

J. H. DAY & P. S. WARD.
M. E. LYONS & F. M. DUDLEY, EXECUTORS OF J. H. DAY, DEC'D.
DOUGH BRAKE,

954,937.

APPLICATION FILED DEC. 1, 1905.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

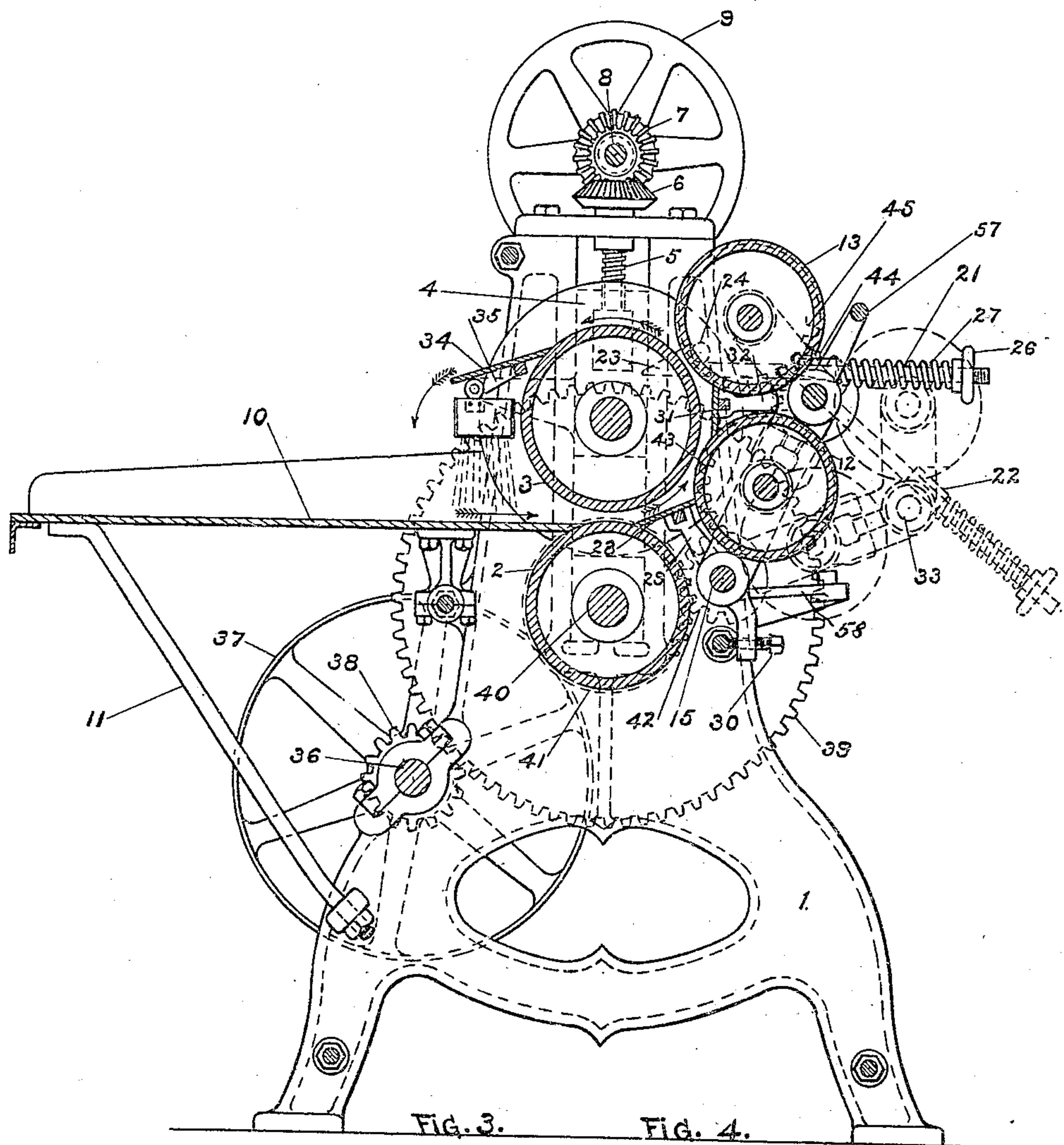
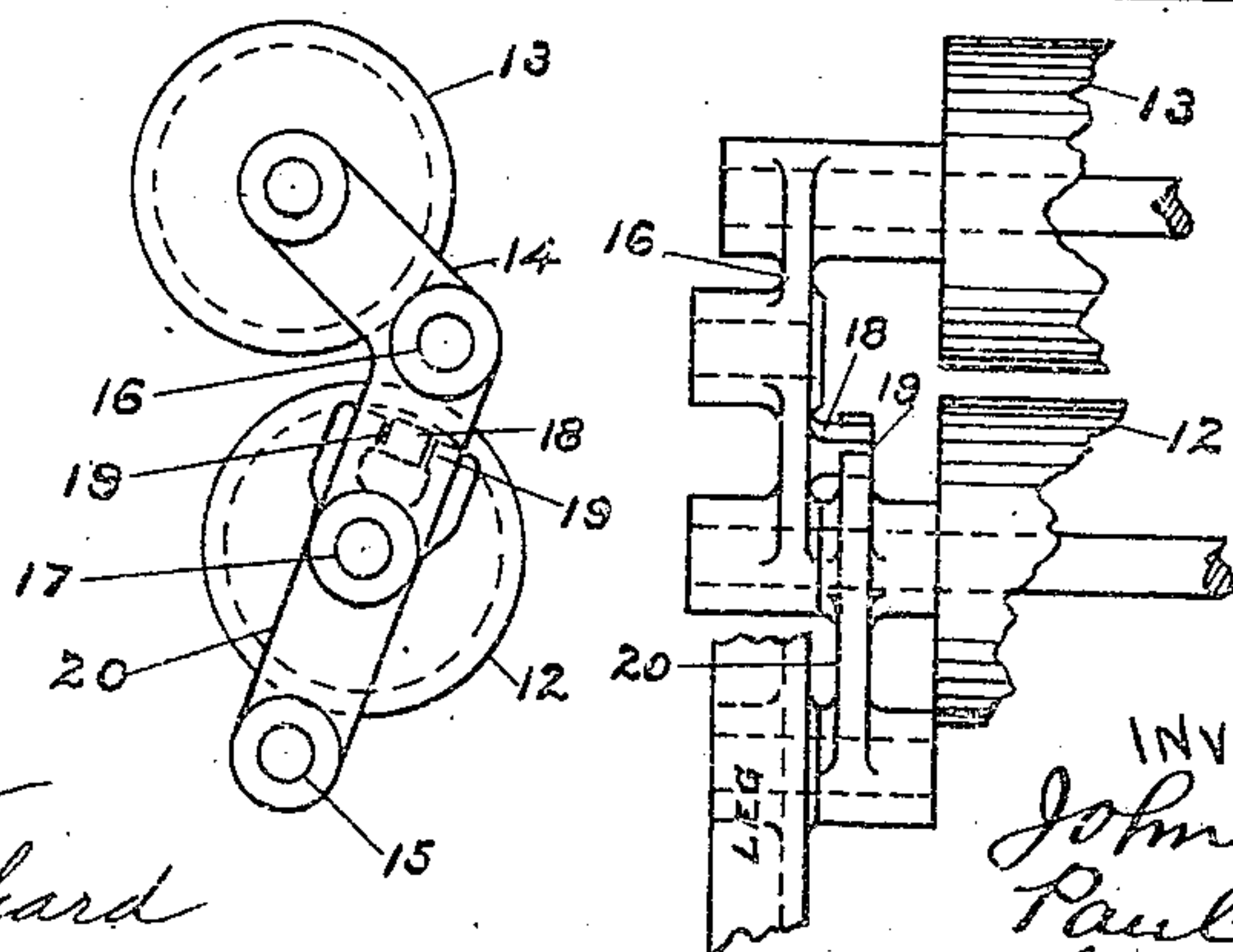


Fig. 3.

Fig. 4.



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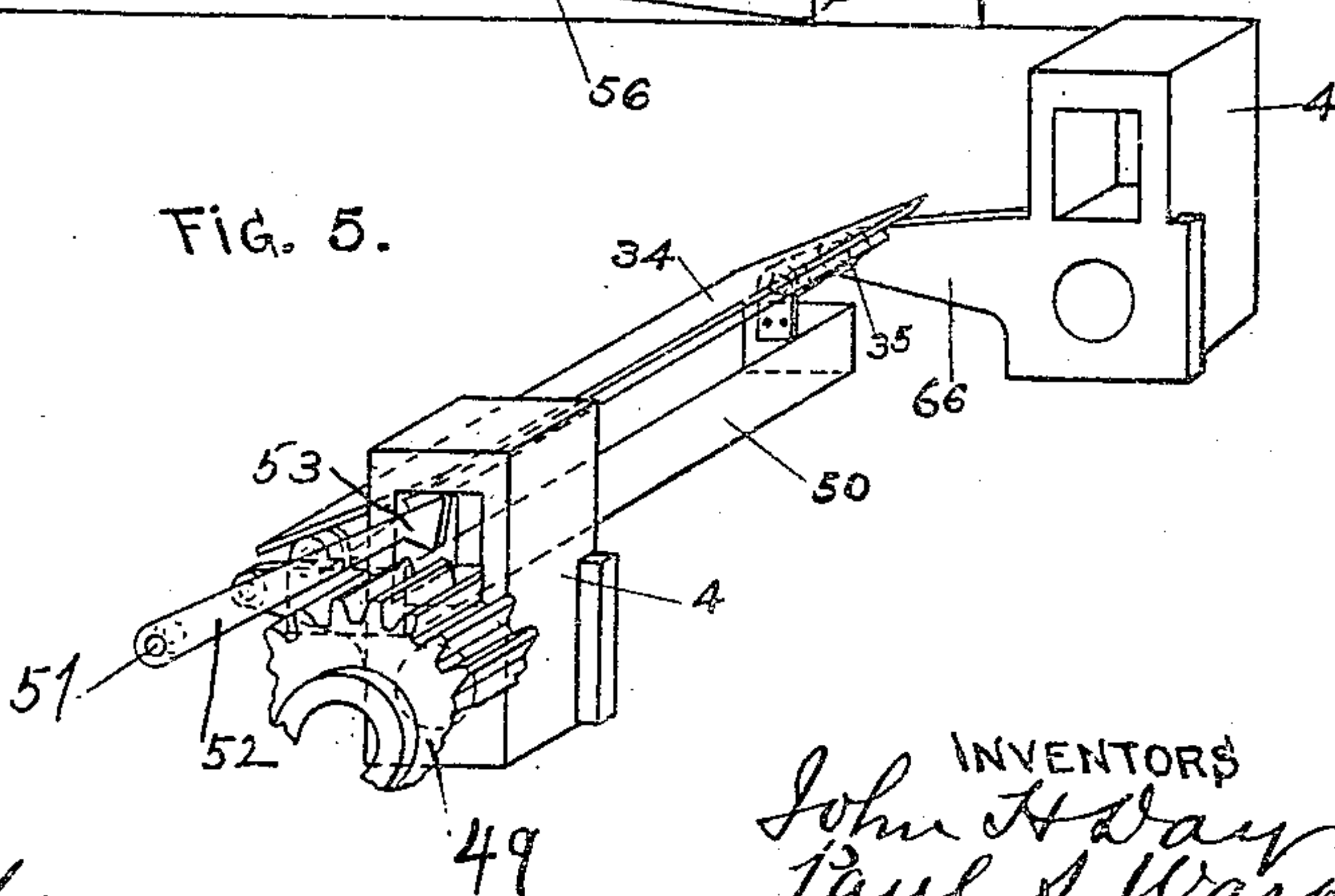
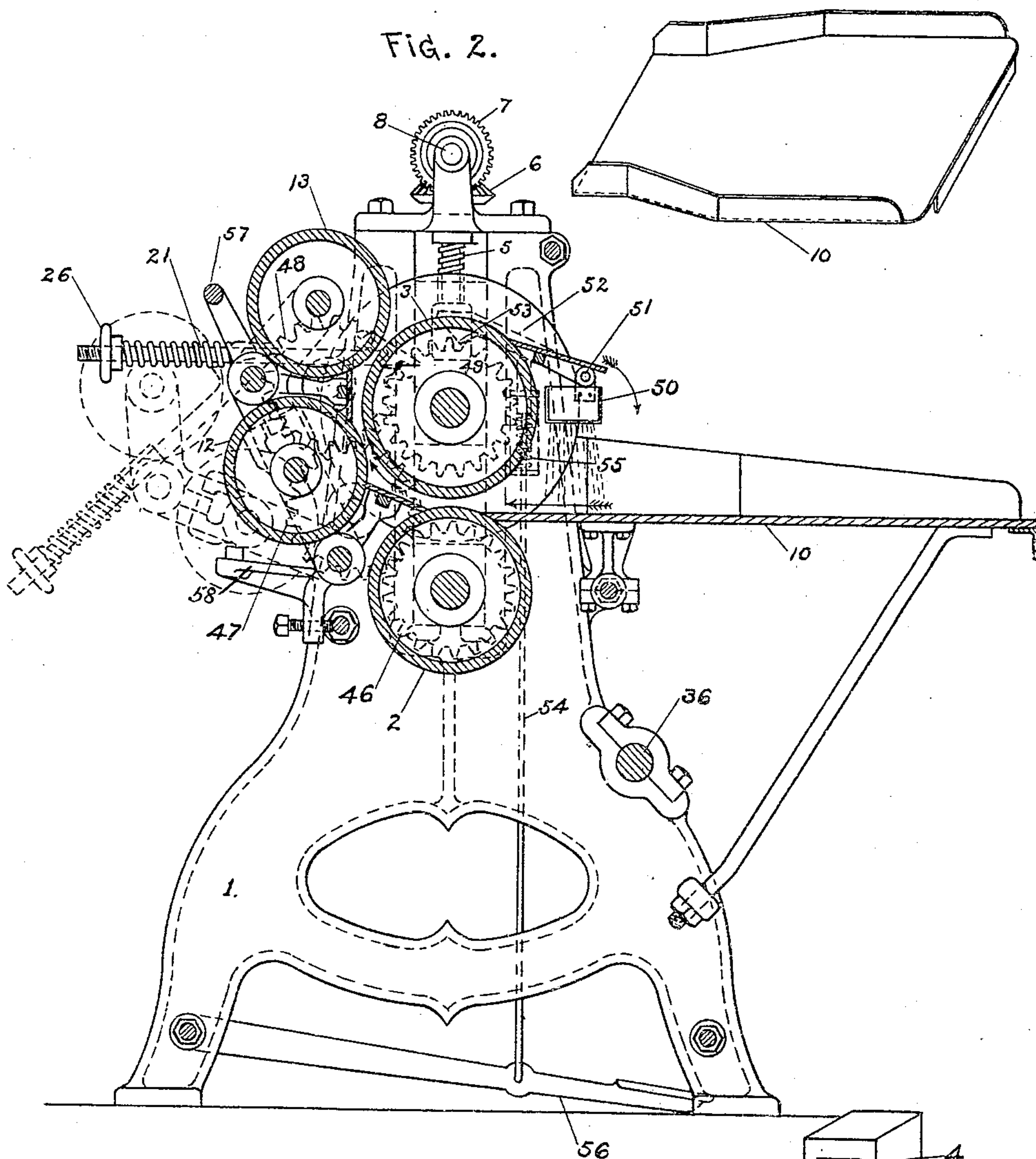
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2 SHEETS—SHEET 2.
Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN H. DAY AND PAUL STERLING WARD, OF CINCINNATI, OHIO; MAURICE E. LYONS AND FRANK M. DUDLEY EXECUTORS OF JOHN H. DAY, DECEASED; SAID WARD AND SAID EXECUTORS ASSIGNORS TO THE J. H. DAY COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

DOUGH-BRAKE.

954,937.

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To all whom it may concern:

Be it known that we, JOHN H. DAY and PAUL S. WARD, citizens of the United States, residing in Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Dough-Brakes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our improvements relate to machines for bakers and the like, for rolling dough, or other plastic or doughy material, and the purpose of the machine is to provide mechanism for the gradual reduction of the sheet of dough, and for returning it automatically to the starting point to be again passed through the machine as many times as desired.

Our improvements consist of the certain new and novel construction and arrangement of parts which will be hereinafter particularly pointed out and claimed.

In the drawings Figure 1 is a vertical central section of the machine looking toward one side. Fig. 2 is a similar vertical section looking toward the other side. Fig. 3 is a detail end elevation showing the construction for supporting the supplementary rolls. Fig. 4 is a front elevation of the same. Fig. 5 is a detail perspective view of the flour box and supporting devices. Fig. 6 is a perspective view of the table.

1—1 are the side standards of the machine, suitably braced together for holding and supporting the operating mechanism. Journaled in these side standards in suitable journal boxes are rollers 2—3, the upper roll being supported in sliding boxes 4—4 adjustable by the screws 5—5 which carry the beveled gears 6—6 actuated by the gears 7—7 on the shaft 8, provided with a hand wheel 9, so that the proper amount of pressure and the distance apart of the rolls 2 and 3 may be adjusted and controlled. These two rolls constitute the primary rolls of the machine through which the dough is first passed.

10 is an apron or table supported by the braces 11 for holding the dough, and upon which the operator works. This table is constructed wider than the rolls to give

ample room for folding and manipulating the dough.

Mounted in the rear of the primary rolls are the secondary rolls 12 and 13, which coöperate with the upper roll 3 of the primary rolls for the further reduction of the thickness of the sheet of dough. The shafts carrying these secondary rolls are journaled in the side frames 14, which are pivoted on the rod, or shaft, 15, mounted across the framework.

In order that the secondary rolls 12 and 13 may be properly mounted and adjusted so that the dough sheet can be gradually reduced in thickness as it passes between the rolls, the supporting side frame is made in two parts. The upper portion 16 is pivotally mounted on the shaft 17 and the block 18, on the lower end of the part 16, engages between the jaws 19 in the upper end of the lower portion or link 20 of the side frame 14, and this link is also pivoted on the shaft 15. In assembling the machine, the secondary roller 13 is allowed to roll on the upper primary roll, and the lower secondary roll can be set a little distance from the roll 3. The adjustment of this roller 12 in assembling can be obtained by filing or grinding off the front side of the block 18, allowing the roller 12 to fall backward away from the roll 3 while the roller 13 still continues to touch the roll 3, and its position is not affected by this adjustment. It will be evident that this adjustment in assembling could not be attained thus simply and easily if the side frame 14 were constructed in a single piece.

In order to hold the supplementary rollers and the frame in position, we provide the catch rods 21, 21, which are mounted loosely to slide in bosses 22, 22 at the angle joint of the side frames 14. These pins 21 are provided with beveled ends 23, which engage behind studs 24 on the side frames. 26, 26 are nuts, screw threaded on the end of these rods. 27, 27 are coiled springs bearing between the ends and the bosses 22, so that the supplementary rollers are held in place by this spring tension, which can be adjusted by the nut 26 as desired.

In order to lower and raise the supplementary rolls and the frame, we provide the

handle 57, extending from side to side. Inasmuch as the upper portion of this supplementary frame carrying the catches is loosely connected with the lower portion of the frame, the catches can be readily disconnected from the studs 24, when it is desired to lower or open out the supplementary rolls for cleaning, and by reason of the beveled ends of the catches when the frame and rolls are raised by the handle 57, the catches will automatically take behind the stud 24.

58, 58 are bumper arms to support the frame.

28 is a scraper plate mounted on arms 29 carried by the shaft 15, the edge of which bears on the surface of the roller 2, and which fills up the space between the primary roller 2, and the supplementary roller 12, and the positions of this scraper plate can be adjusted by the set screw 30, which takes through an extension of the supporting arms 29 and bears against one of the cross braces of the frame.

31 is a second scraper plate arranged between the secondary supplementary rolls 12 and 13, and supported in an adjustable position by the side arms 32, which are mounted on the shaft 33 carried by the supplementary frame 14.

34 is a third scraper plate mounted on the arms 35 pivotally mounted in the bracket arms 36 which extend out from the sliding journal boxes 4 for the upper primary roll. This scraper plate is held in position tightly against the upper primary roll by gravity, or by springs. This scraper plate 34 also acts as a shield to carry the sheet of dough back to the apron or table 10, and it will be evident that the dough fed in between the primary rolls 2 and 3 will be carried by the scraper plates and secondary rolls in the direction of the arrows shown in Figs. 1 and 2 back to the starting point.

The various rolls are driven by gears and pinions as follows: 36 is the driving shaft, upon which is mounted either tight or loose pulleys, one of which is shown at 37, or a clutch can be used for connecting the driving shaft to the power. Mounted on the driving shaft is the pinion 38, which engages the large gear 39 mounted on the roller shaft 40 of the roller 2. This shaft also carries the gear 41 meshing with the pinion 42 on the shaft 15, upon which the frame for the said supplementary rollers is pivoted. This pinion 42 meshes with the gear 43 on the shaft of the lower supplementary roller 12. This gear meshes with the pinion 44 mounted on the shaft carried by the supplementary frame between the two supplementary rollers, and this pinion in turn meshes with the pinion 45 on the shaft of the upper supplementary roller.

The upper primary roller is driven by a train of gears 46—47, 48 and 49, 46 and 49 being mounted respectively on the other ends of the primary roller shafts as shown in Fig. 2, and 47 and 48 being intermediate gearing all of these gears being of the same size, so that the rolls are driven at the same rate of speed.

In order that flour may be sifted, or dusted on the dough as desired, we arrange across the machine above the back end of the apron or table 10, the flour box 50, with a sieve bottom. This flour box is pivotally supported on the bracket arms 36—36, as shown in Fig. 5, and the supporting rod 51 carried an arm 52 secured thereto, the beveled outer end 53 of which arm rests on the gear 49, so that as the gear is rotated, the arm 52 will move up and down to oscillate the flour box 50, and cause the flour to sift through the bottom. As this sifting is only required at intervals, we normally support the arm 52 away from the gear 49 by the rod 54, which is elevated vertically by the coiled spring 55 bearing between the casing and the shoulder on the rod. The lower end of the rod is provided with a foot treadle 56, so that when the operator desires the flour to sift from the box, he depresses the foot lever as shown in Fig. 2, which allows the arm 52 to drop onto the gear so that the flour box may be oscillated or shaken.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a dough brake, the combination with a pair of primary rolls, of a plurality of secondary rolls, coöperating with one of the primary rolls, a swinging frame made in two parts for supporting said secondary rolls and adjusting the same in assembling at different distances from the primary roll, to gradually reduce the dough sheet and to return the same to the starting point, with means for exerting a uniform yielding pressure upon the frame carrying the secondary rolls.

2. In a dough brake, the combination with a pair of primary rolls, of secondary rolls for reducing the dough sheet and returning it to the starting point, coöperating with one of said primary rolls, a pivoted frame in which said secondary rolls are mounted, and a catch for locking the same in position to the frame of the machine, with springs mounted between said catch and the pivoted frame for holding the secondary rolls in yielding contact with the primary rolls.

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