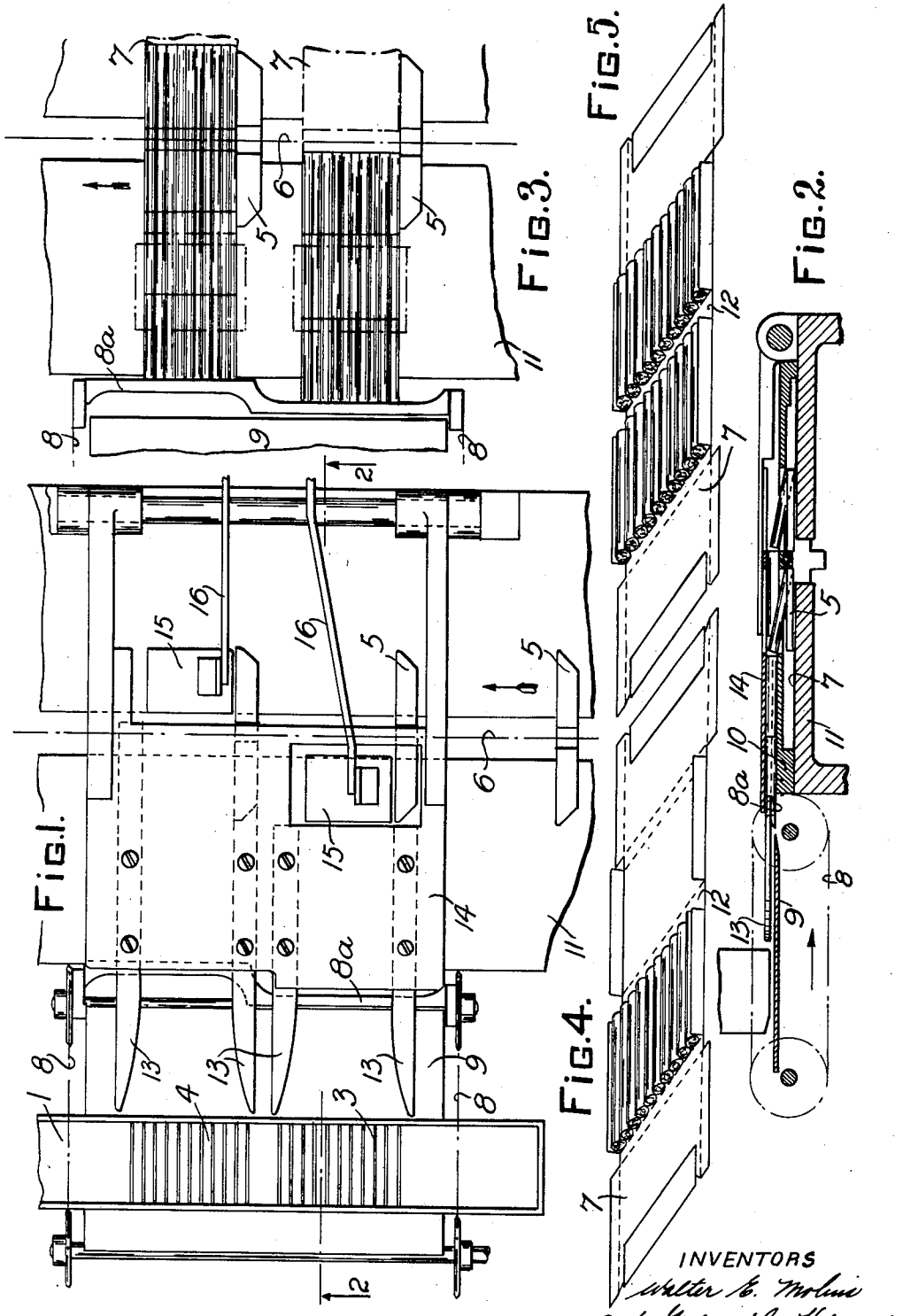
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MACHINERY FOR PACKING CIGARETTES

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## MACHINERY FOR PACKING CIGARETTES

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This invention is for improvements in or relating to machinery for packing cigarettes, and refers more particularly to a cigarette hopper adapted to feed simultaneously two batches of cigarettes to a machine designed to pack cigarettes in a double pocket carton of the type comprising two pockets united by a flap.

The present invention consists of a hopper for feeding cigarettes to a machine operable to pack cigarettes in a double pocket carton of the type referred to which comprises mechanism operable to feed simultaneously two side by side batches of cigarettes spaced apart laterally on to carton blanks moved by a conveyor at right angles to the direction of movement of the cigarettes, the batches of cigarettes being delivered to points disposed at unequal distances from the feeding mechanism, so that each pair of batches of cigarettes is fed to a pair of successive blanks and the individual batches of each pair are disposed on opposite sides of the centre line of the conveyor.

The invention will be more particularly described with reference to the accompanying drawing, in which:—

Fig. 1 is a plan view of a cigarette feeding apparatus constructed according to the invention.

Fig. 2 is a section of Fig. 1 on line 2—2.

Fig. 3 is a fragmentary view of the machine bed shown in Fig. 1 with some of the parts removed.

Fig. 4 is a perspective view of a blank having one batch of cigarettes thereon.

Fig. 5 is a similar view of a blank having two batches of cigarettes thereon.

Referring to the drawing, a hopper or box 1 is provided having two distinct sets of vane openings 3 and 4 separated by a spacing member, the space between the centre line of each set of vane openings being equal to the pitch of the pusher pieces 5 carried by a chain conveyor 6 operable to move carton blanks 7 through the packing machine.

The cigarettes are removed from the vane openings by a conveyor 8 of the kind described in the prior U. S. patent to Walter E. Molins, No. 1,618,214, granted February 22, 1927, having pusher pieces $8^a$ and are carried across a plate 9 and a support 10 mounted above the machined bed 11.

The support is shaped so that the cigarettes of the set of vane openings 4 will be delivered to a point beyond the centre line of the conveyor, whilst the cigarettes of the other set of vane openings 3 will be delivered on the near side of the centre line of the conveyor.

Two batches of cigarettes are simultaneously fed side by side from the hopper by the pusher piece $8^a$, which is stepped as shown, and are moved across the plate 9 and support 10 to a position of rest, while the pusher piece $8^a$ moves back on its return path. The next succeeding pair of batches are fed from the hopper and push the preceding pair of batches across the support 10 for a distance equal to the length of a cigarette, as shown in Fig. 2. The movement is repeated and one batch of the leading pair of batches of cigarettes (i. e., the batch fed from the vane openings 3) is permitted to fall from the support 10 leaving the other supported thereon.

This method of moving the batches is clearly shown in Fig. 3. The batch falls on to the carton blank on the near side of the conveyor, thus producing a partly loaded blank as shown in Fig. 4.

The conveyor 6, which is intermittently operated, moves on one stage and upon the delivery of the next pair of batches of cigarettes, one batch falls upon the near side of the conveyor on the next succeeding blank, whilst the other batch is delivered upon the far side of the conveyor, and on to the blank which has previously received a batch of cigarettes so that each blank receives its pair of batches in two distinct operations, and when loaded is as shown in Fig. 5.

The conveyor of the packing machine is intermittently moved so that the blanks come to rest in line with the batches of cigarettes, and after the first blank has passed, each movement of the machine will cause a batch of cigarettes to fall on each of two consecutive blanks which have been brought by the conveyor to the filling position.

Owing to the fact that the hinged flap 12 of the carton 7 lies between the two portions of the blank which are to receive cigarettes, the pusher of the conveyor 8 which removes the cigarettes from the vane openings, is stepped or shaped as shown so that one batch of cigarettes precedes the others by a distance equal to the width of the flap.

The cigarettes which are delivered from the vanes in comparatively loose formation are closed in to compact batches by tapered guides 13, whilst a top plate 14 prevents the cigarettes from rising up during this movement.

In order to ensure that the batches fall cleanly and without displacement on to the blank, two pressing plates 15 are provided which are carried on pivoted levers 16 and operated by ordinary cams (not shown) to move downwards at the in-

stant the batches of cigarettes fall and press them into position on the blanks.

What we claim as our invention and desire to secure by Letters Patent is:—

1. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with means for moving a row of cartons through a predetermined path with the pockets of each carton aligned transversely of the row, and means for simultaneously feeding batches of cigarettes to each of two successive cartons in the row.

2. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with means for moving a row of cartons through a predetermined path with the pockets of each carton aligned transversely of the row, and means for simultaneously feeding a batch of cigarettes to one pocket of a carton, and a batch of cigarettes to the oppositely positioned pocket of the succeeding carton.

3. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with an intermittently operated conveyor for moving two cartons with the pockets arranged transversely of the conveyor into two predetermined positions of rest in succession, of means for feeding each of two rows of cigarette batches transversely of the direction of movement of the conveyor and toward one of the positions of rest of the cartons, and means for constraining the leading batch of cigarettes in one of said rows to move across the near pocket of one of said cartons for delivery to the far pocket of the carton.

4. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with an intermittently operated conveyor for moving a plurality of cartons with the pockets thereof arranged in two rows spaced laterally of the direction of movement of the conveyor into two predetermined positions of rest, means for feeding two rows of batches of cigarettes transversely of the direction of movement of the conveyor and delivering one batch in each row of batches to each of two pockets in the separate rows of pockets while the cartons occupy one of the said positions of rest.

5. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with an intermittently operated conveyor for moving a plurality of cartons with the pockets thereof arranged in two rows spaced laterally of the direction of movement of the conveyor into two predetermined positions of rest, means for feeding two rows of batches of cigarettes transversely of the direction of movement of the conveyor and delivering one batch in each row of batches to each of two pockets in the separate rows of pockets while the cartons occupy one of the said positions of rest, said batch feeding means comprising an intermittently operated conveyor driven in timed relation to said first named conveyor.

6. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with means for simultaneously conveying a row of cartons in the direction of the length of the row, with the pockets of each carton aligned transversely of the row, of conveying means for feeding two rows of cigarette batches transversely of said first named means, and supporting beds for each row of batches, one of said beds extending to the near side of the row of cartons and the other of said beds extending to the far side of the row of cartons, whereby batches in each row are allocated to and delivered on the pockets on one side only of the row of cartons.

7. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with means for conveying a row of cartons in the direction of the length of the row, with the pockets of each carton aligned transversely of the row to form two rows of pockets, of means for feeding a plurality of rows of cigarette batches transversely of the row of cartons and simultaneously delivering two batches in position on pockets in the separate rows of pockets.

8. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with means for conveying a row of cartons in the direction of the length of the row, with the pockets of each carton laterally aligned to form two rows of pockets, of means for simultaneously delivering one batch of cigarettes on a pocket in one row of pockets, and another batch of cigarettes on a pocket in the succeeding carton and in the other row of pockets.

9. In apparatus for feeding cigarettes to a double pocket carton adapted to receive two batches of cigarettes, the combination with means for conveying a row of cartons in the direction of the length of the row, with the pockets of each carton aligned transversely of the row to form two rows of pockets, of cigarette supporting means affording separate paths extending transversely of the carton rows for separate cigarette batches, one path terminating adjacent each of the rows of pockets, and means for moving batches of cigarettes along each path and onto pockets in the row of pockets adjacent which the path terminates.

10. In apparatus for feeding cigarettes to a double pocket carton of the type in which the pockets are connected by a hinge which spaces the pockets when the carton is opened, the combination with means for conveying a row of cartons in the direction of the length of the row, with the pockets of each carton aligned transversely of the row to form two rows of pockets, of cigarette supporting means affording separate paths extending transversely of the carton row for separate cigarette batches, one path terminating adjacent each of the rows of pockets, and means for moving batches of cigarettes along each path and onto pockets in the row of pockets adjacent which the path terminates, said means comprising a stepped conveyor for moving the batches in one path in advance of the batches in the other path to compensate for the spacing between the rows of pockets.

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