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PIECE OF SEATING FURNITURE WITH INDEPENDENT CUSHIONING ELEMENT

- (57)

A piece of seating furniture comprising a frame (10) and a cushion (20), which are independent of each other, wherein the frame (10) comprises a hollow drawer (11) that is intended to receive and house therein a mono-
- bloc cushioning or suspension element (30) which is located under the cushion (20) and is independent of both the hollow drawer (11) of the frame and the cushion (20).

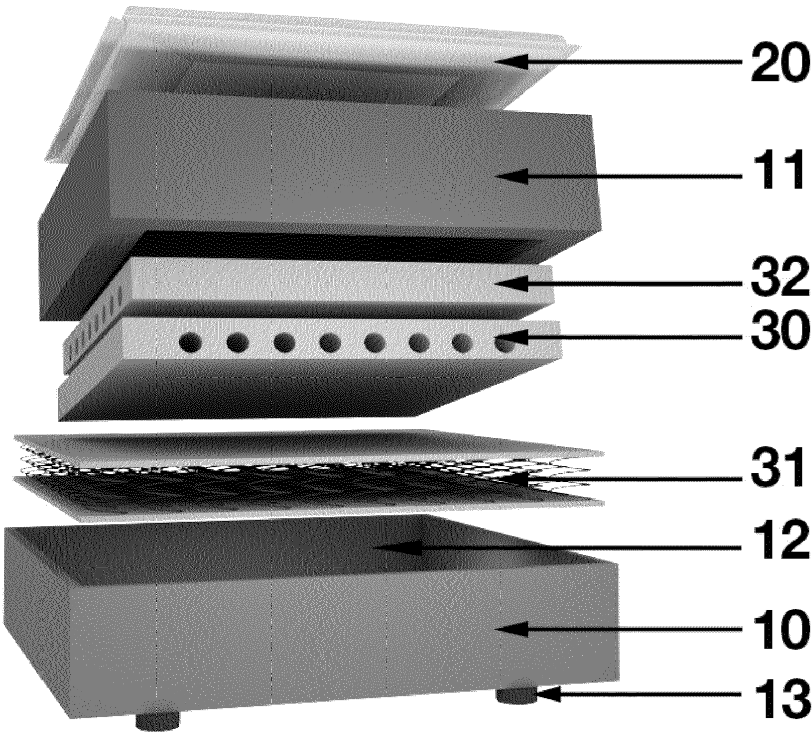


FIGURE 1

## Description

### Technical field

**[0001]** The present invention relates to a piece of seating furniture, such as an armchair, sofa or similar, of the type comprising a support frame and one or more cushions, and which is characterised in that it incorporates a cushioning element which is independent of the frame and of the cushions.

### State of the art

**[0002]** Currently, in the sofas available on the market, the seat cushion is supported by a suspension mount made up of elastic straps or springs. In the mid-twentieth century, a suspension system was used for sofas consisting of a base of conical springs which were tied together with twine in a traditional manner to form a mount on which to support the cushion. This construction system offers comfort and durability that is difficult to match, but the complexity of the manufacturing process caused it to fall into disuse. As time went by, these springs ended up tearing the upper protection and coming out, providing an image that we have all witnessed where the springs protrude in deteriorated sofas.

**[0003]** In the final years of the 20th century and the beginning of the 21st century, conical springs bagged in fabric bags started to be used. These springs were inserted inside the seat cushions of the sofas. Comfort is excellent, but with use, the springs tend to cut into the upper portion of the rubber in the seat cushion. In other words, with use, springs tend to come to the surface, shortening the durability of these seat cushions and, therefore, of the sofas. Over time, due to the low thickness of the rubber placed on the conical pocket springs, same end up becoming noticeable when sitting or, as mentioned, breaking the upper portion and coming out.

**[0004]** Furthermore, the use is known of springs in mattresses and cushions that are placed inside the seat cushion, close to its upper portion, either a hollow box created *ad hoc*, or in circular cutouts within the foam that makes up the core of the cushion, wherein said springs are placed in pockets. However, this solution has three technical problems: (a) the complexity in their manufacture; (b) the springs, with continued use, end up breaking the cushion, usually by the upper portion thereof, i.e., by the seat area itself; and (c) recycling the different elements that make up the cushion is very complicated, since it would be necessary to separate the springs from the filling and/or the upholstery.

**[0005]** These problems are solved with the piece of seating furniture of claim 1.

### Description of the invention

**[0006]** It is an object of the present invention to offer the comfort of sofas with manually tied springs from the

mid-twentieth century, but with a manufacturing method that is not so complex and traditional. Furthermore, an object of the invention is that the springs can be easily replaced over time, in order to extend the life of the sofas or mattresses, and also that, when recycling, the different components of the springs can be separated easily and in a simple manner.

**[0007]** An object of the invention is also to achieve a novel automated manufacturing system, which can offer the convenience of this system, which is obsolete due to the problems it presented, and which can be suited to the new requirements for sustainability and circular economy, in which the elements are easy to manufacture, replaceable to be able to multiply the years of useful life and when it comes to an end, to be able to separate the different components easily and in a simple manner.

**[0008]** An object of the present invention is a piece of seating furniture comprising a frame and a cushion, which are independent of each other, and which is characterised in that the frame comprises a hollow drawer, in the upper portion of which at least one cushion is removably arranged. The hollow drawer houses therein a monobloc cushioning element arranged below the cushion, this monobloc cushioning element being independent of both the hollow drawer of the frame and the cushion.

**[0009]** In a particular embodiment, the monobloc cushioning element is dimensionally configured to occupy the internal volume of the hollow drawer of the frame. In another particular embodiment, the monobloc cushioning element comprises a plurality of springs encapsulated therein.

**[0010]** Thanks to the piece of seating furniture thus described, it is possible to have a non-deformable drawer that, by its very nature, could last for decades. This drawer acts as a container for the cushioning elements, allowing them to be placed separately, without any type of connection. In this way, manufacturing (and assembly) is much simpler, also allowing internal components that may have worn out with use to be replaced over the years, allowing the useful life of the seat to be multiplied.

**[0011]** Furthermore, when it is necessary to recycle the piece of seating furniture, it is much easier to separate the elements that make it up, without any type of handling. For example, the cushion is recycled independently of the monobloc cushioning element or the frame. Last, but not least, when placing the spring block (the cushioning element) in the lower portion of the cushion (instead of close to the upper portion thereof, as in the systems described in the state of the art), the sensation for the user when sitting is entirely different, as if the cushion were *floating* with respect to the monobloc cushioning elements themselves.

### Brief description of the drawings

**[0012]** What follows is a very brief description of a series of drawings that aid in better understanding the in-

vention and which are expressly related to an embodiment of said invention that is illustrated by way of a non-limiting example of the same.

Figure 1 shows an exploded view of the piece of seating furniture according to the present invention.

Figure 2 shows the traditional system used (left) and the novel piece of furniture of the invention (right) with the drawer that is accessed from the top to be able to replace the spring block.

#### Detailed description of an embodiment of the invention

**[0013]** As can be seen in the attached figures, the piece of seating furniture of the invention comprises a frame (10) and a cushion (20), which are independent of each other. The frame (10) comprises a hollow drawer (11), and a bottom (12) under which the legs (13) are located. In this way, the hollow drawer (11) is closed on all sides except for the upper portion thereof, where the cushion (20) is removably arranged.

**[0014]** The hollow drawer (11) is intended to receive and house therein a monobloc cushioning or suspension element (30) which is therefore located under the cushion (20) in the use position. The monobloc cushioning element (30) is, ultimately, independent of the hollow drawer (11) and the cushion (20), such that in order to swap the monobloc cushioning element (30) it will simply be necessary to remove the cushion (20) to extract same, without the need for any particular tool or operation.

**[0015]** In a particular embodiment, the monobloc cushioning or suspension element (30) occupies the entire inner space of the hollow drawer (11). In another particular embodiment, the monobloc cushioning element (30) comprises a plurality of springs (31) that are independent of each other, although same are encapsulated inside one or more foams (32).

**[0016]** The result is a novel seating system that works differently from the usual means, wherein comfort that is far superior to all those existing on the market is achieved, wherein production can be industrialised and which further allows multiplying the life of the seat in perfect conditions of use, allowing all the construction elements that may age over time to be replaced easily and in a simple manner.

**[0017]** The novel piece of seating furniture has the advantage of being able to be used in two different ways: accessing the elements from the upper portion or from the lower portion.

#### *Lower portion access*

**[0018]** First of all, a construction system of the seat cushion box is created by marking the four sides or contours of the hard density rubber seat, it is covered with a rubber lid on the upper portion that serves to give uniformity to the upper portion of the cushion, allowing the

cushion filling to be replaced without having to affix the same with adhesive elements.

**[0019]** Optionally, it is possible to cover the upper portion of the cushion with a fibre quilt or a combination of fibre and feather that adheres to the four sides using Velcro-type adhesive tapes, allowing it to be replaced over time to be able to have a completely new cushion at a minimal cost.

**[0020]** Several filling modules are introduced inside the cushion (20), which can be made of rubber of different densities, with internal cutouts to provide more comfort, or made of rubber and fibre, or fibre plus feather. In the lower portion, the strap suspension is replaced by a block of springs that are automatically linked and wrapped by a fabric or non-woven fabric cover, and covered on both sides by a strong fabric mat that can prevent the springs from cutting or damaging the rest of the monobloc cushioning or suspension elements (30).

**[0021]** In the lower portion, a board or bottom (12) is placed that serves as a base for the novel seating system. In order to access the inside of the cushion, the board is secured with screws or the same support legs (13) for supporting to the floor. Figure 1 depicts the elements that make up the piece of seating furniture of the invention, such that by removing the lower board or bottom (12) it is possible to replace the internal elements, which are configured as consumable elements, to replace the rubber, fibre and feather cores, as well as the monobloc cushioning or suspension element (30).

#### *Access from the upper portion*

**[0022]** The second option is that the lower portion or bottom (12) of the piece of seating furniture is a firm board, and the frame (10) is configured as a drawer (11) wherein the monobloc cushioning or suspension element (30) is introduced without being attached to the drawer (11) and the rubber or fibre and feather cushion (20) is placed on top. To replace the monobloc element (30), the cushion (20) must be simply lifted to replace same.

#### **Claims**

1. A piece of seating furniture comprising a frame (10) and a cushion (20), which are independent of each other, wherein the frame (10) comprises a hollow drawer (11) that is closed on all sides except for the upper portion thereof, wherein the cushion (20) is removably arranged and which is **characterised in that** the hollow drawer (11) is intended to receive and house therein a monobloc cushioning or suspension element (30) which, in the position of use, is located under the cushion (20) and is independent of both the hollow drawer (11) of the frame (10) and the cushion (20)
2. The piece of seating furniture according to claim 1

wherein the monobloc cushioning or suspension element (30) is dimensionally configured to occupy the internal volume of the hollow drawer (11) of the frame (10).

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3. The piece of seating furniture according to claim 1 or claim 2 wherein the monobloc cushioning element (30) comprises a plurality of springs encapsulated therein.

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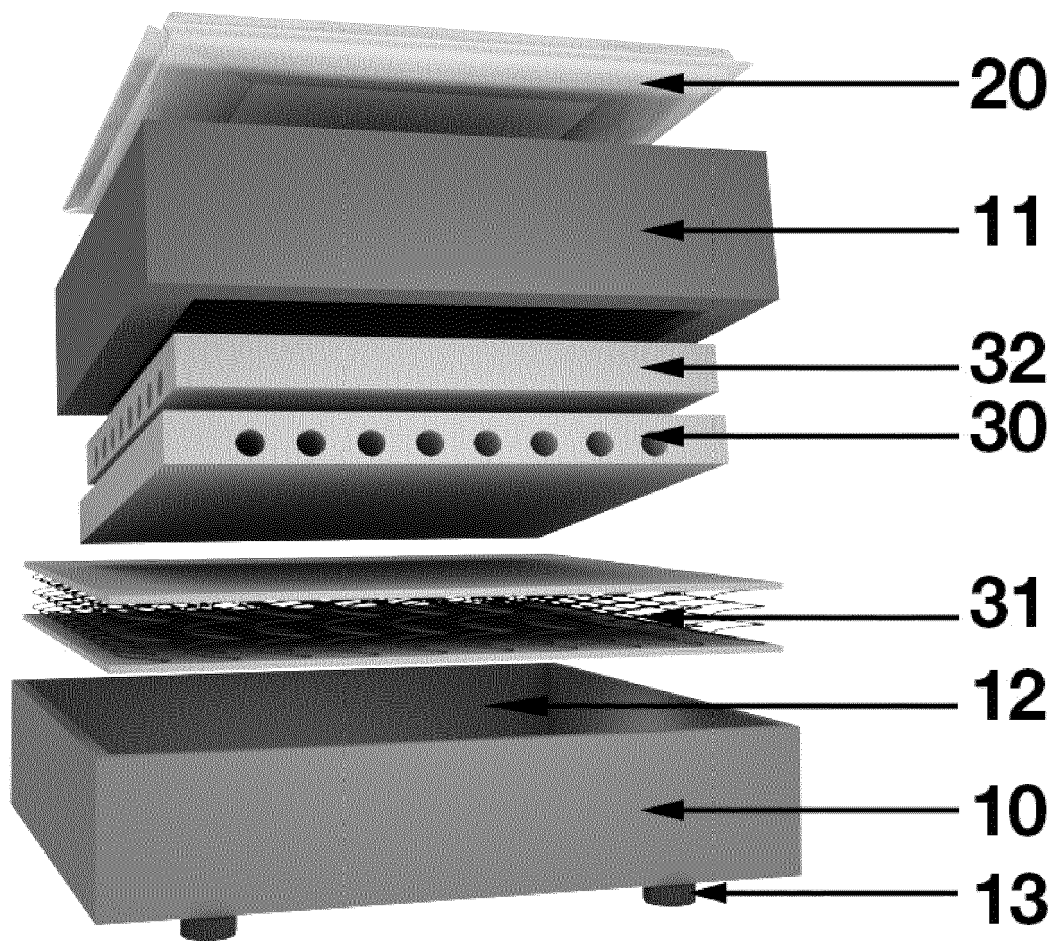


FIGURE 1

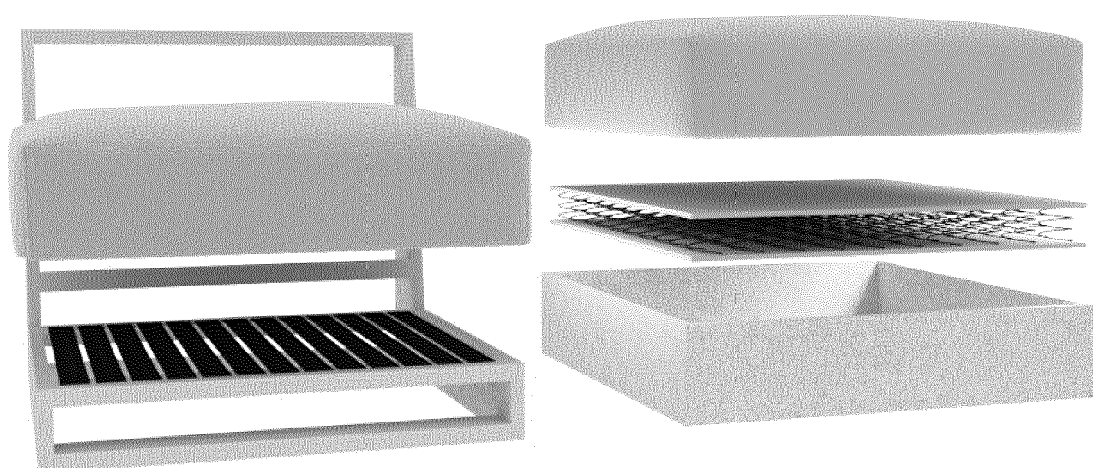


FIGURE 2



## EUROPEAN SEARCH REPORT

Application Number

EP 23 38 3059

## 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	DE 20 2010 005661 U1 (HUANG YUNG LIN [TW]) 30 September 2010 (2010-09-30) * paragraph [0001]; claim 1; figure 2 * -----	1-3	INV. A47C7/20 A47C7/24 A47C23/06
X	US 2006/279124 A1 (WHITE VERDI III [US] ET AL) 14 December 2006 (2006-12-14) * paragraph [0061]; figures * -----	1-3	A47C23/30 A47C27/00 A47C27/20
X	FR 2 264 506 A1 (BERNARD BUREAU ETUDES CHARLES [FR]) 17 October 1975 (1975-10-17) * figures * -----	1, 2	
A	WO 2018/114062 A1 (PRISMA D GMBH [DE]) 28 June 2018 (2018-06-28) * page 4, paragraph 2; figure 1 * -----	1-3	
A	ES 1 285 969 U (FAMA SOFAS S L U [ES]) 2 February 2022 (2022-02-02) * figures * -----	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		26 March 2024	Kis, Pál
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  
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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

26-03-2024

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
<b>DE 202010005661 U1</b>	<b>30-09-2010</b>	<b>NONE</b>	
-----			
<b>US 2006279124 A1</b>	<b>14-12-2006</b>	<b>AU 2006257890 A1</b>	<b>21-12-2006</b>
		<b>AU 2006258246 A1</b>	<b>21-12-2006</b>
		<b>CA 2609450 A1</b>	<b>21-12-2006</b>
		<b>CA 2609477 A1</b>	<b>21-12-2006</b>
		<b>CA 2725118 A1</b>	<b>21-12-2006</b>
		<b>CN 101208030 A</b>	<b>25-06-2008</b>
		<b>CN 101217900 A</b>	<b>09-07-2008</b>
		<b>CN 102125362 A</b>	<b>20-07-2011</b>
		<b>EP 1893053 A2</b>	<b>05-03-2008</b>
		<b>HK 1120378 A1</b>	<b>03-04-2009</b>
		<b>HK 1120709 A1</b>	<b>09-04-2009</b>
		<b>HK 1159447 A1</b>	<b>03-08-2012</b>
		<b>IL 187872 A</b>	<b>28-02-2011</b>
		<b>JP 4897802 B2</b>	<b>14-03-2012</b>
		<b>JP 2008545504 A</b>	<b>18-12-2008</b>
		<b>KR 20080012919 A</b>	<b>12-02-2008</b>
		<b>US 2006279124 A1</b>	<b>14-12-2006</b>
		<b>US 2007085406 A1</b>	<b>19-04-2007</b>
		<b>US 2007257539 A1</b>	<b>08-11-2007</b>
		<b>US 2009315382 A1</b>	<b>24-12-2009</b>
		<b>WO 2006135509 A2</b>	<b>21-12-2006</b>
		<b>WO 2006135855 A2</b>	<b>21-12-2006</b>
-----			
<b>FR 2264506 A1</b>	<b>17-10-1975</b>	<b>NONE</b>	
-----			
<b>WO 2018114062 A1</b>	<b>28-06-2018</b>	<b>DE 202016107344 U1</b>	<b>17-01-2017</b>
		<b>WO 2018114062 A1</b>	<b>28-06-2018</b>
-----			
<b>ES 1285969 U</b>	<b>02-02-2022</b>	<b>EP 4193881 A1</b>	<b>14-06-2023</b>
		<b>ES 1285969 U</b>	<b>02-02-2022</b>
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