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(54) **Sliding mechanism for a furnishing element**

(57) Sliding mechanism (10) for a furnishing element (11), comprising a wheel (14) rotatable on a pin (13) which is provided, at one end, with a first threaded part able to be screwed to the furnishing element (11) and, at the other end, with a head. The pin (13) also comprises a second cylindrical part which is disposed between the threaded part and the head, and which has a diameter substantially equal to the inner diameter of the wheel (14).

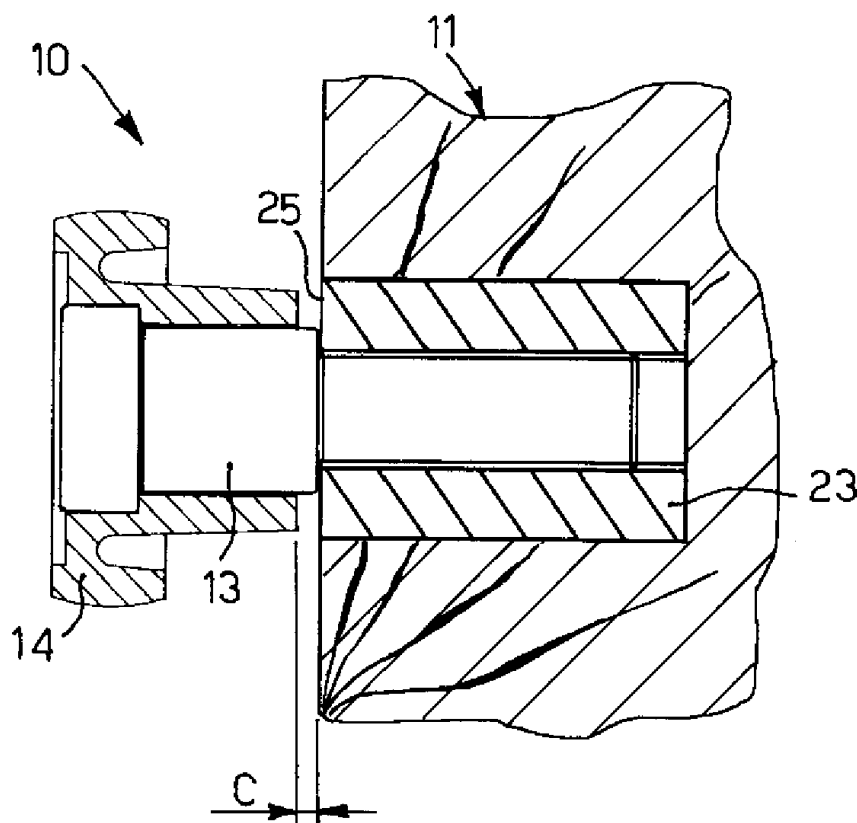


fig. 3

Description

FIELD OF THE INVENTION

5 **[0001]** The present invention concerns a sliding mechanism used in a furnishing element to allow the sliding, for example, between two planes of a table, or of a drawer with respect to a frame, a shelf with respect to a frame, or other.

BACKGROUND OF THE INVENTION

10 **[0002]** The sliding mechanism shown in figs. 1 and 2, and indicated by the number 100, is known. The known mechanism 100 is shown mounted in a furnishing element 11 and comprises a pin 101 made of steel, on which a bush 102 is inserted, made of brass, and a wheel 103 made of plastic, rotatable on the bush 102.

[0003] To be more exact, the pin 101 is provided, at one end thereof, with a threaded part 105 screwed into a metal bushing 23, in turn attached in the furnishing element 11.

15 **[0004]** This known sliding mechanism has the disadvantage, however, that it consists of three different pieces which are complicated to produce and require a relatively long and complex assembly.

[0005] A purpose of the present invention is to produce a sliding mechanism which comprises fewer pieces, which can be produced and assembled more simply with respect to known mechanisms and which is less expensive.

20 **[0006]** The Applicant has devised, tested and embodied the present invention to overcome the shortcomings of the state of the art and to obtain these and other purposes and advantages.

SUMMARY OF THE INVENTION

25 **[0007]** The present invention is set forth and characterized in the main claim, while the dependent claims describe other characteristics of the invention or variants to the main inventive idea.

[0008] In accordance with the above purpose, a sliding mechanism according to the present invention, usable in a furnishing element, comprises a wheel rotatable on a pin, which is provided, at one end, with a first threaded part able to be screwed to the furnishing element, and at the other end is provided with a head.

30 **[0009]** According to a characteristic of the present invention, the pin also comprises a second part, substantially cylindrical, which is disposed between the threaded part and said head, and has a diameter substantially equal to the inner diameter of the wheel.

[0010] The wheel is therefore free to rotate on the second part of the pin and is axially constrained to the pin between the head of the latter and the furnishing element, without needing to interpose a bush between the wheel and the furnishing element.

35 **[0011]** In this way, the sliding mechanism according to the invention comprises only two pieces, and can be produced and assembled more simply than known mechanisms, with a consequent saving in costs.

BRIEF DESCRIPTION OF THE DRAWINGS

40 **[0012]** These and other characteristics of the present invention will become apparent from the following description of a preferential form of embodiment, given as a non-restrictive example with reference to the attached drawings wherein:

- fig. 1 is a lateral section of a sliding mechanism of a known type inserted in a furnishing element;
- fig. 2 is a lateral exploded section of the sliding mechanism of a known type in fig. 1;
- 45 - fig. 3 is a lateral section of a sliding mechanism according to the present invention inserted in a furnishing element;
- fig. 4 is a lateral exploded section of the sliding mechanism in fig. 3.

DETAILED DESCRIPTION OF A PREFERENTIAL FORM OF EMBODIMENT

50 **[0013]** With reference to fig. 3, a sliding mechanism 10 according to the present invention is inserted in a furnishing element 11, such as for example a table.

[0014] The mechanism 10 comprises a pin 13 made of metal, for example steel, or brass, of a substantially cylindrical shape (figs. 3 and 4), and a wheel made of plastic, for example self-lubricating material, and rotatable with respect to the pin 13.

55 **[0015]** The pin 13 comprises, at a first end, a head 16 and at the other end a threaded part 17. Between the two ends an intermediate part 18 is made, substantially cylindrical in shape.

[0016] The head 16 has a diameter D_1 greater than the diameter D_2 of the intermediate part 18, and the latter in turn has a diameter greater than the diameter D_3 of the threaded part 17. To give an example, the diameter D_1 is about 10

mm, the diameter D_2 about 8 mm and the diameter D_3 about 6 mm.

[0017] The wheel 14 comprises inside a first cylindrical seating 21 able to cooperate with the head 16 and a second cylindrical seating 22 able to cooperate with the intermediate part 18.

[0018] The diameter D_4 of the first cylindrical seating 21 is such as to define a coupling with play with respect to the diameter D_1 and, similarly, the diameter D_5 of the second cylindrical seating 22 is such as to define a coupling with play with respect to the diameter D_2 of the intermediate part 18.

[0019] In order to assemble the mechanism 10 according to the invention, the wheel 14 is inserted into the pin 13 on the threaded side 17 until the first cylindrical seating 21 goes to cooperate with the head 16.

[0020] Subsequently the pin 13, by means of its threaded part 17, is screwed onto a bushing 23, in this case made of metal material, attached in turn in the furnishing element 11, until the step that the intermediate part 18 forms with the threaded part 17 abuts with a front surface 25 of the bushing 23.

[0021] To allow the screwing and unscrewing operations, the head 16, for example, has a hexagonal seating for an Allen wrench.

[0022] The height A of the intermediate part 18, which to give an example is equal to about 9 mm, is slightly greater than the height B of the second cylindrical seating 22 by a quantity such as to leave a distance C between the wheel 14 and the bushing 23, so as to allow the wheel 14 to rotate freely around the pin 13.

[0023] The distance C, which in this case is about 1 mm, is generally comprised between about 5% and about 20% of the height A of the intermediate part 18.

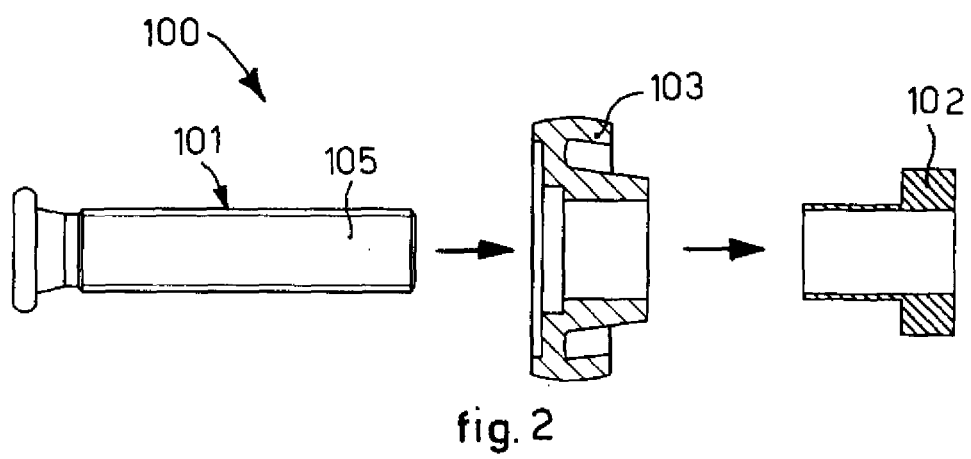
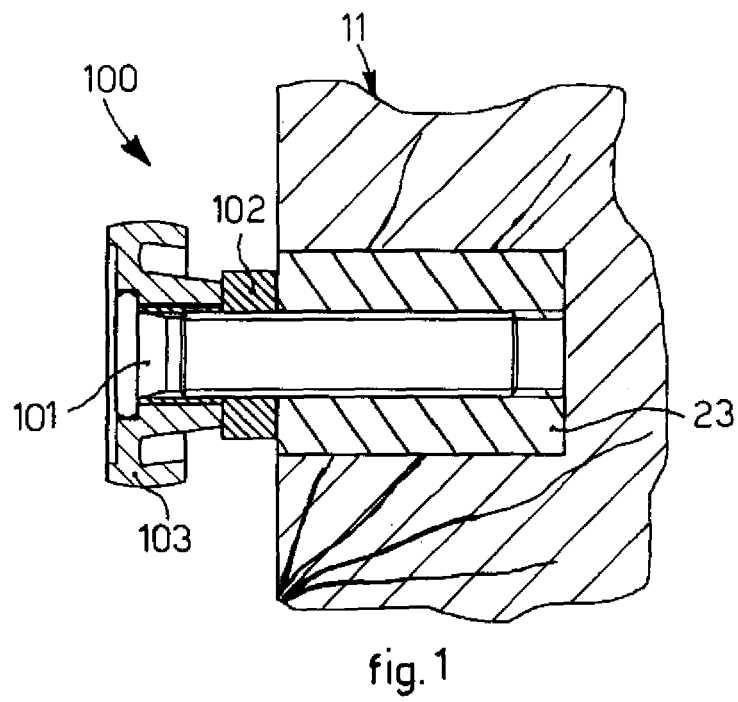
[0024] It is clear that modifications and/or additions of parts may be made to the sliding mechanism 10 as described heretofore, without departing from the field and scope of the present invention.

[0025] According to a variant of the invention, the threaded part 17 is of the self-threading type and therefore the pin 13 is screwed directly to the furnishing element 11, without interposition of the bushing 23.

[0026] It is also clear that, although the present invention has been described with reference to some specific examples, a person of skill in the art shall certainly be able to achieve many other equivalent forms of sliding mechanism for furnishing elements, having the characteristics as set forth in the claims and hence all coming within the field of protection defined thereby.

Claims

1. Sliding mechanism for a furnishing element (11), comprising a wheel (14) rotatable on a pin (13) which is provided, at one end, with a first threaded part (17) able to be screwed to said furnishing element (11) and, at the other end, with a head (16), **characterized in that** said pin (13) also comprises a second part (18), substantially cylindrical, disposed between said threaded part (17) and said head (16), and having a diameter (D_2) substantially equal to the inner diameter (D_5) of said wheel (14).
2. Sliding mechanism as in claim 1, **characterized in that** said pin (13) is made of metal and said wheel (14) is made of plastic material.
3. Sliding mechanism as in claim 1 or 2, **characterized in that** said head (16) protrudes with respect to said second part (18), and the latter in turn protrudes with respect to said threaded part (17).
4. Sliding mechanism as in claim 1, 2 or 3, **characterized in that** said wheel (14) comprises internally a first cylindrical seating (21) able to cooperate with said head (16) and a second cylindrical seating (22) able to cooperate with said second part (18).
5. Sliding mechanism as in claim 4, **characterized in that** the diameter (D_4) of said first cylindrical seating (21) is substantially equal to the diameter (D_1) of said head (16).
6. Sliding mechanism as in claim 5, **characterized in that** said second part (18) has a height (A) greater than the height (B) of said second cylindrical seating (22) by a quantity defining a distance (C) between the wheel (14) and the furnishing element (11) comprised between about 5% and 20% of the height (A) of said second part (18).



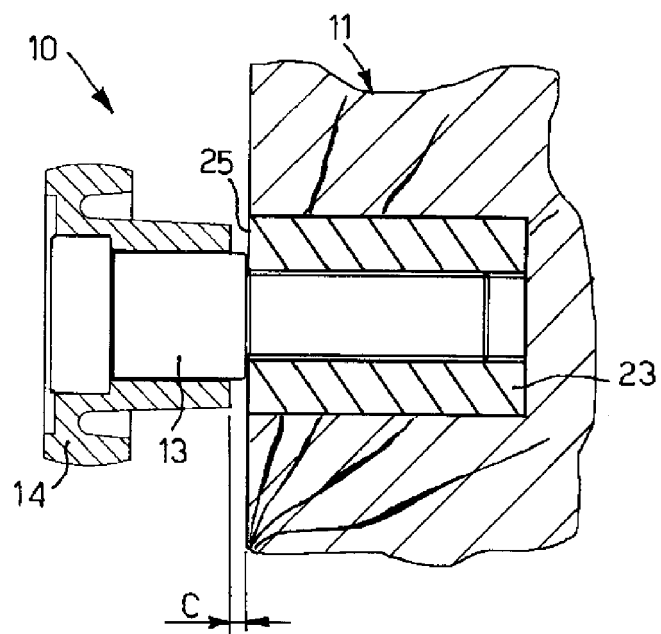


fig. 3

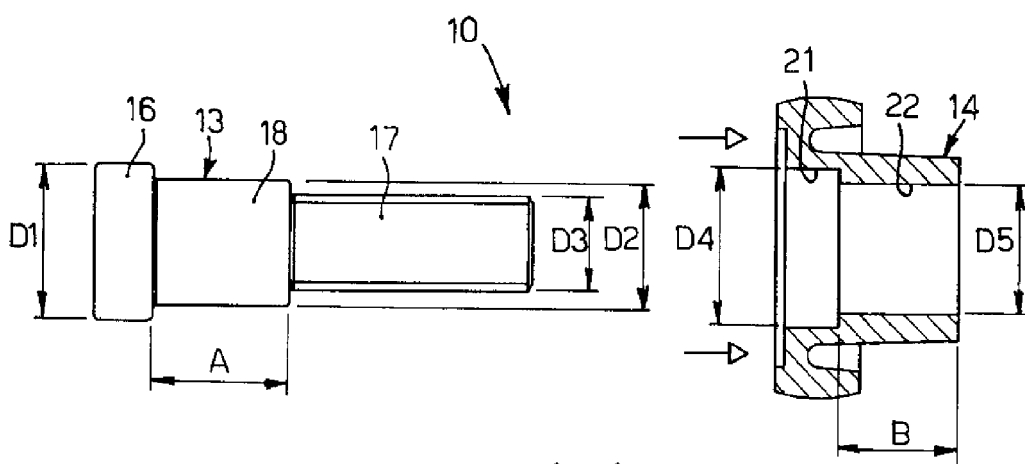


fig. 4



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 11 0827

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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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Y	* figure 1 *	2	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A47B
Place of search		Date of completion of the search	Examiner
The Hague		21 April 2006	Haller, E-C
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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EPO FORM 1503 03.82 (P04C01)

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

EP 06 11 0827

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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21-04-2006

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