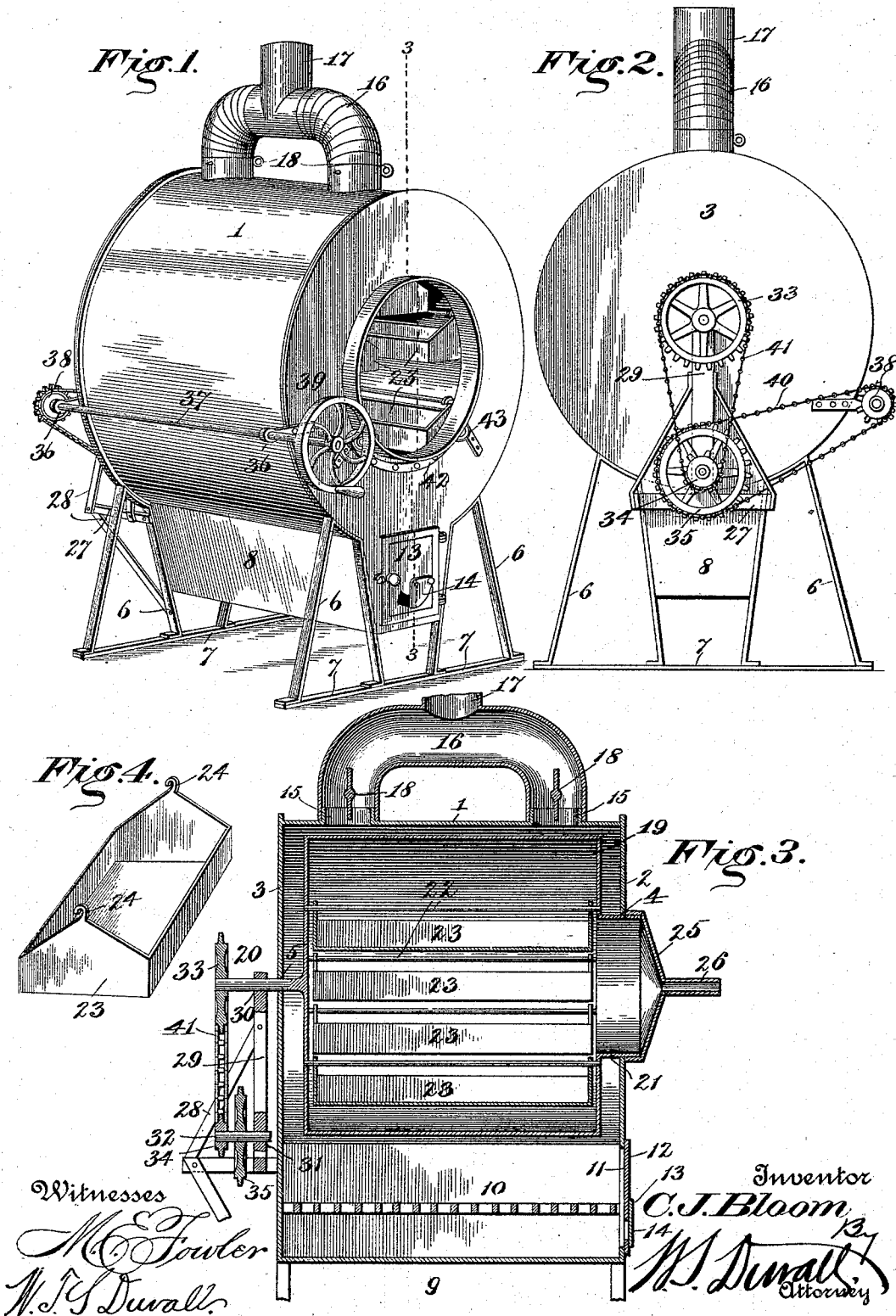


(No Model.)

C. J. BLOOM.
ROTARY OVEN.

No. 528,069.

Patented Oct. 23, 1894.



UNITED STATES PATENT OFFICE.

CHARLES J. BLOOM, OF BURLINGTON JUNCTION, MISSOURI.

ROTARY OVEN.

SPECIFICATION forming part of Letters Patent No. 528,069, dated October 23, 1894.

Application filed May 3, 1894. Serial No. 509,905. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. BLOOM, a citizen of the United States, residing at Burlington Junction, in the county of Nodaway and State of Missouri, have invented certain new and useful Improvements in Rotary Ovens; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in ovens, the objects in view being to produce an oven that is portable, cheaply constructed and simple, and which has increased capacity for the bakings of cakes, pastries, &c., either for domestic or bakers' use, and which by reason of its construction will impart an even heating to all portions of the bakings contained therein, whereby advantageous results accrue.

Other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of an oven embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a vertical longitudinal sectional view thereof. Fig. 4 is a detail of one of the bake pans.

Like numerals of reference indicate like parts in all the figures of the drawings.

In the practice of my invention I construct an outer casing or cylinder of sheet metal and the same consists of an annular wall or drum 1, having front and rear heads 2 and 3 respectively which are secured to the casing and provided at their centers with openings 4 and 5 respectively. The first mentioned opening is sufficiently large to insert the bakings and bake-pans for containing the same, while the latter opening is simply a bearing opening. The casing thus constructed is supported upon suitable frames 6 whose lower ends are bent to form feet and are bolted to cross sills or supports 7. Between these frames 6 the annular wall is provided with depending flanges 8 which are connected at their lower ends by a cross-piece 9, the whole producing a fire box. This fire-box has supported within it a grate 10, and at one end is

provided with a fuel opening 11 which is covered by a swinging door 12 having a draft opening 13 over which is arranged a slide 14. In the present instance it is intended that the oven should be operated by the consumption of hard fuel, but it will be obvious that soft fuel may be used or gas as desired, in which case the fire-box may be omitted or modified in its construction to adapt it for the purpose.

The upper side of the casing is provided with front and rear flanged openings 15, the two being connected by an inverted U-shaped pipe 16 having a central outlet 17 common to both elbows of the pipe. Arranged in the elbows are dampers 18 whose stems extend to the exterior and thereby afford a means by which said dampers may be manipulated.

Contained within the casing thus constructed is a cylinder 19, and the same is of less diameter and length than the casing so as to produce an intermediate space in conjunction with the same. This cylinder is provided at its rear end with a shaft 20 which extends through the bearing 5, and at its front end with a flanged opening 21, the flange thereof extending through the opening 4 of the front of the casing. Arranged in annular series within the cylinder 19 is a series of axially disposed rods 22, and suspended loosely and in a removable manner from each rod is a bake-pan 23. These bake-pans 23 have their ends formed triangularly in the present instance, and at the centers of said ends are provided with hooks 24, which loosely engage the rods and may be readily disengaged from the same when desired.

The flange 21 of the opening at the front end of the cylinder 19 is provided with a conical cover 25, the same preferably having at its apex a vent tube 26.

A horizontal frame 27 is located at the rear of the fire-box, is suitably braced by braces 28 and has a vertical portion or standard 29 arising therefrom. This standard 29 has an upper bearing 30 in line with the opening 5 in the rear end of the casing and is also provided with a lower bearing 31 in which a short shaft 32 is designed to rotate. The upper bearing 30 receives the shaft 20 of the cylinder 19. The outer end of the shaft 20 is provided with a sprocket-wheel 33, and a smaller sprocket-wheel 34 is arranged on the

end of the shaft 32, while between this latter sprocket-wheel and the standard 29 a larger sprocket-wheel 35 is located on said shaft 32.

5 A pair of bearing brackets 36 extend from the front and rear end walls of the casing and accommodate a counter-shaft 37 which extends in front and rear of the casing. The rear end of the counter-shaft is provided
10 with a sprocket-wheel 38 and the front end thereof with a pulley or it may be a hand-wheel 39, by means of which said shaft 37 may be operated. If it is designed to operate the shaft by hand the hand-wheel 39 shown
15 is employed, or if on the other hand it is to be operated by power a pulley is substituted. A sprocket-chain 40 connects the sprocket-wheel 38 with the large sprocket-wheel 35, and thus communicates motion from the
20 counter-shaft 37 to the small shaft 32, and a sprocket-chain 31 connects the small sprocket 34 of the shaft 32 with the large sprocket 33 of the shaft 20 that projects from the rear end of the cylinder 19, so that as will be obvious
25 motion is communicated from the counter-shaft 37 to the cylinder 19.

A curved bracket 42 surrounds the lower portion of the front opening 4 in the outer casing and is provided at its ends with loose
30 rollers 43, see Fig. 1, which support the flange 21 of the front opening of the cylinder 19 whereby a bearing is produced for the front end of said cylinder.

This completes the construction of the oven
35 and the operation of the same will be readily understood. The products of combustion pass up from the fire-box around the sides and ends of the inner cylinder to the pipe 16, and finally out of the pipe 17. The products
40 may be directed in either direction by a manipulation of the dampers 18, and they may be contained within the oven any length of time by an adjustment of said dampers so as to retard their egress. As before
45 stated the pans containing the bakings are inserted through the opening 4 in the outer casing and through the flanged opening 21 of the cylinder 19, the pans being hung successively upon the suspension rods 22, after which
50 the cap or cover 25 is replaced upon the flange 21 and the machine started. In operation the machine is slowly revolved so that all bakings and all portions of each baking are subjected to the same degree of heat and as a
55 consequence an even browning takes place within the pans.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same to
60 any degree and extent within the knowledge of the skilled mechanic.

Having described my invention, what I claim is—

1. In an oven the combination with a casing having front and rear bearing openings,
65 smoke-pipes and draft openings, of an inner

cylinder having a shaft extending through the rear opening, and at its front end an opening having a flange extending through the front opening of the casing, a cover for the flanged
70 opening, bake-pan supports arranged in the inner cylinder, and means for giving motion to the shaft of said cylinder, substantially as specified.

2. In an oven the combination with an external casing, a combustion-chamber communicating therewith, and a smoke-pipe, of an inner cylinder arranged for rotation in the casing and provided with an axial opening for giving access thereto, rods arranged
80 parallel to the axis of and within the inner cylinder around said opening and bake-pans loosely suspended on the rods, and means for rotating said inner cylinder, substantially as specified.
85

3. In an oven the combination with an external casing having a smoke-pipe, and a combustion-chamber communicating with the cylinder of an inner cylinder journaled for rotation in the casing and having an axial
90 opening, means for giving motion to the cylinder and around the opening, rods arranged annularly within the cylinder and bake-pans having opposite end hooks for loosely and removably engaging the rods, substantially as specified.
95

4. In an oven the combination with the outer casing having front and rear openings and a smoke-pipe, of an internal cylinder arranged in the casing and having a rear shaft extending
100 through the rear opening of the casing and a front opening having a flange extending through the opening in the casing, a cap or cover arranged upon the flange in a removable manner and having a vent, a series of
105 rods arranged within the cylinder around the opening, a series of bake-pans having hooks at their ends loosely suspended from the rods, and means for giving motion to the inner cylinder, substantially as specified.
110

5. In an oven the combination with an outer cylindrical casing having a rear bearing opening and a front opening, the U-shaped pipe having dampers at its ends and the common discharge at its center, of the inner cylinder
115 19 having the flanged opening 21 and the removable cover, the shaft 20 extending from the inner cylinder through the rear opening of the casing, means for rotating the shaft, a curved bracket 42 and rollers 43 for supporting the flange of the inner cylinder, substantially as specified.
120

6. In an oven the combination with the outer casing having the supports 6, the depending fire-box between the supports and the discharge-pipes 16 and 17 having dampers 18, of the cylinder 19 having the suspension rods 22, the loose pans 23, the shaft 20, the flanged opening 21, the cover 25 and the vent 26, the sprocket-wheel 33 on the shaft 20, the counter-
130 shaft 37, means for operating the same, the gear 38 on the counter shaft, and means for

communicating motion from the sprocket-wheel 38 to the sprocket-wheel 33, substantially as specified.

7. In an oven the combination with the outer casing having front and rear bearings, the horizontal frame 27 having braces 28, the standard 29 arising therefrom having bearings 30 and 31, the brackets 36, the countershaft 37, means for rotating the same, the sprocket 38, the short shaft 32, the sprocket-wheels 34 and 35 arranged thereon, the chain 40 connecting the sprockets 38 and 35, of the cylinder 19 arranged for rotation in the cas-

ing and having the front flanged opening 21 provided with the cover 25, and the rear shaft 20 arranged in the bearing 30 of the standard, the sprocket-wheel 33 and the sprocket-chain 41 connecting the wheel 33 with the sprocket wheel 34, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES J. BLOOM.

Witnesses:

H. B. WILLIAMS,
E. F. BERRY.