

Mail Handling Device

This invention relates to a mail handling device for use with sealed and unsealed envelopes fed thereto in indeterminate order.

5 For the mechanical processing of letters (envelopes) it is known to guide letters over a holding plate which lifts a letter flap according to its position, so that it is guided over a dampening device, or to leave the letter flap in its original position and to
10 transport the letter forward without contact with the dampening device (DE-OS 23 20 484). For this purpose there is provided a mechanical reversal which controls a deflection part. An arrangement of this type is unsuitable with a mixed processing of open and already
15 sealed envelopes since it requires a constant manual reversal and accordingly it is labour-intensive and uneconomical and in addition requires a large mechanical expenditure.

The present invention has been developed with a
20 view to provide a mail handling device which ensures a mixed processing of already sealed and still open envelopes so that only the letter flaps of open envelopes are guided to a dampening device.

According to the invention there is provided a
25 mail handling device for use with sealed and unsealed envelopes fed thereto in indeterminate order and comprising:

- : an envelope-feeding device for feeding envelopes through the mail handling device;
- 30 an envelope-sensing device associated with said feeding device for sensing the presence of an envelope in the mail handling device;
- a compressed air device operable by said sensing device and having a discharge aperture arranged
35 to direct a stream of compressed air against each envelope as it is fed past the compressed air device

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so as to open the flap of an unsealed envelope;

guide means arranged for guiding a flap of
an unsealed envelope, after impingement of an air
stream thereon from said discharge aperture, to

5 a dampening device;

and said dampening device being arranged to
apply moistening to an unsealed envelope for subsequent
closure thereof.

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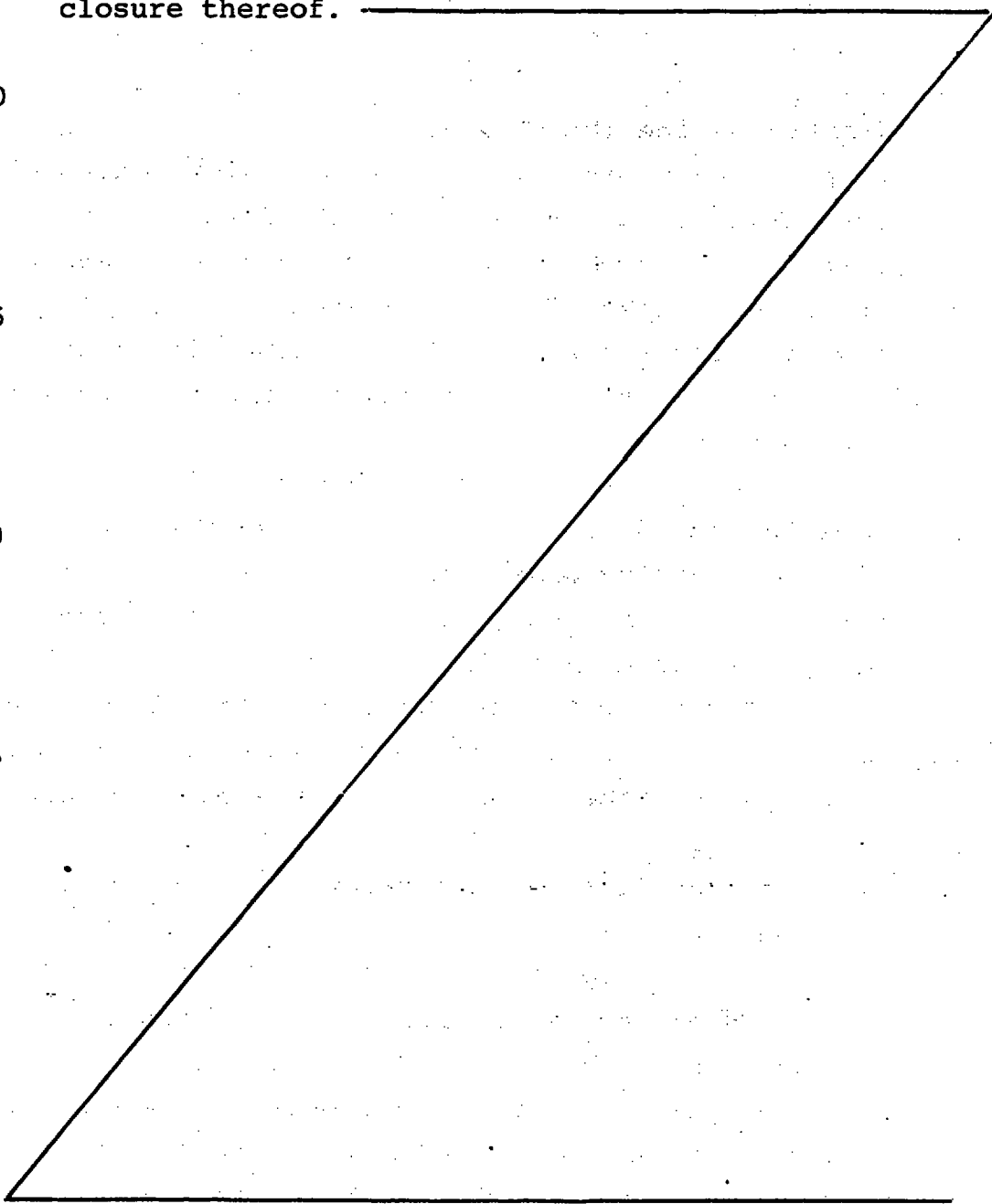
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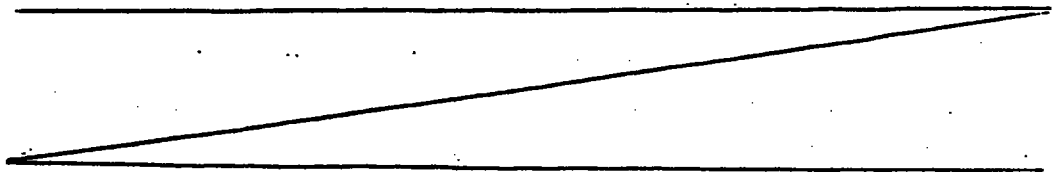
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5 One embodiment of mail handling device according to the invention will now be described in detail, by way of example only, with reference to the accompanying drawing, in which:

Figure 1 is a schematic side view of the device;
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Figure 2 is a plan view of the device of Figure 1, but omitting an envelope-clamping device for ease of understanding.

The feed device of a letter closure device
15 comprises a conveyor shaft (drum) 20 which is arranged in an aperture of a table plate 10, and of a pressure roller 21 with a clamping device 22 opposite the conveyor shaft 20. Subsequently connected to the feed device 21, 22 is a dampening device of which only the essential parts are
20 shown in Figures 1 and 2, namely a holding plate 30 for a brush 31, a sponge 32 and a cover 33. The holding plate 30 of the dampening device is also used as a support bearing for the clamping device 22 in the rest state of the machine.

25 A letter (envelope) 40 is guided along a back wall 11 of the device with its letter flap 41 facing the table plate 10. The letter 40 is pushed onto the conveyor shaft 20 by means of conveyor rollers (not shown) of a pre-arranged postal path, a separating device or by hand.
30 The conveyor shaft 20 transports the letter 40 to the clamping device 22 in co-operation with the pressure roller 21. Thus according to the thickness of the letter the clamping device 22 is moved in the direction of the arrow (Fig. 1) so that the letter strikes the holding plate 30
35 first of all with its lower corner of one side edge. The holding plate 30 has on the side facing the conveyor

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shaft 20 a triangular contour and is rounded at the bottom in the direction of the cover 33. This shape exerts great pressure on the clamping device 22 by the letter 40 which is thus guided over the holding plate 30.

5 In front of or behind the conveyor shaft 20 there is arranged a sensing or scanning device 50, e.g. a light barrier or a sensor device. The scanning device 50 controls a compressed air device having a discharge aperture 60. When a letter 40 is pushed past, air is
10 blown through the discharge aperture 60, and in the case of an unsealed letter, this air opens the letter flap 41 so wide that it is pushed below the holding plate 30. Thus the letter flap 41 of an unsealed letter 40 reaches the brush 31 of the dampening device, is dampened or
15 moistened there and is then sealed by subsequent pressure rollers. However, an already sealed letter slides over the dampening device (without contact therewith) passing over the holding plate 30 between it and the clamping device 22.

20 By means of the scanning device 50, the compressed air device is controlled to operate in pulses, i.e. only whilst a letter 40 is passing by. In addition a further scanning device (not shown) can be provided, for example on the holding plate 30 or on the cover 33, which causes
25 a cut-off of the air flow as soon as the letter flap slides underneath the holding plate 30 or a sealed letter is guided over a specific length over the holding plate.

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Claims:

1. Mail handling device for use with sealed and unsealed envelopes fed thereto in indeterminate order and comprising:

5 an envelope-feeding device for feeding envelopes through the mail handling device;

an envelope-sensing device associated with said feeding device for sensing the presence of an envelope in the mail handling device;

10 a compressed air device operable by said sensing device and having a discharge aperture arranged to direct a stream of compressed air against each envelope as it is fed past the compressed air device so as to open the flap of an unsealed envelope;

15 guide means arranged for guiding a flap of an unsealed envelope, after impingement of an air stream thereon from said discharge aperture, to a dampening device;

20 and said dampening device being arranged to apply moistening to an unsealed envelope for subsequent closure thereof.

2. Mail handling device according to claim 1, in which the guide means comprises a holding plate on which said dampening device is mounted, said
25 holding plate being arranged for the passage thereover of sealed envelopes fed by said feeding device. and being arranged also to guide flaps of unsealed envelopes below the holding plate and towards engagement with the dampening device.

30 3. Mail handling device according to claim 2, in which the feeding device includes a clamping device which overlies said holding plate and cooperates therewith to form a guide for the passage of envelopes through the mail handling device.

35 4. Mail handling device according to claim 2 or 3, in which the edge of the holding plate facing

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the feeding device is obliquely angled to the direction of advance of the envelopes.

5. Mail handling device according to claim 4, in which the obliquely angled edge of the holding plate is along at least a portion thereof curled or curved away from that surface of the plate over which the sealed envelopes pass.

6. Mail handling device according to claim 4 or 5, in which the obliquely angled edge of the holding plate forms a rounded corner with a side edge of the holding plate.

7. Mail handling device according to any one of the preceding claims, in which the sensing device is arranged to cause pulsed operation of the compressed air device so that the latter is triggered into operation each time the presence of an envelope is sensed by the sensing device.

8. Mail handling device according to claim 1 and substantially as hereinbefore described with reference to, and as shown in the accompanying drawings.

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