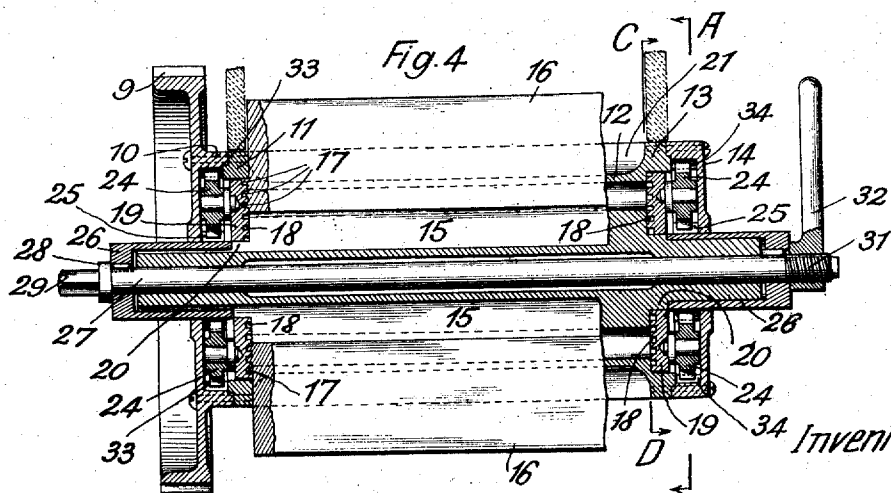


1,259,336.



Inventor:

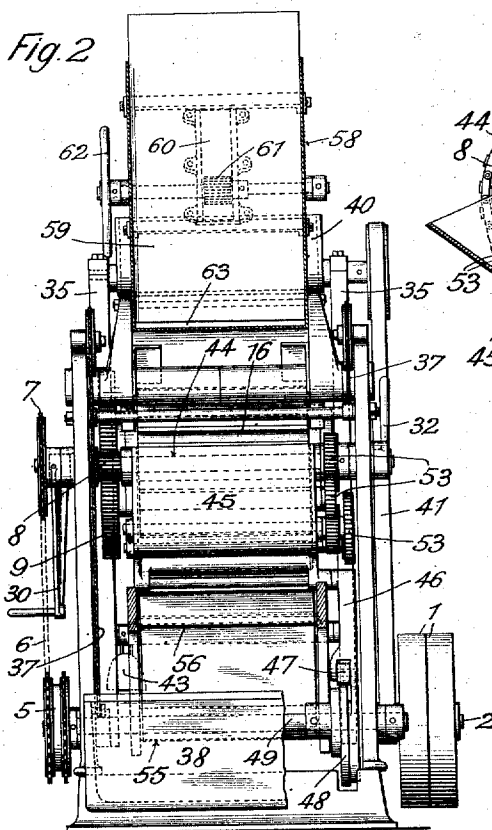
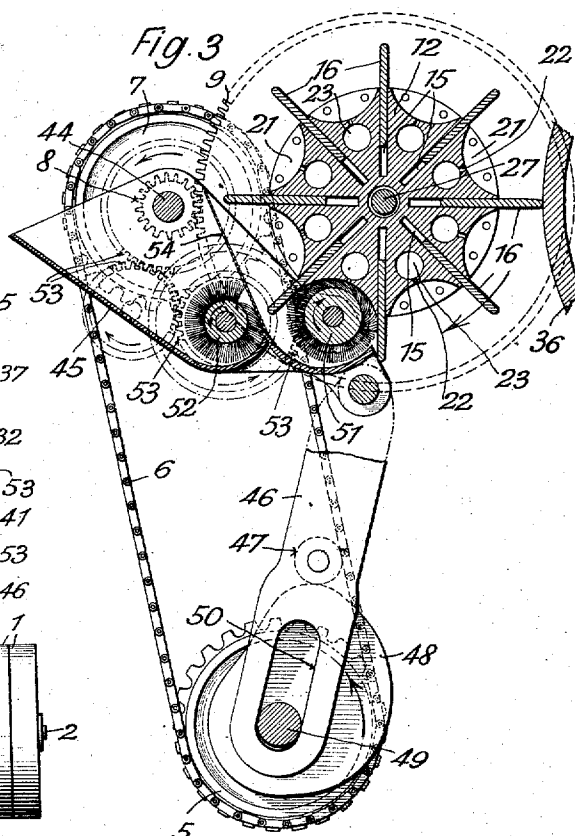
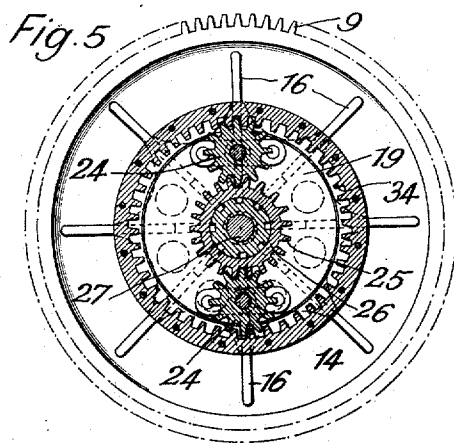
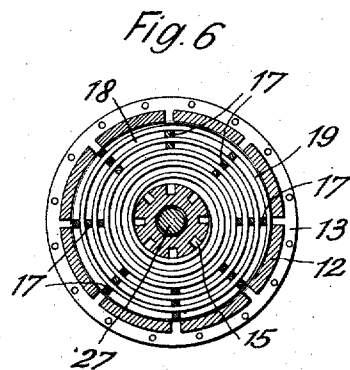
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DOUGH DIVIDING MACHINE.
APPLICATION FILED OCT. 18, 1916.

Patented Mar. 12, 1918.
2 SHEETS—SHEET 2.

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UNITED STATES PATENT OFFICE.

FRIEDRICH AESCHBACH, OF AARAU, SWITZERLAND.

DOUGH-DIVIDING MACHINE.

1,259,336.

Specification of Letters Patent.

Patented Mar. 12, 1918.

Application filed October 18, 1916. Serial No. 126,342.

To all whom it may concern:

Be it known that I, FRIEDRICH AESCHBACH, a citizen of the Republic of Switzerland, residing at Aarau, Switzerland, have invented certain new and useful Improvements in Dough-Dividing Machines; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to an improved construction of a dough-dividing machine having a rotary cylinder provided with a number of pockets in its circumference. The machine according to this invention is provided with a movable body and a rotary cylinder comprising a plurality of separating walls which do not change their position relatively to the cylinder while the machine is running. These separating walls control the movement of said movable body adapted to act as a closing member for the pockets of the cylinder, so that the single pockets are closed by said body upon their filling with dough and are again opened later on owing to the action of the separating walls upon said movable body in order that they may discharge their contents.

This invention will now be more particularly described with reference to the accompanying drawings, which illustrate a constructional example of the invention.

In these drawings:

Figure 1 is a longitudinal section of the improved dough-dividing machine,

Fig. 2 is a corresponding front view,

Fig. 3 shows a part of Fig. 1 on an enlarged scale,

Fig. 4 is a longitudinal section on an enlarged scale of the cylinder provided with a number of pockets in its circumference,

Fig. 5 is a section on the line A—B of Fig. 4 and

Fig. 6 is a section on the line C—D of Fig. 4.

In the drawings, 1 denotes a pair of pulleys mounted on a shaft 2. On this shaft is also mounted a sprocket wheel 3 which transmits its motion to a sprocket wheel 5

by means of a chain 4. The sprocket wheel 5 transmits then its motion to a sprocket wheel 7 arranged above sprocket wheel 5 by means of a chain 6. Sprocket wheel 7 is fixed to a shaft 44 carrying also a toothed wheel 8 engaging with a toothed wheel 9 which is adapted to rotate the cylinder 12 provided with a number of pockets in its circumference. To this end I provide the toothed wheel 9 with a rim 10 (Fig. 4) to which I fix a ring 11 rigidly connected to one end of the cylinder 12. To a similar ring 13 on the other end of cylinder 12 is fixed a cover 14. The cylinder 12 has radial slots 15 in each of which is disposed a movable separating wall 16. These radial separating walls are provided at each end with a gudgeon 17, which engage loosely in spiral grooves 18 of disks 19. The latter are loose on the hubs 20 of cylinder 12. This cylinder has between said radial separating walls recesses 21 forming together with the separating walls 16 trough-like pockets. Holes 22 connect the bottom of these pockets with air-passages 23 in the cylinder 12. The disks 19 carry toothed wheels 24 meshing with teeth 25 provided on the circumference of sleeves 26, which surround the hubs 20 and rest on shoulders of these hubs. A shaft 27 passes as well through both sleeves 26 as the hubs 20 and the central portion of the cylinder 12. To one end of this shaft 27 is fixed a collar 28 provided with a projection 29, which is adapted to receive a hand-crank 30, while the other end of this shaft has a screw-thread 31, so that a press lever 32 provided with a screw-threaded hole may be secured to it. The toothed wheels 24 engage also on one side of the cylinder 12 with an internal gear 33 of the rim 10 and on the other side with an internal gear 34 of the cover 14.

On the shaft 2 are also pivotally mounted two levers 35 carrying a drum 36 loosely mounted in these levers. As shown in Fig. 1, this drum 36 is adapted to act as a closing member for the pockets of the rotary cylinder 12. To a connecting rod of these levers 35 is fixed one end of a cord 37 carrying at the other end a weight 38. The latter has the tendency to press the drum 36 always against the rotary cylinder 12. 39 denotes a roller adapted to strew flour contained in

a sieve-trough 40 on the drum 36. This roller 39 consisting of a brush receives its drive from shaft 2 by means of a belt-drive 41. 42 denotes a stripper which is acted upon by a weight 43.

On the shaft 44 (Figs. 1 and 3), to which are fixed the sprocket wheel 7 and the toothed wheel 8, is pivotally mounted a trough 45 to the lower end of which is pivotally connected a rail 46. The latter carries a roller 47 (Figs. 3, 1) working together with a cam-disk 48, which is fixed to the shaft 49 carrying sprocket wheel 5. Rail 46 is also provided with a longitudinal slot 50 engaging with shaft 49. The trough 45 contains a cylindrical cleaning and spraying brush 51 and a flour-feeding roller 52. The brush 51 as well as the roller 52 are driven in all positions of the trough 45 by a train of toothed-wheels 53 operatively connected to shaft 44. 54 denotes a perforated iron-sheet, which rests partly on the brush-roller 52.

Shaft 2 carries also a roller 55, over which is fed a conveyer-belt 56, which runs on the other end over an adjustable roller 57.

58 denotes a filling-hopper having a slide-wall 59 provided with a rack 60, which meshes with a pinion 61 mounted on a shaft carrying a hand-wheel 62.

The operation of this dough-dividing machine may for instance be as follows:

The dough falls from the hopper 58 through the aperture 63 into the pockets of the rotary cylinder 12. Thereby, slide 59 serves to regulate the dough-quantity passing through said aperture 63. Upon a rotation of cylinder 12 a radial separating wall 16 pushes the drum 36 backward, that is away from this cylinder 12, against the action of weight 38, the latter causing said drum 36 to move shortly afterward again toward the cylinder 12, so that a filled pocket is now closed in the manner shown in Fig. 1. The amplitude of movement of the drum 36 during the dough molding operation is equal to the sum of the middle ordinates of the arcs of the cylinder and of the drum included between the points of intersection of a pair of walls with the surface of the drum. The lower one of the pair of walls coming into operation is in contact with the drum until the mold chamber is completely filled, whereupon the upper wall by its downward rotation moves the drum its full amplitude until the point of contact of said wall with the drum passes a line joining the centers of drum and cylinder. The drum thereafter remains in contact with said wall while moving into the space between this wall and the next following wall until it contacts with the latter, whereupon the operation is repeated. Thus, a determinate quantity of dough is divided from the bulk. This working step is then repeated, the pocket just filled being after-

ward opened owing to the rotation of the cylinder 12, so that the dough-piece may fall on the conveyer-belt 56 carrying it into another dough working machine. At a determinate moment the cam-disk 48 causes the brush-roller 51 to swing into a pocket of the cylinder 12, as shown in Fig. 3, so that this pocket is cleaned and strewed with flour, as the brush 52 sprays flour through the sieve 54, which falls then on the bottom arranged beneath brush 51. This flour is then conveyed by the brush 51 into the cleaned pocket. The flour-strewing device 39, 40 has to provide for an easy disconnecting of the drum 36 from the dough contained in the pockets. As already stated, the drum 36 is loose in the arms 35, its rotation being brought about by the separating walls 16.

While the machine is running the press lever 32 is tightened, so that the sleeves 26 connected with the shaft 27 are pressed tightly against the hubs 20 of the cylinder 12. Thus, the toothings 25 of this cylinder prevent an individual rotation of wheels 24. Should it be desired to adjust the separating walls 16 in a radial direction I move the lever 32 in such a manner, that it ceases to press on said sleeves 26. When this is the case, I may rotate the sleeves 26 by means of the crank 30 without the cylinder 12 being moved, so that the disks 19 are rotated. The latter effect thereby a radial adjustment of all separating walls 16, as the gudgeons 17 provided on these walls engage with the spiral grooves 18 of said disks 19. As soon as the walls have been adjusted in the required manner, press lever 32 is again tightened, so that any further displacement of said walls 16 is prevented. According as these walls have been adjusted in the one or other direction the divided dough-pieces are greater or smaller and the feed to the pockets has therefore to be accordingly varied. This may be effected by moving hand-wheel 62, the slide 59 being thereby adjusted and the size of the aperture 63 varied.

What I claim is:

1. In a dough dividing machine, a cylinder having a number of pockets in its circumference, radial separating walls between the pockets and projecting beyond the circumference of said cylinder, means to rotate the cylinder and a member movable to and from the pockets during the rotation of said cylinder, a portion of said member entering between and simultaneously contacting with a pair of said walls to temporarily close the chamber between said walls and press the dough contained between the walls into the molds.

2. In a dough dividing machine, a cylinder having a number of pockets in its periphery, radial separating walls between the

pockets and projecting beyond the periphery of the cylinder, means to rotate the cylinder, a yieldingly supported drum contacting with said partitions and a portion thereof movable therebetween during the rotation of the cylinder to temporarily close the space between a pair of said walls and compress the dough into the pockets.

3. In a dough dividing machine, a cylinder having a plurality of pockets in its periphery, radial separating walls between the pockets projecting beyond the circumference of said cylinder, means to rotate the cylinder and a freely revoluble drum co-acting with the cylinder and walls and maintained in yielding contact therewith to temporarily enter a portion thereof between said walls and compress the dough into the pockets.

4. In a dough dividing machine, a cylinder having a plurality of pockets in its periphery, radial separating walls between the pockets projecting beyond the periphery of the cylinder, means to rotate the cylinder, and a freely rotatable drum yieldingly mounted to move in contact with a wall to and from the cylinder, the amplitude of said movement being equal to the sum of the middle ordinates of the arcs of said cylinder and drum between the points of intersection of a pair of walls with the surface of said drum.

5. In a dough dividing machine, a cylinder having a number of pockets in its periphery, radial separating walls between the pockets and projecting beyond the periphery of the cylinder, means to rotate the cylinder, a pivoted frame, a freely rotatable drum mounted in the frame and a weight to urge the drum toward the cylinder, said drum successively closing and a portion of said drum entering the chamber between successive pairs of walls during the rotation of the cylinder to compress the dough into the pockets.

6. In a dough dividing machine, a cylinder having a number of pockets in its circumference, radial separating walls between the pockets and projecting beyond the circumference of said cylinder, means to rotate the cylinder, and a member movable to and from the pockets during the rotation of said cylinder to partially enter between and simultaneously contact with a pair of said walls to temporarily close the chamber between said walls and press the dough contained between the walls into the molds, and means to simultaneously adjust the projection of the walls from the cylinder.

7. In a dough dividing machine, a cylinder having peripheral mold pockets therein, radial walls between the molds and projecting from the cylinder, disks at the ends of the cylinder having spiral grooves therein, gudgeons on the ends of the walls engaging

the grooves and means to rotate the disks to simultaneously adjust the projection of all the walls from the cylinder.

8. In a dough dividing machine, the combination with a cylinder having peripheral mold pockets therein; of a lever, a brush mounted at the end thereof proximate said cylinder, mechanism to drive said brush, a rod connected to said lever, and means to actuate said rod to swing said brush into and out of said pockets.

9. In a dough dividing machine, the combination with a rotatable cylinder having mold pockets therein; of a pivoted lever having a flour container, a brush at the end of said lever in front of said container, means in the container to distribute flour to said brush, a driving gear train on said lever for said means and brush, and means to periodically swing said lever to cause the brush to enter said pockets as they are rotated.

10. In a dough dividing machine, the combination of a cylinder provided with a number of pockets in its circumference, separating walls arranged radially in said cylinder and projecting beyond its circumference, means adapted to feed dough into said pockets, a conveyer belt for the divided dough pieces, means to move this belt, a drum adapted to be moved away from the cylinder upon striking of the separating walls against said drum, means having a tendency to move said drum toward the cylinder for the purpose of closing the pocket just filled with dough, said pocket being again opened upon movement of said drum away from the cylinder by one of the separating walls in order that it may discharge its content onto said conveyer-belt, a trough, a flour-spraying device and a cleaning device carried by said trough and means adapted to oscillate said trough for the purpose of swinging said cleaning device into and out of each pocket, said cleaning device strewing at the same time the flours sprayed out by said spraying device into the pockets, substantially as described.

11. In a dough-dividing machine, the combination of a cylinder provided with a number of pockets in its circumference, separating walls arranged radially in said cylinder and projecting beyond its circumference, means adapted to feed dough into said pockets, disks loose on the hubs of said cylinder and provided with spiral grooves, gudgeons on the ends of said separating walls engaging with said grooves, means adapted to rotate simultaneously all said disks from a single point, means adapted to lock said disks so that they are prevented from being moved relatively to said cylinder, a conveyer-belt for the divided dough pieces, means to move said belt, a drum adapted to be moved away from said cylinder upon striking of the separating walls against said

drum and means having a tendency to move
said drum toward the cylinder for the pur-
pose of closing the pocket just filled with
dough, this pocket being again opened upon
5 movement of the drum away from the cylin-
der by one of the separating walls in order
that it may discharge its content onto said
conveyer belt, substantially as described.

In testimony that I claim the foregoing as
my invention, I have signed my name in 10
presence of two subscribing witnesses.

FRIEDRICH AESCHBACH.

Witnesses:

CARL CULVER,
ARNOLD LEHNERT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."