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(54) RECEPTACLE FOR CARDS FED FROM AN ACCOUNTING MACHINE

(71) We, N.V. PHILIPS' GLOEILAMPENFABRIEKEN, a limited liability Company, organised and established under the laws of the Kingdom of the Netherlands, of Emmasingel 29, Eindhoven, the Netherlands do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

The invention relates to a device comprising a receptacle for a stack of record carriers in the form of rectangular cards each provided with a tab on one edge, and guide means whereby such cards can be fed one at a time into the receptacle to form a stack therein, the cards each being fed in a downward direction into the receptacle at one end thereof with the edge of the card opposite said one edge thereof leading.

Such a receptacle is known from German patent specification no. 25 57 272. This known receptacle comprises raised portions on the inner surfaces of the fixed side walls of the receptacle, the rearmost of these raised portions having such tight tolerances in respect of their distance from one another that as each card arrives in the receptacle it is automatically centred. The raised surface portions exert such a frictional force on the side edges of the card that the card in fact tilts about this friction point and is deposited on the stack with the tab-carrying edge of the card foremost.

The tabs on the cards tend to hook into each other during stacking when the tabs are situated at substantially the same location on the cards. Moreover, owing to the high frictional force exerted on the cards by the raised surface portions of the side walls of the receptacle, the cards which are fed-in last are not positioned on the stack over their full length. In the case of manual removal from the stack it is therefore not unlikely that the tabs will hook into each other.

According to the present invention there is provided a device comprising a receptacle for a stack of record carriers in the form of rectangular cards each provided with a tab on one edge, and guide means whereby such cards can be fed one at a time into the receptacle to form a stack therein, the cards each being fed in a downward direction into the receptacle at one end thereof with the edge of the card opposite said one edge thereof leading, wherein the receptacle comprises a bottom and two side walls which are arranged one at each side of the path of movement of the cards into the receptacle and of which at least one is adjustable to vary the distance between the two side walls, each side wall having an inner surface which faces the other side wall and which comprises coplanar first and second portions which extend vertically from the bottom of the receptacle and towards one another from said one end of the receptacle and the other end thereof respectively, a third portion which is offset outwardly of the plane containing the first and second portions, a fourth portion which extends between and adjoins the first and third portions and which slopes inwardly and downwardly from the third portion to the first portion and which also slopes downwardly from the top of the respective side wall at said one end of the receptacle to the bottom of said side wall in a direction towards said other end of the receptacle, and a fifth portion which extends between and adjoins the second and third portions, the fifth portion extending from top to bottom of the respective side wall and extending from the third surface portion to the second surface portion in a direction which extends both inwardly of the receptacle and towards said other end thereof.

The third portion of the inner surface of each side wall may have the shape of a right-angled triangle of which the hypotenuse is formed by a boundary of said third portion at

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which this portion adjoins the associated fourth surface portion, the other two sides of the triangle being formed one by the top edge of the respective side wall and the other by a boundary of the third surface portion at which this portion adjoins the associated fifth surface portion.

An embodiment of the invention will now be described in more detail with reference to the accompanying drawings, in which

Fig. 1 is a diagrammatic side elevation of an accounting machine comprising a receptacle for a stack of account cards, and associated guide means, and

Fig. 2 is a perspective view of a receptacle and associated guide means according to an embodiment of the invention for use in the accounting machine shown in Fig. 1.

In the accounting machine shown in Fig. 1 the account cards to be processed are fed either from a magazine 2 or *via* a manual feed device 3 to the processing station. In Fig. 1 this station is represented diagrammatically by a pressure roller 4.

If rapid processing of the account cards is required, for example, for listing specific entries on the account cards, the account cards are fed further downwards from the processing station 4, so that a reversal of the direction of movement of the cards is not necessary. The account cards are fed in succession by transport rollers 21 and *via* guides 5 and 6 into a lower receptacle 7 in which the cards are stacked on top of one another, as shown in Figure 1. The receptacle 7 is adjustable relative to the guides 5 and 6 in the direction of the arrow A in Figure 1 so that it can be accurately positioned for the entry of the cards into the receptacle.

The account cards are each provided with a tab on one edge in the usual manner. The cards are fed in a downward direction into the receptacle 7 at one end thereof (the left-hand end in Figure 1) and each slide across the top of the stack until the leading edge of the card reaches the other end of the receptacle. The cards are fed with the tabs at the rear with respect to the direction of movement of the cards. If the distance between the sides of the receptacle 7 is made significantly greater than the width of the cards in order to facilitate the entry of the cards into the receptacle and the movement of the cards across the top of the stack, it is possible for the cards to be shifted to one side or the other relative to one another, with the result that when the cards are removed from the receptacle the tabs tend to hook into each other and the cards can be made to register with one another in the stack only with difficulty.

This problem can be overcome with a receptacle according to the present invention, for example, the receptacle shown in Figure 2. This receptacle comprises two side walls 8 and 9 of which at least one, for exam-

ple, the wall 9, is adjustable along rods 10 towards and away from the other wall to vary the distance between the two walls. The receptacle also comprises a bottom 12 which is formed in two parts connected one to each side wall. Only one of these parts can be seen in Figure 2. The two side walls 8 and 9 have inner surfaces which are each composed of a number of surface portions and which are mirror images of one another. Only the inner surface of side wall 8 is visible in Figure 2. This surface comprises coplanar first and second portions 11b and 11a respectively which extend vertically from the bottom 12 of the receptacle and towards one another from the rear and front ends respectively of the receptacle. The rear end of the receptacle (the right-hand end in Figure 2) is the end at which the cards are fed into the receptacle. The inner surface of the side wall 8 further comprises a third portion 13 which is offset outwardly of the plane containing the surface portions 11a and 11b, i.e., offset to the side of this plane which is further from the side wall 9. The surface portion 11b is of triangular shape and has an upper boundary 24 which slopes downwardly from the top of the side wall 8 at the rear end thereof to the bottom of this side wall in a direction towards the front end of the wall. The surface portion 13 also has a boundary 25 which slopes downwardly from the top of the side wall to the bottom of the wall in a direction towards the front end of the wall. Extending between the boundary 25 of the surface portion 13 and the boundary 24 of the surface portion 11b is a fourth surface portion 14 which adjoins the surface portions 13 and 11b at the boundaries 25 and 24 and which slopes inwardly and downwardly from the boundary 25 to the boundary 24. The surface portion 14 also follows the downward slope of the boundaries 24 and 25 from the top to the bottom of the side wall 8 in a direction towards the front end of the wall. Between the surface portions 13 and 11a and adjoining these portions is a fifth surface portion 15 which extends from top to bottom of the side wall 8 and which extends from the surface portion 13 to the surface portion 11a in a direction which extends both inwardly of the receptacle and towards the front end thereof. The surface portion 15 thus lies in a plane which obliquely intersects the plane containing the surface portions 11a and 11b, the acute angle of the obliquity being approximately 15 to 20°. The surface portion 14 also, due to its inward slope from the surface portion 13 to the surface portion 11b, lies in a plane which obliquely intersects the plane of the surface portions 11a and 11b. The acute angle of the obliquity is again approximately 15 to 20°. The surface portion 13 has the shape of a right-angled triangle of which the hypotenuse is formed by the boundary 25,

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the other two sides being formed one by the top edge of the side wall 8 and the other by the common boundary 26 between the surface portions 13 and 15.

5 The inner surface of the other side wall 9, being a mirror image of the inner surface of the side wall 8, is composed of surface portions identical to those described above.

10 The receptacle 7 is secured to a carriage 16 which is movable along guide rails 17 in the directions of the double-headed arrow A in Figure 2 to effect the positional adjustment of the receptacle relative to the guides 5 and 6.

15 The side wall 9 of the receptacle 7 is adjusted along the rods 10 according to the size of the cards that are to be fed into the receptacle so that there will be a play of at most half the width of a card tab between the side edges of the cards and the inner surface portions 11a and 11b of the side walls 8 and 9 of the receptacle.

20 The cards are guided downwardly into the rear end of the receptacle 7 by the guide 6 in the direction of the arrow P in Figure 2. If a card is slightly off-centre to one side or the other as it enters the receptacle, the edge of the card at that side will engage and slide down the portion 14 of the inner surface of the adjacent side wall 8 or 9 of the receptacle. Due to the inward slope of this surface portion 14, a preliminary centring of the card occurs. As the card moves forward across the stack towards the front end of the receptacle, if the card is still off-centre it will engage the oblique surface portion 15 of the relevant side wall of the receptacle and be further centred thereby. As the card reaches the front end of the receptacle, the front edge of the card is stopped flush with the front edges of the other cards in the stack by abutment plates 19 and 20 at the front end of the receptacle.

45 If, instead of account cards of a large size (for example, DIN A4), cards of a small size (DIN A5) are to be processed, the receptacle 7 can be adapted to the smaller dimension between the front and rear edges of the cards by tilting a portion 22 of each of the two parts of the bottom of the receptacle at the front end thereof upwards about an axis 23. For this purpose, these bottom portions 22 are not rigidly connected to the side walls 8 and 9. The receptacle can thus be adjusted for different card sizes both in respect of length (the distance between the front and rear edges of the card) and width, the latter adjustment being effected by moving the side wall 9 along the rods 10. Differences of more than 100 mm in length or width of the account card can thus be accommodated.

WHAT WE CLAIM IS:-

65 1. A device comprising a receptacle for a stack of record carriers in the form of rectangular cards each provided with a tab on one

edge, and guide means whereby such cards can be fed one at a time into the receptacle to form a stack therein, the cards each being fed in a downward direction into the receptacle at one end thereof with the edge of the card opposite said one edge thereof leading, wherein the receptacle comprises a bottom and two side walls which are arranged one at each side of the path of movement of the cards into the receptacle and of which at least one is adjustable to vary the distance between the two side walls, each side wall having an inner surface which faces the other side wall and which comprises coplanar first and second portions which extend vertically from the bottom of the receptacle and towards one another from said one end of the receptacle and the other end thereof respectively, a third portion which is offset outwardly of the plane containing the first and second portions, a fourth portion which extends between and adjoins the first and third portions and which slopes inwardly and downwardly from the third portion to the first portion and which also slopes downwardly from the top of the respective side wall at said one end of the receptacle to the bottom of said side wall in a direction towards said other end of the receptacle, and a fifth portion which extends between and adjoins the second and third portions, the fifth portion extending from top to bottom of the respective side wall and extending from the third surface portion to the second surface portion in a direction which extends both inwardly of the receptacle and towards said other end thereof.

2. A device as claimed in Claim 1, wherein the third portion of the inner surface of each side wall has the shape of a right-angled triangle of which the hypotenuse is formed by a boundary of said third portion at which this portion adjoins the associated fourth surface portion, the other two sides of the triangle being formed one by the top edge of the respective side wall and the other by a boundary of the third surface portion at which this portion adjoins the associated fifth surface portion.

3. A device comprising a receptacle and associated guide means, substantially as herein described with reference to the accompanying drawings.

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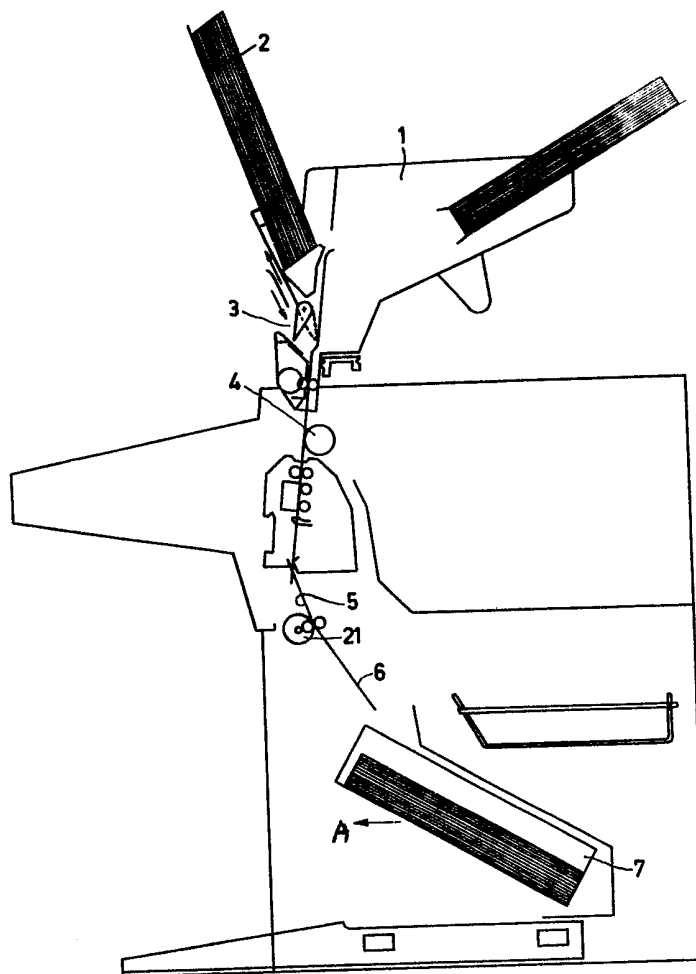


Fig.1

