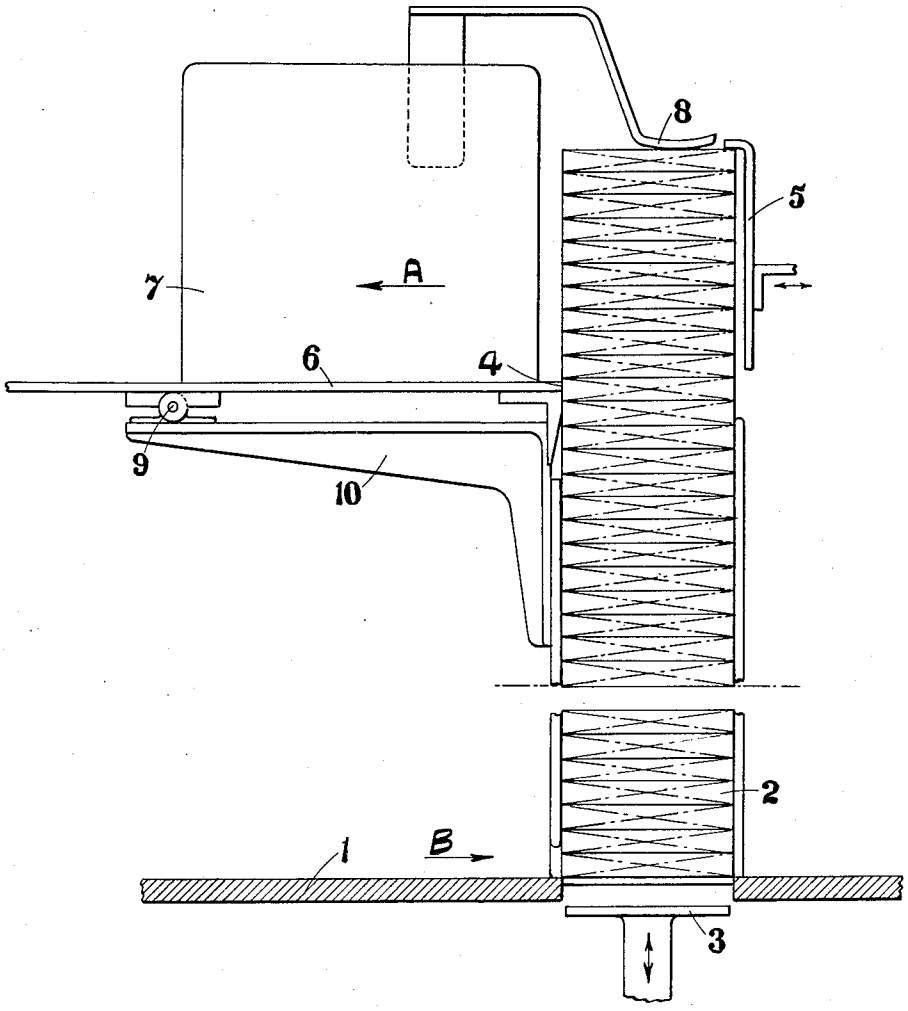
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PACKING MACHINERY

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PACKING MACHINERY

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2 Claims. (Cl. 214—8.5)

This invention is for improvements in or relating to packing machinery, and refers more particularly to a stacking apparatus for use on packing or wrapping machines, of the kind in which the packets are thrust along in a column in a stacker.

Considerable difficulty is experienced with mechanically handling packets which are to be delivered from stackers in a direction at right angles thereto, as a long stack of packets does not always measure the same distance between the end faces, because a slight variation from the standard value of the packet thickness is multiplied by the number in the stacker. This variation in the length of the column renders the use of a fixed delivery plate unsatisfactory, as if the surface of the last packet of the group to be removed from the stacker is not in line with the delivery plate, the packet is liable to be crushed against the edge of the plate as the plunger operates.

In order, therefore, to satisfactorily remove a group of packets from a stacker by an automatic apparatus such as a plunger, it is necessary to provide means for ensuring that the last packet of the batch to be removed is in line with the surface over which the packets are to be moved. This is accomplished by arranging the said surface to vary its position in the manner hereinafter described.

The invention therefore consists in arranging the delivery plate of a stacker from which batches of packets are to be removed in a direction at right angles to the stacker in such a manner that the plate can vary its position, the exact location of the plate being determined by a feeling device which contacts with the leading packet of a batch.

Referring to the drawing which shows in diagrammatic form a section of a vertical stacking apparatus with the invention applied thereto, the packets are brought along the bed 1 of the packing machine in the direction of the arrow "B" by any suitable mechanism and carried into the base of the stacker 2.

A platform 3 which is caused to reciprocate as shown by the arrow, thrusts each packet in turn upwardly into the stacker where it is retained by any suitable ratchet device such as brushes or springs which form no part of the present invention.

As previously explained, when dealing with packets made of paper or cardboard, the total height from the base of the stacker to the discharge point 4 is likely to vary a good deal, and it sometimes happens that when the top batch of packets is pushed off from the stack in the direction of arrow "A", the last one of the batch may foul the edge of the delivery plate 6 or in extreme cases, too many packets may be taken off from the top of the stacker.

As the packets rise towards the top of the stacker, batches of, for example ten, are removed from time to time by a reciprocating plunger 5 or equivalent device, and delivered on to the plate 6, each batch pushing the preceding batch along the plate to any desired delivery point. The packets are controlled laterally by guides such as 7.

In order therefore to prevent the lowest packet of a batch from fouling the edge of the delivery plate, a detecting or gauging finger 8 is provided which can contact with the top of the stack, and this finger is fixed to the wall 7 which is in turn fixed to the plate 6, the latter being pivoted at 9 to a bearing carried on a bracket 10.

As the stack of packets rises into contact with the feeler, the latter swings about the hinge and therefore the edge of the plate 6 nearest to the packets will move in the same manner as the feeler moves and comes into line with the lowest packet of the batch which is to be removed.

Under these circumstances the plunger 5 will always move the correct number of packets from the top of the stack as in the comparatively short distance between the end packets of the batch, the errors in the thicknesses of the packets do not accumulate to any appreciable extent.

It should be explained that in actual practice the height of the stacker from the bed of the machine to the table 6 is much greater than is shown on the drawing so that in such a distance the errors accumulate and cause the faulty operation of the machine above referred to.

Balance weights or springs may be provided, as necessary, to ensure that the movement of the delivery plate and feeler will not injure the top packet of the batch.

Although the invention has been described with reference to a vertical stacker the same idea is obviously applicable to a horizontal stacker.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A stacking apparatus of the kind referred to having a movable delivery plate at right angles thereto, and a feeling device which contacts with the leading packet in the stacker and thereby sets the delivery plate in the desired position prior to the removal of a batch.

2. A stacking apparatus as claimed in claim 1 in which the delivery plate is pivoted to the machine frame and has the feeler attached to it.

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