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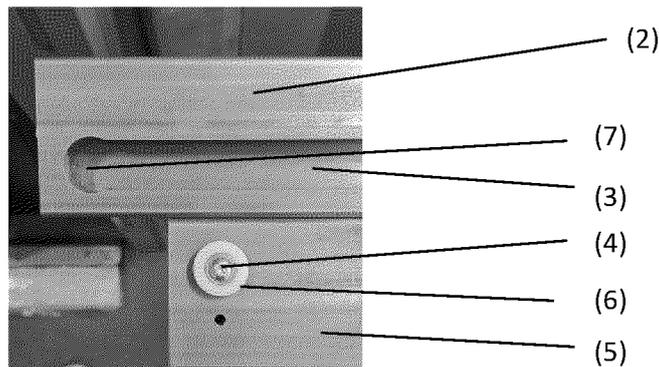
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(54) **SLIDING EXTENSION SYSTEM FOR FURNISHING ELEMENTS**

(57) The present invention concerns a sliding extension system (1) for furnishing elements, preferably for tables, consoles, etc., characterized by construction and manufacturing simplicity, particularly due to the presence

of internally hollow metal tubular profiles (2) equipped with longitudinal slots (3) suitable to allow the accommodation of bearings (4) fixed on the moving elements (5).

Fig. 3



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## Description

### Technical field

[0001] The present invention concerns a sliding extension system for furnishing elements, preferably for tables, consoles, etc., therefore it falls within the furnishing sector, in particular furniture and more particularly auxiliary accessories for furniture.

### State of the Art

[0002] Historically and up to the present day, systems for the sliding extension of furnishing elements, including both automatic and manual systems, involved the creation of extruded metal profiles made to order and specially structured to offer a sliding line for the bearings responsible for the fluidity of the opening movement.

[0003] The creation of said elements involved the prior creation of molds for the extrusion of the molten metal, which entailed particularly high design and manufacturing costs.

[0004] Furthermore, in-house fusion processes in companies are relatively unsustainable, have a very negative impact on the environment and the health of workers and are energetically very expensive.

[0005] The present invention intends to eliminate the design and manufacturing processes, adopting simple tubular profiles capable of providing, through simple machining, the same performances obtainable previously.

[0006] Patent document DE20304251U1 discloses a sliding extension system for shower enclosures.

### Summary of the invention

[0007] The problem addressed by the present invention is therefore that of providing an improved sliding extension system for furnishing elements, i.e. one which does not present or overcomes the aforementioned problems encountered with reference to the prior art.

[0008] Furthermore, as an additional problem, we would like to have a sliding extension system for furnishing elements with relatively low energy consumption and therefore more eco-sustainable and/or which provides said systems with a simple manufacturing process.

[0009] These problems are solved by the sliding extension system for furnishing elements of the present invention, as outlined in the attached claims, the definitions of which are an integral part of the present description.

[0010] In particular, the object of the invention is a sliding extension system (1) for furnishing elements which, according to a preferred embodiment, can be a table, a console, etc.

[0011] In particular, the object of the invention is a sliding extension system (1) for furnishing elements which, according to a preferred embodiment, can be a

table, a console, etc.

[0012] Another object is a process for producing a sliding extension system (1) for furniture elements.

[0013] Furthermore, another object are the furnishing elements comprising said sliding extension system (1).

[0014] Finally, another object is the use of an internally hollow metal tubular profile (2) for the creation of a sliding extension system (1) for furnishing elements.

[0015] Further characteristics and advantages of the sliding extension system (1) for furnishing elements of the invention and of the use of an internally hollow metal tubular profile (2) for its realization will result from the description of the examples of realization of the invention, provided as a indication of the invention.

### Brief description of the figures

[0016] The elements part of the system of the invention are listed and numbered here:

- (1) a sliding extension system for furniture elements,
- (2) internally hollow metal tubular profile,
- (3) longitudinal crack,
- (4) bearing, having a "U" profile, and has a wheel (6) coaxially applied.
- (5) sliding element,
- (6) wheel applied to bearing (4),
- (7) circular eyelet,
- (8) internal cavity of the internally hollow metal tubular profile (2).

Fig.1 shows a side view of an internally hollow metal tubular profile (2), in particular showing in the foreground the internal cavity (8) of said internally hollow metal tubular profile (2), according to an embodiment of the 'invention. This is an example of an internally hollow metal tubular profile (2).

Fig.2 shows a perspective view of the internally hollow metal tubular profile (2), in particular, showing the longitudinal slot (3), from which the thickness of the profile used as a sliding track and the window limit switch are evident cutting, as well as showing the internal cavity (8) of said internally hollow metal tubular profile (2).

Fig. 3 shows a front perspective view of the internally hollow metal tubular profile (2), in particular, showing the longitudinal slot (3) and the circular eyelet (7). Fig. 3 also shows the sliding element (5) on which a bearing (4) is fixed, having a "U" profile, and having a wheel (6) coaxially applied, also shown in figure 3.

Fig. 4 shows a perspective view of the internally hollow metal tubular profile (2), in particular, showing the longitudinal slot (3), from which the thickness of the profile used as a sliding track and the end stop of the window are evident cutting, as well as showing the internal cavity (8) of said internally hollow metal tubular profile (2) and also showing the circular eyelet (7).

Fig. 5 shows a perspective view of the sliding element (5) on which a bearing (4) is fixed, having a "U" profile, and having a wheel (6) coaxially applied, also shown in figure 5. This is the profile with sliding wheel to be coupled to the internally hollow metal tubular profile (2).

Fig. 6 shows a side view from above of the sliding element (5) on which two bearings (4) are fixed, having a "U" profile, each of which has a wheel (6) coaxially applied, also shown in figure 6.

Fig. 7 shows two bearings (4) including a wheel (6), according to a preferred embodiment, where the "U" groove of the bearing (4) is made on the upper part of the wheel (6) of the bearing (4).

### Detailed description of the invention

**[0017]** As used herein, the terms "top", "bottom", "right", "left", "back", "front", "vertical", "horizontal" and their derivatives refer to the concepts oriented in Fig. 3.

**[0018]** However, it should be understood that the concepts can take various alternative orientations, except where expressly specified to the contrary.

**[0019]** As used herein, the term "and/or", when used in a list of two or more items, means that any of the listed items may be employed alone, or in any combination of two or more of the listed items.

**[0020]** For example, if a system is described as containing components A, B and/or C, the system can only contain A; B only; C only; A and B in combination; A and C in combination; B and C in combination; or A, B and C in combination.

**[0021]** The terms "includes", "comprising" or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a system, process, use, which includes a list of elements does not include only those elements but may include other items not expressly listed or inherent to such system, process, use, etc.

**[0022]** An element followed by "comprises...a..." does not, without further constraints, prevent the existence of further identical elements in the system, process or use comprising the element.

**[0023]** An object of the present invention is a sliding extension system (1) for furnishing elements comprising:

- at least one internally hollow metal tubular profile (2) where said internally hollow metal tubular profile (2) has at least one longitudinal slot (3), where said at least one longitudinal slot (3) is suitable for housing and allowing the longitudinal sliding of the "U" or "T" profile of at least one bearing (4) or of a wheel (6) applied to said bearing (4), or of at least an "H" profile, where said at least one bearing (4) or said at least an "H" profile is fixed on a sliding element (5) and where in said at least one internally hollow metal tubular profile (2) internally presents a profile suitable for housing and allowing the longitudinal movement of at least part of said bearing (4) or of a wheel (6)

applied to said bearing (4) or of said at least an "H" profile;

- at least one bearing (4) comprising a "U" or "T" profile, where said at least one bearing (4) is fixed on said sliding element (5) and where said at least one bearing (4) has, optionally, coaxially applied a wheel (6); or at least one "H" profile where said at least one "H" profile is fixed on said sliding element (5),
- a sliding element (5) on which said at least one bearing (4) or at least an "H" profile is fixed.

**[0024]** According to a preferred embodiment, the object of the present invention is a sliding extension system (1) for furnishing elements comprising:

- at least one internally hollow metal tubular profile (2) where said internally hollow metal tubular profile (2) has at least one longitudinal slot (3), where said at least one longitudinal slot (3) is suitable for housing and allowing the longitudinal sliding of the "U" profile of at least one bearing (4), where said at least one bearing (4) is fixed on a sliding element (5) and where said at least one internally hollow metal tubular profile (2) internally presents a profile suitable for housing and to allow the longitudinal movement of at least part of a wheel (6) applied to said bearing (4);
- at least one bearing (4) comprising a "U" profile, where said at least one bearing (4) is fixed on said sliding element (5) and where said at least one bearing (4) has a wheel (6) coaxially applied,
- a sliding element (5) on which said at least one bearing (4) is fixed.

**[0025]** It has in fact been surprisingly found that said system allows problems to be solved with reference to the prior art, allowing and, as it is structurally conceived, allowing the system of the invention to be created in an extremely simple, not expensive, eco-friendly way. friendly and sustainable.

**[0026]** It has in fact been found to use the internal cavity of the profile as a sliding seat for the bearing (4) and/or the wheel (6) necessary for the movement of the extension elements or profiles.

**[0027]** Alternatively, it has been found that it is possible to use the internal cavity of the profile as a sliding seat for the bearing (4) and/or the wheel (6), and, at the same time, use the longitudinal slot (3) as a track for the sliding of the bearing (4) and/or of the wheel (6) having a "U" or "T" profile.

**[0028]** Preferably, it has been found that it is possible to use the internal cavity of the profile as a sliding seat for the bearing (4) and the wheel (6), and, at the same time, to use the longitudinal slot (3) as a track for the sliding of the bearing (4) and the wheel (6), where the wheel (6) has a "U" or "T" profile.

**[0029]** The term sliding extension system (1) for furnishing elements means a system which, thanks to the

fact that it can be extendable, when applied to furnishing elements, allows them to be lengthened.

**[0030]** The term "T" means an inverted T, i.e. a T shape where the T is arranged horizontally and not vertically, as usually understood.

**[0031]** According to a preferred aspect, the sliding extension system (1) comprises at least one bearing (4) having a wheel (6) coaxially applied.

**[0032]** The sliding extension system (1) is aimed at the "dynamic" transformation of a furnishing element.

**[0033]** The term furnishing elements includes furniture for furnishing private or work environments, and therefore includes, among others, tables, consoles, desks, armchairs, etc.

**[0034]** The term an internally hollow metallic tubular profile (2) means a substantially tubular body, such as and for example a tube with a circular, square, rectangular section, etc. which is internally hollow, where the cavity has the same type of section as the tubular body. Therefore, this term includes, among others, circular tubes or profiles, square section tubes or profiles, rectangular section tubes or profiles, etc.

**[0035]** The term longitudinal crack (3) indicates a crack with a longitudinal shape, where said crack has the same direction as the longitudinal axis of the internally hollow metal tubular profile (2).

**[0036]** The term bearing (4) indicates a body comprising a bearing on which, optionally, a wheel (6) is coaxially applied and where said bearing is fixed to a sliding element (5) by means of a fastening element which extends from center of the bearing to the sliding element (5).

**[0037]** Preferably, the bearing (4) has a "U" or "T" profile.

**[0038]** Alternatively and preferably, the term bearing (4) indicates a body comprising a bearing on which a wheel (6) is coaxially applied and where said bearing is fixed to a sliding element (5) by means of a fixing element which extends from the center of the bearing to the sliding element (5), and where the "U" or "T" groove of the bearing (4) is made on the top of the bearing and/or the wheel (6) of the bearing (4).

**[0039]** In general, the bearing (4) is attached to a sliding element (5) by a fastener that extends from the center of the bearing to the sliding element (5). This fastening element can be for example a screw or screw with bolt.

**[0040]** The term sliding element (5) indicates an element capable of sliding longitudinally with respect to an internally hollow metal tubular profile (2). The sliding element (5) can be fixed to further elements, such as for example drawers, extensions, doors, etc., suitable for sliding from the rest position.

**[0041]** The internally hollow metal tubular profile (2) can be made of any metal, such as iron, aluminium, etc. or in a metal alloy such as steel, cast iron, etc. Preferably the internally hollow metal tubular profile (2) is made of aluminum or steel.

**[0042]** The internally hollow metal tubular profile (2)

can have a round, square, rectangular section, etc. Preferably the internally hollow metal tubular profile (2) has a rectangular section.

**[0043]** The internal cavity of the internally hollow metal tubular profile (2) has the same type of section as the tubular profile, therefore, if for example the tubular profile (2) has a rectangular section, its internal cavity also has a rectangular section.

**[0044]** Preferably the internally hollow metal tubular profile (2) has a rectangular section and the internal cavity (8) has a rectangular section.

**[0045]** Preferably, the rectangular section of the internally hollow metal tubular profile (2) and the rectangular section of the internal cavity (8) have the vertical side measuring from 105% to 400% compared to the measurement of the horizontal side, with reference to the concepts orientations of fig. 3 or fig. 5; more preferably from 150% to 300% compared to the measurement of the horizontal side.

**[0046]** The height of at least one longitudinal slot (3) is 1 to 2 mm higher than the height of the "U" profile of at least one bearing (4) and where said height of the longitudinal slot (3) is smaller than the external diameter of the wheel (6) of the bearing (4). The concept of height refers to the orienting concept of figure 3.

**[0047]** These height values of the longitudinal slot (3) will allow the wheel (6) to be kept in place and to slide correctly.

**[0048]** The height positioning (H) of the central axis of the cutting window (parallel to the sliding trend) on the face of the profile does not follow predetermined logic. The design of the scrolling and its dynamics determine its location.

**[0049]** However, a programmed misalignment between the sliding axes of the slots or "windows" created in the coupled profiles is preferable. The ultimate aim is to create a pre-load effect on the wheels involved in sliding so as to obtain greater stability between the elements, a controlled fluidity of the rotation of the wheels themselves and greater resistance to structural stresses due to bending moment in the phases of maximum extension of the product.

**[0050]** The at least one longitudinal slot (3) has in one of the two end parts a circular eyelet (7) whose center lies on the longitudinal axis of the slot (3), where said circular eyelet (7) has a diameter of 1 to 3 mm larger than the external diameter of the wheel (6) or bearing (4), or where said circular eyelet (7) has a diameter whose value is greater than the height of the longitudinal slot (3).

**[0051]** At the head of the longitudinal slot (3) (or cutting window) the creation of a circular insertion "eyelet" (7) is preferably provided. The hole (7) created will have a center aligned and parallel to the scrolling axis, in a median position with respect to the height of the scrolling window. Its diameter will be greater than the external diameter of the sliding wheel (6) by a value between 1 and 3 mm. The hole (7) will allow the sliding position of the chosen rotating element and its groove in contact with the

internal edge of the milled profile. At the tail, the milling will maintain a height equal to the longitudinal slot or the sliding window and will end with a circular cut of the same diameter, avoiding the wheel coming out at the end of the stroke.

**[0052]** The bearing (4) can be a radial wheel, ball or roller bearing, etc.

**[0053]** The bearing (4) must be provided with a "U" or "T" groove for sliding on the thickness of the profile inside the longitudinal slot (3) and must adapt in diameter and depth to the dimensions of the tubular profile internally hollow metal (2) furthermore and/or must adapt to the dimensions of the track created by the longitudinal slot (3).

**[0054]** The "U" groove of the bearing (4) is subject to loads and frictional actions such as to recommend the use of reinforced nylon wheels (6) and steel ball wheel. However, the system object of the present invention does not preclude the use of alternative rotating elements.

**[0055]** Preferably, the "U" or "T" groove of the bearing (4) is made on the upper part of the wheel (6) of the bearing (4).

**[0056]** More preferably, the "U" or "T" groove of the bearing (4) is made on the top of the wheel (6) of the bearing (4), where the wheel (6) is made of reinforced nylon.

**[0057]** According to one embodiment, the at least one metal tubular profile (2) has a plurality of longitudinal slots (3).

**[0058]** In fact, it is considered possible to create multiple longitudinal slots (3), i.e. sliding windows, on a single profile and single sliding face so as to multiply the extendable elements; it is also possible to produce two independent windows, on the same sliding axis or in misalignment, obtaining sliding in opposite directions, and multiple extension sides.

**[0059]** Preferably, at least two bearings (4) are fixed in the sliding element (5).

**[0060]** According to a preferred aspect, said at least one bearing (4) has a wheel (6) coaxially applied.

**[0061]** According to a preferred aspect, the wheel (6) is applied around said at least one bearing (4).

**[0062]** According to a more preferred aspect, said at least one bearing (4) has a wheel (6) coaxially applied and the wheel (6) is applied around said at least one bearing (4).

**[0063]** According to a preferred aspect, the wheel (6) has a "U" or "T" profile.

**[0064]** According to a more preferred aspect, the wheel (6) has a "U" or "T" external profile.

**[0065]** According to a preferred aspect, the wheel (6) is made of Teflon®.

**[0066]** According to a preferred aspect, the sliding extension system (1) is that of fig. 3.

**[0067]** The sliding extension system (1) has different embodiments:

- 1) one in which the bearing (4) or the wheel (6)

applied around the bearing (4) slides along the longitudinal slot (3) using the lower part of the slot as a sliding track. The external "U" or "T" profile of the bearing (4) or of the wheel (6) favors sliding on the aforementioned track; in this situation the bearing (4) or the wheel (6) applied around the bearing (4) slide partially inside the internally hollow metal tubular profile (2);

2) the one in which the bearing (4) or the wheel (6) applied around the bearing (4) slide completely inside the internally hollow metal tubular profile (2), where therefore the internal part of the internally hollow metal tubular profile (2) acts as a sliding track;

3) the one in which the bearing (4) slides along the longitudinal slot (3) using the lower part of the slot as a sliding track, while the wheel (6) slides completely inside the internally hollow metal tubular profile (2).

**[0068]** The first embodiment described above is the most preferred one because it gives rise to greater stability and tightness of the sliding extension system.

**[0069]** Another object is a process for creating a sliding extension system (1) for furniture elements as described above, comprising the following steps:

- a) identification and provision of at least one internally hollow metal tubular profile (2),
- b) creation on graphic software of the sizing drawings of the millings to be made on said internally hollow metal tubular profile (2),
- c) create at least one longitudinal slot (3), by milling operations with bench, axis or laser cutting milling machines, on the internally hollow metal tubular profile (2),
- d) fix at least one bearing (4) including a "U" or "T" profile on a sliding element (5), or at least an "H" profile,
- e) assemble the internally hollow metal tubular profile element (2) with at least one longitudinal slot (3) of the passage c) with the sliding element (5) equipped with at least one bearing (4) or at least one "H" profile of step d).

**[0070]** This is an extremely easy process to implement the sliding extension system (1).

**[0071]** In step a), the identification of the tubular metal profiles is such as to require the selection of profiles suitable for sliding movement and bending loads in the maximum opening position of the extendable element.

**[0072]** In step b) the sizing drawings of the millings to be made on the metal profiles are created on graphic software. The metal profiles involved in the sliding usually work in pairs but can work in double combination on the two opposite faces, producing a sequential sliding on multiple elements in "telescopic" mode.

**[0073]** In step c), the milling operations can be carried out with bench, axis or laser cutting milling machines. The milling line involves a linear "passing" cut, to be made on

the chosen sliding side of the profile and parallel to the sliding trend. The same approach applies to the matched profile(s). Alternatively, the cuts can be made on a single profile and the sliding wheels can be installed in the coupled profile.

**[0074]** The cut will produce a longitudinal sliding "window" or crack. The processing waste (surplus) resulting from milling, preferably laser milling, will not play any role in the element handling processes.

**[0075]** Preferably, in step c) the milling is carried out using a laser cutting cutter.

**[0076]** Preferably, said process also includes step c-bis) of creating a circular eyelet (7) in one of the two end parts of the longitudinal slot (3) and whose center lies on the longitudinal axis of the slot (3).

**[0077]** Preferably, the aforementioned process can include a further step c-tris) where, through cutting processes on axis CNC machines (3,4,5), it involves the beveling of the edges of the longitudinal crack(s) (3) through the intervention of specific cutting tips. This further passage (c-tris) allows the creation of a sliding seat that is less wearing and has less impact on the "U" groove of the bearing (4). This further step c-tris) improves the functional performance of the system (1), in particular by reducing the wear of the bearing (4).

**[0078]** Another object is a furniture element comprising at least one sliding extension system (1) as described above. Preferably, said furnishing element is a table or console.

**[0079]** Finally, another object is the use of an internally hollow metal tubular profile (2) for the creation of a sliding extension system (1) for furnishing elements, where, preferably, said furnishing elements are tables, consoles, etc.

**[0080]** With the process described above, a simplified sliding system is created, capable of reducing design and construction costs.

**[0081]** The use of the internal cavity of the milled profile as a track or partial sliding track, combined with wheels, is suitable for applications in the field of furniture and transformable and dynamic extension systems.

**[0082]** In the evolution of handling methods, a further form of embodiment of the sliding extension system (1), among the possible sections, also "H" profiles for elements that do not "slide" thanks to a rotation on a central axis with application of wheels, but for simple passage-movement on the longitudinal slot (3) permitted by the low friction provided by the type of material that constitutes them, for example Teflon (PTFE), High Density Polyethylene (HDPE), Nylon, Acetal (POM), etc., constitute a further embodiment.

**[0083]** These "H" profiles can be mechanically fixed to one of the tubulars, and act as "spacers" and at the same time, as sliding elements.

**[0084]** Said "H" profiles do not necessarily have to have a shape that respects radial symmetry and can do without an axis of rotation.

**[0085]** This embodiment is a simplification of the ex-

tension system and is therefore particularly economical.

**[0086]** The fact remains that bearings (4) and/or wheels (6) with radial symmetry are preferable.

**[0087]** According to a preferred embodiment of the sliding extension system (1) described above, the at least one "H" profile is made of Teflon (PTFE), High Density Polyethylene (HDPE), Nylon, or Acetal (POM).

**[0088]** All the individual pieces constituting the sliding extension system (1) are commercially and individually available on any large online commercial platform and, considering the figures reported here, their assembly does not require further inventive efforts.

## 15 Claims

1. A sliding extension system (1) for furnishing elements comprising:

- 20 - at least one internally hollow metal tubular profile (2) where said internally hollow metal tubular profile (2) has at least one longitudinal slot (3), where said at least one longitudinal slot (3) is suitable for housing and allowing the longitudinal sliding of the "U" or "T" profile of at least one bearing (4) or of a wheel (6) applied to said bearing (4), or of at least an "H" profile, where said at least one bearing (4) or said at least an "H" profile is fixed on a sliding element (5) and wherein said at least one internally hollow metal tubular profile (2) internally presents a profile suitable for housing and allowing the longitudinal movement of at least part of said bearing (4) or of a wheel (6) applied to said bearing (4) or of said at least an "H" profile;
- 25 - at least one bearing (4) comprising a "U" or "T" profile, where said at least one bearing (4) is fixed on said sliding element (5) and where said at least one bearing (4) has, optionally, coaxially applied a wheel (6); or at least one "H" profile where said at least one "H" profile is fixed on said sliding element (5),
- 30 - a sliding element (5) on which said at least one bearing (4) or at least an "H" profile is fixed.

2. A sliding extension system (1) according to claim 1, wherein the internally hollow metal tubular profile (2) has a rectangular section and where the internal cavity (8) has a rectangular section.

3. A sliding elongation system (1) according to claim 2, wherein the rectangular section of the internally hollow metal tubular profile (2) and the rectangular section of the internal cavity (8) have the vertical side measuring from 105% to 400 % compared to the measurement of the horizontal side.

4. A sliding extension system (1) according to any one

- of claims 1 to 3, wherein the height of the at least one longitudinal slot (3) is 1 to 2 mm higher than the height of the "U" profile " of at least one bearing (4) and where said height of the longitudinal slot (3) is lower than the external diameter of the wheel (6) of the bearing (4). 5
- 5.** A sliding extension system (1) according to any one of claims 1 to 4, wherein the at least one longitudinal slot (3) has in one of the two end parts a circular eyelet (7) whose center lies on the longitudinal axis of the slot (3), where said circular eyelet (7) has a diameter 1 to 3 mm larger than the external diameter of the wheel (6) or the bearing (4), or where said circular eyelet (7) has a diameter whose value is greater than the height of the longitudinal slot (3). 10
- 6.** A sliding extension system (1) according to any one of claims 1 to 5, wherein the at least one metal tubular profile (2) has a plurality of longitudinal slots (3). 20
- 7.** A sliding extension system (1) according to any one of claims 1 to 6, wherein said at least one bearing (4) has a wheel (6) coaxially applied. 25
- 8.** A sliding extension system (1) according to claim 7, wherein the wheel (6) is applied around said at least one bearing (4).
- 9.** A sliding extension system (1) according to any one of claims 1 to 8, wherein said wheel (6) has a "U" or "T" profile. 30
- 10.** A sliding extension system (1) according to any one of claims 1 to 9, wherein said wheel (6) is made of Teflon®. 35
- 11.** A sliding extension system (1) according to any one of claims 1 to 3 or 5 to 6, wherein the at least one "H" profile is made of Teflon (PTFE), High Density Polyethylene (HDPE ), Nylon, or Acetal (POM). 40
- 12.** Process for the creation of a sliding extension system (1) for furnishing elements according to any of claims 1 to 11, comprising the following steps: 45
- a) identification and provision of at least one internally hollow metal tubular profile (2),
  - b) creation on graphic software of the sizing drawings of the millings to be made on said internally hollow metal tubular profile (2), 50
  - c) create at least one longitudinal slot (3), by milling operations with bench, axis or laser cutting milling machines, on the internally hollow metal tubular profile (2), 55
  - d) fix at least one bearing (4) including a "U" or "T" profile on a sliding element (5), or at least an "H" profile,
  - e) assemble the internally hollow metal tubular profile element (2) with at least one longitudinal slot (3) of the passage c) with the sliding element (5) equipped with at least one bearing (4) or at least one "H" profile of step d).
- 13.** Process for the creation of a sliding extension system (1) according to claim 12, wherein said process also includes step c-bis) of creating a circular eyelet (7) in one of the two end parts of the longitudinal slot (3) and whose center lies on the longitudinal axis of the crack (3).
- 14.** Furnishing element comprising at least one sliding extension system (1) according to any one of claims 1 to 11
- 15.** Use of an internally hollow metal tubular profile (2) to create a sliding extension system (1) for furnishing elements.

Fig. 1

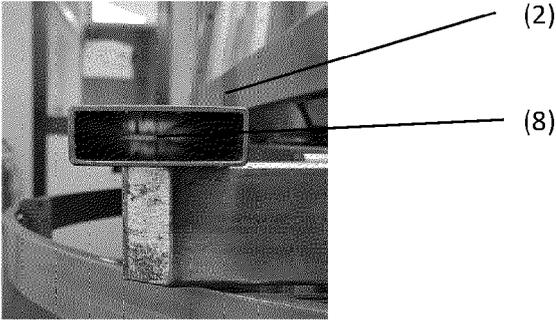


Fig. 2

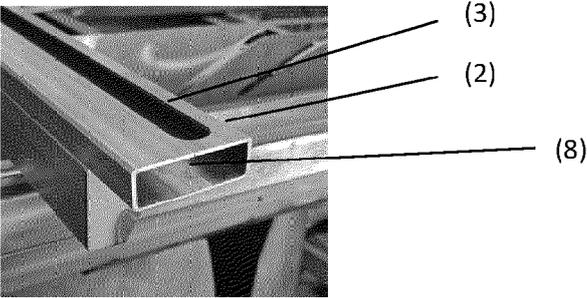


Fig. 3

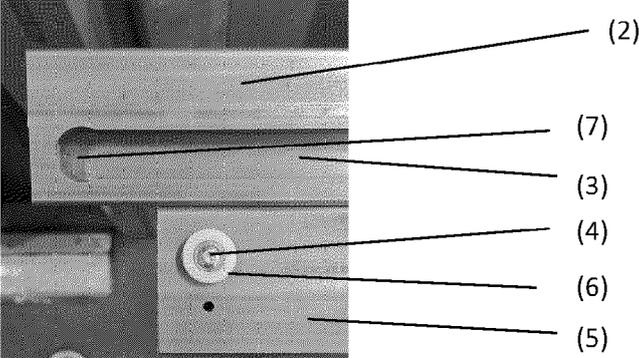


Fig. 4

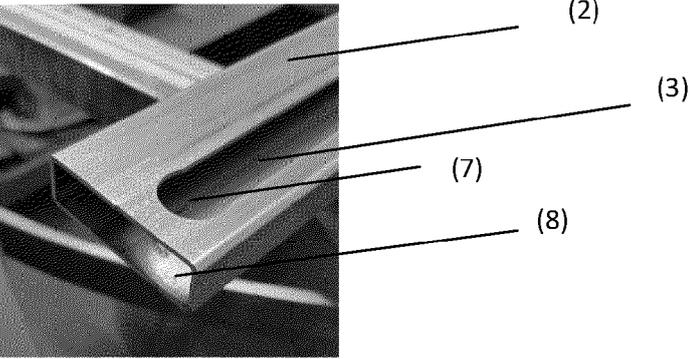


Fig. 5

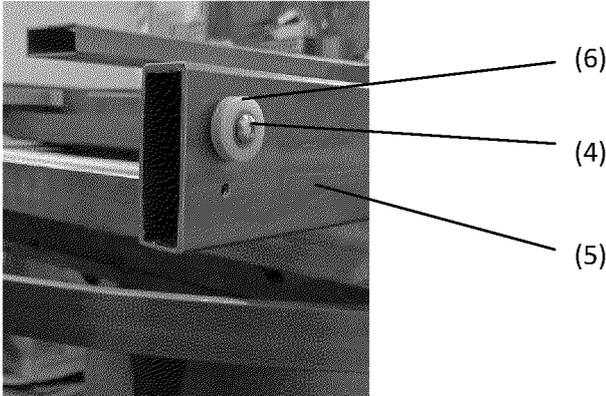


Fig. 6

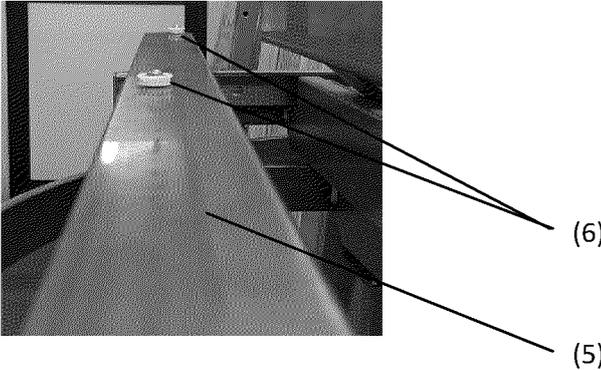
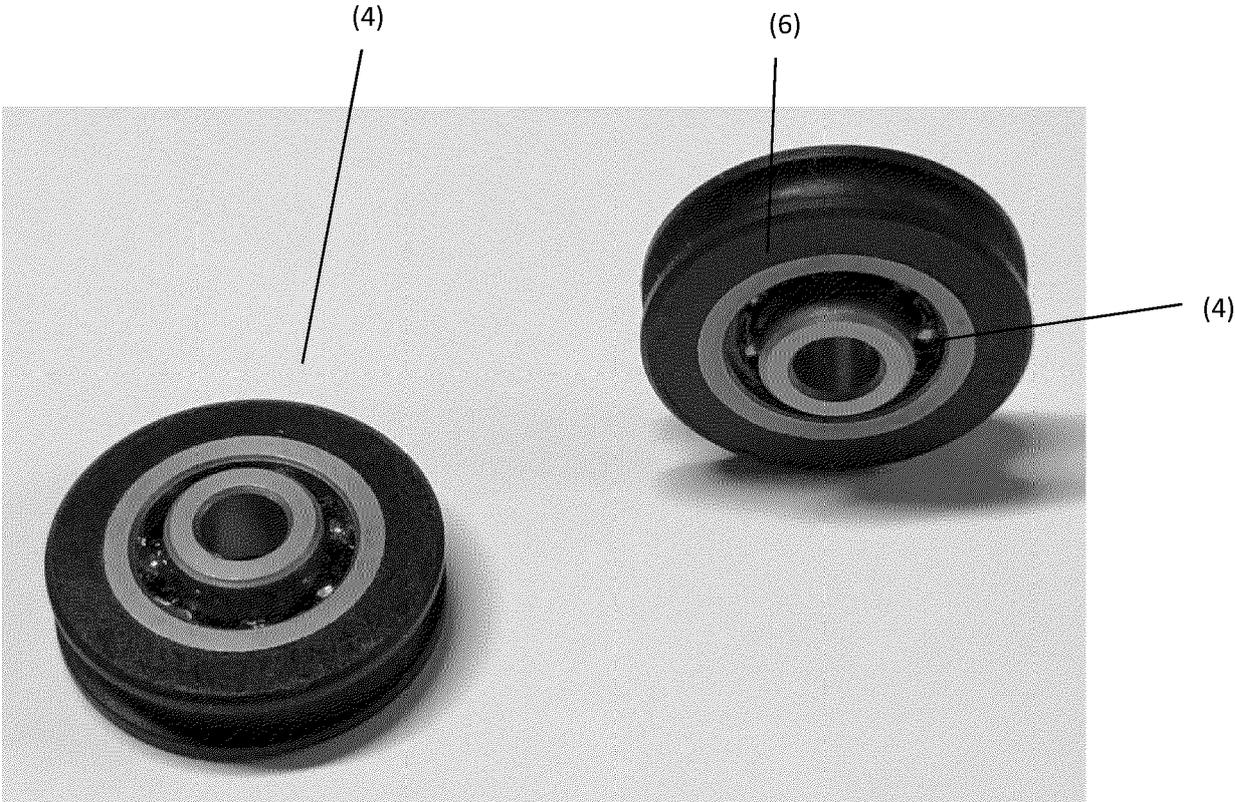


Fig. 7





EUROPEAN SEARCH REPORT

Application Number

EP 24 21 2966

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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,D	DE 203 04 251 U1 (SCHULTE DUSCHKABINEN [DE]) 18 June 2003 (2003-06-18)	1-4, 6-12,14, 15	INV. A47B1/10 A47B88/487
A	* page 3, line 34 - line 35 * * figure 2 *	5,13	ADD. A47C3/00
A	DE 20 2013 007959 U1 (ELEVATOR TRADING GMBH [DE]) 25 September 2013 (2013-09-25) * paragraph [0043] - paragraph [0044] * * figures 2,3-7 *	1-15	
A	US 1 191 159 A (CUNNINGHAM CHARLES P [US]) 18 July 1916 (1916-07-18) * page 1, line 63 - line 70 * * figures 2-4,6 *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47B F16C E05D A47D A47C
The present search report has been drawn up for all claims			
Place of search <b>The Hague</b>		Date of completion of the search <b>19 March 2025</b>	Examiner <b>Bitton, Alexandre</b>
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.**

EP 24 21 2966

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

19 - 03 - 2025

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 20304251 U1	18-06-2003	NONE	
DE 202013007959 U1	25-09-2013	NONE	
US 1191159 A	18-07-1916	NONE	

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EPO FORM P0459

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**Patent documents cited in the description**

- DE 20304251 U1 [0006]