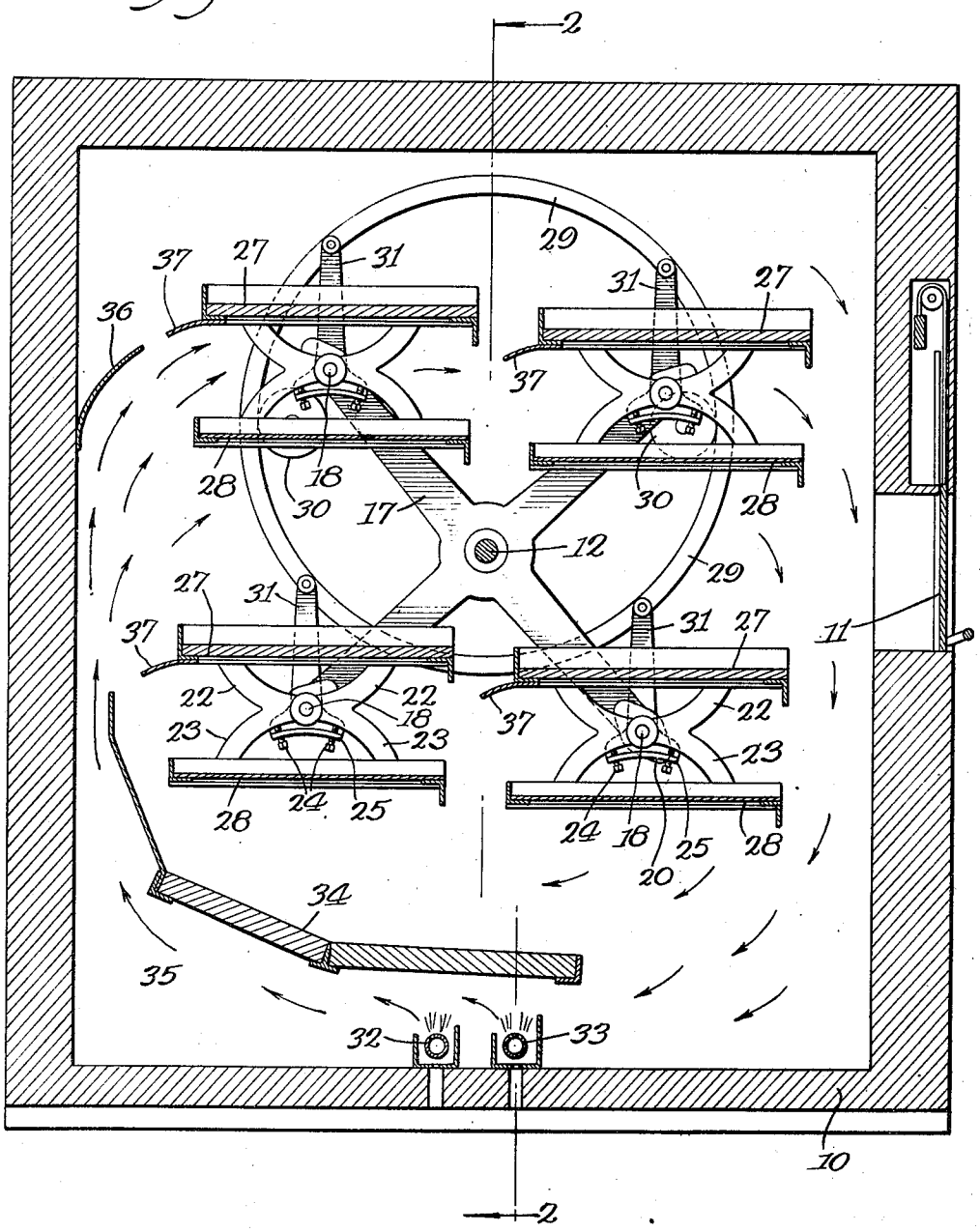
Jan. 18, 1938. J. FAULDS 2,106,052

BAKE OVEN

Filed June 3, 1936 2 Sheets-Sheet 1

Fig. 1



Inventor:
John Faulds
By Gilson, Mann & Co.
Attys.

Jan. 18, 1938. J. FAULDS 2,106,052

BAKE OVEN

Filed June 3, 1936 2 Sheets-Sheet 2

Fig. 2

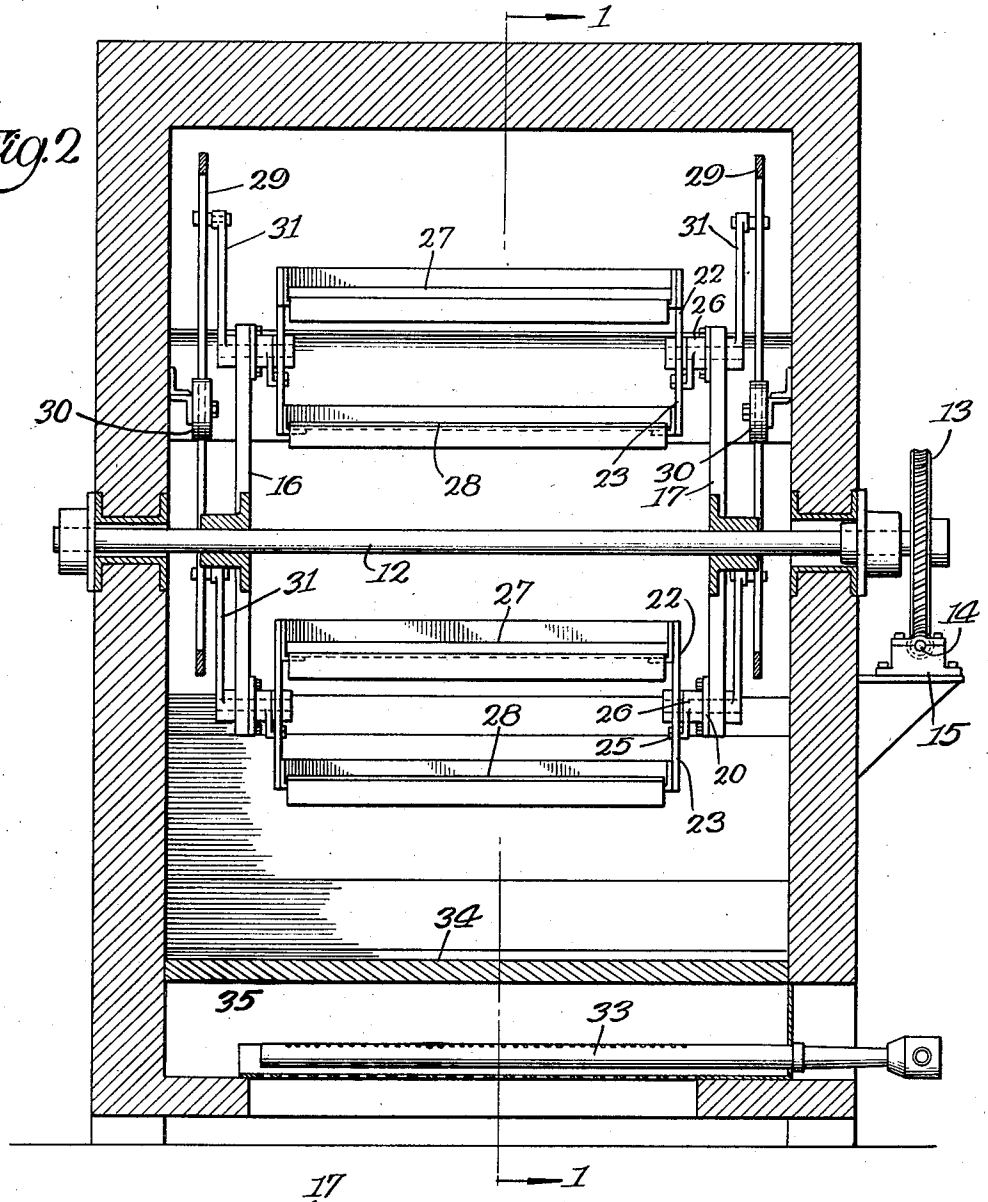
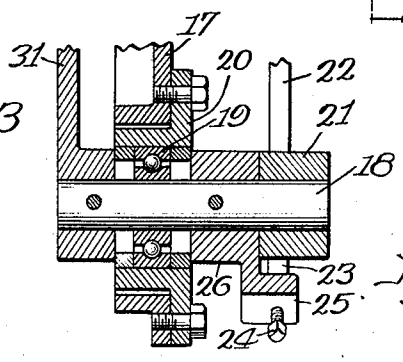


Fig. 3



Inventor:
John Faulds
By Gillson, Mann & Co
Attys.

Patented Jan. 18, 1938 2,106,052

UNITED STATES PATENT OFFICE

2,106,052

BAKE OVEN

John Faulds, Oak Park, Ill.

Application June 3, 1936, Serial No. 83,288

6 Claims. (Cl. 107—59)

The invention relates to bake ovens of the reel type, its object being to secure increased capacity and efficiency of ovens of this type.

A preferred embodiment of the invention is hereinafter described and is illustrated in the accompanying drawings in which

Fig. 1 is a vertical section on the line 1—1 of Fig. 2;

Fig. 2 is a vertical section on the line 2—2 of Fig. 1; and

Fig. 3 is a sectional detail.

The casing of the oven, indicated at 10, may be of any suitable form to adapt it to contain the furnace and shelving and its walls may be of such material as may be deemed suitable. A counterweighted charging door is shown at 11 and this also may be of such type as may be preferred. The reel shaft 12 is shown as journalled in suitable bearings in opposite side walls of the casing and may be driven by any preferred means. For this purpose there is shown a worm wheel 13 mounted on the shaft co-operating with the worm shaft 14 journalled in suitable brackets 15 secured to the outer face of one of the walls of the casing and to which shaft power may be applied.

The reel, as shown, comprises a pair of spiders 16 and 17 fixedly mounted upon the shaft 12 and each having four radiating arms for carrying the baking shelves.

A stub shaft 18 is journalled parallel with the shaft 12 in the outer end of each of the reel arms, the bearing being, preferably, of the ball type, as shown at 19 in Fig. 3, this bearing being housed within a socket plate 20 set within an aperture in the arm of the spider and secured thereto by means of suitable bolts as indicated in Fig. 3. Upon the inner end of each of the shafts 18 there is mounted a bracket comprising a hub 21, a pair of upwardly projecting arms 22, 22 and a pair of downwardly projecting arms 23, 23, these brackets being adjustably fixed to the shaft 18 by means of set screws 24 setting through a depending flange 25 of an anchor block 26, sleeved upon and pinned to the shaft 18 and positioned to engage the inner face of the ball bearing race 19.

A pair of baking shelves 27 and 28 are carried by correspondingly disposed brackets associated with the two spiders, the shelves being carried, respectively, by the upwardly projecting bracket arms 22 and the downwardly projecting bracket arms 23 and being secured thereto in any desired manner.

The baking shelves are stabilized, that is to say, held against tilting, by the known means of a pair of rings 29 and 29 located between the reel and each of the side walls of the casing and guided by rollers 30 mounted on brackets secured to the inner faces of the casing walls; these rings being connected to the several shafts 18 by crank arms 31.

Any preferred form of heating device may be employed. For this purpose, there is shown a pair gas burners 32 and 33 located on the bottom of the casing 10 and covered by a wall 34 extending from side wall to side wall of the casing, and being continued upwardly adjacent the rear wall thereof and substantially to the full width of such wall, to inclose a flue 35 opening approximately at the level of the reel shaft. The opposite end of the wall 34 is preferably spaced from the front wall of the casing to permit the entry for reheating of descending vapors.

In order to insure a circulation of the hot vapors between the two shelves of each pair as they pass the open end of the flue 35, an inwardly and upwardly inclined deflector 36 is secured to a wall of the casing above the outlet of this flue. Supplementing or displacing the deflector 36, an outwardly projecting and downwardly inclined deflector plate 37 may be attached to the outer end of the upper shelf of each pair. The reel may be turned in either direction during the baking operation.

The several baking shelves are preferably of uniform size and shape; those of each pair being spaced apart sufficiently to permit the passage of the hot vapors between them. As each pair of the shelves passes the open end of the flue 35 the vapors will naturally pass under the lower shelf, as in the old single shelf type of reel ovens, and the lower shelf is prevented from blanking the lower face of the upper shelf by the deflectors 36 and 37 which insure the proper baking of the bottoms of the articles carried by the upper shelves, and the tops of the articles carried by the lower shelves. The vapors of combustion circulate through the entire oven chamber, descending upon the side opposite from the flue 35. A suitable vent, not shown, is provided for the escape of the partially cooled vapors, as is customary in all bake ovens.

While the invention is shown in connection with an oven of the reel type, it is applicable to other forms of traveling shelf ovens.

The twin shelves, as shown, not only double the capacity of the oven, without requiring any material increase in fuel consumption, but improve the product. When the shelves are in the posi-

tion as shown in Fig. 1, a portion of the hot vapors will enter between the lower shelf of the upper pair and the upper shelf of the lower pair, insuring the baking of the under side of the contents of the former and the upper side of the contents of the latter. A portion of the vapors will be guided by the deflector **36** between the shelves of adjacent pairs, insuring the baking of the lower portions of the contents of the upper shelf and the upper portions of the contents of the lower shelf.

The improved oven has the further advantage of providing for this increase of capacity without necessitating any increase in the floor space occupied.

I claim as my invention:

1. In a bake oven, in combination, a casing, a horizontal shaft pivotally mounted within the casing, a reel mounted on the shaft and comprising a pair of end elements, shelves arranged in vertically disposed pairs pivotally mounted on the reel, a side wall of the casing parallel with the axis of the reel being provided with an inwardly inclined deflector for directing ascending vapor currents inwardly between the shelves of an ascending pair.

2. In a bake oven, in combination, a casing having a side wall, a horizontal shaft parallel to said wall pivotally mounted within the casing, a reel mounted on the shaft and comprising a pair of end elements, shelves arranged in vertically disposed pairs pivotally mounted on the reel, and means comprising a plate extending from an upper portion of said wall for deflecting ascending vapor currents between the shelves of passing pairs.

3. In a bake oven, in combination, a casing, a revoluble reel within the casing, shelves carried by the reel and arranged in pairs, means for directing hot vapors peripherally as to the reel by convection, and means spaced from the first means for directing the hot vapors between the shelves of the several pairs.

4. In a bake oven, in combination, a casing inclosing a baking chamber, a burner in the lower part of the chamber, a reel in the chamber, a pair of vertically spaced shelves carried by the reel, and deflecting means carried by one of said shelves for directing vapors from the burner between the shelves.

5. In a bake oven, in combination, a casing inclosing a baking chamber, a burner in the lower part of the chamber, a reel in the chamber, pairs of vertically spaced shelves carried by the reel, and deflecting means carried in part by a wall of the casing and in part by certain of the shelves for directing vapors from the burner between the shelves of the several pairs.

6. In a bake oven, in combination, a casing inclosing a baking chamber, a reel within the chamber, shelves carried by the reel for supporting articles to be cooked, a combustion chamber below the reel, a flue leading from such chamber along a wall of the casing and discharging into the baking chamber in the vicinity of a horizontal plane through the axis of the reel, and deflector plates projecting outwardly from certain of the shelves and extending into the path of the vapors issuing from the flue as such shelves move though the zone of the baking chamber adjacent the discharge end of the flue.

JOHN FAULDS.

CERTIFICATE OF CORRECTION.

Patent No. 2,106,052. January 18, 1938.

JOHN FAULDS.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, line 33, claim 6, for the word "though" read through; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Sgined and sealed this 22nd day of February, A. D. 1938.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)