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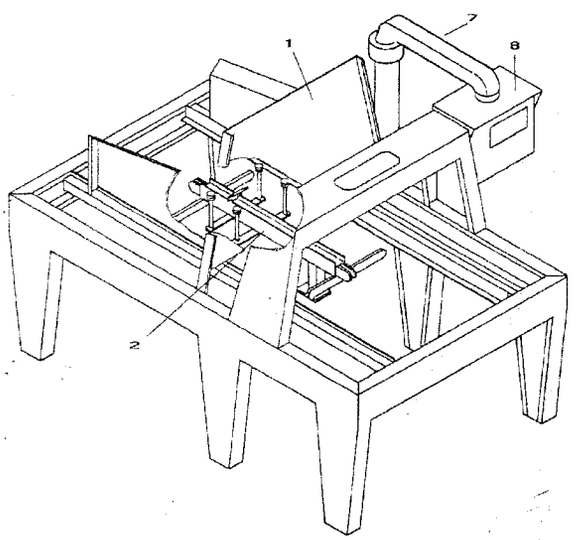
(54) Intelligent tray shaper.

(57) Intelligent tray shaper, which has a motorized and demountable introductor assembly which acts as a supply device situated on the lower part of the machine in order to allow a rapid and easy supply by the operator, which can peform the operation even seated, while on the other hand the machine is provided with a display with an arm (7) and a 180º rotatable cabin (8) in such a way that all the controls of the machine are installed in the cabin. All the axes are monosyntonized with measurement and size changes with selectors with mechanization of all movements in a memory block. The machine has glue injectors with automatic displacement, both in hight and length, alowing the application of the same in a more suitable form with respect to different sizes of tray.

FIGURE 3



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The present invention, as indicated in its title, relates to a shaper of trays in different dimensions, be it in length, in width or in hight in which either the dimensions of the sheet or those of the shaping may be memorized giving a name or a number for each measurement of tray.

A so called intelligent tray shaper is ment in the sense that every data which it is asked for in relation to the configuration, that is, the size of the different types of boxes which can be manufactured remain in its memory.

Said parameters can be introduced for each type of tray by adjusting manually the machine in all its movements, by means of levers installed on the control panel, which control all the motors of the axes of the manual system. Said levers are equipped with the adequate symbology in order to avoid errors of positioning and make easier the operation by a non-expert operator.

A program is included in the machine in order to introduce data on the length and the form of the sheet and the length an the form of the box formed, the length of the cords and the points where glue is to be applied.

After having adjusted the machine for the tray proposed, the data is stored in the memory or the data storage and a name or a number is given to the same, and at any time which said measurements of tray are required to be mounted, the name or the number assigned to the same will be called; in such a moment all the motors will adjust the guiding axes, carrying out the introduction and the application of glue with no error or effort from the operator.

It is also possible to introduce the data by a more experienced personnel, introducing the real measurements of thre sheet and the size of the tray shaped, with which the machine is adjusted automatically to the programmed measurements, said measurements will also be introduced in the memory as discussed in the previous case.

With this new system time is saved as to the changing of measurements and the efforts of the operator, which is an enormous saving in comparison with the existing machines at present, in which said adjustments are carried out manually by means of handles and screws and for each measurement the same operation has to be repeated.

All the exisiting machines at present with similar purposes have an adjustable sheet pile around the center of traction of the storage which is fixed, having the drawback that there aretoo many parts to be moved around said center.

In the machine of the present invention said center is displaced with the introductor, with which a front limit point or a fixed panorama, and the center of traction of the storage is varied according to changes of the size of the sheet, avoiding various adjustments a loss of time.

All the existing machines at present are very uncomfortable as to their loading because of their size and hight as well as their adjustments because they require unsuitable positions for the operator.

The machine of the present invention has a smaller size than any other of this type of performance, which is redundant as to the sapce either is the working place or in transportation having the consequent saving.

All the controls of the machine are situated on a 180º rotatable cabin which allows the operator to place the controls on the back side when the machine is in normal use and the front side in order to adjust the shaping.

The object of the present invention will be better understood with the aid of the following description based on a prcatical example of embodiment. Said description is made with the aid of the accopmanying drawings in which:

Figure 1 represents an elevation of the principal deives of the machine.

Figure 2 represents the same devices in perspective.

Figure 3 shows a perspective view of the whole assembly.

Figure 4 explains the cabin or the control panel.

Figure 5 is an elevation of the machine showing the glue injectors.

Figures 6 and 7 show a system of shaping.

Figures 8 and 9 show another system of shaping.

The machine object of the present invention has an introductor (2) with which the center of traction is displaced so that said center by not being fixed, the drawback of having to move too many parts around said center.

nevertheless the cenral limit point or fixed panorama (1) is maintained fixed and the center of traction is changed according to the size of the sheet avoiding adjustments and loss of time.

The machine has lateral guides (6) for piling sheets and a mould (4) for the boxes having aguide of mould 45) with upward and downward movements in order to form the box.

The introductor (2) is displaced towards front and back by means of chains (3).

All the controls of the machine are placed in a 180° rotary cabin or control panel (8) by means of a rotating arm (7) such that it permits the operator to place the cabin or the control panel (8) on the back side for the manual work of the machine, or on the front side in order to adjust the shaping.

The cabin or control panel (8) has control levers housings (10) which as shown in figure 4, performs the series of movements corresponding to the displacements of the glue injectors (9), the displacements of the introductor with chain (3), the movements of the lateral guides of piling of sheets (6), in order to determine the width of the sheet and the

movements of the parts which form the mould (4) for the shaping of the box.

The glue application system is a mixture of HOLT-MET and vinyl with a base of water.

The thermofusible glues are more difficult to recycle and much more expensive, and according to the above, the machine uses a decimal part of what any other machine of thermofusible glue would use, therefore the gluing is much better, more recyclable and more economic.

The machine has two systems of folding and gluing lappets using less parts and movements than the regular machines for different types of cardboard.

Having sufficiently described the nature ofthe present invention as well as one way of putting the same into practice, it only remains to be added that it is possible to introduce changes of form, material and disposition in the invention as a whole or in the parts which it is composed of, as long as such alterations do not substantially vary the characteristics of the invention which are claimed as follows:

Claims

1.- Intelligent tray shaper which shapes trays of different dimensions of either length or width or hight, characterized in a control panel situated on a 180º rotatable cabin which makes it possible to be placed on the back part for normal operation of the machine or on thefront part for adjusting the shaping.

2.- Intelligent tray shaper, according to the previous claim, characterized in that the dimensions of the sheet or the shaping may be memorized, giving them a name or a number as parameters for each measurement of the tray such that said parameters, for each type of tray, may be introduced by manually adjusting the machine in all its movements by means of levers situated on the control panel, said levers control all the motors of the axes of the manual system, and that said levers are provided with the apropriate symbology in order to avoid errors of positioning and make easier the handling by a non-expert operator.

3.- Intelligent tray shaper, according to the previous claims, characterized in that once the machine is adjusted to the desired tray, this will be stored in the memory and at any time which it is necessary to install said measurement of the tray, the indicated name or number will be called, in such a moment all the motors adjust their guiding axes.

4.- Intelligent tray shaper, according to the previous claims, characterized in that by introducing the real measurements of the sheet and the size of the shaped tray the machine is automatically adjusted to the programmed means, which are also introduced in the memory.

5.- Intelligent tray shaper, according to claim one, characterized in that the center of traction of the storage is demounted with the introductor with which the front limit or fixed panorama and the center of traction of the storage change according to the size of the sheet.

6.- Intelligent tray shaper, characterized in that the application system is a mixture of HOLT-MET and vinyl with base of water.

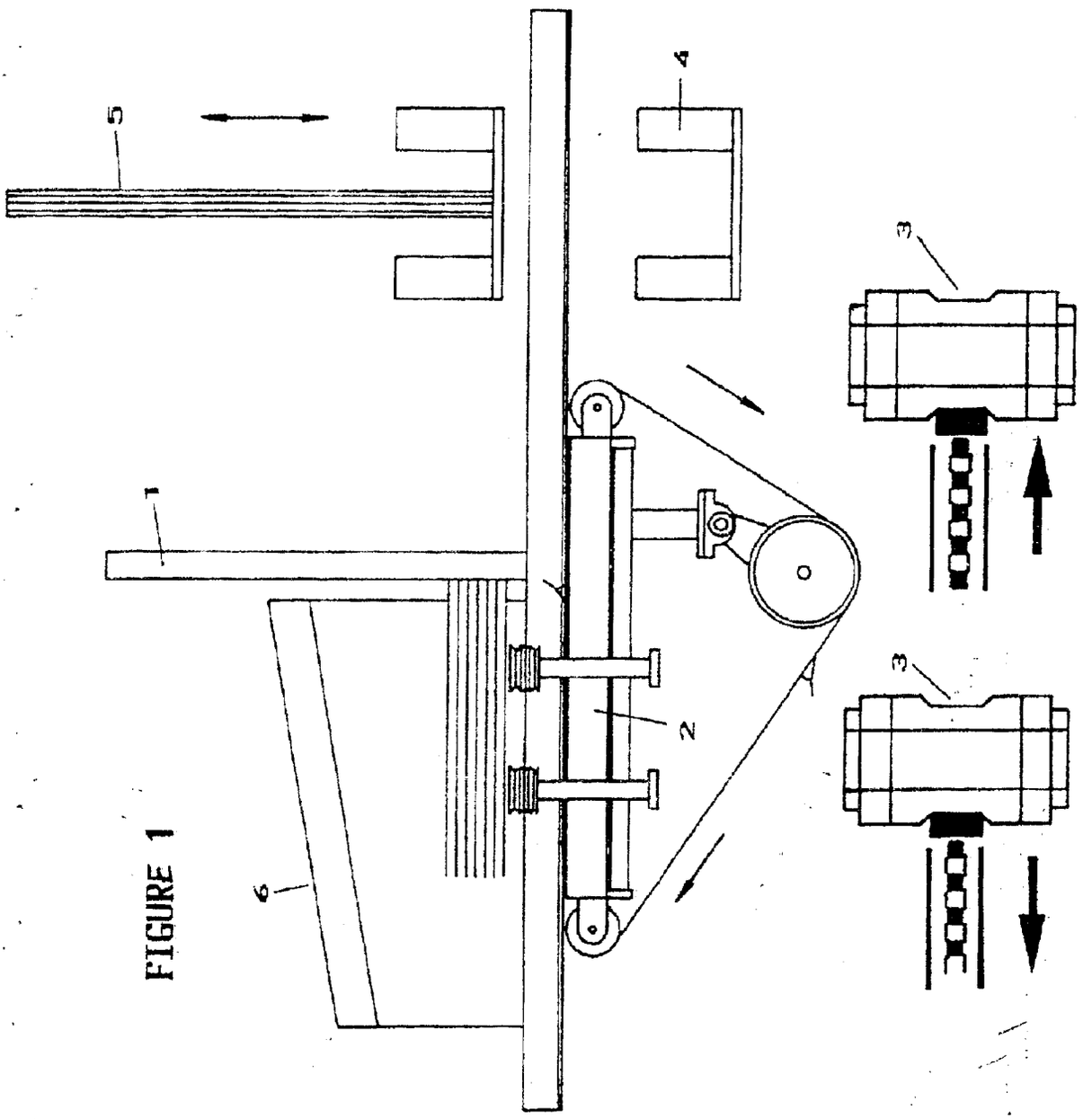


FIGURE 1

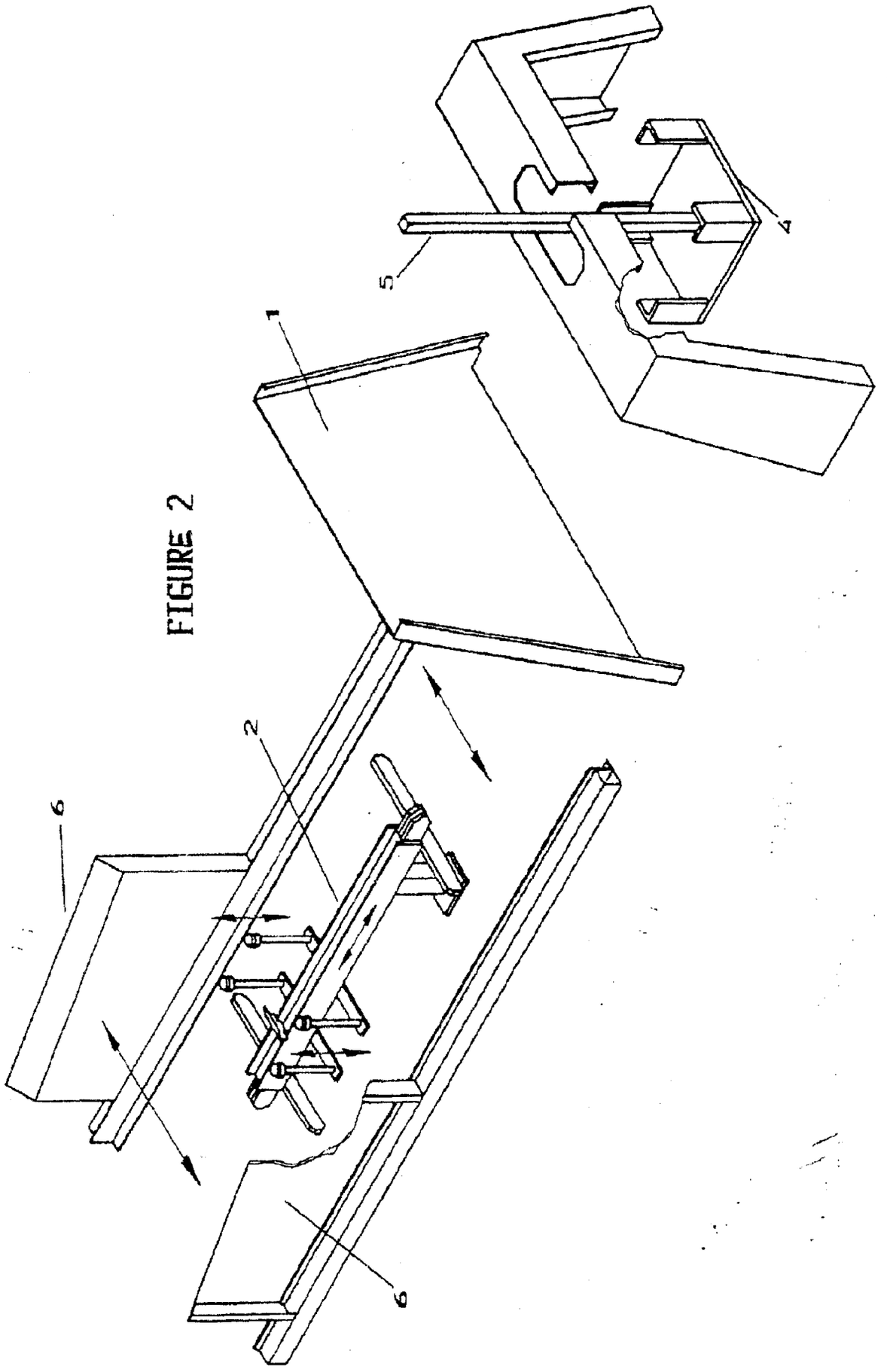
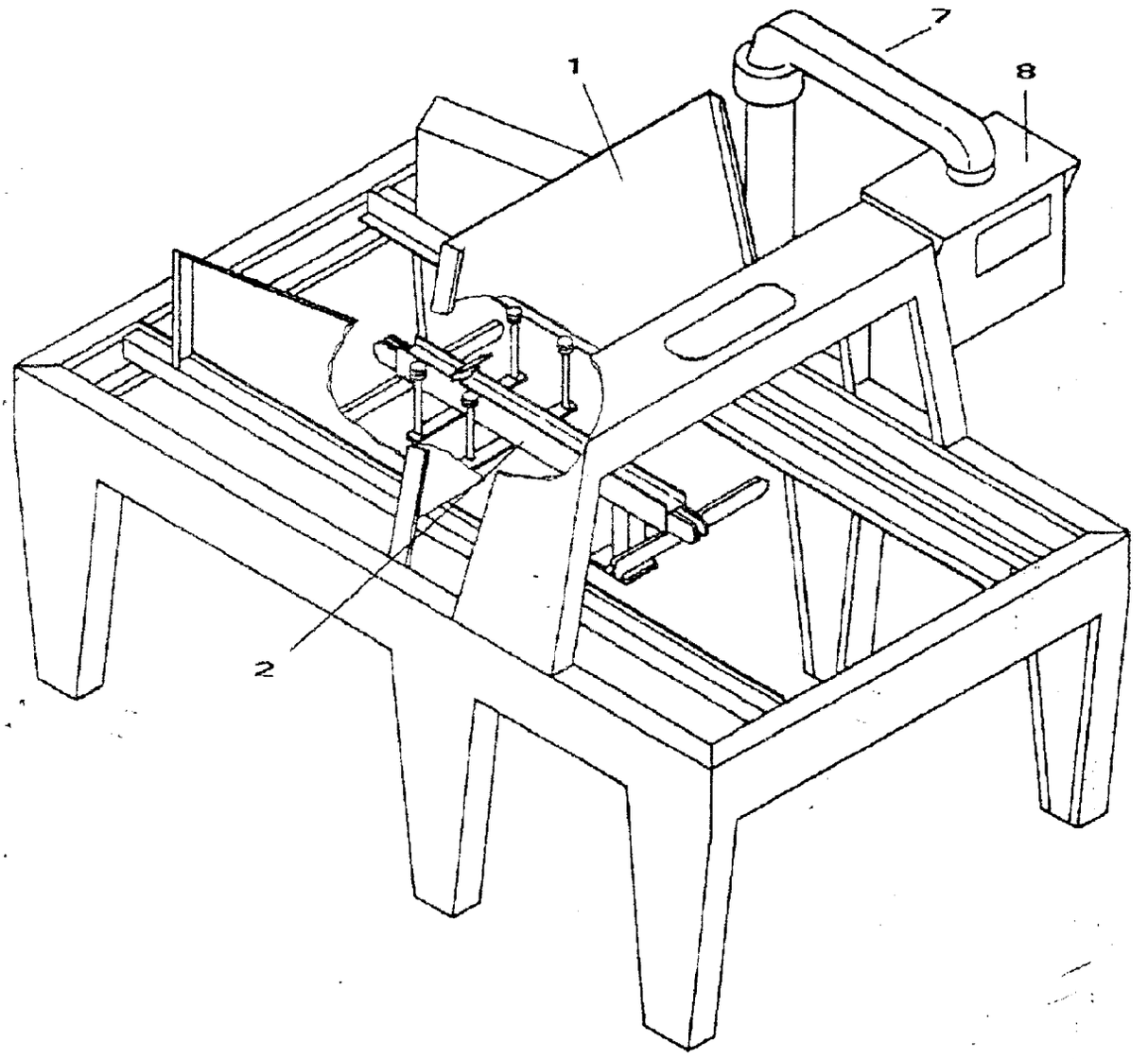


FIGURE 2

FIGURE 3



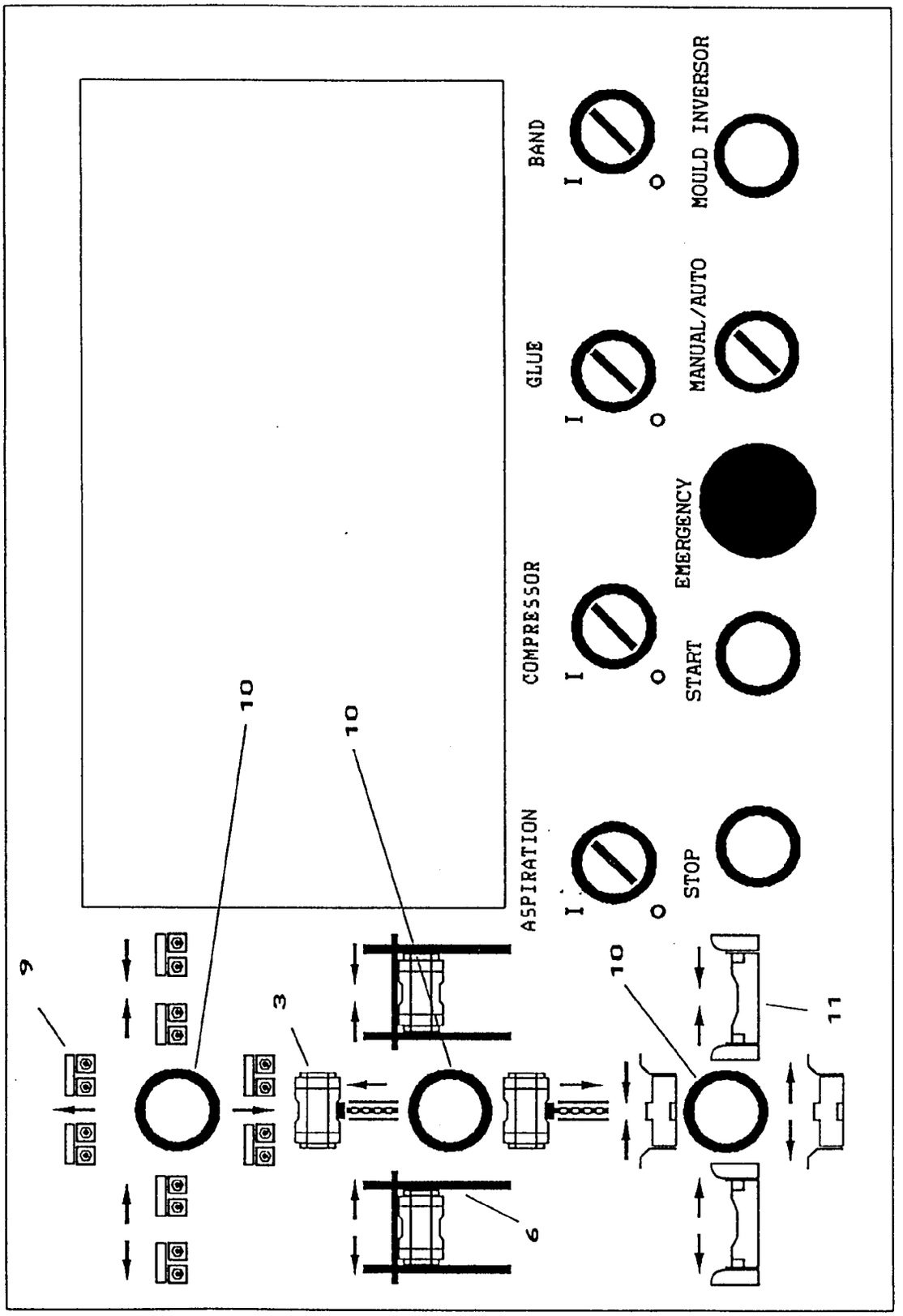

ASPIRATION
COMPRESSOR
START
STOP
EMERGENCY
GLUE
MANUAL/AUTO
BAND
MOULD INVERSOR
I
O
9
10
3
6
11

FIGURE 4

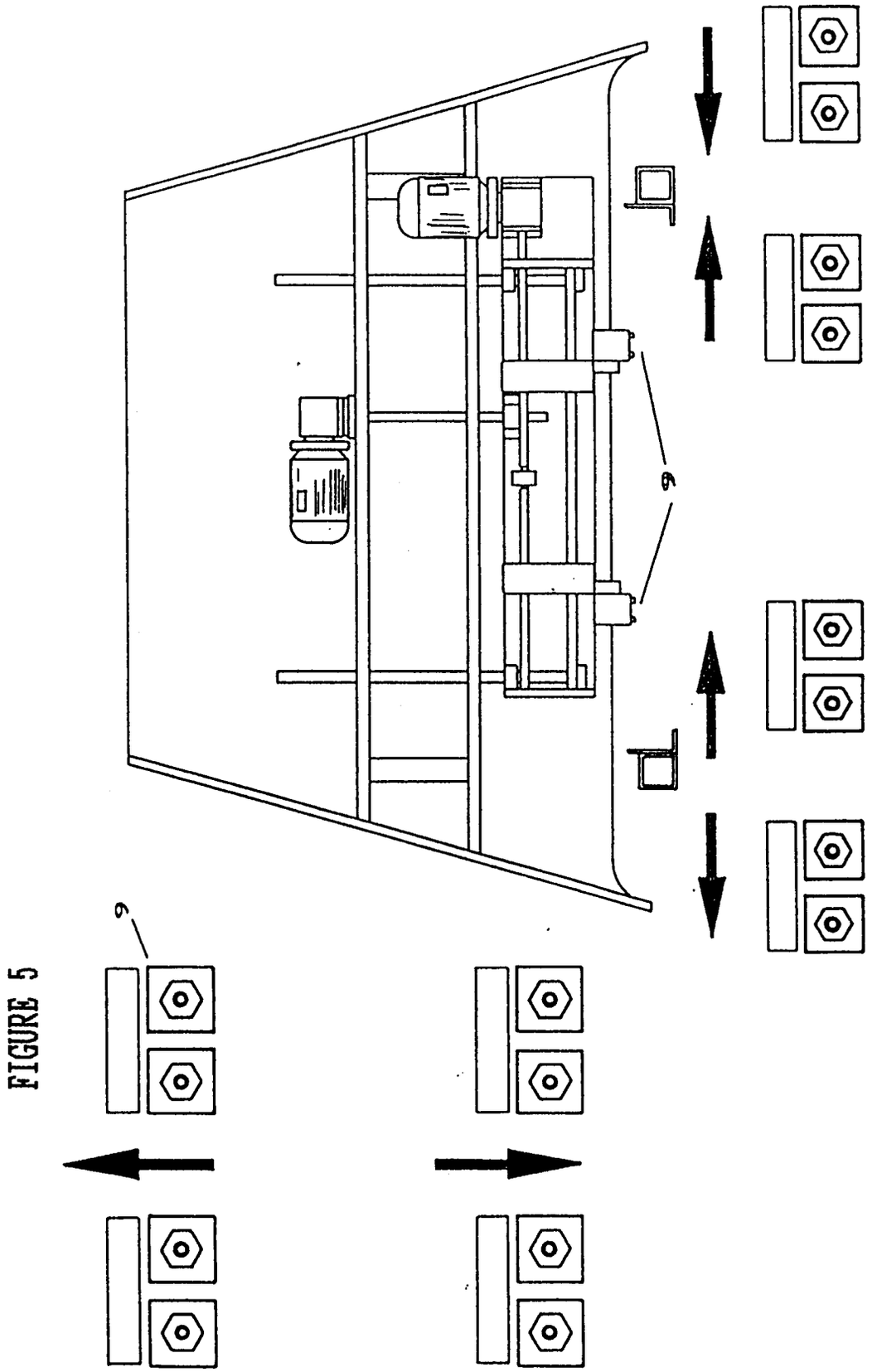


FIGURE 5

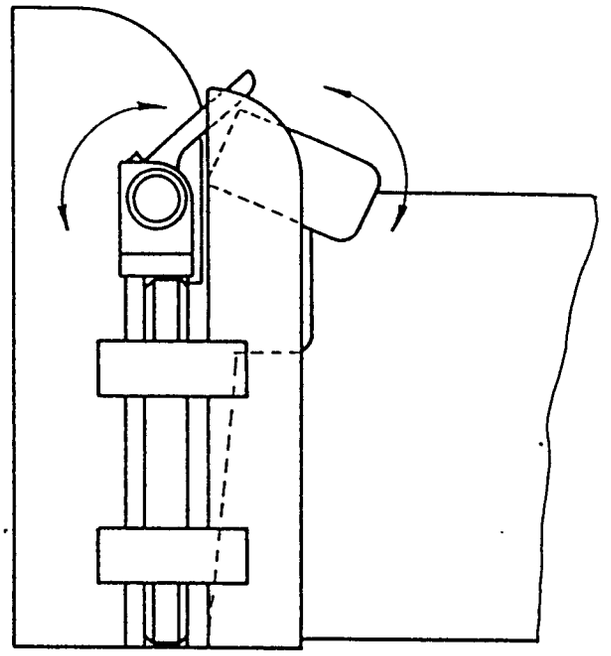


FIGURE 6

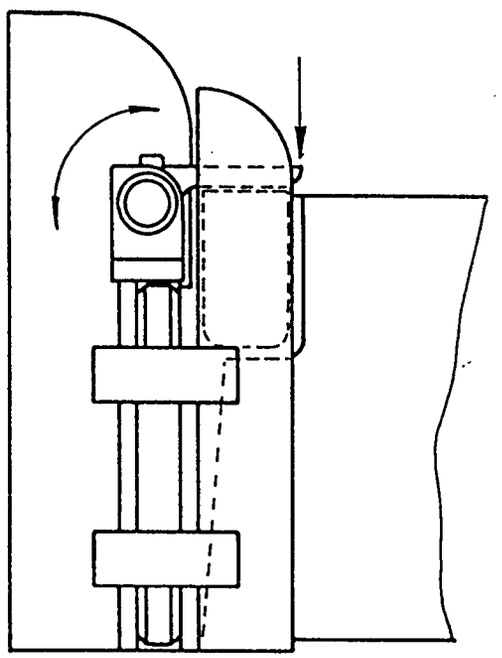
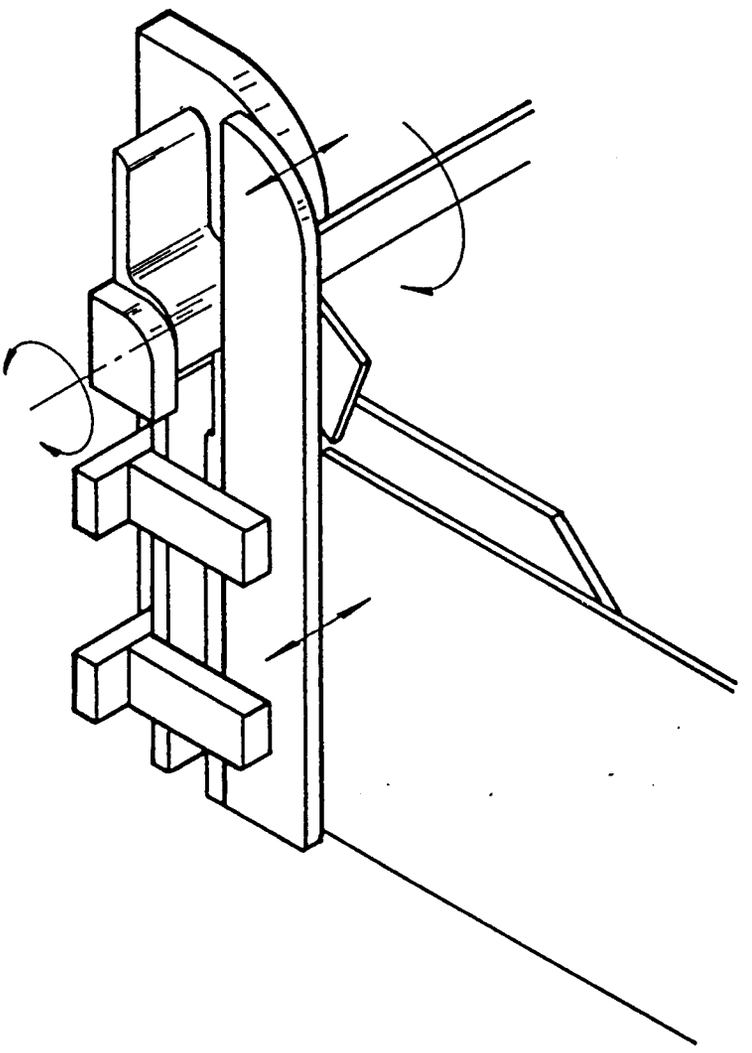


FIGURE 7



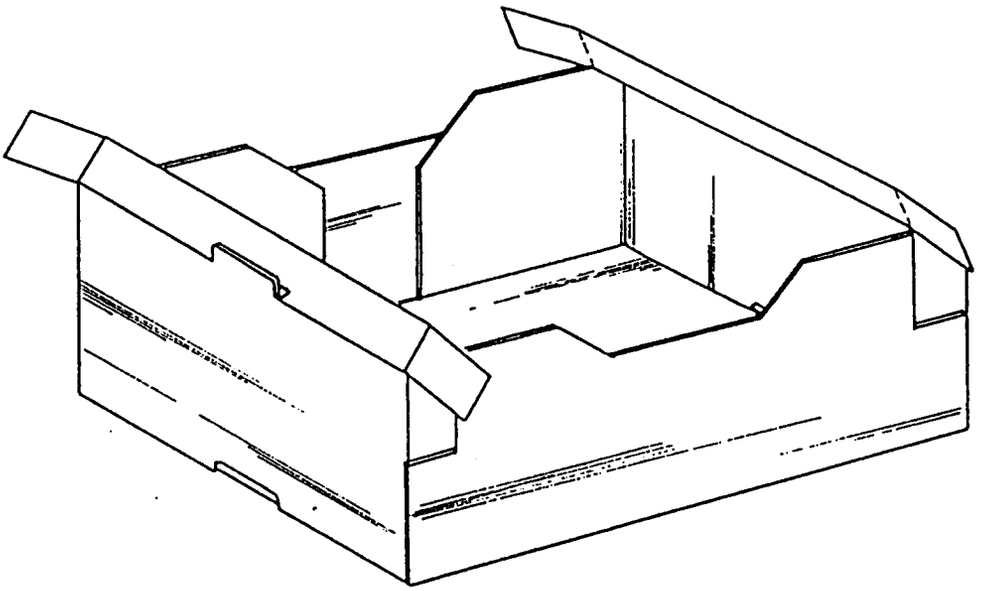
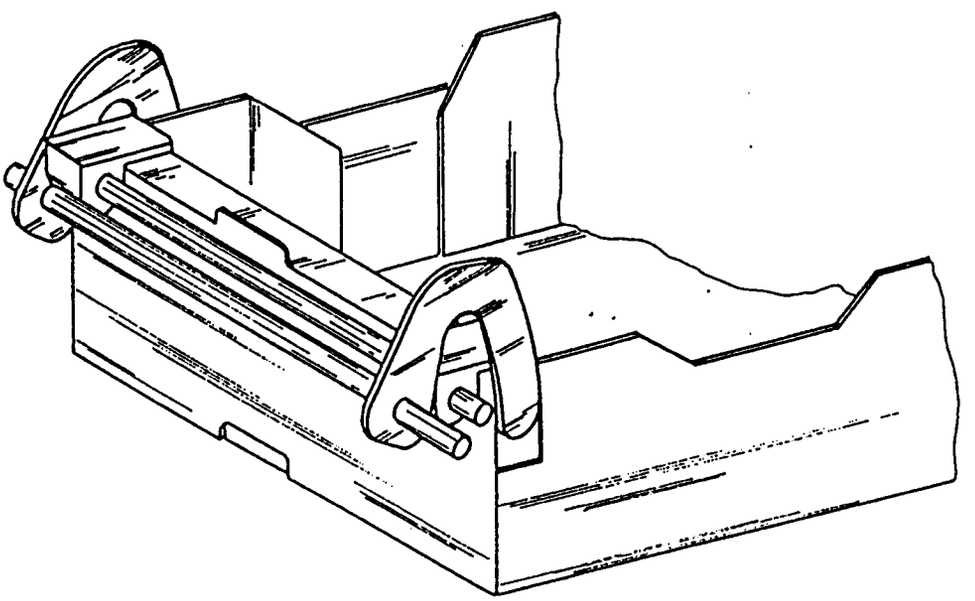
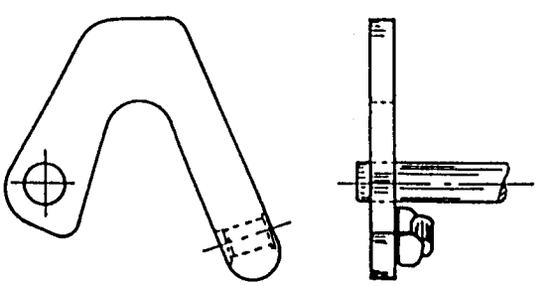


FIGURE 8





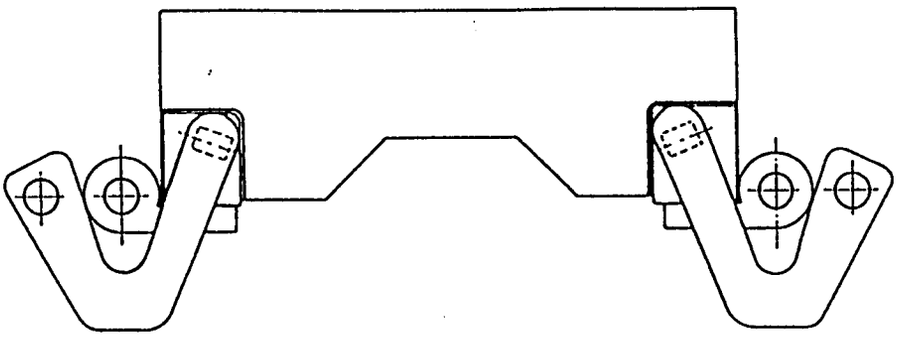
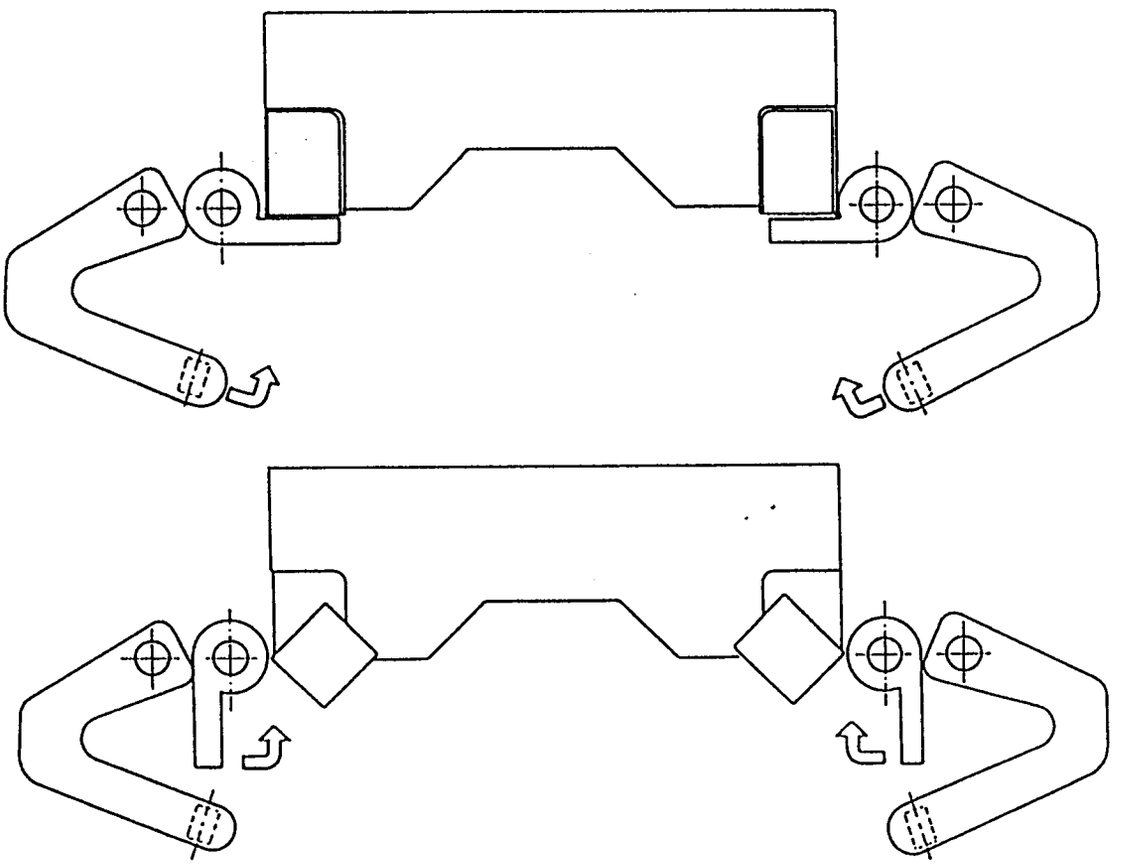


FIGURE 9



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EUROPEAN SEARCH REPORT

Application Number
EP 93 50 0102

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.5)
A	GB-A-2 207 083 (DOPACO INC)		B31B1/74
A	US-A-4 262 582 (DAINIPPON INK AND CHEMICALS INCORPORATED)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			B31B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	6 January 1994	Pipping, L

CATEGORY OF CITED DOCUMENTS

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