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(54) **MALE ELEMENT FOR BOX-MAKING MACHINE**

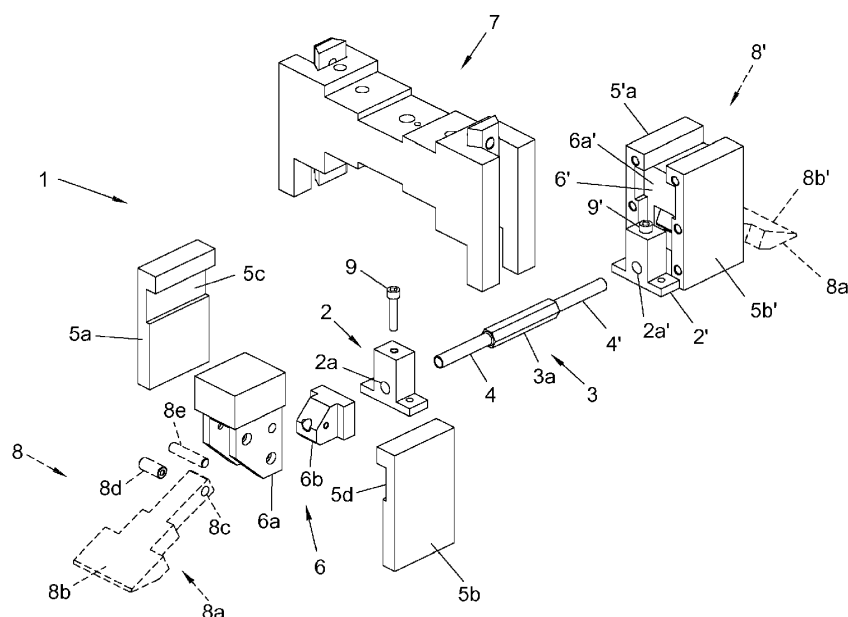
(57) The invention relates to a male element for a box-making machine comprising a central core that comprises in turn:

- two back plates having through holes and arranged on two opposite sides of the central core;
- a rotating shaft for adjusting the position of two pressure means, wherein the through holes of the back plates penetrate said shaft, and wherein said rotating shaft also has

two ends threaded in opposite directions;

- two sliding parts, each of said sliding parts being joined to one of the threaded ends of the shaft; and
- two pressure means, wherein each of these pressure means is solidly connected to one of the sliding parts.

The invention also relates to the box-making machine containing the described male element, in any of its variants.



**FIG. 1**



## EUROPEAN SEARCH REPORT

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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                                                                                                                                                                                                                                                      | US 3 218 940 A (PEARSON REINHOLD A)<br>23 November 1965 (1965-11-23)                                               | 1,2,11                                                                                                                                                                                                                                                                       | INV.<br>B31B50/44                               |
| Y                                                                                                                                                                                                                                                      | * column 7, line 30 - line 72; figures 8, 14, 17, 18 *                                                             | 3,4                                                                                                                                                                                                                                                                          | ADD.<br>B31B100/00<br>B31B110/35                |
| Y                                                                                                                                                                                                                                                      | US 2010/155557 A1 (CARTY GREGORY JOSEPH [AU]) 24 June 2010 (2010-06-24)<br>* paragraph [0034]; figures 1, 2 *      | 3                                                                                                                                                                                                                                                                            |                                                 |
| Y                                                                                                                                                                                                                                                      | CN 107 747 520 A (XIAN AEROSPACE PROPULSION INST) 2 March 2018 (2018-03-02)<br>* paragraph [0024]; figures 1, 3a * | 3                                                                                                                                                                                                                                                                            |                                                 |
| Y                                                                                                                                                                                                                                                      | CN 101 258 959 A (UNIV SOUTHEAST [CN]) 10 September 2008 (2008-09-10)<br>* page 8; figures 11, 12 *                | 3                                                                                                                                                                                                                                                                            |                                                 |
| Y                                                                                                                                                                                                                                                      | US 5 743 653 A (KATOH MASATAKA [JP]) 28 April 1998 (1998-04-28)<br>* figure 10 *                                   | 4                                                                                                                                                                                                                                                                            |                                                 |
| Y                                                                                                                                                                                                                                                      | US 6 125 968 A (SHIRAI TAKEKI [JP]) 3 October 2000 (2000-10-03)<br>* figure 1 *                                    | 4                                                                                                                                                                                                                                                                            | TECHNICAL FIELDS SEARCHED (IPC)<br>B31B<br>F16C |
| Y                                                                                                                                                                                                                                                      | DE 10 2012 215783 A1 (SKF AB [SE]) 6 March 2014 (2014-03-06)<br>* figure 1 *                                       | 4                                                                                                                                                                                                                                                                            |                                                 |
| <del>The present search report has been drawn up for all claims</del>                                                                                                                                                                                  |                                                                                                                    |                                                                                                                                                                                                                                                                              |                                                 |
| Place of search<br><b>Munich</b>                                                                                                                                                                                                                       |                                                                                                                    | Date of completion of the search<br><b>12 February 2020</b>                                                                                                                                                                                                                  | Examiner<br><b>Sundqvist, Stefan</b>            |
| 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 |                                                                                                                    | 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 |                                                 |

EPO FORM 1503 03.02 (P04C01)



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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-4, 11

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION**  
**SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3, 11

See parts 1.1 and 1.2.

1.1. claims: 1-3

An adaptable geometry of the central portion of the rotating shaft.

1.2. claim: 11

A box-making machine (claim 11 as dependent on claim 1).

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2. claim: 4

Runners for sliding parts (as dependent on claim 1).

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3. claim: 5

Threaded bushings in sliding parts (as dependent on claim 1).

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4. claim: 6

Grip screw (as dependent on claim 1).

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5. claim: 7

Upper and lower elements of sliding parts (as dependent on claim 1).

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6. claim: 8

Pressure means in the form of a pivotable flap.

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7. claim: 9

Pressure means in the form of a central plate.

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8. claim: 10

Ancillary portion.

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**LACK OF UNITY OF INVENTION  
SHEET B**

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

Please note that all inventions mentioned under item 1, although not necessarily linked by a common inventive concept, could be searched without effort justifying an additional fee.

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

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