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(54) **TABLE LEVELLER**

(57) Table leveler. The invention relates to a table leveler which comprises a casing with outwardly projecting flanges at the top, wherein the casing contains two independent dampers. The flanges slide in grooves which are rigidly connected to the table leg. The leveler is suitable for preventing the wobbling of tables with oblique legs. In one embodiment, the grooves are on the inside of the leg. In another embodiment, the grooves are located in the capsule that is built into the table leg.

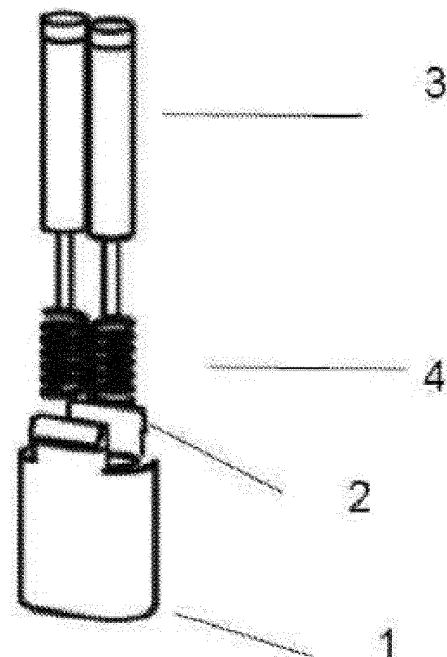


FIG 5

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Description

Technical field of the invention

[0001] The present invention describes a table lever comprising a casing with flanges at the top and inside the casing there are two independent dampers.

Background of invention

[0002] An existing problem in the state of the art is to avoid the wobbling of the tables.

[0003] The state of the art details different solutions to this problem. JP2009189629 describes a leveling system with threads. US2775849 describes a leveling system with a nut and a threaded rod.

[0004] It is known that threaded systems must be operated by hand and, on the other hand, the threads can seize due to their use. Thus, the document closest to the invention EP16887803 describes an automatic leveling system.

[0005] EP16887803 discloses a leveling device comprising a casing and a moving part. The casing is inserted inside the leg of the table and has a slit on its perimeter edge. The movable part is inserted into the interior of the casing and the lower part of the movable part rests on the ground. The mobile part contains flanges in its upper part that are inserted into the slits of the casing. Finally, inside the moving part there is a single damper and the spring is located above the damper.

[0006] However, this device is not suitable for tables that have oblique legs, that is, legs that form an angle of less than 90° with the horizontal.

Object of the invention

[0007] The problem solved by the invention is to obtain an improved leveler for tables, more resistant, and suitable for tables with oblique legs. The leveler described in the invention allows unevenness of up to 18 mm to be bridged.

Detailed description of the invention

[0008] The leveler is made up of a hollow casing (1) that houses two independent dampers (3) inside. The casing (1) contains in its upper part flanges (2) projected outwards. The flanges (2) are inserted into slots that are integral with the table legs.

[0009] In the first embodiment, the flanges (2) of the casing (1) move through the slots (6), which are located inside the leg (5).

[0010] In the second embodiment, the flanges (2) of the casing (1) move through the slots (8) of the capsule (7).

First mode of realization

[0011] The leveler is inserted into the leg (5) of a table. The lower part of the casing (1) is in contact with the ground. The leg (5) of the table contains some lateral grooves (6) through which the flanges (2) move and the upper ends of the dampers come to a stop inside the leg, avoiding wobbling. Since the dampers are independent and their elongation is different, the leveler is appropriate to improve the stabilization of oblique legs because three support points are created.

[0012] In a preferred mode, the dampers (3) are coupled to springs (4) to improve stabilization and in a more preferred mode the springs are below the dampers, as illustrated in Figures 2-5. The leg (5) forms an angle of less than 90° with the horizontal, that is, it is an oblique leg, as detailed in figures 1-3. The meeting between the shock absorbers (3) and the leg (5) is made diagonally as illustrated in figure 2.

Second mode of realization

[0013] In this embodiment, the flanges (2) move through the slots (8) located inside the capsule (7), as illustrated in figure 6.

[0014] The capsule (7) is closed at the top and its base has a complementary opening to the casing (1). The capsule (7) is integrally embedded in the leg of the table and therefore the slot (8) is also integral with the leg. The casing (1), resting on the ground, moves vertically with the help of the dampers, until the dampers come up against the upper part of the capsule (7). In a preferred mode, the capsule (7) has a window (10). Figure 7.

[0015] In another preferred mode, the capsule (7) has ribs (9) suitable for embedding the capsule (7) inside the leg. In a more preferred mode, the capsule (7) consists of two halves cut longitudinally and joined by a screw. Figure 6.

Brief description of the figures

[0016]

Figure 1 shows the operation of the leveler

Figure 2 shows the leveler inserted inside a leg with a diagonal meeting Figure 3 shows a front view of the leveler and the leg Figure 4 shows a profile view of the leveler and the leg Figure 5 shows a side view leveler perspective Figure 6 shows the shell inserted into the capsule and with ribs Figure 7 shows the shell with a window.

Claims

1. Table lever comprising a casing (1) provided with flanges (2) projected outwards in its upper part,

where the casing (1) contains damping means inside, **characterized in that** the damping means are two independent dampers (3)

2. Table leveler according to claim 1, **characterized in that** the dampers (3) are coupled with respective springs (4). 5
3. Table leveler according to claim 2, **characterized in that** the springs (4) are below the damper (3). 10
4. Table leveler according to claims 1-3, **characterized in that** it is inserted into a leg (5) that includes grooves (6) and the flanges slide through the grooves (6). 15
5. Table leg (5) according to claim 4, **characterized in that** the leg (5) forms an angle of less than 90° with the horizontal. 20
6. Table leveler according to claims 1-3, **characterized in that** the casing (1) is inserted into a capsule (7) provided with slots (8) through which the flanges (2) move. 25
7. Table leveler according to claim 6, **characterized in that** the capsule (7) contains a window (10). 30
8. Table leveler according to claim 6, **characterized in that** the capsule (7) contains ribs (9). 35
9. Table leveler according to claims 6 or 8, **characterized in that** the capsule (7) consists of two halves cut longitudinally and joined with a screw. 40

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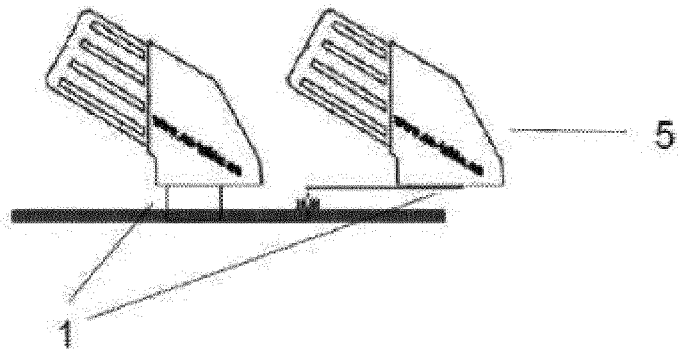


FIG 1

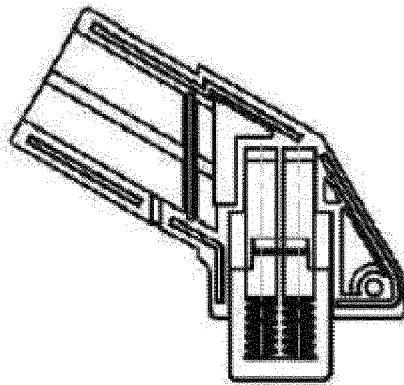


FIG 2

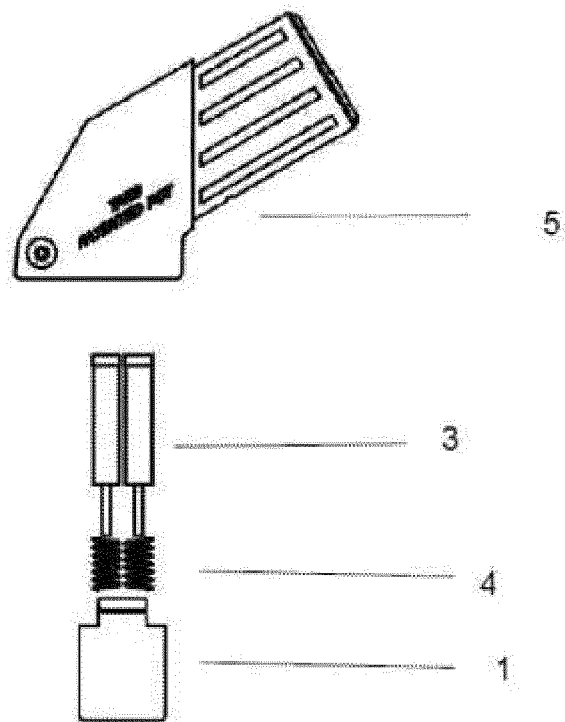
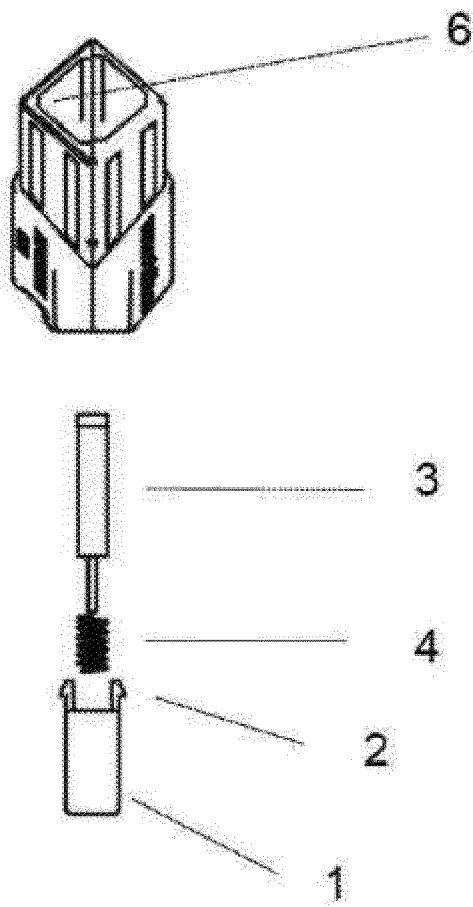


FIG 3



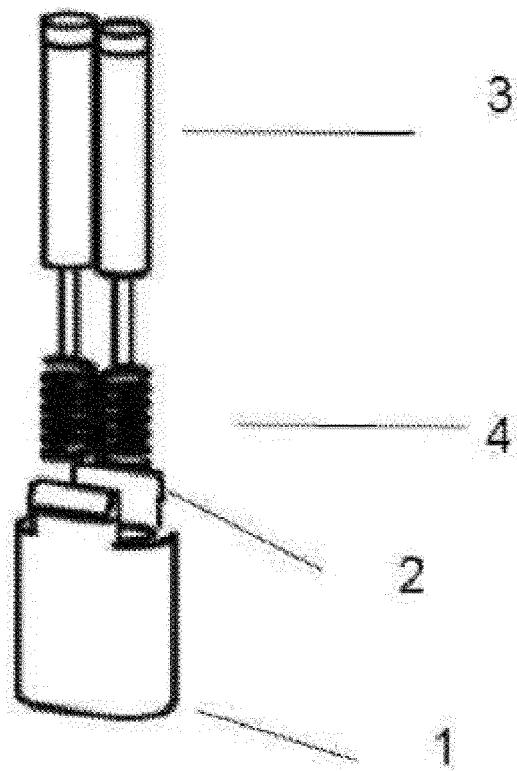
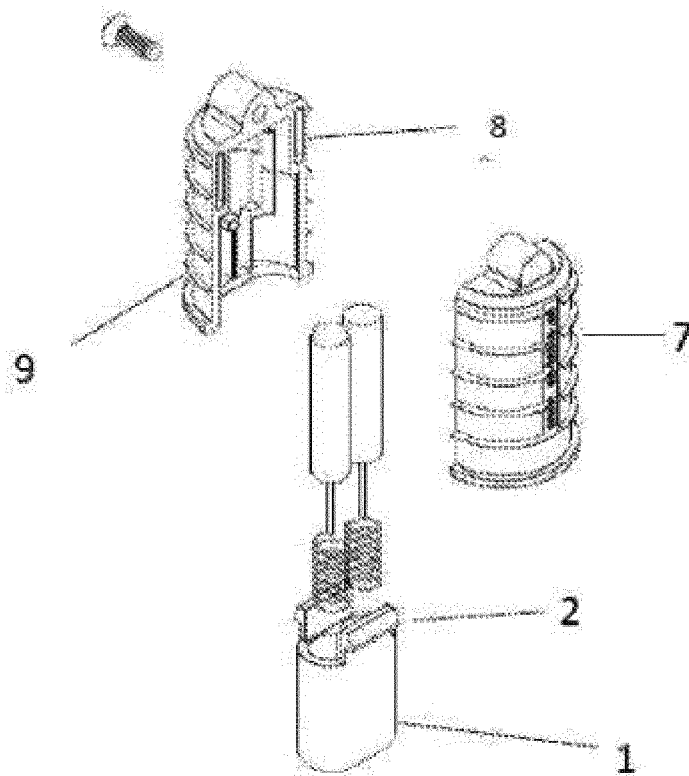


FIG 5



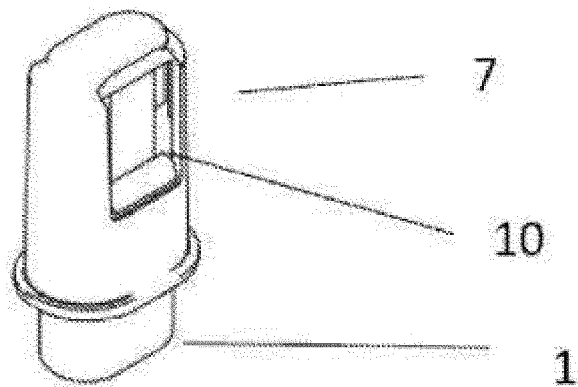


FIG 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2022/070338

5	A. CLASSIFICATION OF SUBJECT MATTER	
	A47B91/16 (2006.01)	
	According to International Patent Classification (IPC) or to both national classification and IPC	
10	B. FIELDS SEARCHED	
	Minimum documentation searched (classification system followed by classification symbols) A47B	
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPODOC, INVENES	
	C. DOCUMENTS CONSIDERED TO BE RELEVANT	
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages
	X	US 2020022494 A1 (PAUL PHILIP) 23/01/2020, paragraphs[0027 - 0029]; paragraph [0039]; figures.
25	X	US 2017274429 A1 (BARNES JEFFERY R ET AL.) 28/09/2017, paragraph [0023]; figure 1, figures 5 - 7.
30	X	CN 207506221U U (STEELCASE INC) 19/06/2018, Abstract from DataBase WPI. Retrieved of EPOQUE; figures.
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35	A	ES 1151559U U (ORTEGA FRANCES RAFAEL) 26/02/2016, the whole document.
40	☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.	
45	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance. "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure use, exhibition, or other means. "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
50	Date of the actual completion of the international search 12/09/2022	Date of mailing of the international search report (13/09/2022)
55	Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04 Form PCT/ISA/210 (second sheet) (January 2015)	Authorized officer R. Peñaranda Sanzo Telephone No. 91 3493051

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International application No.
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C (continuation).	DOCUMENTS CONSIDERED TO BE RELEVANT	
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International application No.

Information on patent family members

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