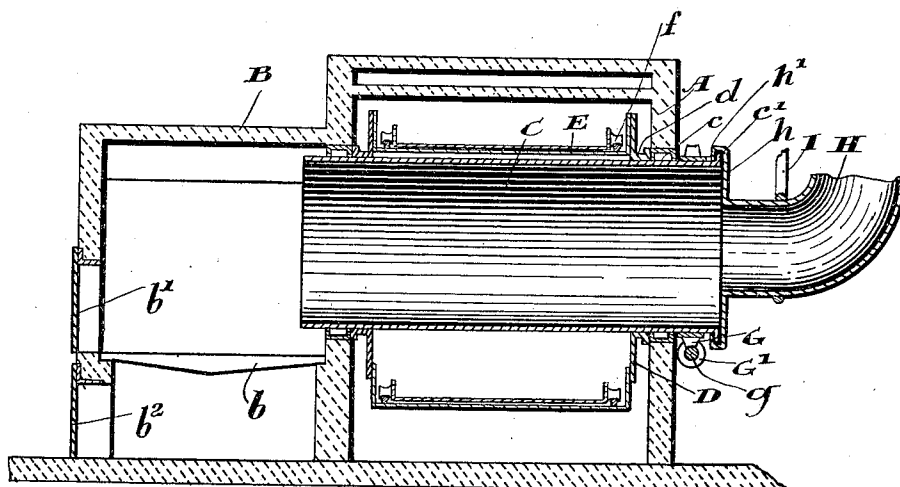


Fig. 3.

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REEL-OVEN.

No. 799,746.

Specification of Letters Patent

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To all whom it may concern:

Be it known that I, ISAAC JENKS MARSH, of Deer Park post-office, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Reel-Ovens, of which the following is a specification.

My invention relates to improvements in reel-ovens; and the object of the invention is, first, to devise an economical means for heating the oven in which none of the products of combustion will enter the baking-chamber, and, secondly, to devise a simple means for removing the products from the oven; and it consists, essentially, first, of a heating-drum extending through the oven and provided with an exit-flue and a heating means for the drum located, preferably, at one end thereof and arranged so that the products of combustion are carried through the drum, the reel being secured on the drum and suitable means being provided for rotating the drum, and, secondly, of removable shelves supported by rollers on rails on the pivotal shelves and extension-rails extending through the oven-door opening, whereby the removable shelves may be successively withdrawn, the parts being arranged and constructed in detail, as hereinafter more particularly explained.

Figure 1 is a perspective view of the outside of the oven, showing one means for driving the drum and means for locking the pivotal shelf preparatory to withdrawing the removable shelf. Fig. 2' is a cross-section of the oven. Fig. 3 is a longitudinal section. Fig. 4 is a detail of the removable shelf.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the casing or wall of the oven, which is formed in any preferred manner and of any preferred material, and B is the fire-chamber, provided with the usual fire-grate *b* and fire-door *b'* and ash-door *b''*.

Although I show the fire-chamber, which may be adapted for coal or wood, it will of course be understood that I do not wish to confine myself to what fuel may be used, as gas or fuel-oil or a blast-furnace may be used.

C is a drum, which is preferably of a large diameter and is journaled in roller-bearings *c* in the end walls of the oven.

D are arms secured on the rings *d*, which are preferably secured to the periphery of the drum.

E are the pivotal shelves, which are pivot-

ally connected to the outer ends of the arms D and are provided with rails *e*, the form of these shelves or supporting-arms being such as is usually made in reel-ovens. Of course the cross portion connecting the ends may be made lighter and of open-work or cross-bars, as may be desired.

F is the removable shelf, which is provided with end rollers *f*, as indicated, which rest on the rails *e*, hereinbefore referred to.

G is a gear, preferably a worm-gear, with which meshes the worm *G'*, which is located on the shaft *g*, journaled in suitable bearings and deriving movement from any suitable source of power.

H is the exit-flue, which is provided with a flange *h*, having an inwardly-turned portion designed to fit over the end flange *c'* of the drum C, and *h'* is a supplemental flange located to the inside of the flange *c'* and secured to the inturned portion of the flange *h*.

I is a supporting-bracket for the flue H. The flue H is preferably held stationary, and the drum rotates the flange *c'*, rotating within the flange *h*, as will appear.

J represents rails located at the bottom of the door-opening *J'* of the oven and opposite the rails of the shelves, such rails J extending in close proximity to the path of the outer edge of the shelf as it rotates.

K represents plungers extending through the end walls of the oven and provided, preferably, with forked ends *k*, and L is a lever secured on the end of the crank-rod *l*, which is pivoted on the brackets *l'* on the outer wall of the oven. There is a crank-rod on each end of the oven connected to the plungers, and the crank-rods are connected, so as to operate in unison, by the links *l''*, connected to the central pivot-lever *l'''*, having arms of equal length.

It will now be seen that by manipulating the lever L the forked ends *k* may be thrown underneath each end of the supporting-shelf E, and thereby hold such shelf stationary preparatory to the removal of the shelf F, which can be drawn outwardly, the rollers *f* passing outwardly over the rails *e* J. This operation can be done successively to feed the shelves inwardly or outwardly as the drum and reels are rotated and the shelves come opposite the door-opening.

Of course I do not show any door for the opening; but it will of course be understood that the usual door will be provided.

The great advantage in my construction is

that none of the products of combustion can get into the baking-chamber and yet the oven may be adequately heated.

What I claim as my invention is—

5 1. In a reel-oven, the combination with the baking-chamber provided with suitable walls, of the drum journaled in the walls, having its ends projecting through said walls, means connected to one of said ends for rotating the
10 drum, arms connected to the drum, shelves carried by said arms and means for heating the interior of the drum.

2. In a reel-oven, the combination with the baking-chamber provided with suitable walls,
15 of the drum journaled in said walls and having its ends extending therethrough, means secured to one of said ends outside the walls of the baking-chamber for rotating the drum, arms connected to the drum, shelves carried
20 by said arms, heating means at one end of the drum and a stationary flue at the other end, said flue having a flange having its edge bent to form an annular groove and the said drum having a flange adapted to rotate in
25 said groove, substantially as described.

3. In a reel-oven, the combination with the baking-chamber provided with suitable walls, of the drum journaled in said walls and having its ends extending beyond the same, rings
30 secured to the drum, arms carried by the rings, shelves pivoted to the arms, removable shelves carried by said pivoted shelves, heating means at one end of the drum, a stationary flue at the other end of the drum, a
35 worm-wheel secured to the drum outside the baking-chamber, a worm-gear meshing therewith and means for rotating the worm-gear.

4. The combination with the reel and shelves hung thereon, of reciprocating plungers
40 passing through the walls of the oven and means for simultaneously throwing such

plungers in under the shelf when it arrives opposite the bottom of the oven-door.

5. The combination with the reel and shelves hung thereon, of reciprocating plungers extending into the oven, a lever for reciprocating one plunger and link connections from said plunger to the other plunger whereby when the lever is operated both plungers will be forced into or out of the oven, substantially as described. 50

6. In a reel-oven, the combination with a baking-chamber provided with suitable walls, of the drum supported in the walls and extending therethrough and designed to form a
55 conduit for the products of combustion, the heating-chamber located at one end of the drum and communicating therewith, a flue connected to the opposite end of the drum and a reel supported upon the exterior of the drum as and for the purpose specified. 60

7. In a reel-oven, the combination with the baking-chamber provided with suitable walls, of the drum supported in the walls and extending therethrough and capable of radiating heat outwardly into the chamber, a heating-chamber communicating with one end of the drum and a flue connected to the opposite end of the drum and a reel supported
65 peripherally outside of the drum as specified. 70

8. In a reel-oven, the combination with the baking-chamber provided with suitable walls, of the drum supported in the walls extending therethrough and capable of radiating heat outwardly into the chamber, a reel supported
75 peripherally outside of the drum and means for interiorly heating the drum as and for the purpose specified.

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