Sept. 27, 1949. T. M. KANE 2,482,916

AUTOMATIC FEEDER AND POSITIONER

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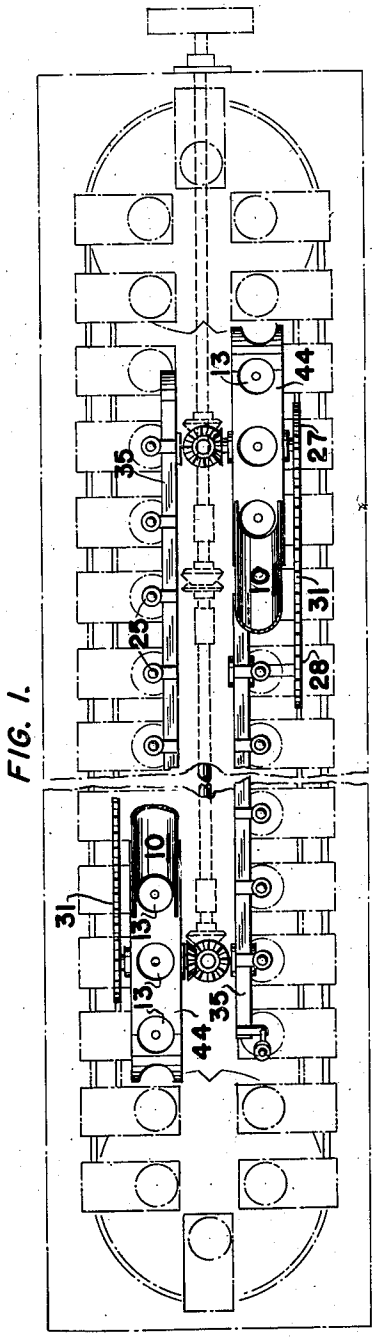


FIG. 1.

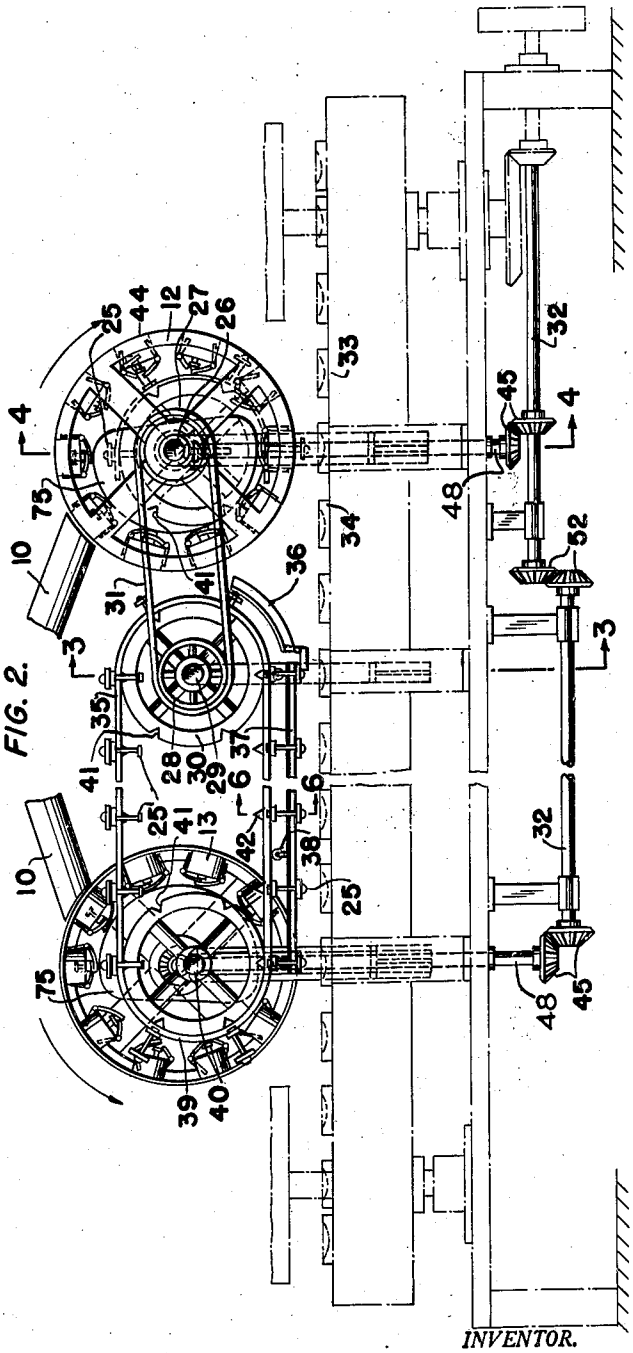


FIG. 2.

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FIG. 3.

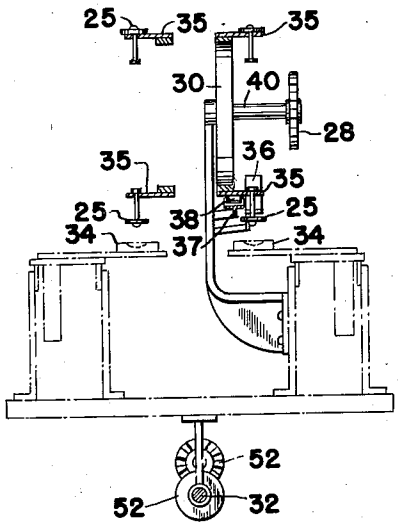


FIG. 4.

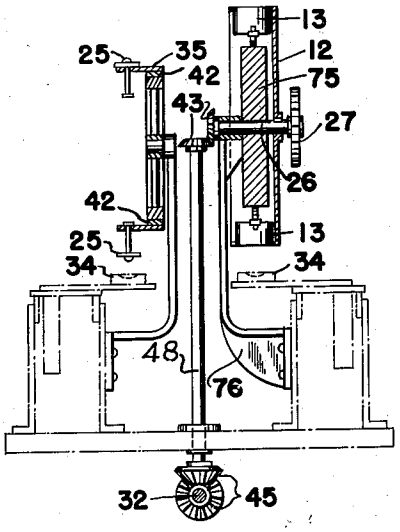


FIG. 5.

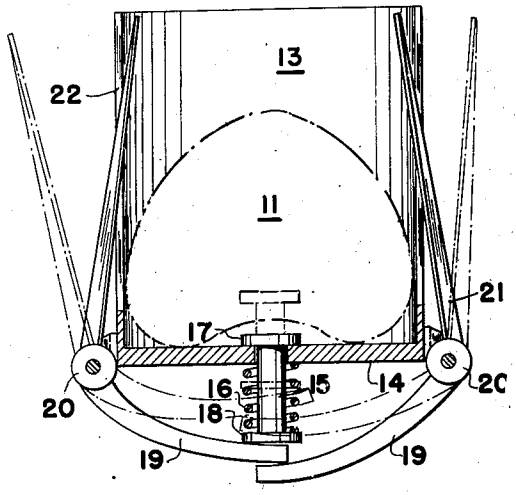
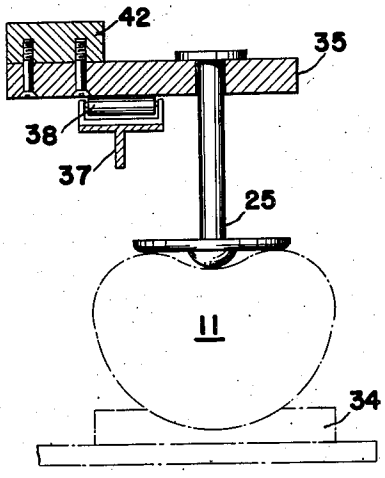


FIG. 6.



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AUTOMATIC FEEDER AND POSITIONER

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Application May 26, 1947, Serial No. 750,470

2 Claims. (Cl. 198—103)

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This invention relates to the mechanical distribution and processing of items of food, and more particularly to the line used for the conveying of particular raw materials from one portion of a process to another.

The invention is intended to be used with the type of equipment described by the same inventor and detailed in the U. S. Patent No. 2,463,281, issued March 1, 1949, for improvements in Dual turret conveyors, to which reference may be made to acquire more information as to a particular manner in which it may be used.

It is an object of the present invention to provide a new and improved food depositing mechanism that will avoid one or more of the disadvantages and limitations of the prior art.

Another object of the invention is to provide a new and improved food depositing mechanism that will carry delicate items of food as they are received and deposit them carefully and without damage on a conveyor to be taken to another point where further processing is done thereon.

A further object of the invention is to provide a new and improved depositing and conveying mechanism that will center the items of food received by it for processing, so such items will be located in the most desirable position for the next process.

Other objects will become apparent as the invention is more fully set forth.

For a clearer understanding of the invention and the principles thereof reference is made to the drawings provided herewith, and the description following, and also the claims provided to indicate the general scope of the invention.

In the drawings:

Figure 1 is a plan view of a tomato depositing and conveying mechanism embodying this invention, portions being broken away to clarify its construction, the mechanism being shown attached to a conveying machine to illustrate the use of the invention;

Figure 2 is a side view in elevation of Figure 1, and is fragmentary, especially with regard to the rear conveyor belt;

Figure 3 is a section taken on line 3—3 of Figure 2;

Figure 4 is a sectional detail on line 4—4 of Figure 2;

Figure 5 is an enlarged detail partly in section of the receiving cup used in the mechanism shown in Figure 1; and

Figure 6 is a sectional detail on line 6—6 of Figure 2.

Similar reference numerals refer to similar parts throughout the drawings.

In the particular construction shown in the drawings, by way of example, a pair of chutes 10 are employed to slide tomatoes 11 or similar items of food down to pick-up wheels 12. The

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wheels 12 rotate in the direction of the arrows and carry a series of cups 13 radially within the wheels 12. The bottom 14 of each cup 13 has a pin 15 reciprocating axially through it. A coil spring 16 of the underside of the bottom 14 keeps the pin down with its head 17 on the bottom. A flange 18 on the lower end of the pin is pressed on by the spring 16 and keeps the fingers 19 open and resiliently in that position. When the pin 15 is down, a number of fingers 19 hinged at 20 to the bottom of each cup engage against the flange 18 and keep their arms 21 angularly and inwardly directed over the upper portion of the cup 13. These arms 21 hold on to the tomato 11 or other item of food placed in the cup, and prevent same from falling out. The arms 21 are enabled to pass through the wall of the cup by the provision of openings or slots 22 arranged therein in suitable locations. The tomato 11 is therefore held in the cup 13 by its walls and the use of the arms 21. The wheels 12 rotate as indicated and carry the cups on their periphery. After the item of food 11 is dropped in the first and succeeding cups 13 it is rotated and the cups in each instance become consecutively pointed out sidewise or downwardly. In such positions the tomatoes 11 would normally fall out of the cups 13, if the arms 21 did not restrain them from doing so. The arms operate to arrange this holding under the tension of the spring 16. However since the arms 21 have to be in open position while the item 11 is deposited in the cup 13 from the chute 10, some means have to be provided to open them. This is accomplished through the use of a cam member 75 installed in a fixed position within the structure of the wheel 12 so it will contact the fingers 19 as they register therewith. The cam member 75 is supported by a bracket 76 and is contoured to provide a gradual movement of the fingers 19 so that by the time the cups 13 reach the location of the chutes 10 they have the arms 21 moved outwardly so the cup will be entirely open to receive the tomatoes 11. The wheels 12 are rotated by shaft 26 on which a pulley 27 is mounted and keyed. This pulley 27 operates another pulley 28 mounted on the shaft 29 of a conveyor drum 30 through a driving member 31. A motor drive is suitably arranged through shafts 32 and gears 52 for the purpose, as shown in Figure 2. The cam member 75 also causes the arms 21 to open up when the cup reaches the lowest position of the wheel and over a conveyor belt 33. This conveyor belt is driven in a horizontal plane and supports the dished out plates 34 to receive the tomatoes 11 as they are deposited from the open cups 13. When the arms 21 open, the head 17 of the pin 15 is pushed into the cup 13 to force the item 11 out and discharge it. The tomatoes 11 travel on the plates 34 until they arrive under the conveyor drum 30. The drums

30 are provided with notches 41. The conveyor belt 35 on the drums 30 carries a number of stabilizers 25 spaced along its length, which are guided to the top of the tomatoes 11 in turn by a guide element 36. As the stabilizers 25 contact the tomatoes 11 they centralize them in the plates 34 and make them ready for the next process. Incidently the next process, not shown, cores the tomatoes, and therefore requires that the items of food be properly centered. Channels 37 with rollers 38 maintain the belt 35 and stabilizers in position as they pass along to the end of the travel of the conveyor belt. An idler drum 39 with its shaft 40 is carried by the belt 35 and through the use of notches 41 and teeth 42 which pulls it along in the proper sequence. The various shafts 32 are supported on brackets 43 and bearings mounted on the framework of the conveyor underneath or other suitable foundations for the use in question, whether indicated or not.

In the drawings, a dual arrangement of pick-up wheels and attachments is shown, in order to make effective use of the type of horizontal conveyor shown. It should be noted that the pick-up wheels are so arranged that they have peripheral rims 44 that prevent the tomatoes spilling out of the chute when the cups are rotated. Also the cam members are stationary, while the pick-up wheels revolve. When the conveyor belt 35 moves, it causes the stabilizers to take the positions shown in the drawings. These stabilizers 25 move inwards into the belt when in the upper plane and move outwards at the bottom plane of the belt, resting in the tomatoes, see Figure 6. While passing around the drums, they are pushed out. The shafts 26 and pick up wheels 12 are rotated by bevel gears 43 attached to shafts 48 and rotated by gears 45 of main shaft 32.

While but one general form of the invention is shown in the drawings and described in the specifications, it is not desired to limit this application for patent to this particular form or in any other way otherwise than limited by the scope of the claims, as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention what is claimed is:

1. In a mechanism of the class described, a pick-up wheel, a plurality of cups peripherally mounted on said wheel, said cups having longitudinal slits in the wall thereof, L-shaped fingers pivoted outwardly of said cups, spring means carried by said cups and normally pressing on said fingers to force a portion thereof to extend within the slits in the cups, chutes adjacent said wheel for supplying said cups with an article of food, means for rotating said wheel, a cam co-operating with said fingers and spring means to periodically oscillate said fingers to alternately grip the article of food in the cups and to permit its release therefrom, a conveyor for carrying the article of food upon release from said cups, said means for rotating said wheel including notched wheels, a belt connecting said wheels, and stabilizing elements carried by said belt for centering each article of food upon said conveyor.

2. A mechanism as set forth in claim 1, means adjacent said belt to maintain said belt and stabilizing elements in position, said means comprising channels and rollers carried thereby and in contact with said belt.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,058,193	Mulholland	Apr. 8, 1913
1,266,172	Stake	May 14, 1918