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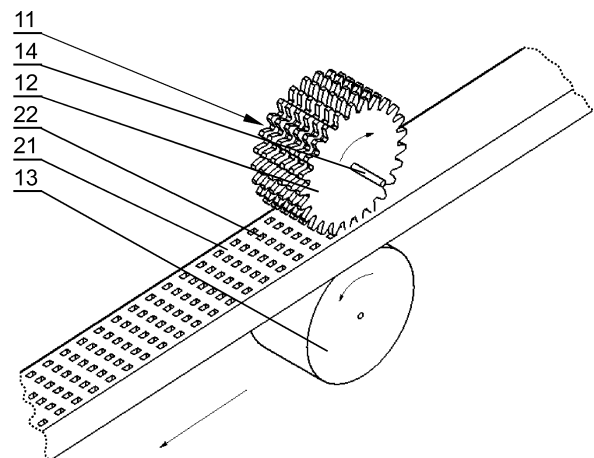
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(54) **A method for manufacturing of cardboard boxes and a cardboard box**

(57) A method for manufacturing of cardboard boxes from at least two cardboard sheets, comprising the steps of laminating the sheets on one side with pre-printed paper sheets having a smoothness higher than the smoothness of the surface of the cardboard sheet, die-cutting the sheets to a desired shape of die-cut pieces, joining the folded flaps (21) of the die-cuts, thus forming a box in a flat form. Before joining the die-cuts with glue using a gluer, the flaps of the die-cuts are perforated using a rotary perforating head (11) equipped with a rotatable mandrel (14) having an adjustable height, on which there are replaceably mounted rotary toothed cutting blades (12), wherein the height of the mandrel is adjusted to a value resulting in the depth of the cuts from 10% to 90% of the thickness of the laminated cardboard.



**Fig. 4**



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| DOCUMENTS CONSIDERED TO BE RELEVANT  |   |  |   |
|--|---|--|---|
| Category   | Citation of document with indication, where appropriate, of relevant passages   | Relevant to claim                                | CLASSIFICATION OF THE APPLICATION (IPC)                           |
| X  | JP H02 27321 U (.)<br>22 February 1990 (1990-02-22)<br>* figures 1-9 *  | 1-5  | INV.<br>B31B1/25<br>B31B1/62<br>B31B17/60<br>B65D5/32<br>B65D5/42 |
| A  | DE 27 09 025 A1 (RHEINISCHE<br>WELLPAPPENFABRIK)<br>7 September 1978 (1978-09-07)<br>* page 7, paragraph 3; claim 1; figure 1 * | 1-5  |   |
| A  | JP S55 42550 U (.)<br>19 March 1980 (1980-03-19)<br>* figures 1-5 *   | 1-5  |   |
| A  | JP S51 91221 U (.)<br>21 July 1976 (1976-07-21)<br>* figures 1-9 *  | 1-5  |   |
| A  | JP H02 190324 A (HONSHU PAPER CO LTD)<br>26 July 1990 (1990-07-26)<br>* abstract; figures 1-9 *                                 | 1-5  |   |
|  |   |  | TECHNICAL FIELDS SEARCHED (IPC)                                   |
|  |   |  | B31B<br>B65D<br>B31F  |
| The present search report has been drawn up for all claims   |   |  |   |
| Place of search<br>Munich  |   | Date of completion of the search<br>9 March 2016 | Examiner<br>Sundqvist, Stefan                                     |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document<br>T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |   |  |   |

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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09-03-2016

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| JP H0227321 U                          | 22-02-1990       | NONE                    |                  |
| DE 2709025 A1                          | 07-09-1978       | NONE                    |                  |
| JP S5542550 U                          | 19-03-1980       | JP S5542550 U           | 19-03-1980       |
|  |                  | JP S5745160 Y2          | 05-10-1982       |
| JP S5191221 U                          | 21-07-1976       | NONE                    |                  |
| JP H02190324 A                         | 26-07-1990       | NONE                    |                  |

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82