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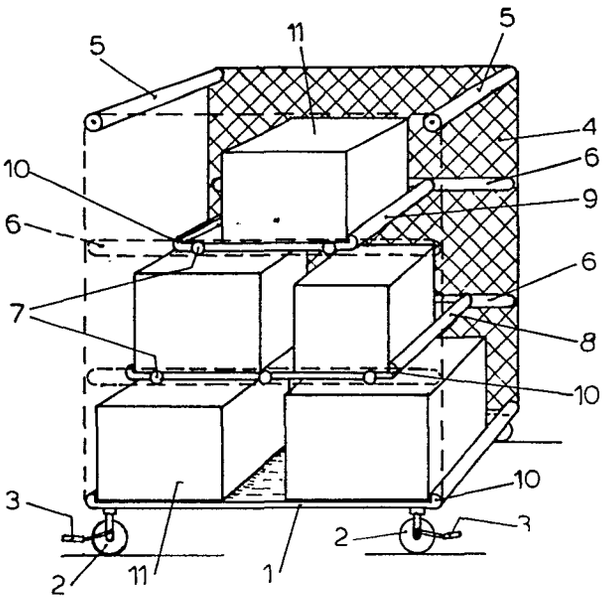
(71) Applicant: **Partners Data B.V., Industrieweg 12 Postbus 278, NL-7940 AG Meppel (NL)**

(72) Inventor: **Langenberg, Cornelis Willem Diederik, Lytse Wijngaarden 4, NL-8404 BL Langezwaag (NL)**
Inventor: **Bloemendal, Johan Pieter, Majoor van Swietenlaan 4, NL-8382 CG Frederiksoord (NL)**

(74) Representative: **Lips, Hendrik Jan George, Ir. et al, HAAGSCH OCTROOIBUREAU Breitnerlaan 146, NL-2596 HG Den Haag (NL)**

(54) Device for storage of paper and supplying this to a computer-printer.

(57) Device for storage of paper (13), as in a box (11), and supplying this to a computer-printer (12), said device comprising a carriage provided with wheels (2), to be suitable to be driven below the printer (12) and being provided with a number of shelves (1, 8, 9) one above the other, on each of which one or more boxes (11, 11a, 11b) can be placed, said boxes (11, 11a, 11b) being positioned such that the paper (13) out of it can be directliy supplied to the printer (12).



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Device for storage of paper and supplying this to a computer-printer.

The invention relates to a device for storage of paper, as in a box, and supplying this to a computer-printer.

It is customary to place a box, in which paper is stored which has to be fed to a computer-printer, near the printer e.g. on or below the table on which the printer is positioned. So each box which is needed has to be taken up and in many cases has to be brought up from a storehouse which takes much time and a considerable bodily strength.

When no one is directly disposable to carry out the related activities, this can led to the fact that the printer comes to a stand-still, which naturally brings a lower efficiency of the printer with it.

Now the invention aims to remove these objections and to this provides that the related device comprises a carriage provided with wheels, said carriage being suitable to be driven below the printer and said carriage being provided with a number of shelves one above the other, on each of which one or more boxes can be placed in which the paper is present which has to be supplied to the printer, said boxes being positioned such that the paper out of a box can be directly supplied to the printer, that means without displacement of the box or the paper in horizontal direction in the plane of the paper which is upwardly removed from the box.

So on said carriage a number of boxes can be present which may contain a same type of paper or also different types of paper so that it is easy to supply another type of paper to the printer if this is wanted.

The carriage can be used for the transport of the boxes of

paper from the storehouse to the printer at the same time so that in the storehouse at most empty boxes have to be replaced by full ones. With this use can be made, however, of accessories so that the amount of bodily labour which has to be carried out can be considerably reduced.

While further the carriage positioned below the printer can be easily replaced by another one, the stand-still-period of the printer can be considerably reduced too.

It is preferred that the carriage, as seen in horizontal direction in the plane of the paper which is upwardly removed from the box, will have a width which is only somewhat larger than the width of the paper either the box in which the paper is present.

By this it is obtained, that the carriage nearly almost can be directly positioned below the printer, because the table on which the printer is present substantially always will offer room for this. So no boxes will be placed beside each other, but only behind each other as seen in the vertical plane in which the longitudinal axis is lying of the paper which is fed through the printer.

According to a preferred embodiment of the invention the carriage will be provided with substantially horizontally running guides for guiding the paper supplied from a box to the printer. By this it is directly possible to supply paper to the printer from a box which is present in an arbitrary position on the carriage.

According to a favourable embodiment in that case at least some of the guides can form part of the frame of the carriage. By this the costs of the carriage can be kept low.

It is preferred that the carriage is constructed such that the guides running perpendicular to the vertical side walls of the carriage serve to support the shelves, from which shelves, with exception of the lowest one, the edges which are perpendicular to the side walls can be

shaped as guides.

Out of a box present on a given shelf the paper can be guided to the printer along the shelf positioned above the first mentioned one or along the above lying shelves, without the paper coming in contact with boxes present on said higher positioned shelves.

For a right guiding along the above lying shelves and for an easy access of the boxes present on lower positioned shelves, it can be provided that the lowest shelve has a length substantially corresponding with the length of the side walls of the carriage, each succeeding shelf having a smaller length than the shelf directly lying below it, said shelves with exception of the lowest shelf being longitudinally shiftable in respect of the side walls of the carriage.

Although it is possible to put down the paper fed through the printer on one of the shelves of the carriage, it also can be provided that the carriage comprises separate means for taking up the paper fed through the printer.

To prevent an unwanted movement of the carriage, e.g. during the shifting of shelves and/or boxes, it can be provided that at least one of the wheels of the carriage is provided with a foot-operated brake. Naturally more wheels can be provided with such a brake so that at least one of said brakes is easy for access.

Now the invention is further described by means of an embodiment, shown in the drawing, in which:

Fig. 1 schematically shows a perspective view of a carriage, from one side wall of it only being shown the circumference-lines;

Fig. 2 schematically shows the carriage of fig. 1 positioned below a printer, the paper fed through the printer being put on a place outside the carriage;

Fig. 3 shows a view corresponding to fig. 2

but in which the paper fed through the printer can be put down on different places of the carriage; and

Fig. 4 shows a view corresponding to fig. 2 and 3, but in which the carriage is provided with separate means for putting the paper fed through the printer on it.

The carriage schematically shown in Fig. 1 comprises the lowest shelf 1, which is supported by four wheels 2, which can be executed as swivel wheels. At least one of the wheels 2 is provided with a foot-operated brake 3.

Two side walls 4 are connected to the shelve 1 and are mutually connected near their upper corners by means of connection rods 5, which can serve as handles for moving the carriage as well as for guiding the paper as will be explained below.

Both side walls 4 are provided with opposed positioned guides 6 in which rollers 7 can be positioned which are connected with the second shelf 8 and the third shelf 9 respectively.

The shelf 8 is having a smaller length than the lowest shelf 1 and the shelf 9 again has a smaller length than the shelf 8. By means of the rollers 7 the shelves 8 and 9 can be displaced between positions in which the edges of them are found above the edges of the lowest shelf 1.

The shelves 1, 8 and 9 are provided with somewhat erected edges 10 to prevent boxes 11 positioned on it from falling down so as during the shifting of the shelves or the shifting of the boxes on the shelves either the displacement of the carriage.

The erected edges 10 also can be provided with marks for centering the boxes so that the paper supplied from the boxes is fed to the printer in the right way.

Fig. 2 shows a carriage positioned below a printer 12, to

which printer paper 13 is supplied out of a box 11 positioned on the shelf 8, the shelf 9 being moved to such a position that one of the edges of it can serve for guiding the paper 13. The paper 13, fed through the printer 12, in this case is put down on a place outside the carriage.

Fig. 3 shows the possibility to fed paper 13 out of a box 11, present on the shelf 8, to the printer 12 by guiding it by means of the connection rod 5. Also it is possible to fed the paper 13a out of a box 11a, present on the lowest shelf 1, to the printer 12 as this is indicated by means of a dashed line. With a dash and dot line the possibility is indicated to fed the paper 13b out of a box 11b, present on the shelf 9, to the printer 12.

With this the paper fed through the printer 12 can be put down on two different places 14a or 14b, the place 14b being positioned on the shelf 8.

Finally Fig. 4 still shows the possibility to put down the paper 13 fed through the printer 12 on a special storing plate 15 connected to the carriage. This plate 15 can be pivotally connected to the side walls 4 of the carriage at will, either can be easily releasable connected to this.

It will be obvious, that in the drawing only a possible embodiment of the device according to the invention is shown and is described above and that many modifications can be provided without leaving the scope of the invention.

- C l a i m s -

1. Device for storage of paper (13), as in a box (11), and supplying this to a computer-printer (12), characterized in
that the device comprises a carriage provided with wheels (2), said carriage being suitable to be driven below the printer (12) and said carriage being provided with a number of shelves (1,8,9) one above the other, on each of which one or more boxes (11,11a,11b) can be placed in which the paper (13,13a,13b) is present which has to be supplied to the printer, said boxes (11,11a,11b) being positioned such that the paper (13) out of a box (11,11a,11b) can be directly supplied to the printer (12) that means without displacement of the box (11,11a,11b) or the paper (13,13a,13b) in horizontal direction in the plane of the paper which is upperwardly removed from the box (11,11a,11b).

2. Device according to claim 1,
characterized in
that the carriage, as seen in horizontal direction in the plane of the paper (13,13a,13b) which is upwardly removed from the box (11,11a,11b) will have a width which is only somewhat larger than the width of the paper (13,13a,13b) either the box (11,11a,11b) in which the paper is present.

3. Device according to claim 1 or 2,
characterized in
that the carriage is provided with substantially horizontally running guides (5,10) for guiding the paper (13,13a,13b) supplied from a box (11,11a,11b) to the printer (12).

4. Device according to claim 3,
characterized in
that at least some of the guides (5) can form part of the frame of the carriage.

5. Device according to claim 3 or 4, characterized in that the guides (5,10) running perpendicular to the vertical side walls (4) of the carriage serve to support the shelves (8,9), from which shelves (8,9), with exception of the lowest one (1) the edges (10) which are perpendicular to the side walls (4) are shaped as guides.

6. Device according to one of the preceding claims, characterized in that the lowest shelve (1) is having a length substantially corresponding with the length of the side walls (4) of the carriage, each succeeding shelf (8,9) having a smaller length than the shelf (1,8) directly lying below it, said shelves (8,9) with the exception of the lowest shelf (1) being longitudinally shiftable in respect of the side walls (4) of the carriage.

7. Device according to one of the preceding claims, characterized in that the carriage is provided with separate means (15) for taking up the paper (13,13a,13b) fed through the printer (12).

8. Device according to one of the preceding claims, characterized in that at least one of the wheels (2) of the carriage is provided with a foot-operated brake (3).

FIG. 1

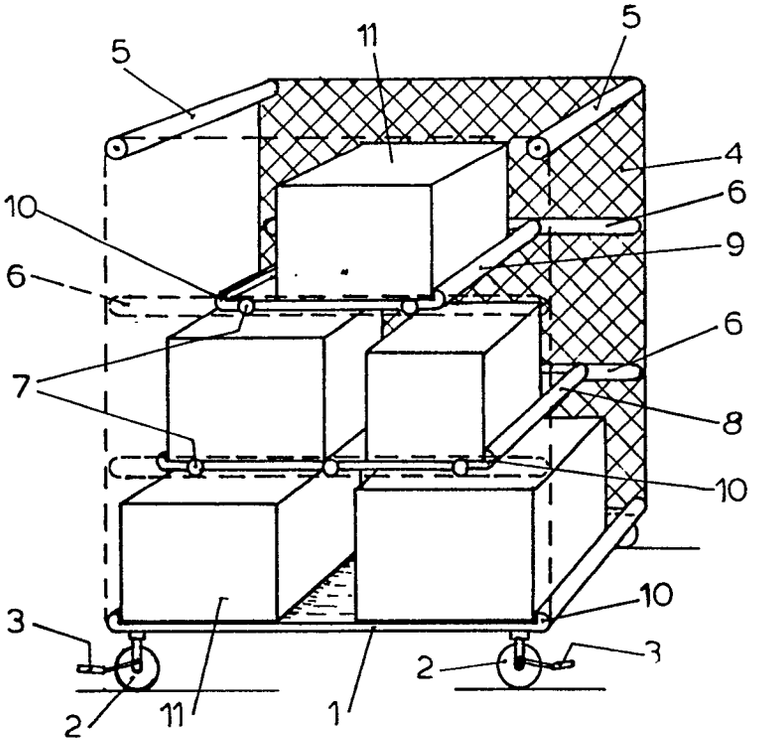

FIG. 2

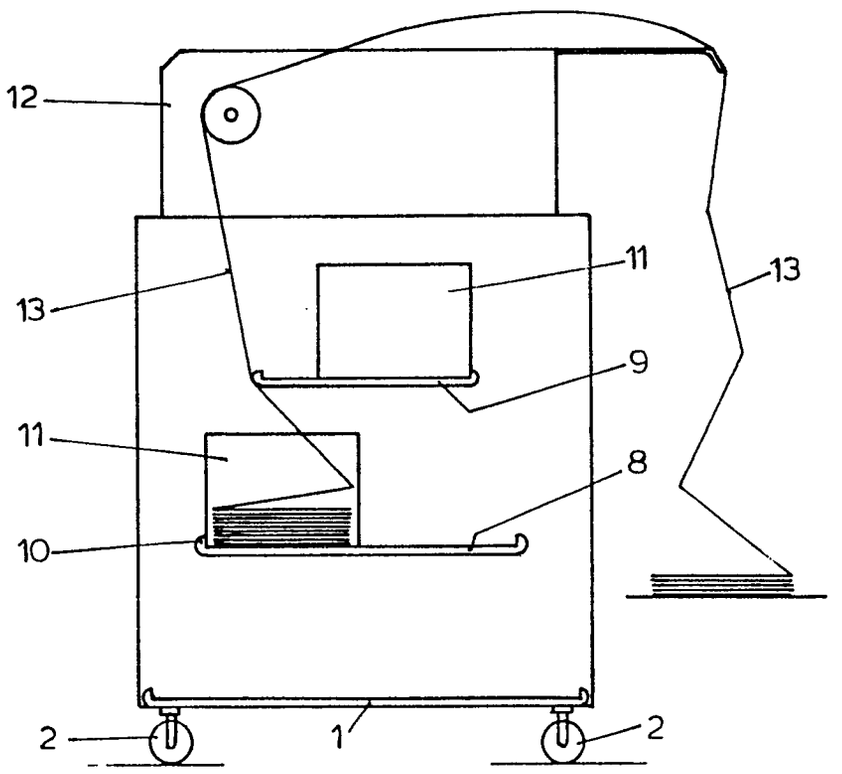

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FIG.3

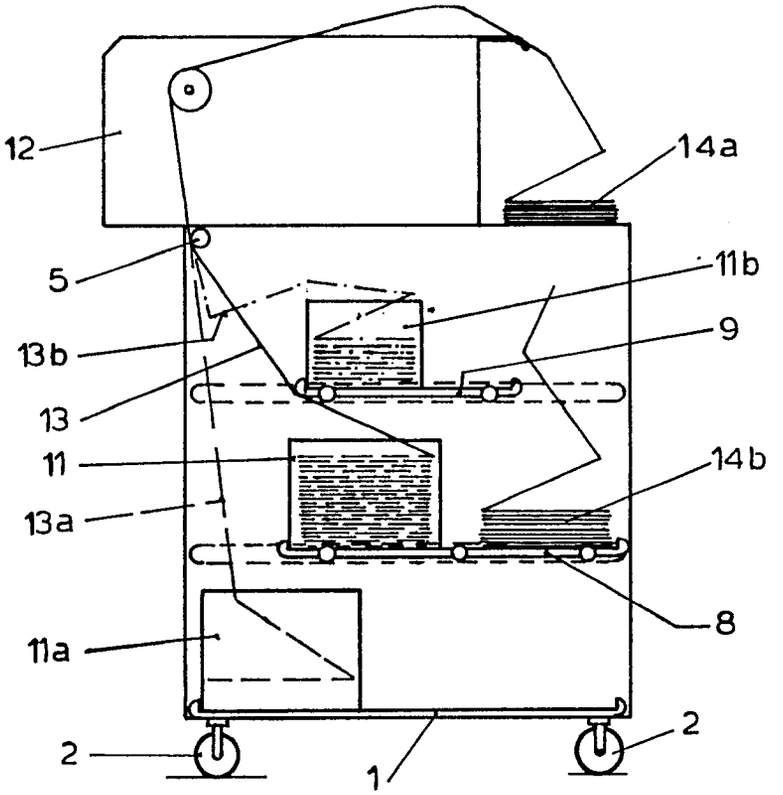
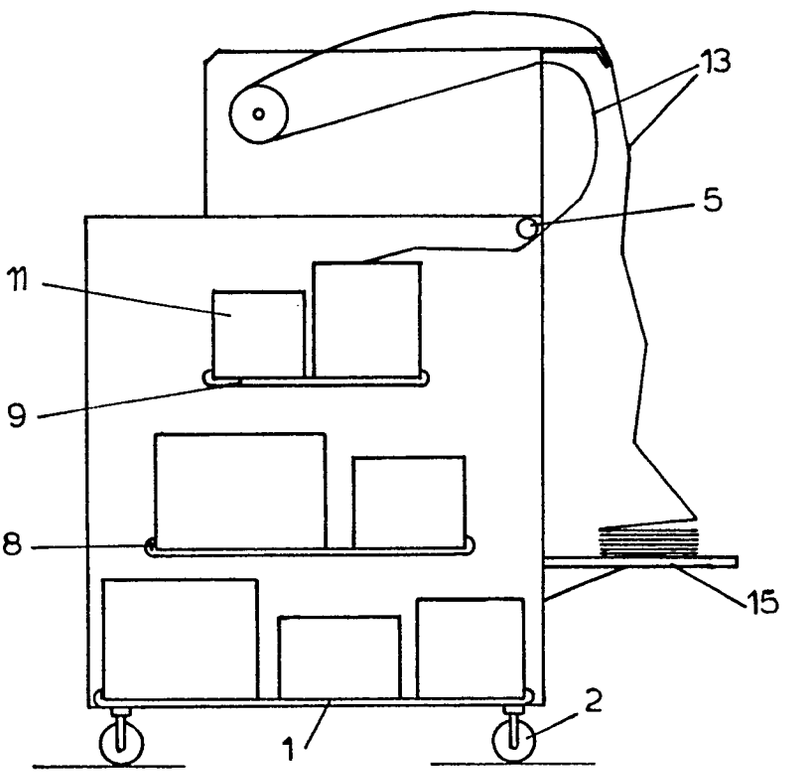


FIG.4



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EUROPEAN SEARCH REPORT

0168885

Application number

EP 85 20 1098

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	WO-A-8 300 321 (V.A. PECK) * Whole document *	1,3,5,6	B 41 J 11/58
A	PATENTS ABSTRACTS OF JAPAN, vol. 7, no. 106, (M-213)[1251], 10th May 1983; & JP - A - 58 28 394 (USAC DENSHI KOGYO K.K.) 19-02-1983 * Abstract *	1,2,7	
A	US-A-3 860 992 (J.R. LEGG) * Whole document *	8	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

B 41 J
B 60 B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	09-10-1985	VAN DEN MEERSCHAUT G

CATEGORY OF CITED DOCUMENTS

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