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64 Receptacle for flat sheet-like items.

57 A receptacle for flat sheet-like items, for example letters, is incorporated in a machine, for example a letter sorting machine, which includes first conveyor means (2) arranged to deposit the items in a laid flat position in the receptacle. The receptacle incorporates a second conveyor (4) which is arranged to receive and support the items being stacked, and is operable to move these items away from the loading position in such manner that apart from an initially formed stack, the items adopt a successively overlapping relationship in the receptacle.

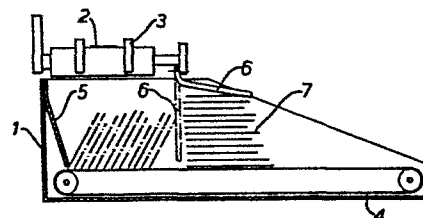


Fig. 1.

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"IMPROVED RECEPTACLE"

This invention relates to receptacles for flat sheet-like items, for example letters.

5 In a letter sorting machine in which letters or similar postal items on a conveyor are each diverted into a selected one of a number of stacking boxes, the stacking boxes must clearly be closely watched and regularly emptied by the operator if the boxes are not to be allowed to become too full.

10 In one known form of letter sorting machine (U.S. Patent Specification No.3,782,541) each stacking box is provided with a pusher plate which automatically, upon a predetermined weight of letters being stacked in the box, moves across the box to eject the stack
15 therefrom into a compartment of an associated receiver. However in this arrangement the stack of letters, when this has built up, is completely ejected from the stacking box rather than being moved in the box away from the stacking position and furthermore the machine
20 requires a receiver to receive the ejected letters.

The object of the invention is to provide an arrangement which represents an improvement upon the known machine referred to above.

25 According to the invention, a receptacle for flat sheet-like items as incorporated in a machine which includes first conveyor means arranged to deposit the items in a laid flat position in the receptacle, incorporates a second conveyor which is arranged to

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receive and support the items being deposited and is operable to move these items away from the loading position in such manner that apart from an initially formed stack, the items adopt a successively overlapping relationship in the receptacle.

In order that the invention may be more fully understood one form of receptacle in accordance with the invention will now be described with reference to the accompanying drawing in which:

FIGURE 1 shows a diagrammatic side view of the receptacle and

FIGURE 2 shows an end view looking into the receptacle of Figure 1.

Referring to the drawing, a letter stacking system forming part of a letter sorting machine includes a receptacle box 1 and a conveyor 2 from which letters 7 are diverted by means of a diverter 3 to be deposited in the box.

The support for the letters in the box 1 comprises a second conveyor 4 which is directed transversely of the direction of the conveyor 2 and to initiate operation of this conveyor a light sensing device sensitive to the height of any stack of the letters in the box is provided, this sensing device having a manual override.

Furthermore the box includes a lateral guide 5 and a curtain 6 which conveniently is of a soft transparent polymer.

In operation, letters are deposited in the box in a horizontal or laid flat position initially to form a stack and in this regard the guide 5 and curtain 6 serve to constrain the letters as they enter the receptacle so that their longitudinal edges remain parallel with the rear of the receptacle thereby minimising skewing. The stacking continues until the height of the stack is sufficient to actuate the sensing device which then operates the conveyor 4 to move the stack towards the outer end of the box (the

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right hand end in Figure 1) and away from the loading position until the stack passes from the field of view of the sensing device. The curtain 6 being quite flexible does not impede movement of the stack/. In fact
5 as each letter enters the box, it passes through the field of view of the sensing device and this causes momentary movement of the conveyor. This however is very small but it is advantageous in that it causes the stack to be formed leaning slightly inwardly
10 (that is away from the open end of the box).

As further items enter the box after movement of the initially formed stack, they partially overlies the initially formed stack at an angle and this stack of "tiled" or successively overlapping letters increases in length until the incoming letters start
15 to pile up when again the light sensitive device is operated. As the conveyor moves the letters towards the open end of the box, the piled letters drop down behind the others and movement of the conveyor is
20 stopped. In this way a continuous stream of "tiled" or successively overlapping letters is formed. After a number of intermittent operations of the conveyor, the end of the box is reached when the items may be removed in convenient quantity by the operator without interfering with the items remaining in the box
25 or the incoming items.

If the box is required to be emptied in a part filled condition, they may be driven out on demand by means of the above-mentioned manual override, so
30 obviating the need for an operator to reach inside the box.

Claims:

1. A receptacle for flat sheet-like items as incorporated in a machine which includes first conveyor means (2) arranged to deposit the items in a laid
5 flat position in the receptacle, wherein the receptacle incorporates a second conveyor (4) which is arranged to receive and support the items being deposited and is operable to move the items being formed away from the loading position in such manner that apart from an
10 initially formed stack the items adopt a successively overlapping relationship in the receptacle.

2. A receptacle as claimed in claim 1, including guide means (5,6) to assist the positioning of the items in the receptacle.

15 3. A receptacle as claimed in claim 2, wherein the guide means include a flexible curtain (6) on the downstream side of the loading position in relation to the operation of the second conveyor (4).

4. A receptacle as claimed in claim 1, 2 or 3
20 including a light sensing device responsive to any stack of the items at the loading position reaching a predetermined size and which is arranged to initiate operation of the conveyor (4) in the receptacle to move the stacked items away from the loading position.

25 5. A receptacle as claimed in claim 4, wherein the light sensing device is arranged to effect movement of the conveyor until the stack passes from the field of view of the device.

6. A receptacle as claimed in claim 5, wherein the
30 light sensitive device is provided with a manual override.

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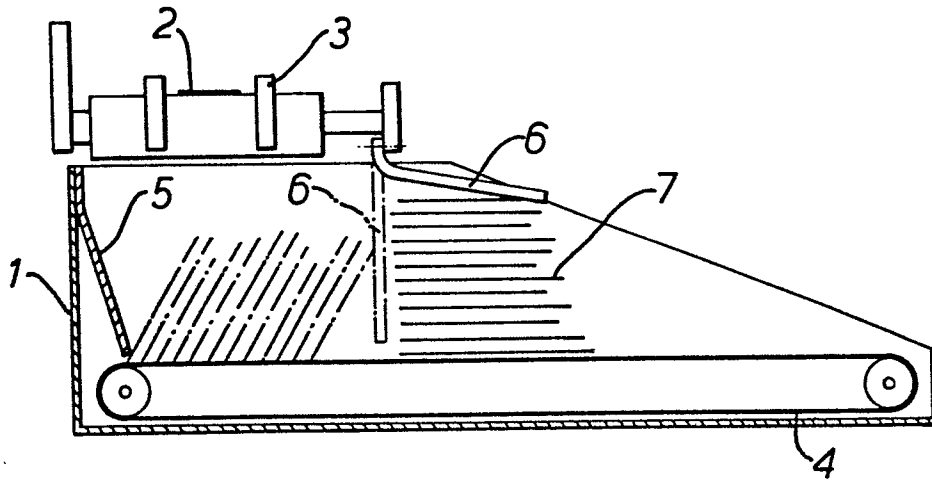


FIG. 1.

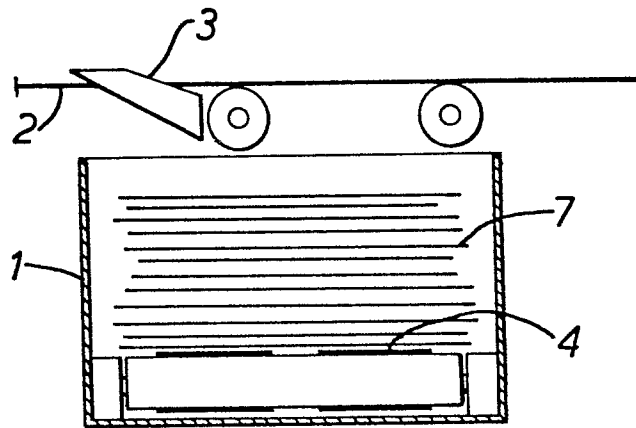


FIG. 2.