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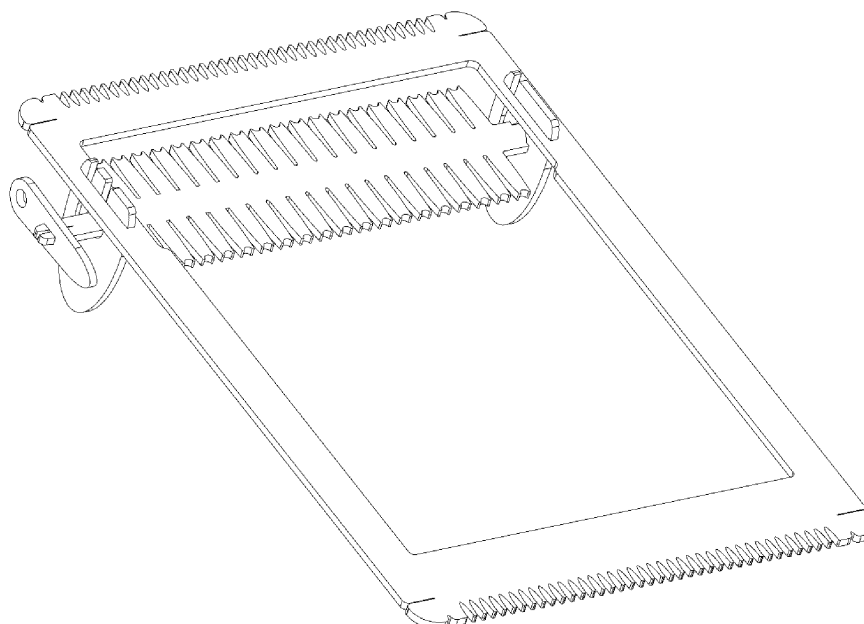
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(54) **FLAT PACK SEMI-AUTOMATIC SAMPLING LOOM**

(57) The present invention relates to sample weaving looms for yarn and cloth. In particular the invention provides a simplified method of weaving complex patterns through the use of a revolving warp separator to alternately raise and lower the warp threads of a woven sample. The interchangeable warp separator allows for

different weaving patterns to be created by exchanging the warp separator with different configurations to provide the required pattern sequence. The advantage of the invention is that the skill required to create accurate weaving patterns is minimised and the speed of weaving is greatly increased.

FIG. 3



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## Description

### 1. Field of Invention:

[0001] The present invention relates to improvements of a small loom for making sample weaving squares. In particular the invention relates to a loom which is flat-packed, and assembled to allow for woven fabric samples to be created, using an interchangeable semi-automatic warp separator for varying weaving patterns.

### 2. Background to the invention:

[0002] A sampling loom is a small, simple weaving loom which allows wool and yarn buyers to test the quality and finish of yarn samples. These are small squares of various materials, with a row of pins top and bottom to allow the vertical threads, or warp, of the sample weaving to be strung between them. The horizontal threads (or weft) of the sample weaving are then laid alternately over and under the warp threads, by manually lifting the appropriate threads with a need or shuttle. These simple looms are both inaccurate and time consuming to use, in addition to requiring some skill at weaving to produce a desirable result.

[0003] There exists a need for a compact and simple to use sampling loom which can be configured to rapidly produce varying sample weaving patterns, with minimal training.

### 3. Statement of invention

[0004] Accordingly, there is provided a flat packed, clip together, sample weaving loom comprising: A Frame incorporating equally spaced pins at both top and bottom; a rotating, interchangeable Warp Separator comprised of 1 or more elements as required to lift the warp threads in the required sequence for the weaving pattern required; two support Legs which hold the frame at an angle for ease of use and also support the warp separator to allow it to rotate freely; a Handle to operate the warp separator; and associated required weaving implements including a Comb, Shuttle, Spacer Bar and Needle.

[0005] The invention is supplied in a flat sheet, with each element able to be removed and clipped together for assembly.

[0006] The advantages of the invention are that the Warp Separator is designed such that the correct pattern of warp threads is automatically lifted when the operator turns the Handle, allowing the Shuttle to be easily passed between the raised and unraised threads, ensuring the correct weaving pattern is followed, and the speed of weaving is increased. The ability to dis-assemble the sample loom to a flat state facilitates ease of transport. The ability to interchange the Warp Separator allows the ability to create complex sample weaving patterns which would otherwise require considerable skill in weaving techniques.

## 4. Detailed Description:

[0007] Referring now to the drawings and initially to Figures 2 and 3, there is illustrated a loom comprising a Frame (1), a plurality of Legs (2) and Warp Separator (3) with Handle (4) attached.

[0008] The Frame (1) is cut from a suitable flat material, having equally spaced pins cut into the profile at the upper and lower edges of the Frame (1), spaced accordingly to suit the number of warp threads required per inch of the weaving sample. Square slots are provided on either side of the Frame (1), appropriately size to allow the Legs (2) to be inserted and retained.

[0009] Both Legs (2) fit and clip into the equally sized slots on the sides of the Frame (1), with the Warp Separator (3) fitting axially through the round holes in each Leg (2).

[0010] The Warp Separator (3) consists of a row of fingers spaced to align with alternating warp threads when the Loom is fully assembled and in use. The alternating fingers are placed on opposing sides of the Warp Separator (3) so as to allow the alternating threads to be raised as the Warp Separator (3) is rotated in the assembled Loom.

[0011] The Handle (4) is clipped to the appropriate end of the Warp Separator (3) to complete assembly.

[0012] Figure 3 shows the assembled loom with the basic Warp Separator (3) fitted. The user rotates the handle 180deg allowing the fingers of the Warp Separator (3) to lift alternating warp threads, allowing the shuttle to pass easily between the alternating raised and unraised warp threads.

[0013] Referring specifically to Figures 3 and 4, the illustrated Warp Separator (3) can be removed from the assembled loom by first removing the Handle (4), and releasing the clip of one Leg (2). The Warp Separator can now be removed and replaced with an Accessory Warp Separator assembly (5, FIG 4), fitted axially through the 2 circular holes in the Legs (2), and refitted to the Frame (1) as per initial assembly, and the Handle (4) re-clipped to the appropriate end of the Accessory Warp Separator (5). The illustrated example of an Accessory Warp Separator (5) described herein is presented by way of example only. The configuration of the fingers as indicated in parts (5a), (5b), and (5c) may vary to allow differing weaving patterns without departing from the inventive concept.

[0014] The invention described herein is constructed from plywood by way of example, however the material of the invention may vary without departing from the inventive concept.

### Brief description of the drawings

[0015] The invention will be more clearly understood from the following description of an embodiment thereof, given by way of an example only, with reference to the accompanying drawings, in which:

Figure 1 shows the flat-packed layout of the loom components, including an example of an accessory Warp Separator

Figure 2 shows the components as removed from their flat pack configurations and labelled 5

Figure 3 shows the assembled loom in isometric view

Figure 4 shows an example of an accessory Warp Separator in assembled isometric view 10

## Claims

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1. A weaving loom for the purpose of easily creating sample weavings in a variety of patterns; comprising a Frame; Legs; and interchangeable warp separator; a frame to which a pair of legs attach in such a manner that they support the axial motion of the rotating warp separator, allowing the warp threads to be alternately raised and lowered during the weaving process. 20
  2. A weaving loom as claimed in claim 1 further comprising an interchangeable warp separator; a warp separator on which differing sequence lifting arms can be inserted or attached to allow the weaving of varied weaving patterns. 25

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FIG. 1

LOOM

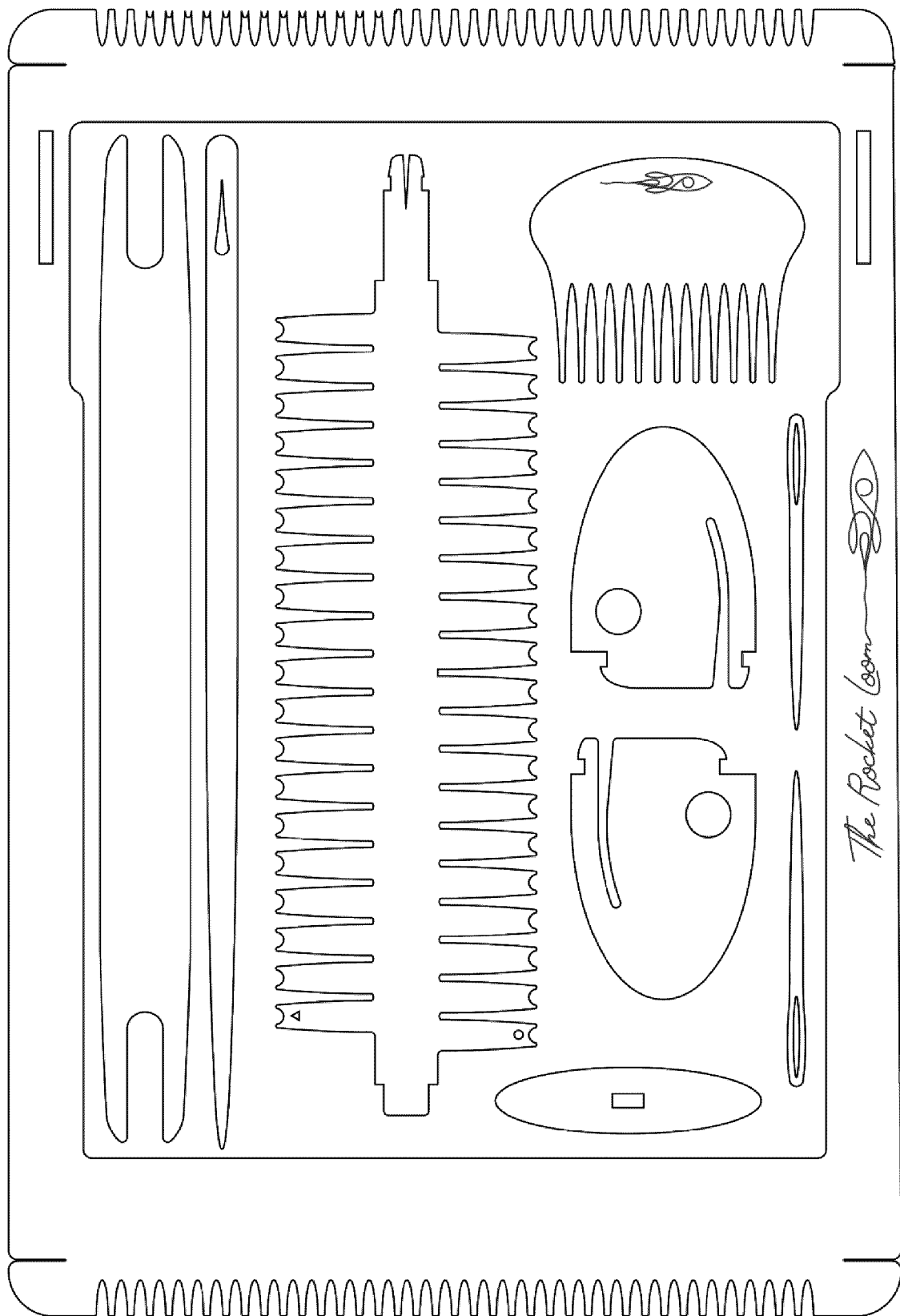


FIG. 2

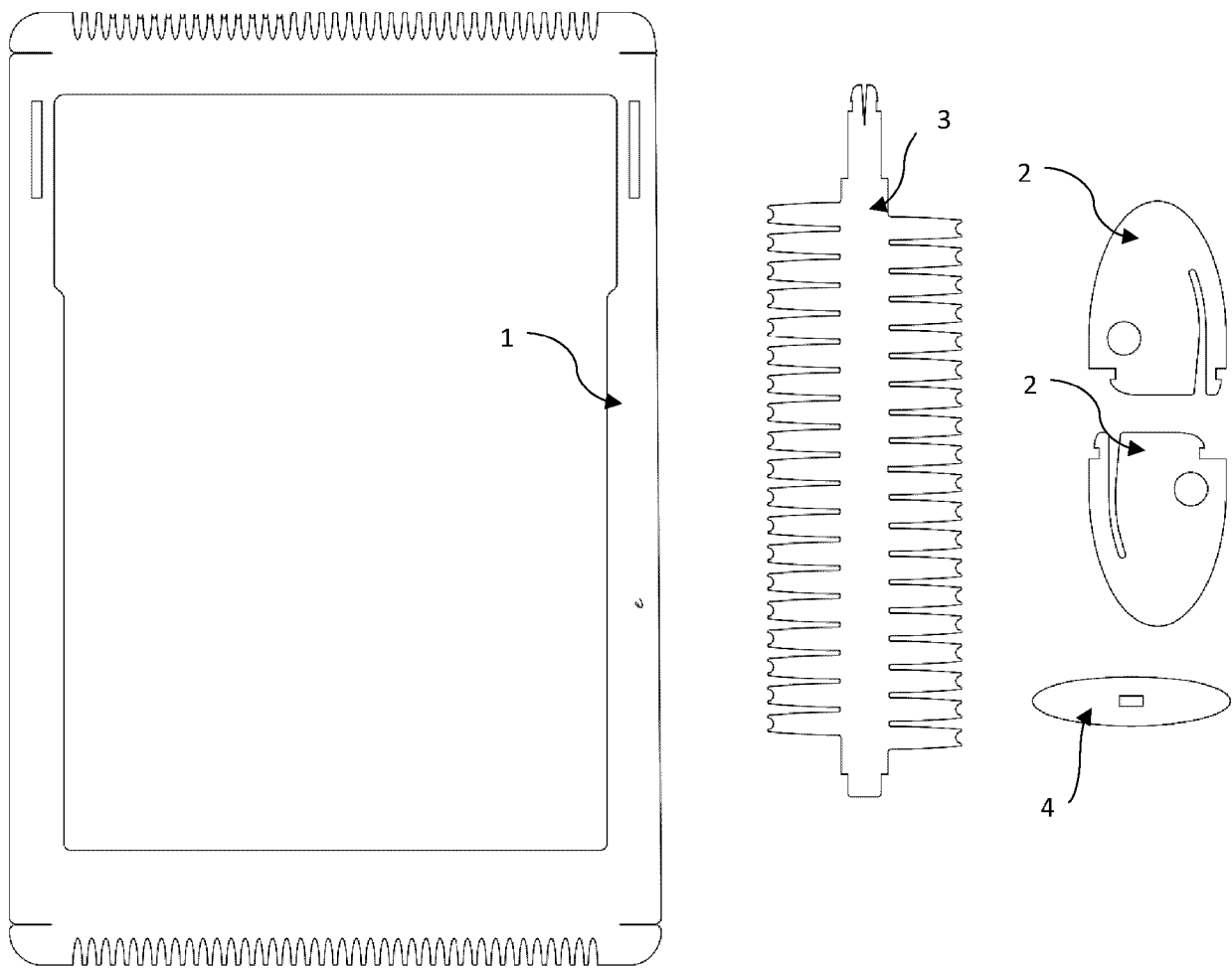


FIG. 3

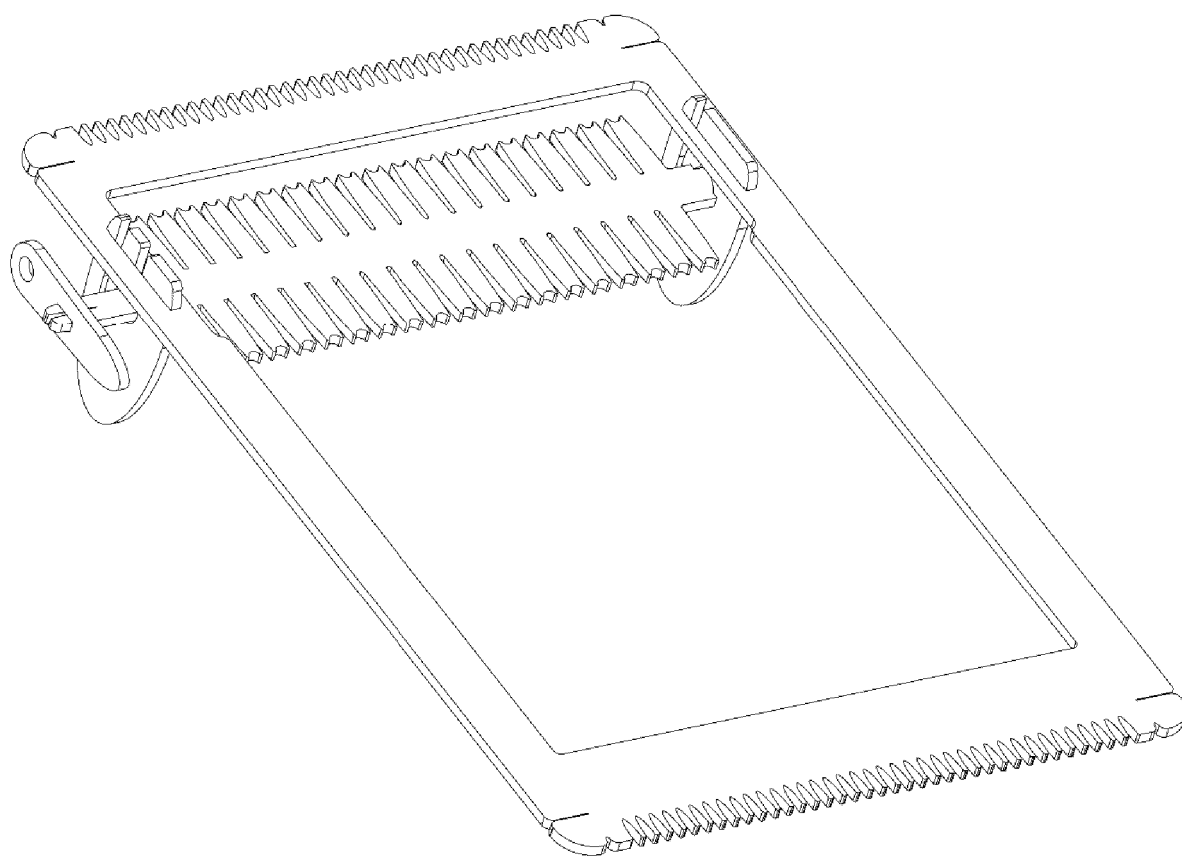
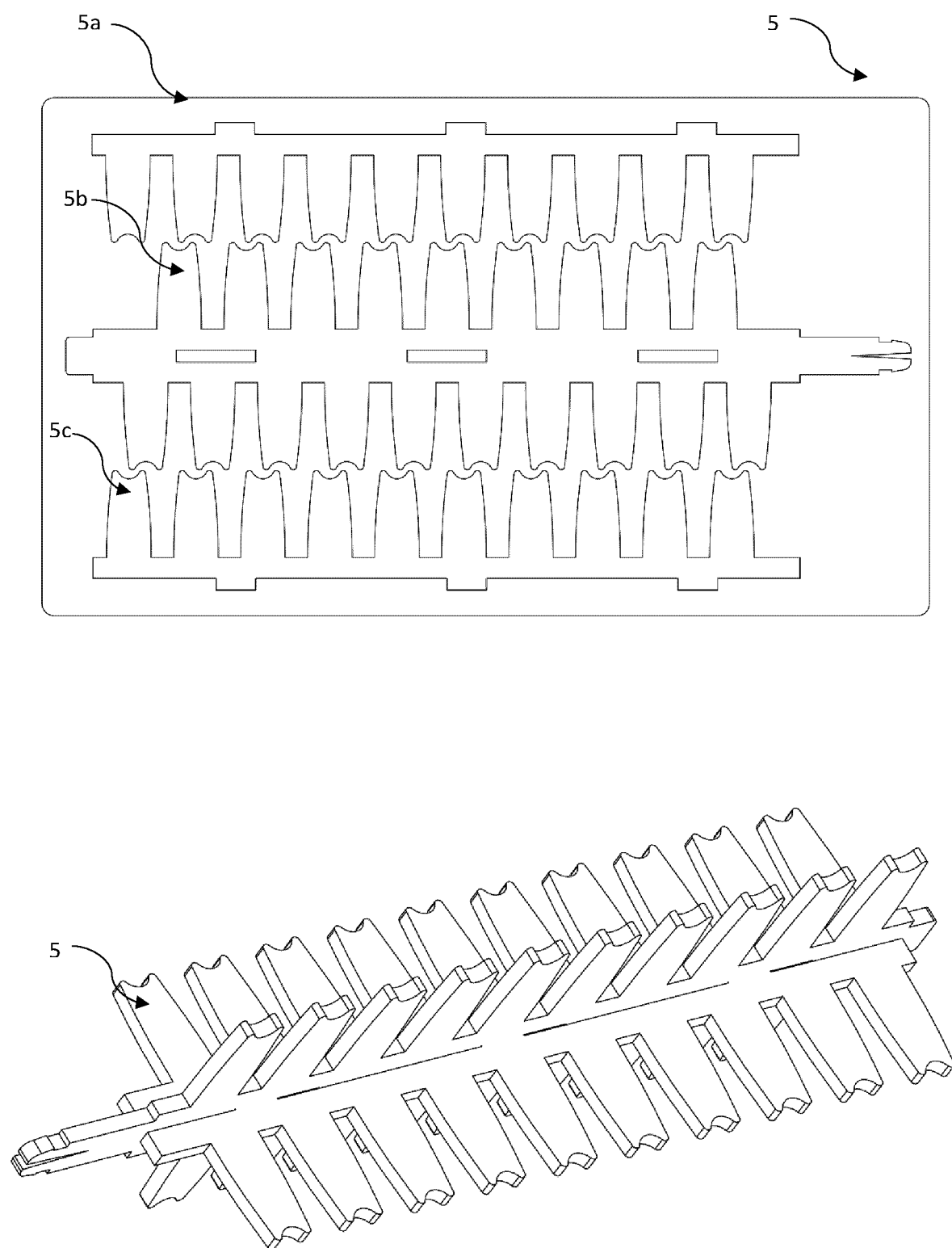


FIG 4





## EUROPEAN SEARCH REPORT

Application Number

EP 24 21 1941

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category                                                                                                                                                                                                                                               | Citation of document with indication, where appropriate, of relevant passages                                                                                                                                                                                                                                                         | Relevant to claim                                                                                                                                                                                                                                                                     | CLASSIFICATION OF THE APPLICATION (IPC)                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
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| The present search report has been drawn up for all claims                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                       |                                                        |
| Place of search<br><b>Munich</b>                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                       | Date of completion of the search<br><b>18 March 2025</b>                                                                                                                                                                                                                              | Examiner<br><b>Heinzelmann, Eric</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>.....<br>& : member of the same patent family, corresponding document |                                                        |

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

EP 24 21 1941

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18-03-2025

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