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F. FARMER

WRAPPING MACHINE CONTROL

Filed July 31, 1926

Fig. 1.

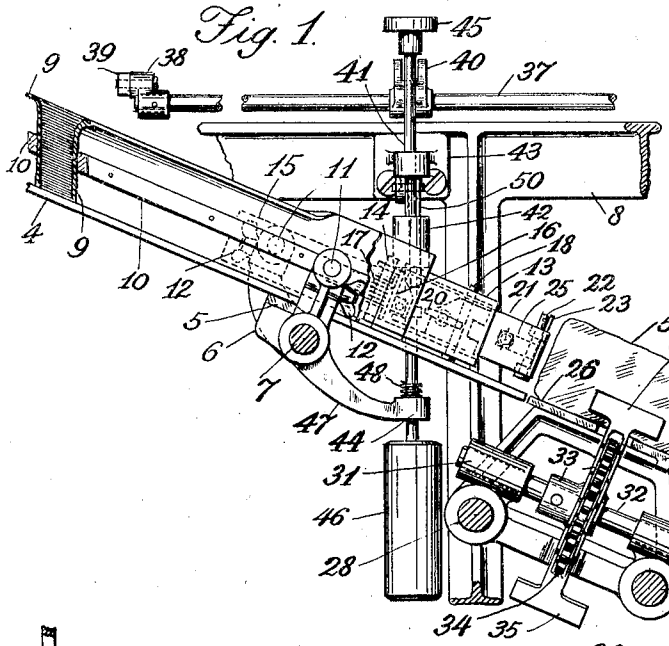


Fig. 3.

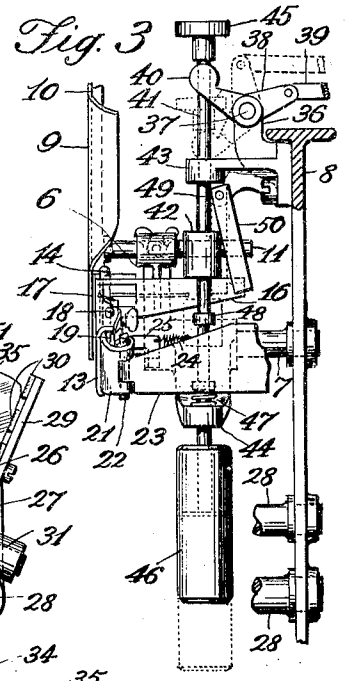
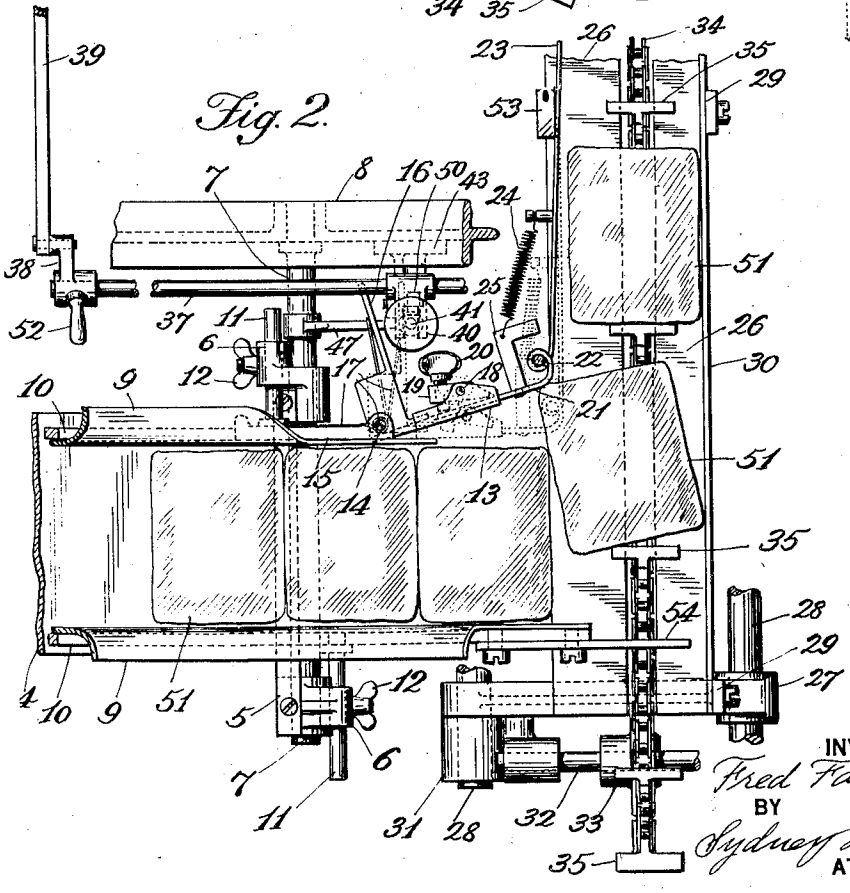


Fig. 2.



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WRAPPING-MACHINE CONTROL.

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This invention relates to an improved wrapping machine control, and it has for its main object the production of a control operating to automatically stop the machine when a defective or misplaced article is passing therethrough, and to prevent starting of the machine until after the defective or misplaced article has been removed. With this and other objects not specifically mentioned in view, the invention consists of certain constructions and combinations which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

In the accompanying drawings, in which like characters of reference indicate the same or like parts, Figs. 1, 2 and 3 are respectively side elevation, plan, and end elevation of a control constructed in accordance with the invention.

Generally speaking, the structure shown is provided with a gravity feed chute from which the articles to be wrapped are delivered to a conveyor running substantially at right angles to said chute, so that the articles have to pass around a corner formed by the walls of the chute and the conveyor, the articles shown being loaves of bread, and the machine in connection with which the control is used being a well known bread wrapping machine. The control includes a yielding section of one of the walls of the chute which acts as the actuating member of the device. When a defective or misplaced article passes this section and is caught by the conveyor to be advanced at right angles thereto, said article presses against said section, moves it, and thereby actuates the machine-stopping mechanism of the control; and when this occurs, a locking dog engages the control and prevents starting of the machine until the defective or misplaced article is removed.

In carrying the invention into effect, there is provided a gravity feed chute, a conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor. In the best constructions contemplated, there is also provided means for preventing starting of the machine when stopped until after the defective or misplaced article has been removed therefrom. These parts may be widely varied in construction within the scope of the claims for the specific structure selected to illustrate the invention is but one of numerous possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

Referring to the drawings, the bottom plate of the gravity feed chute is marked 4 and is supported by cross-bars 5 attached to brackets 6 mounted on rods 7 carried by the frame 8 of the wrapping machine in connection with which the control is employed. The side walls 9 of the chute, which are reinforced by the bars 10, are adjustably supported from the brackets 6 by means of studs 11 attached to the bars 10, the studs 11 being clamped in position by means of the nuts 12.

The inside wall of the chute has a yielding section 13 which is hinged to the stationary part of the wall by means of a pintle 14 engaging lugs provided in a casting 15 forming the end of the reinforcing bar 10 of the inside chute wall. The hinge end of the section 13 is provided with a projecting arm 16 extending at right angles from the chute wall and held in tension by the coil spring 17 surrounding the pintle 14. The free end of the section 13 carries a pin 18 upon which is hinged a clamp 19 having a thumb screw 20. The clamp 19 serves to adjustably attach to the section 13 the strip 21 carrying a pin 22 on which is hinged a conveyor wall 23 which is held in its normal position, perpendicular to the section 13, by means of a spring 24 pulling it against a stop 25 fastened to the plate or strip 21.

The conveyor which receives the articles from the chute and carries them to the wrapping mechanism, not shown, has a slotted bottom plate 26 supported by brackets 27 mounted on rods 28 fastened to the main frame 8. Upright strips 29 are attached to the lower edge of the plate 26 and support rails 30 forming a stationary rear wall for the conveyor. On the ends of the supporting rods 28 are mounted brackets 31 in which is journaled a shaft 32 carrying a sprocket 33 which constitutes one of the supports of an endless chain 34 having equidistant fingers 35 which pass through the

slot of the plate 26 and engage the articles received from the chute and advance them toward the wrapping mechanism.

To the main frame 8 of the machine, brackets 36, only one of which is shown, are attached which carry a clutch operating shaft 37 having an arm 38 to which the clutch shifting rod 39 is attached. On the shaft 37 is mounted a forked arm 40 through the free end of which a rod 41 passes. This rod has a collar 42 normally resting on the arm 16 of the section 13. The rod 41 is guided by brackets 43 and 44 attached to the frame 8 and rod 7 respectively. It has a knob 45 at its top, and a weight 46 at its bottom. Upon the bracket 44 is placed a cushioning spring 47 which engages a collar 48 on the rod 41 when the latter drops. To the bracket 43 is attached a pin 49 on which is hung a dog 50 normally resting in an inclined position against the edge of the upper shoulder of the collar 42 of the rod 41 when said rod is in its highest or normal position.

So long as the articles are properly fed into the range of action of the fingers 35 of the conveyor chain, the hinged section 13 of the chute wall remains in the position shown by the dotted lines on Fig. 2, and the arm 16 remains in engagement with the collar 42 of the rod 41, thus holding the latter inactive and permitting idle movement of the forked arm 40 and manipulation of the clutch arm 38 by means of the handle 52. When, however, one of the articles reaches the conveyor in a damaged or twisted condition, it will strike the section 13 when advanced by the conveyor. The section 13 is thereby caused to swing on the pintle 14, thus disengaging the arm 16 from the collar 42 and permitting the weight 46 to drop carrying the rod 41 with it. Since the free end of the wall 23 of the conveyor rests against the guide 53, the wall 23 will turn on the hinge 22 as the latter moves around the pintle 14. Improperly fed articles 51 are prevented from dropping on the sprocket 33 by a guard 54 attached to the end of the reinforcing bar 10 of the outside chute wall.

As the weight 46 descends, the shoulder of the knob 45 engages the fork of the arm 40, pulling the latter down into the position shown in dotted lines in Fig. 3, thereby turning the shaft 37 and causing the arm 38 to shift the rod 39 into declutching position, whereupon the machine will immediately stop. When the rod 41 reaches its lowermost position, and the collar 48 rests on the cushioning spring 48, the dog 50, which is then out of engagement with the collar 42, drops to a vertical position over the collar 42 and thus prevents the operator from starting the machine by turning the handle 52 since the shaft 37 will not turn until the rod 41 has been raised. Consequently, the dog 50 must be reset by lifting it up and raising the rod 41 before the machine can be restarted. But the rod 41 will not remain in its raised position unless the arm 16 is replaced under the collar 42 which can be done only after the defective or misplaced article has been removed. Thus, the machine will remain inoperative until the obstruction is cleared away.

What is claimed is:

1. The combination with an inclined gravity feed chute, of a correspondingly inclined conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor.

2. The combination with an inclined gravity feed chute, of a correspondingly inclined conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor, said mechanism including an actuating member forming a yielding section of one of the walls of said chute.

3. The combination with an inclined gravity feed chute, of a correspondingly inclined conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor, said mechanism including an actuating member hinged to and forming a yielding section of one of the walls of said chute, and a conveyor wall hinged to the free end of said section.

4. The combination with an inclined gravity feed chute, of a correspondingly inclined conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor, said mechanism including an actuating member hinged to and forming a yielding section of one of the walls of said chute, and a weighted clutch controlling device normally held inactive by said actuating member.

5. The combination with an inclined gravity feed chute, of a correspondingly inclined conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said con-

veyor, said mechanism including an actuating member hinged to and forming a yielding section of one of the walls of said chute and having a projecting arm, and a weighted clutch controlling device having a collar normally in engagement with said arm to normally hold said device inactive.

6. The combination with an inclined gravity feed chute, of a correspondingly inclined conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor, said mechanism including means for preventing starting of the machine when stopped until after the defective or misplaced article has been removed.

7. The combination with a gravity feed chute, of a conveyor receiving articles from said chute and moving them in a direction substantially at right angles thereto, and machine-stopping mechanism automatically actuated only by a defective or misplaced article passing from said chute to said conveyor, said mechanism including an actuating member hinged to and forming a yielding section of one of the walls of said chute and having a projecting arm, a weighted clutch controlling device having a collar normally in engagement with said arm to normally hold said device inactive, and a gravity-actuated dog engaging the upper side of said collar when the machine is stopped to prevent starting of the same until after the defective or misplaced article has been removed.

8. The combination with a walled pathway along which articles travel, of machine stopping mechanism actuated only by a defective or misplaced article traveling along said pathway and including an actuating member hinged to and forming a yielding section of a wall of said pathway and having a projecting arm, and a weighted clutch controlling device having a collar normally in engagement with said arm to normally hold said device inactive.

9. The combination with a walled pathway along which articles travel, of machine stopping mechanism actuated only by a defective or misplaced article traveling along said pathway and including an actuating member hinged to and forming a yielding section of a wall of said pathway and having a projecting arm, a weighted clutch controlling device having a collar normally in engagement with said arm to normally hold said device inactive, and a gravity-actuated dog engaging the upper side of said collar when the machine is stopped to prevent starting of the same until after the defective or misplaced article has been removed.

In testimony whereof, I have signed my name to this specification.

FRED FARMER.