

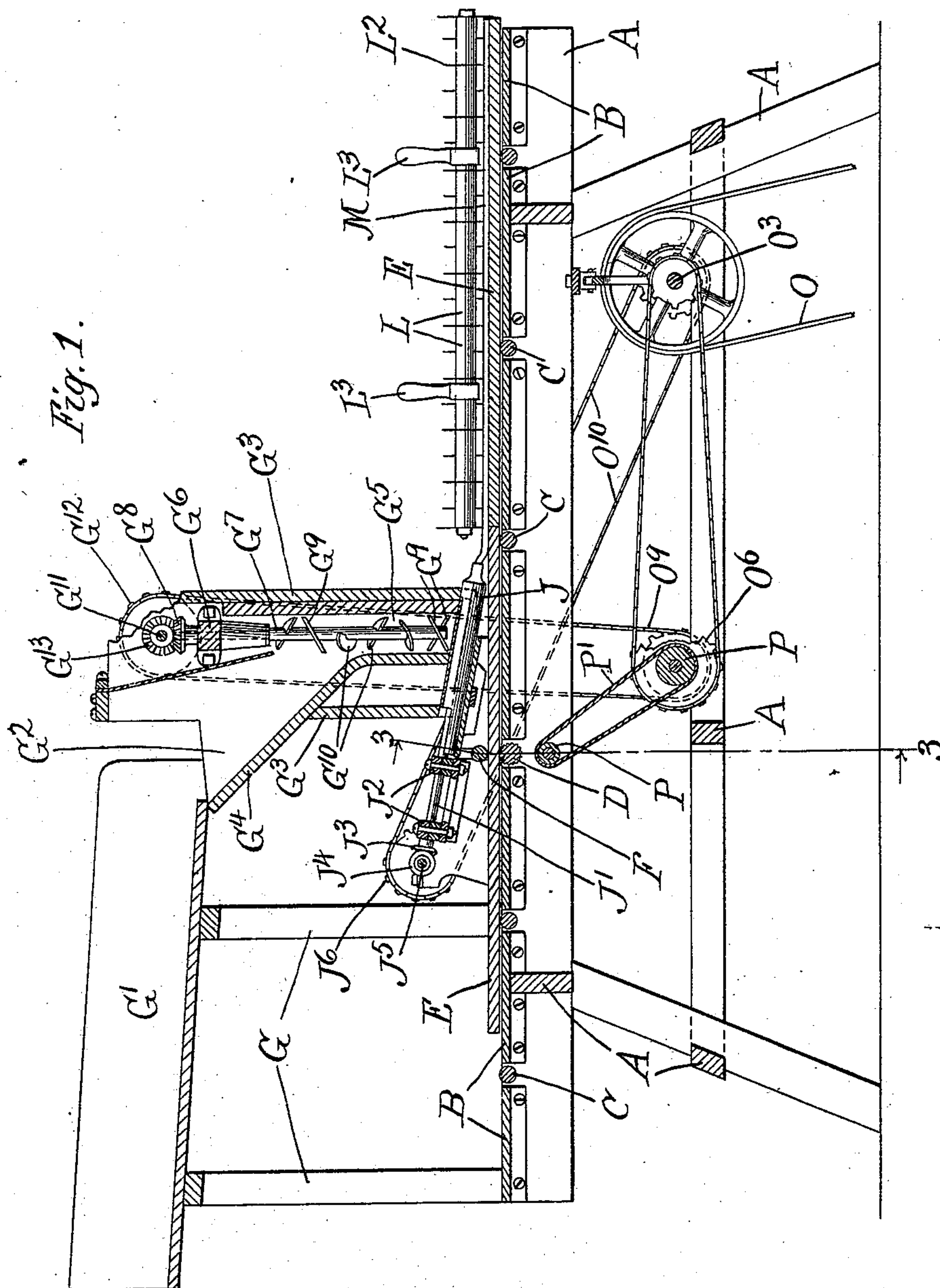
(No Model.)

3 Sheets—Sheet 1.

F. H. MARKER.  
MACHINE FOR MAKING YEAST CAKES.

No. 534,336.

Patented Feb. 19, 1895.



Witnesses  
E. T. Wray.  
J. H. Coulter.

Inventor.  
Frank H. Marker

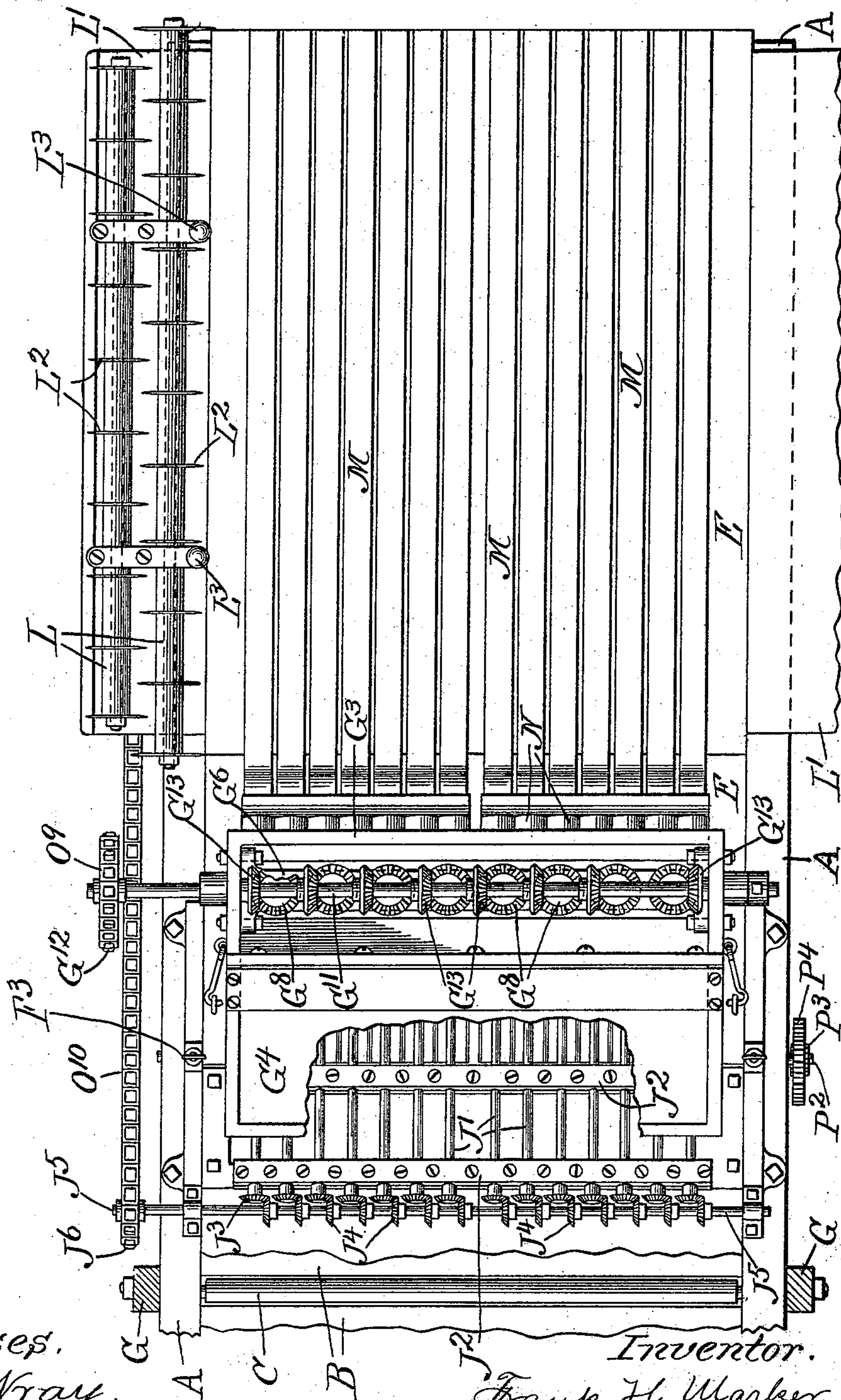
by *Francis W. Parker*  
his Atty

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Fig. 2.



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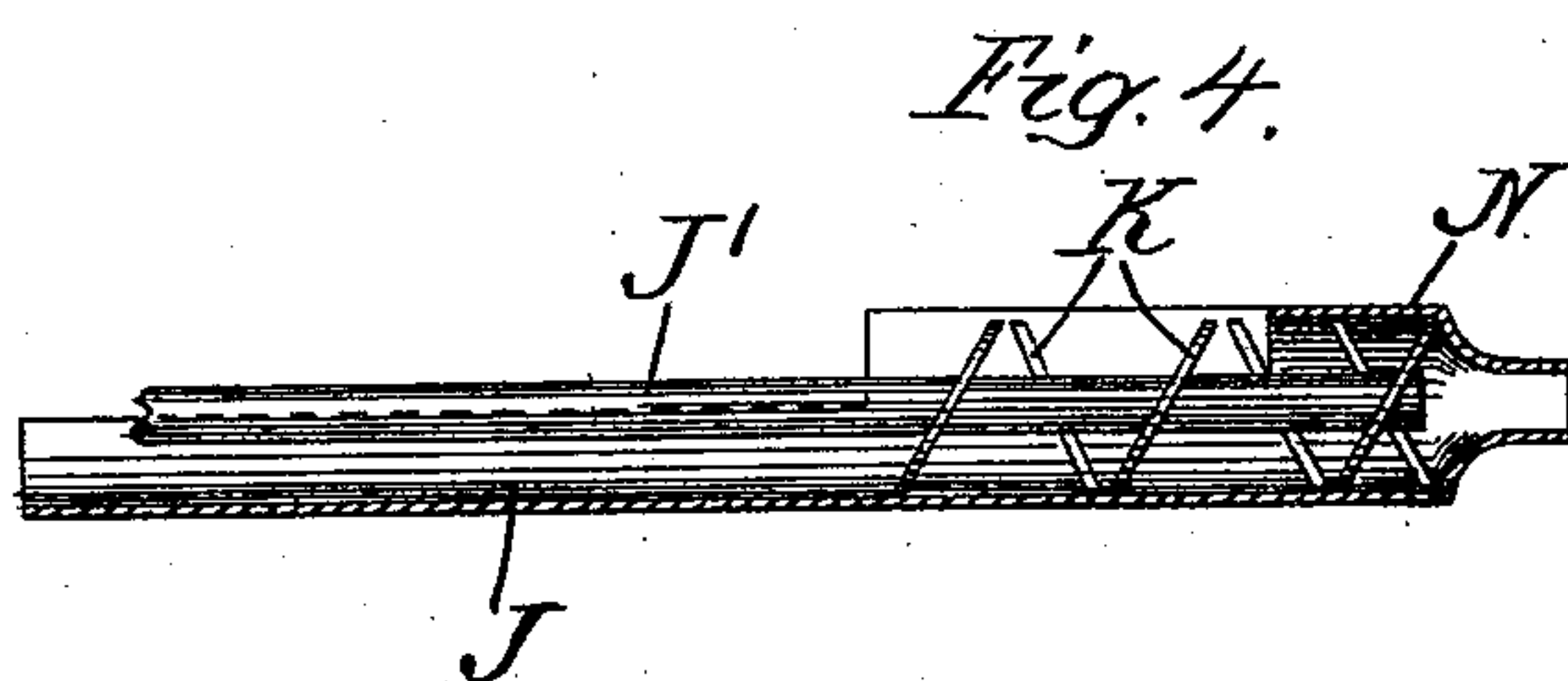
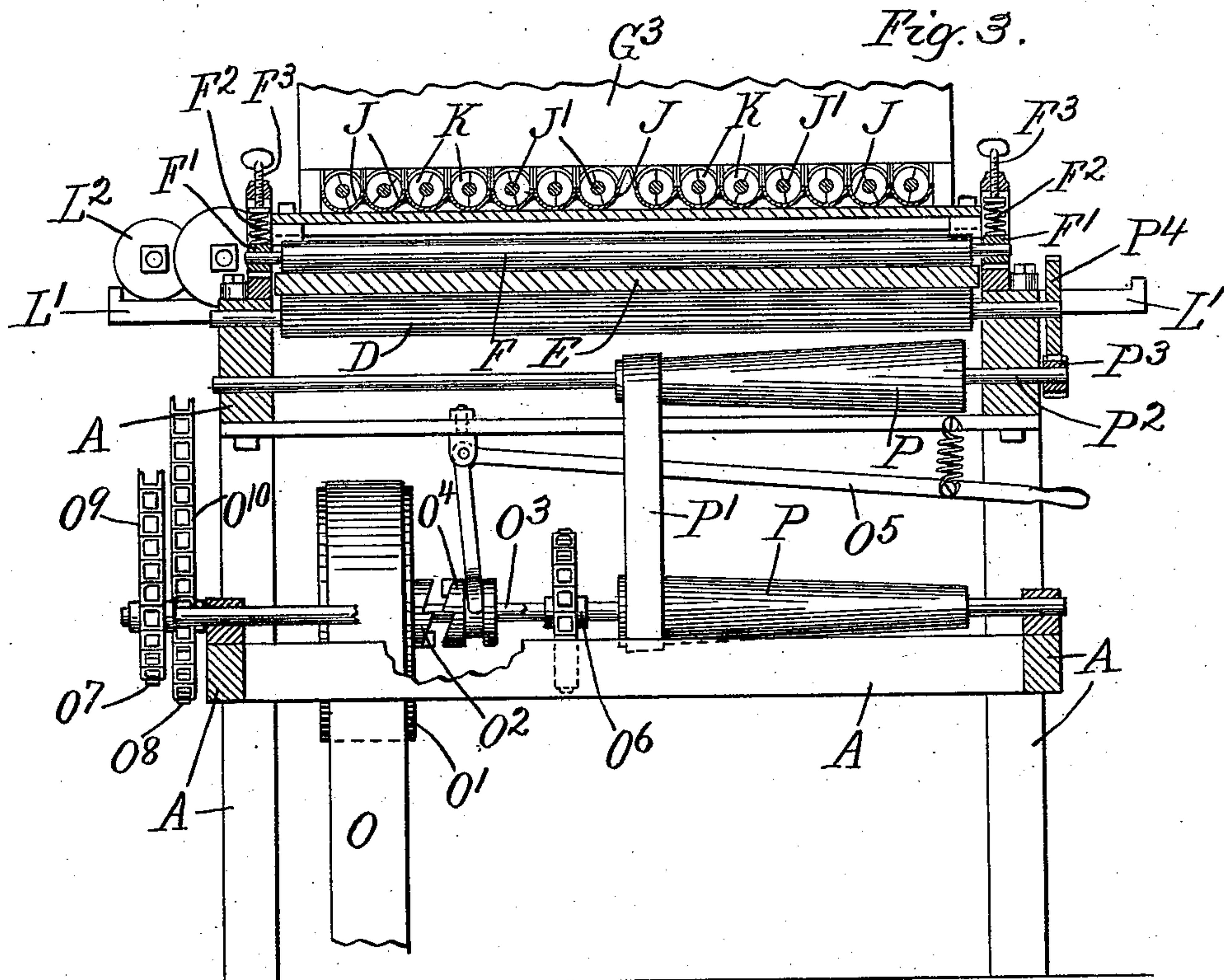
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Frank H. Marker.  
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# UNITED STATES PATENT OFFICE.

FRANK H. MARKER, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE PRICE FLAVORING EXTRACT COMPANY, OF ILLINOIS.

## MACHINE FOR MAKING YEAST-CAKES.

SPECIFICATION forming part of Letters Patent No. 534,336, dated February 19, 1895.

Application filed November 6, 1894. Serial No. 528,020. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK H. MARKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Making Yeast-Cakes, of which the following is a specification.

My invention relates to machines for making yeast, and has for its object to provide a simple and effective machine which will discharge the yeast fed into it in a mass, in layers suitable to be cut into cakes of the right size.

My improvements have especial reference to adapting the machine to handle this peculiar substance, which constantly changes in character and hence requires peculiarities in the machine to adapt it to handle the substance in question.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a vertical longitudinal section. Fig. 2 is a plan view with parts broken away. Fig. 3 is a vertical cross-section. Fig. 4 is a detail.

Like parts are indicated by the same letter throughout all the views.

A A are the legs and frame pieces of the lower frame upon which the bed proper, composed of the cross pieces B B is supported. Intermediate between these several cross-pieces are the idle rollers C C.

D is a corrugated roller occupying a similar position and adapted to engage the under side of the receiving board E.

F is a roller which bears against the upper part, and is journaled at the sides in the movable blocks F' F', being elastically forced down by the springs F<sup>2</sup> F<sup>2</sup> controlled by the screws F<sup>3</sup> F<sup>3</sup>.

Mounted on the frame and supported by the standards G G is the feed way G' which discharges into the receiving space G<sup>2</sup> in the vertical feed box G<sup>3</sup>.

The board G<sup>4</sup> passes down into the box as indicated, leaving a narrow but long discharge way G<sup>5</sup>. G<sup>6</sup> are long bearings in the upper part of this passage way, one for each of the spindles G<sup>7</sup>. Each spindle has at its upper end the bevel gear G<sup>8</sup> and at its lower end

the stirrers G<sup>9</sup> G<sup>9</sup> and the conveyer blades G<sup>10</sup> G<sup>10</sup>. The transverse shaft G<sup>11</sup> is mounted in the upper part of the way and driven by means of the sprocket wheel G<sup>12</sup>. It carries a series of beveled pinions G<sup>13</sup> which engage each one of the bevel gears G<sup>8</sup>. They are all arranged as indicated in Fig. 2 so as to rotate all the spindles in one direction, except the spindle at one end, and here the gear and pinion are so related that the spindle rotates in the opposite direction.

J J are a series of semi-cylindrical troughs in each of which works a spindle J' which is supported by the bearings J<sup>2</sup> J<sup>2</sup>. Each spindle has at one end the bevel gear J<sup>3</sup> to engage the gear J<sup>4</sup> on the shaft J<sup>5</sup>. This shaft is journaled in suitable bearings on the frame, and has the sprocket wheel J<sup>6</sup> at one end. Toward one end of each spindle J' are arranged the compressor blades K.

L L are rollers set on the frame L' and having each a series of round cutters L<sup>2</sup> L<sup>2</sup>. Each cutter on one roller is opposite the midway point between two cutters on the other.

L<sup>3</sup> L<sup>3</sup> are handle pieces attached to the rollers, whereby the two rollers with their cutters may be moved back and forth across the table E.

M M are strips of yeast on the board E in position to be cut into cakes just as they have issued from the lower end of the troughs J. These troughs at their lower extremities preferably terminate in the discharge nozzles N N, which nozzles should be very short.

Referring now to the driving mechanism: O is the driving belt driving the pulley O' and clutch O<sup>2</sup> on the shaft O<sup>3</sup>. O<sup>4</sup> is the other member of the clutch controlled by the handle O<sup>5</sup> and adapted to throw the power on. O<sup>6</sup> O<sup>7</sup> O<sup>8</sup> are sprocket wheels; O<sup>9</sup> O<sup>10</sup>, link belts driven therefrom and whereby the apparatus is run. P P are cone pulleys connected by the belt P' which is preferably adapted to be operated to vary the speed. The upper pulley P is on the shaft P<sup>2</sup> which drives the pinion P<sup>3</sup> which meshes with the gear P<sup>4</sup> on the shaft of the corrugated roller D.

The use and operation of my invention are as follows: A quantity of yeast in the proper condition to be molded into cakes is placed in the trough G' whence it is fed down onto



the board  $G^4$  and into the case or box  $G^3$ . It feeds directly and laterally against the spindles  $G^7$  which, of course, are in rotation, and in such a direction as to force the yeast downwardly. These spindles are set in close proximity to each other and tend to press the yeast downwardly out of the case and at the same time to move it toward one side. The reversed spindle is employed at the side toward which the yeast is thus forced. These spindles are provided with alternate stirring arms or paddles and compressing blades and they are set in such close proximity to each other and to the walls of the passage way in which they are placed that the whole body of yeast is continually stirred and subdivided and yet constantly forced down upon the other set of spindles which operate in the opposite direction. The second set of spindles lie horizontally or substantially so, and the first set discharge or force the yeast against the second set practically at right angles thereto.

I have found that in feeding and operating upon yeast of this character, it is well nigh impossible to operate successfully with long and narrow feeding channels or discharge nozzles, and that the use of such only tend to clog and retard the work. I have therefore placed these horizontal spindles each in a semi-circular trough. The whole result is that of a corrugated board with longitudinal corrugations in which the spindles lie and along which the yeast is forced by the horizontal spindles. The yeast thickens rapidly and tends to clog easily, and hence I find that the projecting nozzles are unsatisfactory and the least possible length of tubular channel or projecting nozzle is to be preferred.

During the various processes in connection with the manufacture of the yeast it is frequently observed that it suffers great change in character and bulk. Hence the necessity of having the several parts accurately adjusted and timed with reference to each other so that the conveyer or compressor spindles will operate in harmony with each other, and so that the board will move across the table perfectly timed with regard to the operation of the device for throwing out the yeast when formed into a strip. The yeast strips when thus arranged on the board are easily cut; but in any ordinary process for cutting them by means of a rolling cutter, it is found that the dough has a strong tendency to stick to the cutter and roll up back of it and around

it. I obviate these difficulties by arranging my cutters on two parallel axes, the one considerably in the rear of the other. When the first roller has passed over the strips of yeast it severs them and would tend to pick them up and roll them about itself, were it not for the fact that the next roller comes on at that moment and cuts such pieces in two in the middle. Since the outside edges of each piece is already severed it is easily held down by the roller long enough to permit such piece to be severed in the middle, making the cakes of the right size.

I claim—

1. In a machine for making yeast cakes, the combination of a series of vertical spindles provided each with stirring arms and conveyer blades and set in close proximity to each other in a narrow vertical passage way, with a series of transverse spindles lying each in a semi-circular trough and provided each with conveying and stirring blades, the lower free ends of said first mentioned spindles being substantially at right angles to and in close proximity with the second set of spindles, means for driving all of said spindles simultaneously, and an opening whereby the yeast may be fed laterally against the vertical spindles, the extreme vertical spindles rotating in opposite directions, substantially as shown and described.

2. In a machine for making yeast cakes, the combination of a series of vertical spindles provided each with stirring arms and conveyer blades and set in close proximity to each other in a narrow vertical passage way, with a series of transverse spindles lying each in a semi-circular trough and provided each with conveying and stirring blades, the lower free ends of said first mentioned spindles being substantially at right angles to and in close proximity with the second set of spindles, means for driving all of said spindles simultaneously, an opening whereby the yeast may be fed laterally against the vertical spindles, and a table consisting of a series of rollers and intermediate flat portions, one of said rollers corrugated and a board to pass over said corrugated roller, and a friction roller elastically and adjustably secured above such board.

FRANK H. MARKER.

In presence of—

DONALD M. CARTER,  
JNO. H. COULTER.