

May 8, 1923.

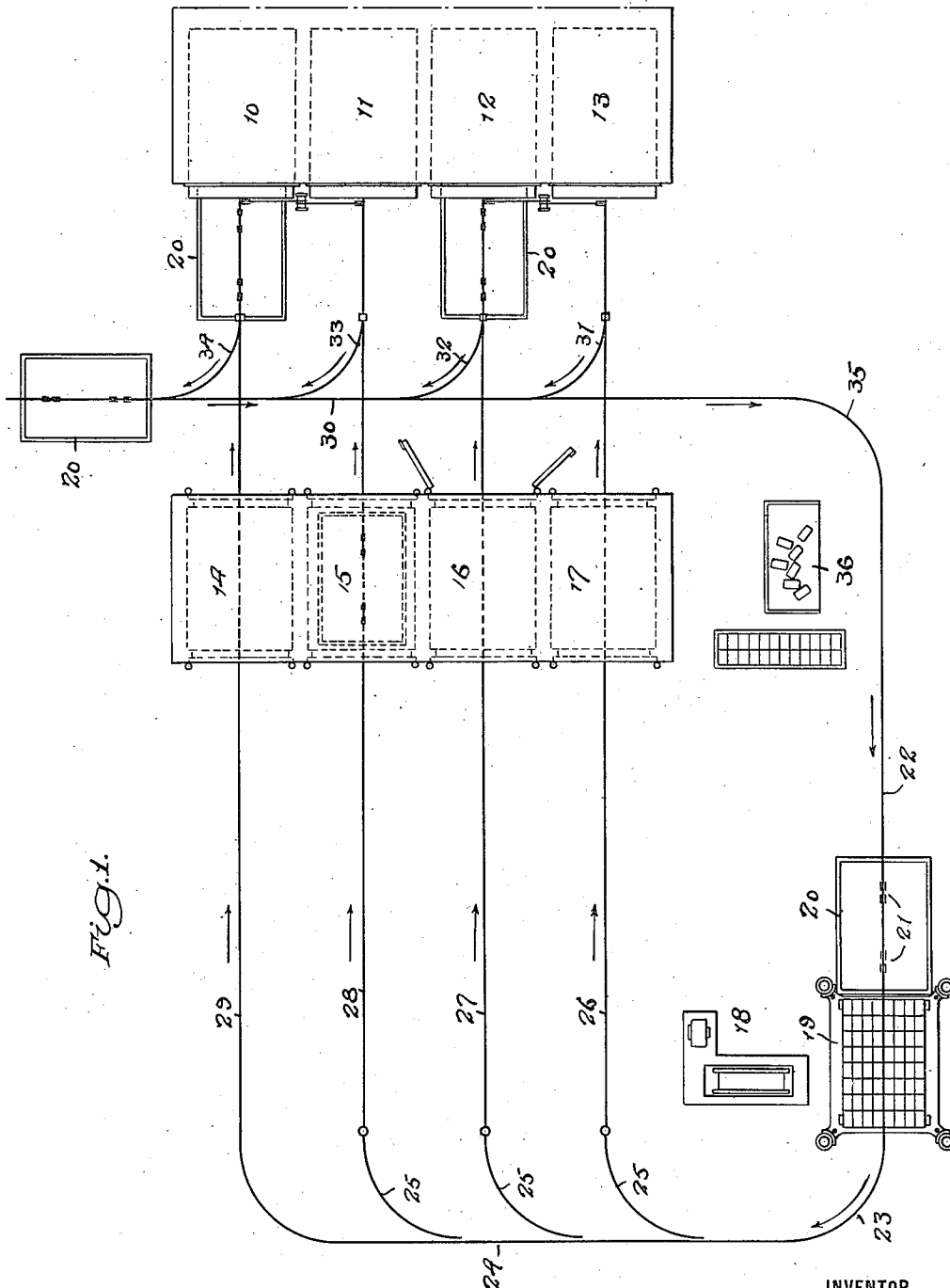
1,454,675

J. M. GANTVOORT

BAKER'S INSTALLATION

Filed March 25, 1922

3 Sheets-Sheet 1



INVENTOR

JOHN M. GANTVOORT

BY

Horton and Horton
ATTORNEYS

May 8, 1923.

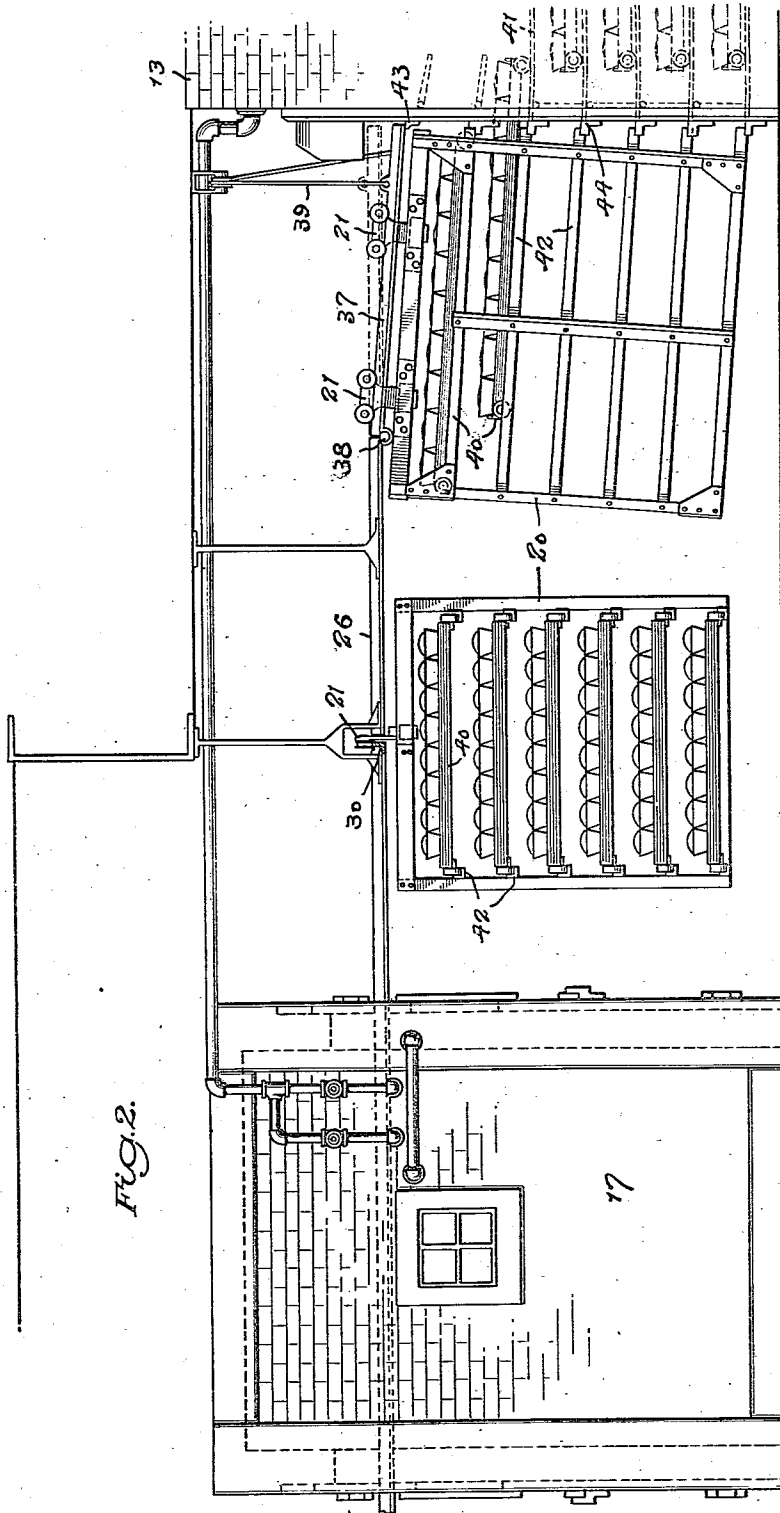
1,454,675

J. M. GANTVOORT

BAKER'S INSTALLATION

Filed March 25, 1922

3 Sheets-Sheet 2



INVENTOR
JOHN M.
GANTVOORT
BY
H. M. STANLEY
ATTORNEYS

May 8, 1923.

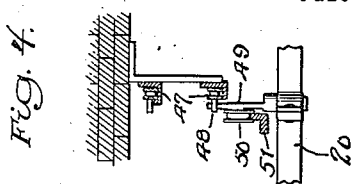
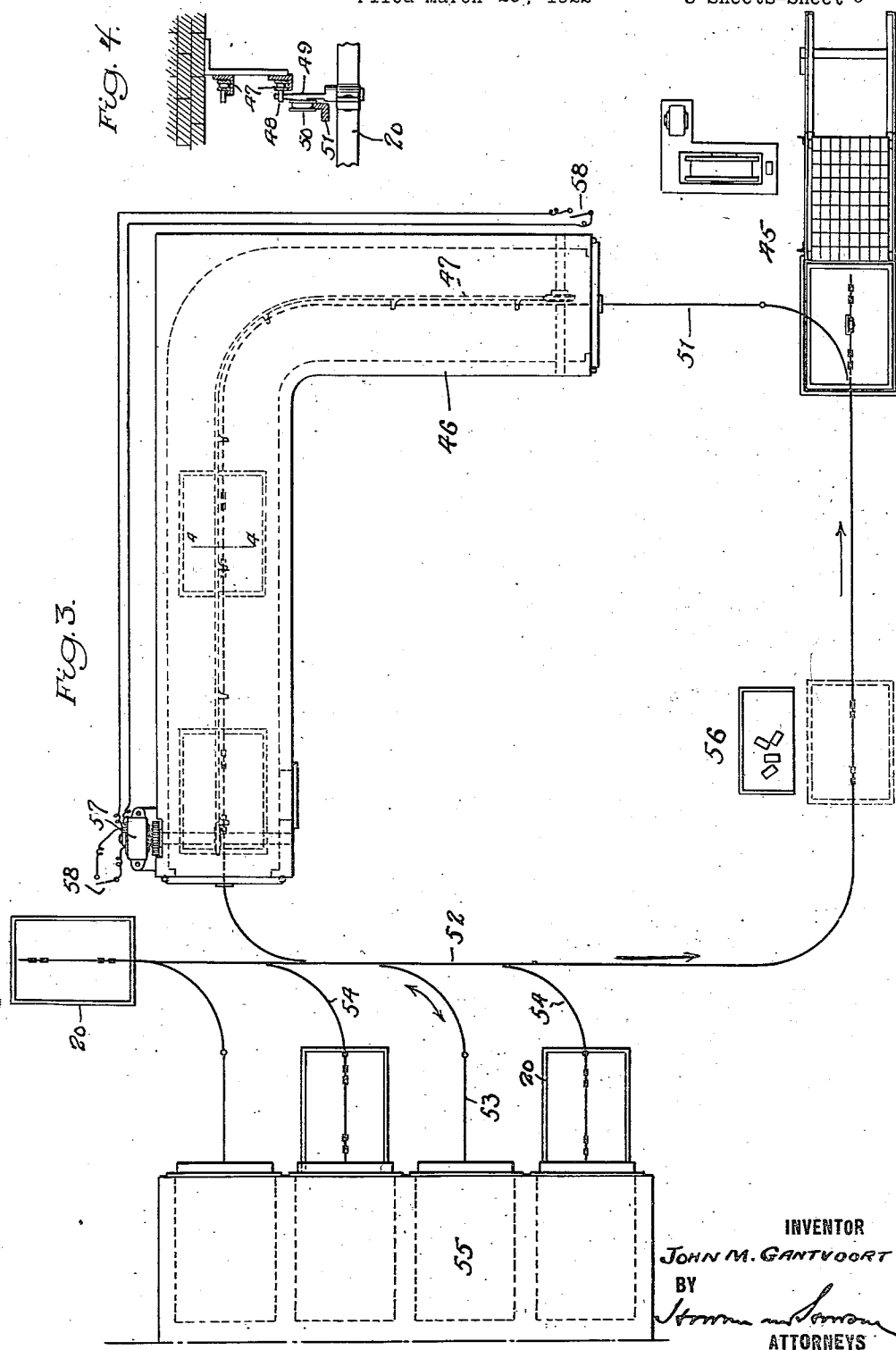
J. M. GANTVOORT

BAKER'S INSTALLATION

Filed March 25, 1922

1,454,675

3 Sheets-Sheet 3



Patented May 8, 1923.

1,454,675

UNITED STATES PATENT OFFICE.

JOHN M. GANTVOORT, OF BEACON, NEW YORK.

BAKER'S INSTALLATION.

Application filed March 25, 1922. Serial No. 546,758.

To all whom it may concern:

Be it known that I, JOHN M. GANTVOORT, a citizen of the United States of America, residing at Beacon, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Bakers' Installations, of which the following is a specification.

My invention relates to bakers' installations, and particularly to an installation employing ovens of the general type illustrated in my Patent No. 1,135,172, April 13, 1915. The object of my invention is to improve the lay-out and operation of the plant.

In the accompanying drawings—

Fig. 1 is a more or less diagrammatic plan of a layout for a four-oven plant;

Fig. 2 is an enlarged side elevation of portion of the plant;

Fig. 3 is a plan of a modified lay-out; and

Fig. 4 is a vertical section on an enlarged scale on the line 4—4, Fig. 3.

In installations of the type employing ovens and racks of the type shown in my patent above mentioned, it has heretofore been customary to mount the racks on wheels so that they may be readily shifted from place to place about the bake shop. It not infrequently happens, especially in large bake shops, that the racks are not only shifted from place to place over various courses, but when not in use, are left standing idle in various positions, where they obstruct the operations of the shop. By the present invention the installation is such that the course of the racks is limited to certain defined lines of travel, which may be varied with the needs of any particular shop lay-out, but in any event prevent the promiscuous clogging of the shop area with racks temporarily not in use. Furthermore, the construction is such that the travel of the racks is such that they are presented in exact position, not only with respect to the ovens, but also to the proofing rooms. Time heretofore lost in adjusting position is thus saved. It is a further object of my invention to support the racks from over-head rails, thus maintaining the floor uninterrupted and smooth, so that it may be readily kept clean and sanitary.

In the lay-out of Fig. 1 I have indicated a battery of four ovens 10, 11, 12 and 13, and a corresponding battery of four proofing chambers 14, 15, 16 and 17 arranged parallel

to the oven battery, but spaced sufficiently therefrom to permit the manipulation of the racks in the manner hereinafter set forth.

The present plant is designed primarily for bread baking. A molding machine 18 is therefore provided, while adjacent it I have indicated a loading table 19, which is preferably of one of the types shown in my application of even date herewith. The racks 20, instead of being supported on running wheels, as has heretofore been the practice, are suspended by trolleys 21 from over-head tracks 22. The trolleys and tracks may be of any suitable system, although I prefer the Louden over-head carrying system by reason of its simplicity and efficiency for the present purpose.

In the lay-out indicated, the loading table 19 is located in one corner of the work room. The track 22 leads therefrom around the curve 23 to the end line 24, from which are branched by switches 25 the three lines 26, 27 and 28 parallel to the continuation 29 of the end line 24, and at right angles to the latter. The parallel lines 26 to 29 inclusive are arranged to pass directly through the proofing chambers 14 to 17, and thence in the same direct line to dead ends at the ovens 10 to 13. A return line 30 at right angles to the dead ended lines 26 to 29 is connected to the latter by the switches 31, 32, 33 and 34. The return line 30, passing between the proofing chambers and ovens, is connected by the curve 35 to the track reach 22 leading to the loading table. An unloading table 36 is arranged in advance of the loading table and receives the discharge from the racks as they return to the loading table from the ovens.

The operation of the plant is readily understood. Assuming a rack to have been loaded at the table 19, it is shoved around the curve 23 onto the end line 24, thence to one or the other of the parallel lines 26 to 29, which pass through the proofing chambers. The rack is halted in the proofing chamber sufficiently long to prove the goods carried by the rack, and is then advanced from the proofing room along the same line to dead-end position in front of the oven. If the oven at the dead end of any line is already charged, the rack of proofed goods on that line may be shifted by one of the switches 31 to the return end line 30, and shunted across the latter to the switch lead-

ing to an empty oven, into which the shelves from the rack are shoved in well understood manner. After the goods have been baked and the shelves are drawn out upon a rack, the rack is shifted by one of the switches 31 to 34 to the return end line 30 and moved along the latter to the unloading table 36, where the baked goods are discharged and the rack advanced to the loading table again for a return of the circuit.

It will be noted that the arrangement of the track system is such that while the lines are dead ended in front of the ovens 10 to 13, the racks are returned to the line 30 with their front ends faced in the direction of travel, thus obviating the necessity for turntables or other devices for rectifying their position.

In Fig. 2 I have illustrated on a larger scale an arrangement of the dead-ended lines 26—29 for facilitating the charging of the oven. As here shown the terminal section 37 of the dead-ended line is hinged at 38. Its free end may be lowered by any suitable means, such as a cable 39 to incline the rack downwardly, so that the baking shelves 40 may be readily run off the rack onto the oven tracks 41 with which the tracks 42 on the rack are brought into register. A stop 43 for the track section 37 determines the position of the rack. Brackets 44 may also be provided on the oven to cooperate with the extended ends of the rails 42 of the rack for the same purpose, as well as to guide the wheels of the oven shelves from the rack to the oven rails. As will be noted, the forward ends of the lower tracks on the rack are extended a greater distance than those at the top of the rack to compensate the greater spacing of the bottom of the rack from the oven in inclined position. The same effect may be attained by varying the projection of the guide racks 44 on the oven front.

A modified lay-out is illustrated in Fig. 3. Passing from the loader 45, which may be of one of the types shown in my application of even date, the racks enter an L-shaped tunnel proofing chamber 46, through which they are advanced by an endless chain conveyor 47 having pawls 48 (Fig. 4) which engage studs 49 associated with the trolley 50. The track 51 passes through the proofing chamber and delivers the racks to the end line 52, from which the dead-ended lines 53 are branched by switches 54 and lead to the battery of ovens 55. The racks are again returned to the end line 52, across the switches 54, and are then shifted in the direction of the arrow to the unloading table 56, and thence again to the loader 45. In an arrangement such as this, the central floor space of the chamber is kept free from obstruction at all times. The endless conveyor 47 for advancing the racks through

the proofing chamber is preferably intermittently operated by a motor 57 controlled by manually operated switches 58 and 59 at opposite ends of the proofing tunnel.

Various other lay-outs will readily occur to those dealing with the problem without, however, departing from what I claim as my invention.

I claim—

1. In a baker's installation, a battery of ovens, each adapted to receive a series of removable, superposed, baking shelves, proofing chamber means, a loading table, an unloading table, racks adapted to support in superposed position a group of baking shelves for an oven, trolley means for overhead suspension of the racks, and an overhead track system for the rack trolleys, said track system comprising a circuit of the loading table, proofing chamber means, ovens, unloading table, and thence to the starting point.

2. In a baker's installation, a battery of ovens, each adapted to receive a series of removable, superposed, baking shelves, proofing chamber means, a loading table, an unloading table, racks adapted to support in superposed position a group of baking shelves for an oven, trolley means for overhead suspension of the racks, and an overhead track system for the rack trolleys, said track system comprising a reach substantially parallel to the front of the oven battery, and reaches extending substantially at right angles thereto but connected thereto by switches, said reaches being dead ended in front of the ovens to support the racks in oven-loading position.

3. In a baker's installation, an oven adapted to receive a series of superposed, removable oven shelves, a rack adapted to support said shelves in superposed position substantially corresponding to that occupied by the shelves in the oven, an overhead suspension system for the rack by which the latter may be shifted to position in front of the oven, and means for tilting the rack to bring the oven shelves thereon into register with the shelf support of the oven, and to facilitate the delivery of the shelves to the oven.

4. In a baker's installation, an oven adapted to receive a series of superposed, removable oven shelves, a rack adapted to support said shelves in superposed position substantially corresponding to that occupied by the shelves in the oven, an overhead suspension system for the rack by which the latter may be shifted to position in front of the oven, said system comprising a hinged track section in front of the oven, and means for operating said track section to impart an inclination to a rack supported thereon in front of the oven.

5. In a baker's installation, a battery of ovens, each adapted to receive a series of

removable, superposed, baking shelves, and unloading table, and for exactly positioning said racks with respect to all of said members of the installation. 10

In testimony whereof I have signed by name to this specification.

JOHN M. GANTVOORT.