Aug. 27, 1929. J. P. ALDRICH ET AL 1,726,418

CONVEYER MECHANISM

Original Filed Jan. 9, 1925 2 Sheets-Sheet 1

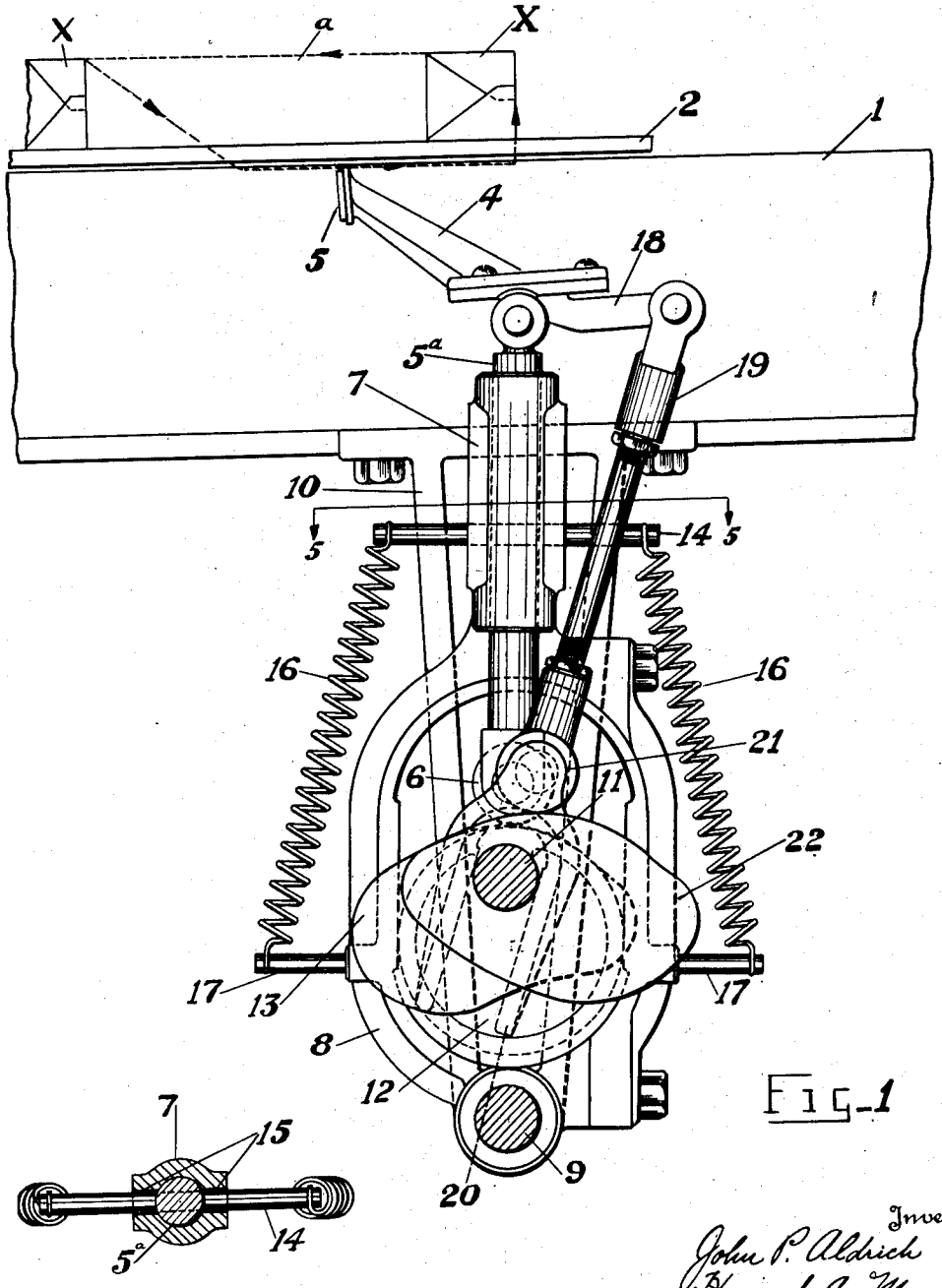


Fig-1

Fig-5

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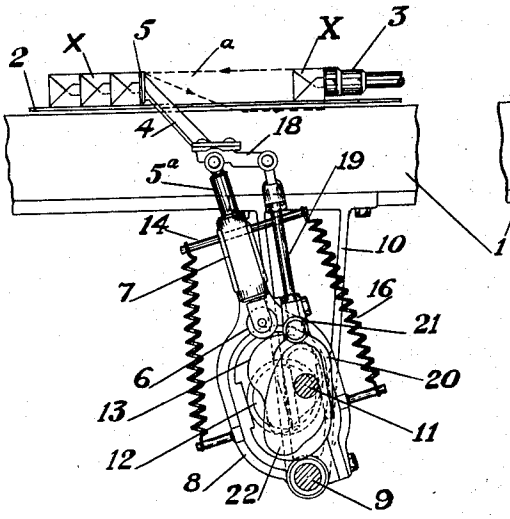


Fig. 2

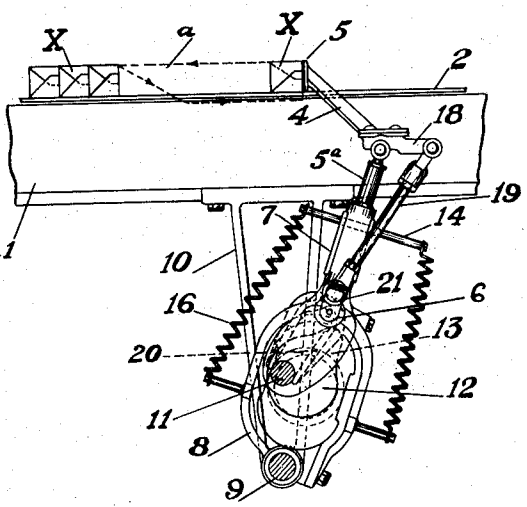


Fig. 3

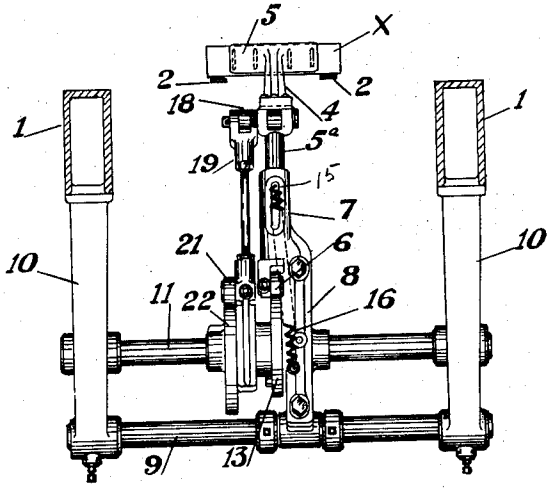


Fig. 4

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UNITED STATES PATENT OFFICE.

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CONVEYER MECHANISM.

Original application filed January 9, 1925, Serial No. 1,352. Divided and this application filed September 5, 1925. Serial No. 54,872.

This invention relates to conveyers but is more particularly concerned with mechanism for advancing a predetermined number of articles successively along a guide, and is especially useful in connection with the machine shown and described in our co-pending application, Serial Number 1,352, filed Jan. 9, 1925, of which this application is a division.

Objects of the invention are to provide a conveyer mechanism for successively advancing a predetermined number of articles along a guide in a simple and convenient manner; and to provide conveyer mechanism having the new and improved features of construction and arrangement hereinafter described.

The invention is shown by way of illustration in the accompanying drawings in which,—

Fig. 1 is a side elevational view of the mechanism showing the paddle partially retracted; Fig. 2 is a view similar to Fig. 1 but on a reduced scale showing the paddle in its fully advanced position; Fig. 3 is a view similar to Fig. 2 showing the paddle at the beginning of its advancing movement; Fig. 4 is a rear end elevation of the mechanism; and Fig. 5 is an enlarged transverse section on the line 5—5 of Fig. 4.

In the above mentioned copending application, there is shown a package wrapping machine which is particularly adapted for wrapping individual units of butter, oleomargarine and the like, the units being in the form of elongate rectangular bars of one quarter pound size and, after wrapping each unit a predetermined number are formed into a symmetrical pile which is thereafter packaged in a carton. Generally this machine consists of mechanism for feeding unwrapped bars along a guide to a position where a plunger mechanism moves each unit from the feeding mechanism along another guide and during this movement each bar is automatically wrapped with relatively thin and flexible sheet material. Thereafter a kicker mechanism successively advances individual bars along the guide until a predetermined number of them are disposed in close juxtaposition whereupon the stacking mechanism is operable to form a symmetrical stack, this stack being subsequently packaged in a carton.

More specifically this invention is directed to the kicker mechanism for advancing the articles individually and successively along the guide. As indicated in the drawings 1 indicates a pair of longitudinal frame members which are spaced apart and suitably mounted on the frame members 1 are guides 2 on which the wrapped butter bars X are supported. As indicated in Fig. 2 plunger mechanism 3 is operable successively to deliver individual bars X to the kicker mechanism and this plunger delivers a bar X when the paddle of the kicker mechanism has moved to its fully advanced position whereupon the plunger retracts to engage the next succeeding butter bar.

The kicker mechanism includes a paddle 4 having a vertically disposed plate 5 for engaging a butter bar. As indicated by the dotted line *a*, the paddle 4 first engages a butter bar X and then moves in practically a straight horizontal plane forwardly until the butter bar has been advanced to the desired position whereupon the paddle 4 commences its retracting movement and gradually inclines downwardly and rearwardly to a position slightly below the guide 2. The paddle 4 then moves rearwardly in a horizontal plane to a position in rear of a butter bar X which has just been delivered by the plunger, and thereafter the paddle 4 moves vertically upward to engage this bar and thereafter the movement heretofore described is repeated.

For actuating the kicker paddle 4 rod 5^a is pivoted to the lower part of the paddle and depends therefrom, a roller 6 being mounted on the lower end thereof. For guiding the movement of the rod 5^a, this rod extends through a tubular guide 7 and formed in the portion of the guide is a strap 8 which is pivoted to a transverse shaft 9 mounted in the upright frame supports 10. Extending through the strap 8 is a drive shaft 11 which is mounted at its opposite ends on the upright supports 10 and this shaft may be driven from any suitable source of power. Fixed to the drive shaft 11 is an

eccentric 12 which engages the strap 8 thereby to swing the tubular guide 7 backward and forward.

For raising and lowering the paddle 4 at the beginning and end of the advancing movement thereof, a cam 13 is fixed to the shaft 11 and engages the roller 6, this cam being designed to hold the paddle 4 in its elevated position during the forward swing movement of the tubular guide 7 and to lower the paddle 4 during backward or rearward swinging movement of the guide. For holding the roller 6 in an engagement with the cam 13 a rod 14 is fixed to the rod 5^a transversely thereof and extends through axially elongate slots 15 in the tubular guide 7 and connected to the opposite ends of the rod 14 are springs 16 which are connected at their opposite ends to rods 17 fixed to and projecting outwardly from the strap 8.

For maintaining the plate 5 of the kicker 4 in substantially vertical position during the advancing movement thereof, an arm 18 is fixed to the lower part of the paddle 4 and pivoted to the outer end of the arm 18 is a rod 19 which depends therefrom and is formed at the lower end with a fork 20 which engages the drive shaft. Mounted on the fork 20 is a roll 21 engaging the cam 22 which is fixed to the drive shaft 11. The cam 22 is designed to permit the rod 19 to assume its lower position in a progressive manner as the paddle 4 is advanced thereby enabling the paddle 4 to turn in a clockwise direction and keep the engaging plate 5 in a substantially vertical plane. During the retracting movement of the paddle 4 the cam 22 moves the rod 19 upwardly thereby to lower the engaging plate 5 so that the upper edge thereof lies below the guides 2 when moving rearwardly.

While we have shown and described a construction which is the best form known to us at the present time it is to be understood that numerous changes in details of construction and arrangement may be effected without departing from the spirit of the invention.

What we claim is new and desire to secure by Letters Patent is:—

1. The combination of a guide, a paddle for advancing articles along said guide, means including a plurality of rods pivoted to the underside of said paddle for successively imparting an upward and horizontal advancing movement along said guide and a downward and horizontal retracting movement below said guide and for actuating said paddle during advancing movement to maintain the face thereof at substantially right angles to said guide.

2. In a machine of the class described, a paddle for advancing articles, means for imparting an upward movement to the paddle and after a predetermined period of time a downward movement, said means including a rod pivoted to said paddle having a roller on its lower end, a guide for said rod having a strap at its lower end, a stationary pivot for the lower end of said strap, a drive shaft extending through said strap having a cam coacting with said roller, means yieldingly holding said roller in operative relation to said cam, and means for concomitantly imparting longitudinal reciprocatory movement to said paddle, said means comprising an eccentric on said drive shaft for engaging said strap and swinging said strap backward and forward.

3. The combination of a guide, a paddle for advancing articles along said guide, rocking means on which said paddle is pivotally mounted, means associated with said rocking means to elevate the same whereby said paddle is elevated at the inception of the stroke and gradually lowered beneath the guide during retracting movement, and means gradually to move the face of the paddle relatively to the rocking means during advancing movement for maintaining the same at substantially right angles to the guide.

4. The combination of a guide, a paddle movable along said guide for propelling articles thereover, rocking means underneath said guide and having pivotal connection with said paddle for imparting successively horizontal advancing and retracting movements thereto, means to raise the face of the paddle above the guide during the advancing movement and to lower said face during the retracting movement, and coacting means for maintaining the said face at approximately right angles to the guide during advancing movement.

In testimony whereof, we have hereunto signed our names to this specification.

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