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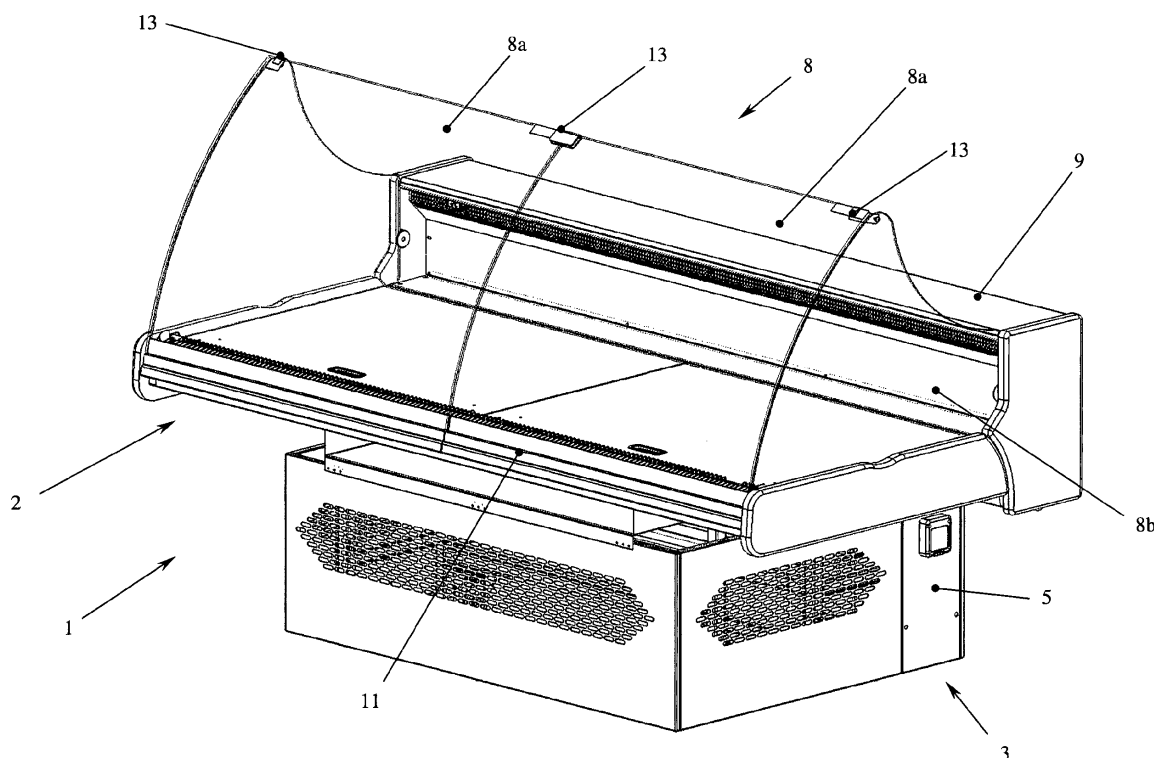
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(54) **Refrigerated and foldable exhibiting bench**

(57) A refrigerated and foldable exhibiting bench (1) is described, used in particular for storing and displaying foodstuff aimed to be sold, comprising at least one supporting structure (3) equipped with refrigerating plant and at least one overturnable exhibiting flatbed (2), such flatbed (2) being connected to such supporting structure (3)

by interposing at least one oscillating kinematism (4), such oscillating kinematism (4) being adapted to allow moving such flatbed (2) from an operating exhibiting position to an overturned operating position with reduced overall sizes, and vice versa.



**FIG. 1a**

## Description

**[0001]** The present invention refers to a refrigerated and foldable exhibiting bench.

**[0002]** Refrigerated benches and windows are known in the art and are used in particular for storing and displaying foodstuff aimed to be sold. In order to make their use easier, above all by road sellers, the art has proposed some solutions of refrigerated benches and windows of the foldable type in such a way as to be able to reduce their sizes in case of non-use, and, consequently, to make their transport and handling easier. Examples of such foldable benches and windows are disclosed in FR 2719983, US2010283368, US2009293533, US2007256440, WO0182755, CN201662293, GB2445999, CN201715794.

**[0003]** Refrigerated and foldable benches and windows are however still relatively big and bulky, even when they are folded, and opening and folding operations are long and complex, having to deal with a high number of movable or disassembled components.

**[0004]** Therefore, object of the present invention is solving the above prior art problems by providing a refrigerated and foldable exhibiting bench which, though being composed of a limited number of moving components, has smaller overall sizes with respect to what is proposed by the prior art, allowing at the same time its easier transport and handling, even when it is packaged, and the chance of transporting a higher number of such benches with the same load volume available.

**[0005]** Another object of the present invention is providing a refrigerated and foldable exhibiting bench, which makes opening and folding operations easier and quicker with respect to what is proposed by the prior art.

**[0006]** The above and other objects and advantages of the invention, as will appear from the following description, are obtained with a refrigerated and foldable exhibiting bench as claimed in Claim 1, Preferred embodiments and non-trivial variations of the present invention are the subject matter of the dependent claims.

**[0007]** It is intended that all enclosed claims are an integral part of the present description.

**[0008]** It will be immediately obvious that numerous variations and modifications (for example related to shape, sizes, arrangements and parts with equivalent functionality) could be made to what is described, without departing from the scope of the invention as appears from the enclosed claims.

**[0009]** The present invention will be better described by some preferred embodiments thereof, provided as a non-limiting example, with reference to the enclosed drawings, in which:

- Figure 1a shows a front perspective view of a preferred embodiment of the refrigerated and foldable exhibiting bench according to the present invention in an open position;
- Figure 1b shows a partially sectioned side view of

the refrigerated and foldable exhibiting bench of Figure 1a;

- Figure 1c shows a partially sectioned front view of the refrigerated and foldable exhibiting bench of Figure 1a;
- Figure 2a shows a front perspective view of a preferred embodiment of the refrigerated and foldable exhibiting bench according to the present invention in a folded position;
- Figure 2b shows a partially sectioned side view of the refrigerated and foldable exhibiting bench of Figure 2a; and
- Figure 2c shows a partially sectioned front view of the refrigerated and foldable exhibiting bench of Figure 2a.

**[0010]** For conciseness, herein below descriptions related to parts and components which are common with other refrigerated exhibiting benches and necessary for the basic operation of the bench itself will obviously not be given, since are deemed anyway widely known in the art, such as for example electric supply systems, conditioning, compressing and channelling systems for refrigerating gases, etc., in order to describe in detail in particular the subject matter and components characterising the bench according to the present invention. Obviously, as will clearly appear to a skilled person in the art, the possible variations of embodiments of the bench according to the present invention are numerous, without however departing from the scope of the invention itself. In fact, merely as a non-limiting example, Figures 1a to 2c show a possible preferred embodiment of such bench.

**[0011]** Therefore, with reference to the Figures, it is possible to note that the refrigerated and foldable exhibiting bench 1, according to the present invention, used in particular for storing and displaying foodstuff aimed to be sold, comprises at least one supporting structure 3 equipped with refrigerating plant and at least one overturnable exhibiting flatbed 2, such flatbed 2 being connected to such supporting structure 3 by interposing at least one oscillating kinematism 4, such oscillating kinematism 4 being adapted to allow moving such flatbed 2 from an operating exhibiting position (like the one, for example, shown in Figures 1a, 1b and 1c) in which such flatbed 2 is in a substantially horizontal position with respect to such supporting structure 3 to an overturned operating position with reduced overall sizes (like the one, for example, shown in Figures 2a, 2b and 2c) in which such flatbed 2 is in a substantially vertical position with respect to such supporting structure 3, and vice versa.

**[0012]** The flatbed 2 can further be equipped with at least one removable display window 8 preferably arranged, at least partially, along a perimeter of such flatbed 2: such removable display window 8 can therefore be easily removed from the flatbed 2 to allow this latter one to be taken from the operating exhibiting position to the overturned operating position without the size given

by the display window 8 itself. Vice versa, once having taken the flatbed 2 from the overturned operating position to the operating exhibiting position, the display window 8 can be easily placed again around the flatbed 2. For such purpose, the flatbed 2 is equipped on its perimeter with at least one groove 11 adapted to house therein at least part of the lower edge of such display window 8.

[0013] In order to make handling and moving the display window 8 easier and easier, it can be modular and composed of at least one front panel 8a and/or at least one side panel 8b: when removing the display window 8, it can therefore be individually decomposed into the panels 8a, 8b, therefore having global overall sizes which are smaller than the complete display window 2, such panels 8a, 8b being also able to have such shapes as to be substantially capable of being overlapped. Each one of such panels 8a, 8b can further be equipped with suitable fastening means 13 adapted to make the panels 8a or 8b near it integral therewith.

[0014] Still more preferably, the bench 1 according to the present invention is further equipped with at least one containing room 15 adapted to house therein such panels 8a, 8b, possibly overlapped one to the other once the display window 8 is not used. Still more preferably, such containing room 15 is arranged on the lower surface 17 of the flatbed 2 in order to further make it easier to insert and withdraw the panels 8a, 8b in and from inside it when the flatbed 2 is in its overturned operating position.

[0015] Preferably, such oscillating kinematism 4 is a kinematism with articulated quadrilateral, possibly and suitably cooperating with one or more elastic means (such as, for example, at least one traction spring 21): in particular, such oscillating kinematism 4 comprises:

- at least one pair of first vertical risers 4a fixed to and integral with such supporting structure 3, each one of such first vertical risers 4a being connected on its top to such flatbed 2 by interposing respective first articulating means 6a;
- at least one pair of second, moving vertical risers 4b, each one of such second vertical risers 4b being connected on its top with such flatbed 2 by interposing respective second articulating means 6b;
- possibly, at least one pair of cross members 4c, each one of such cross members 4c having a first end connected to a corresponding one of such first vertical risers 4a by interposing a respective third articulating means 6c and a second end connected to a corresponding one of such second vertical risers 4b by interposing respective fourth articulating means 6d.

[0016] The supporting structure 3 comprises in particular at least one technical room 5 preferably arranged at the base of the supporting structure 3 itself, and adapted to contain therein the components of the refrigerating plant, such as condenser, compressor, etc., such room 5 communicating with the outside environment by inter-

posing at least one suction grid 7. The supporting structure 3 further comprises at least one chamber 9 for diffusing cold generated by such refrigerating plant onto the flatbed 2 to refrigerate the foodstuff placed and displayed thereon.

[0017] The supporting structure 3 can further be equipped on its lower part with a plurality of transport wheels 19, suitably arranged, preferably of the rotating and braking type, in order to make it easier to move, displace and transport the structure itself.

[0018] Obviously, the refrigerated and foldable exhibiting bench 1 according to the present invention can be equipped with several accessory features, comprising, for example:

- valve-type venting for open markets, venting with capillary for Rental for closed exhibitions;
- trap-type discharge or with removable basin;
- presence of a front element made of waxed cloth with the chance of inserting a silk-screen print with the seller's logo;
- removable lighting of the flatbed, for example with a row of neon lamps.

## Claims

1. Refrigerated and foldable exhibiting bench (1), used in particular for storing and displaying foodstuff aimed to be sold, comprising at least one supporting structure (3) equipped with refrigerating plant and at least one overturnable exhibiting flatbed (2), said flatbed (2) being connected to said supporting structure (3) by interposing at least one oscillating kinematism (4), said oscillating kinematism (4) being adapted to allow moving said flatbed (2) from an operating exhibiting position to an overturned operating position, and vice versa, **characterised in that** said oscillating kinematism (4) comprises:

- at least one pair of first vertical risers (4a), fixed to and integral with said supporting structure (3), each one of said first vertical risers (4a) being connected on its top to said flatbed (2) by interposing respective first articulating means (6a);
- at least one pair of second, moving vertical risers (4b), each one of said second vertical risers (4b) being connected on its top to said flatbed (2) by interposing respective second articulating means (6b).

2. Bench (1) according to the previous claim, **characterised in that**, in said operating exhibiting position, said flatbed (2) is in a substantially horizontal position with respect to said supporting structure (3) and, in said overturned operating position with reduced overall sizes, said flatbed (2) is in a substantially vertical position with respect to said supporting structure

(3).

3. Bench (1) according to claim 1 or 2, **characterised in that** said flatbed (2) is equipped with at least one removable display window (8). 5
4. Bench (1) according to claim 3, **characterised in that** said flatbed (2) is equipped on its perimeter with at least one groove (11) adapted to house therein at least part of a lower edge of said display window (8). 10
5. Bench (1) according to claim 4, **characterised in that** said display window (8) is modular and composed of at least one front panel (8a) and/or at least one side panel (8b). 15
6. Bench (1) according to claim 5, **characterised in that** each one of said panels (8a, 8b) is equipped with fastening means (13) adapted to make the panels (8a) or (8b) near it integral therewith. 20
7. Bench (1) according to claim 5, **characterised in that** it is equipped with at least one containing room (15) adapted to house therein said panels (8a, 8b). 25
8. Bench (1) according to claim 7, **characterised in that** said containing room (15) is arranged on a lower surface (17) of said flatbed (2).
9. Bench (1) according to claim 1, **characterised in that** said oscillating kinematism (4) is a kinematism with articulated quadrilateral. 30
10. Bench (1) according to claim 1, **characterised in that** said oscillating kinematism (4) comprises at least one pair of cross members (4c), each one of said cross members (4c) having a first end connected to a corresponding one of said first vertical risers (4a) by interposing respective third articulating means (6c) and a second end connected to a corresponding one of said second vertical risers (4b) by interposing respective fourth articulating means (6d). 35 40
11. Bench (1) according to claim 1, **characterised in that** said supporting structure (3) comprises at least one technical room (5) containing therein components of said refrigerating plant and at least one chamber (9) for diffusing cold generated by said refrigerating plant onto said flatbed (2). 45 50

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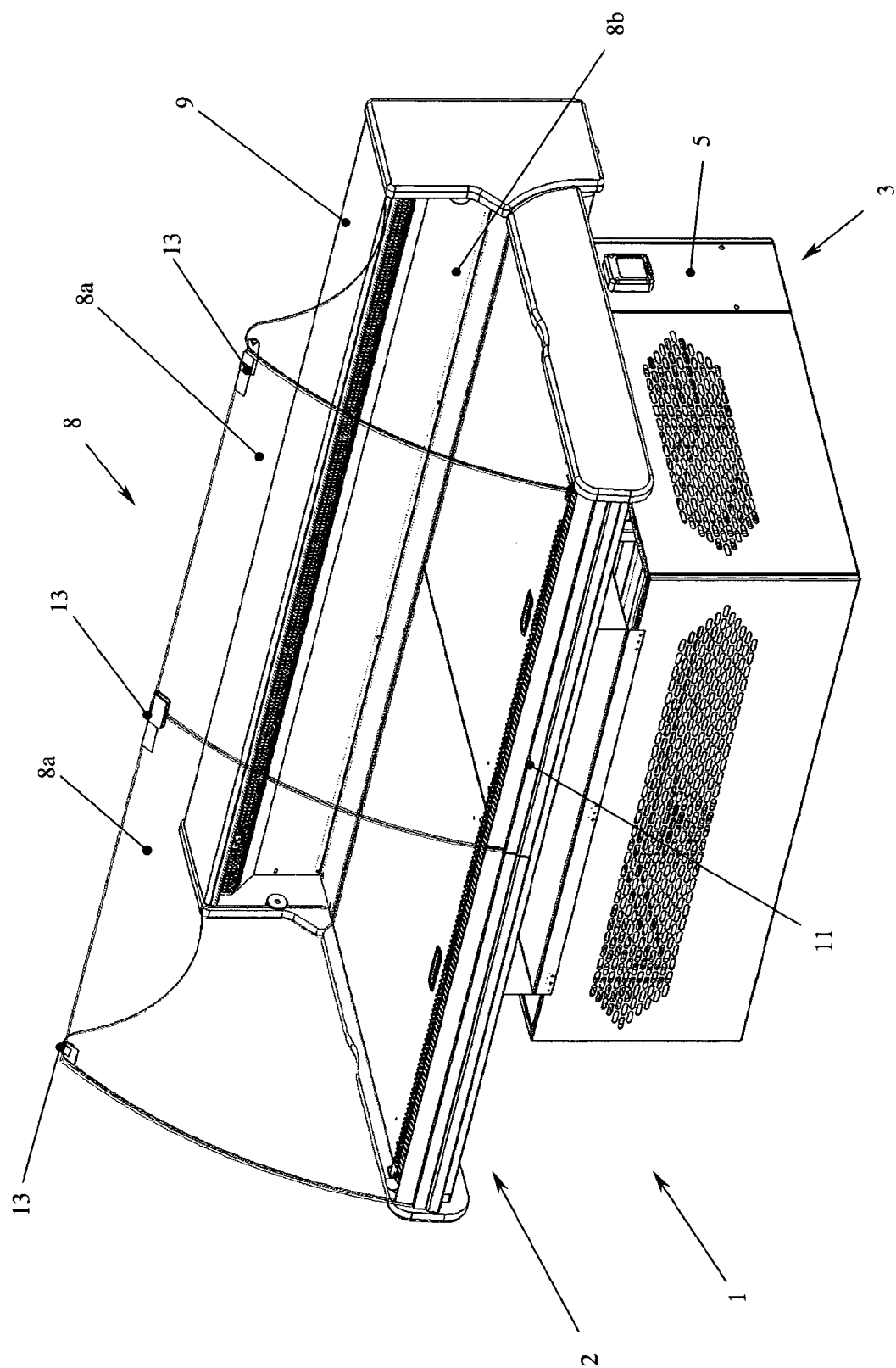


FIG. 1a

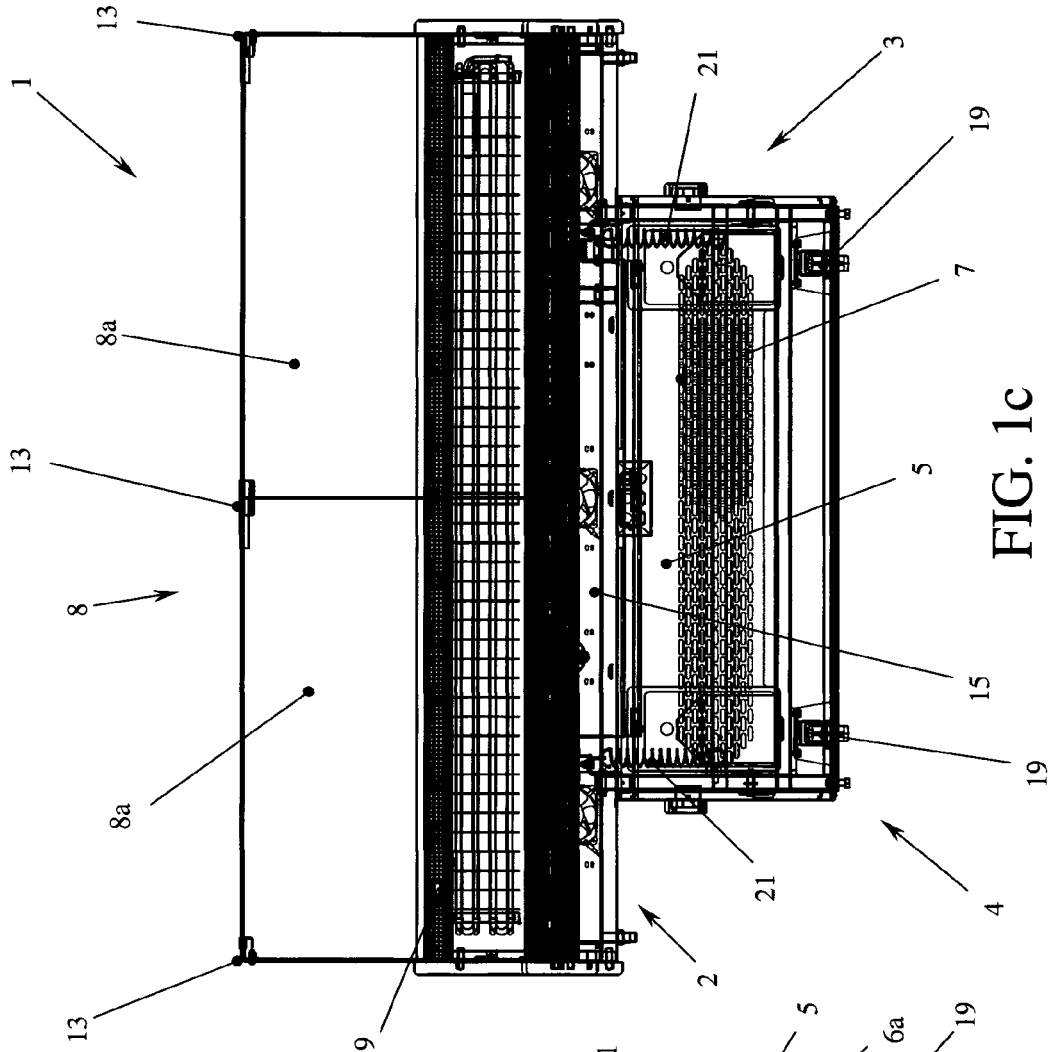


FIG. 1c

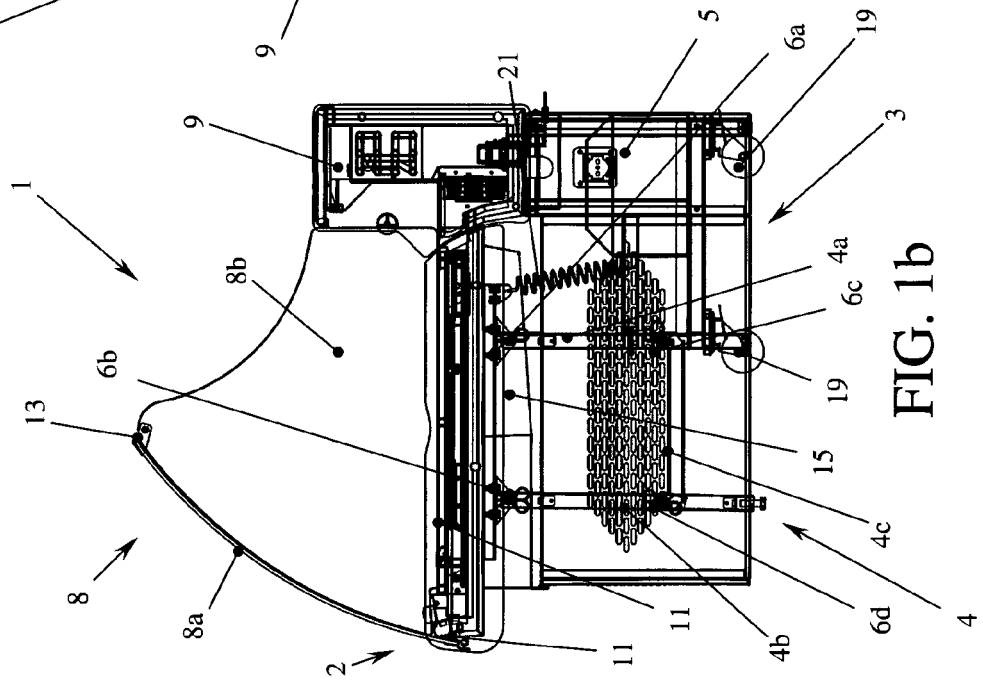


FIG. 1b

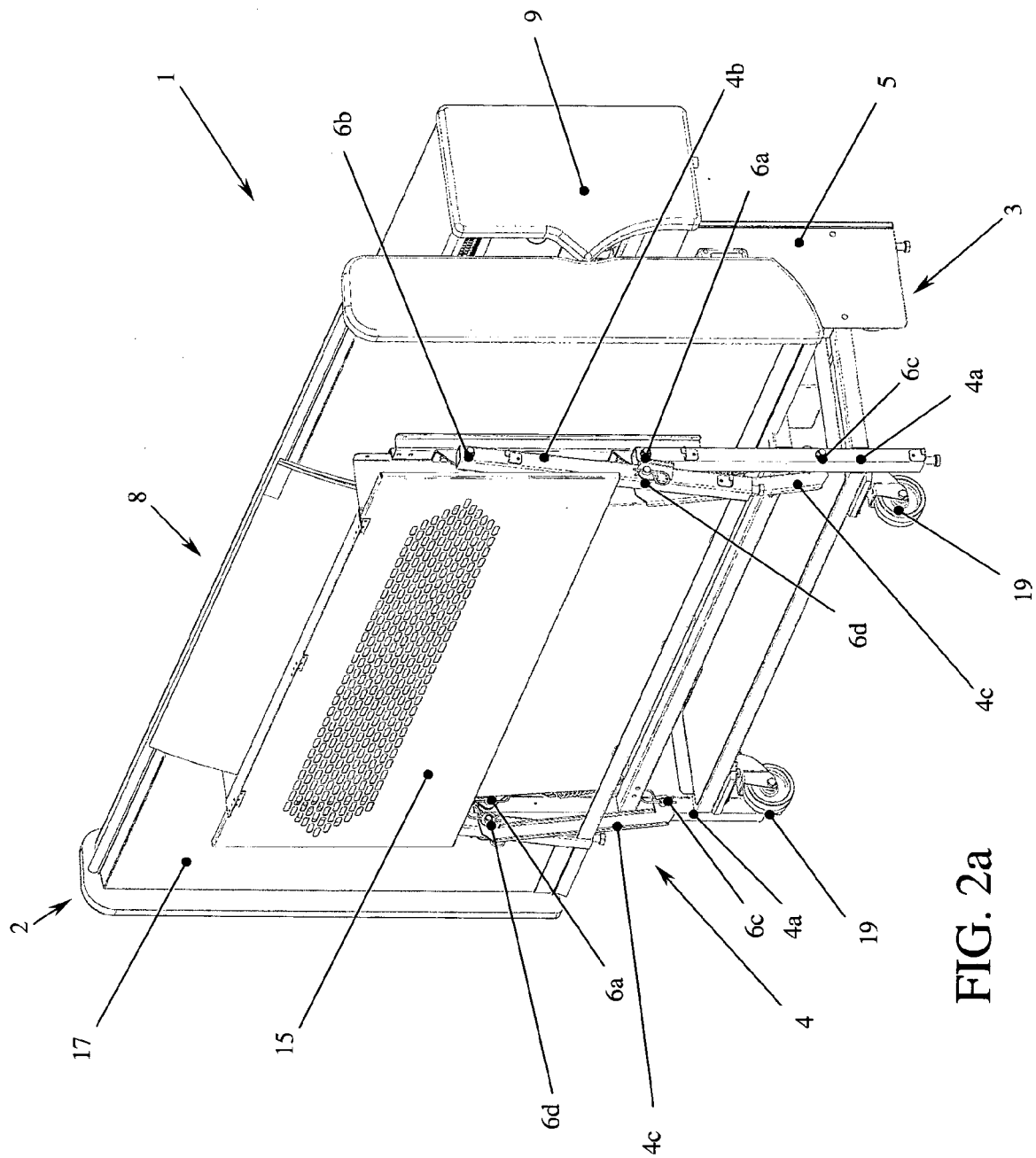


FIG. 2a

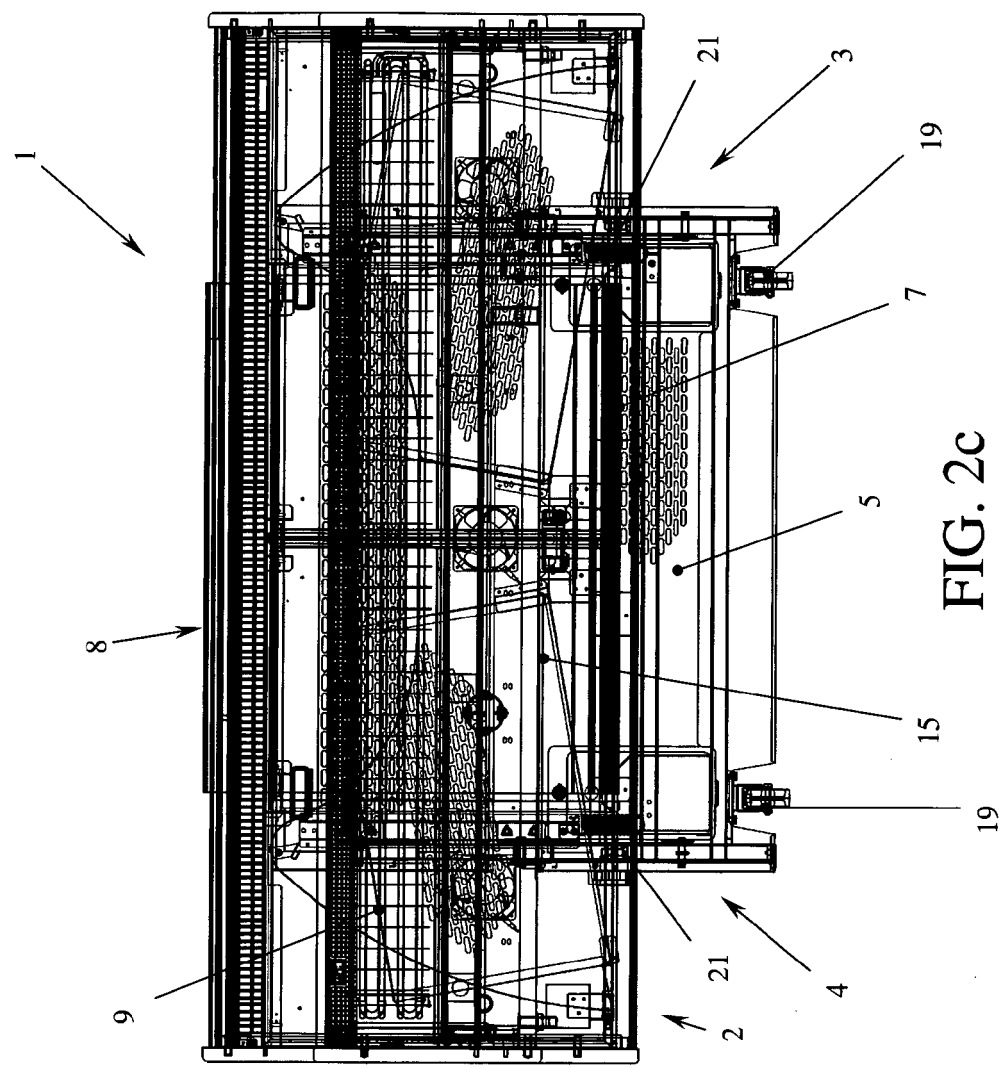


FIG. 2c

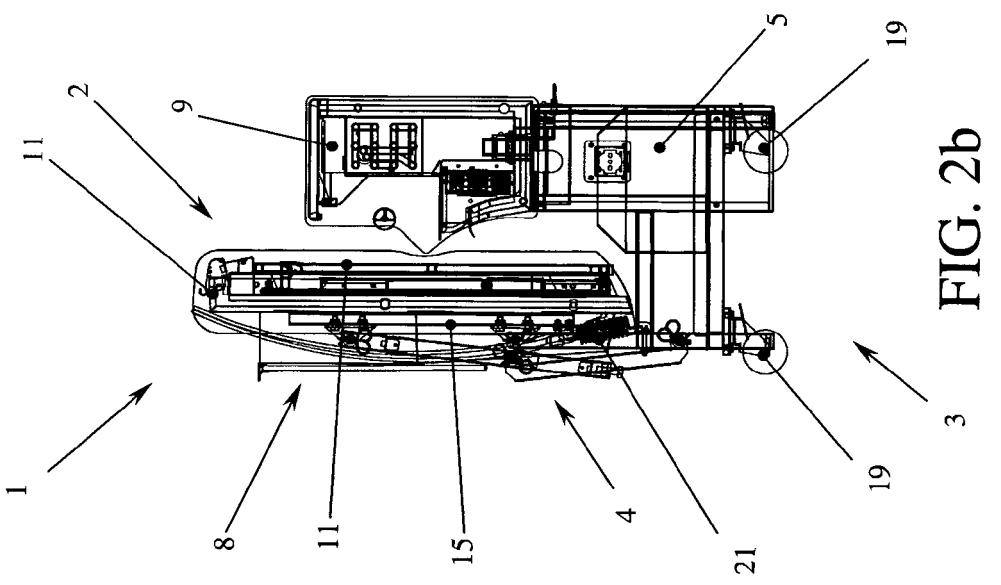


FIG. 2b



## EUROPEAN SEARCH REPORT

Application Number  
EP 13 00 4389

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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 The Hague		Date of completion of the search 17 December 2013	Examiner Vehrer, Zsolt
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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The members are as contained in the European Patent Office EDP file on  
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