



EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.08.2020 Bulletin 2020/33

(51) Int Cl.:
A47B 88/41 ^(2017.01) **A47B 88/487** ^(2017.01)

(21) Application number: **19156304.8**

(22) Date of filing: **08.02.2019**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(71) Applicant: **Mazza, Loris**
47890 San Marino (SM)

(72) Inventor: **Mazza, Loris**
47890 San Marino (SM)

(74) Representative: **Agazzani, Giampaolo**
RSM Patents & Trademarks S.R.L.
Via 28 Luglio, 187
47893 Borgo Maggiore (SM)

(54) **SLIDING GUIDE FOR CONTAINER OR SHELF**

(57) A sliding guide for container (2) or shelf (30) consists of at least one fixed portion (3), which can be fixed to a support (27) arranged almost horizontally in a piece of furniture (10) or between two corner walls (31), and at least a movable portion (4) that can be fixed to the container (2) or to the shelf (30), with said fixed portion (3) and movable portion (4), mutually coupled and sliding between a closed condition (C), where the movable portion (4) is almost completely facing the fixed portion (3) and the container (2) is inside the furniture (10) or the shelf (30) is between the corner walls (31), and an open condition (A) in which the movable portion (4) is almost completely withdrawn from the fixed portion (3) and the

container (2) is extracted from the furniture (10) or the shelf (30) is extracted from the recess defined by the angled walls (31).

The fixed portion (3) comprises a longitudinal guide (8) which is fixed to a longitudinal support (6). The movable portion (4) comprises a bar (15) slidingly inserted into the longitudinal guide (8) almost completely in the closed condition (C) and almost partially inserted in the opened condition (A).

A sliding member (7) is interposed between the fixed portion (3) and the movable portion (4) for facilitating the mutual sliding.

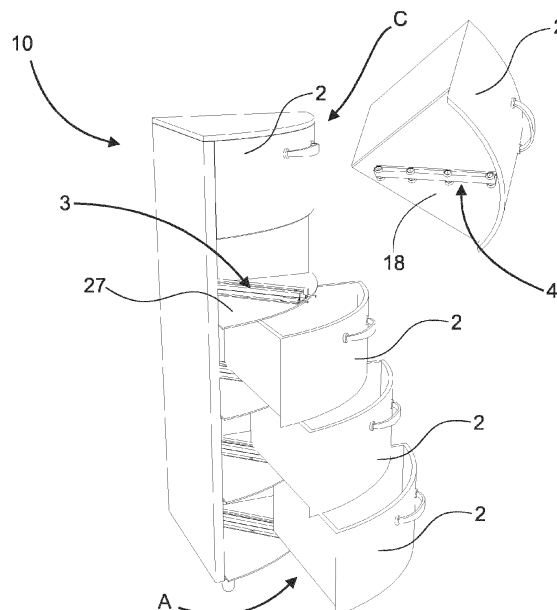


FIG. 1

Description

[0001] The present invention relates to the technical sector of furniture accessories and in particular refers to a sliding guide for container or shelf.

[0002] There are known guides for containers, such as drawers and/or shelves and/or supports, which each have a portion that can be fixed to a piece of furniture, or a vertical wall, and a portion that can be fixed to the container or shelf and with these two portions that can be coupled together during use.

[0003] Usually guides are used in pairs, since they are fixed to opposite sides of container or shelf in order to guarantee its sliding in a direction parallel to the longitudinal axis of the guides.

[0004] A disadvantage of the known guides is that they must be fixed parallel and that they cannot be used, for example, to allow the sliding of "quarter" containers or shelves, i.e. those containers or shelves which are triangular shaped and that must be contained in a corner cabinet or between corner walls.

[0005] The main object of the present invention is to propose a sliding guide for container or support or shelf allowing the support and the sliding of a container and/or of a support and/or of a plane of triangular shape and which must be extracted or inserted respectively in a corner cabinet or between two walls arranged at an angle.

[0006] Another object is to propose a guide that allows the extraction and total re-insertion of container or shelf into relative furniture or corner niche.

[0007] The characteristics of the invention are shown below with particular reference to the attached drawings in which:

- Figure 1 shows a perspective view of an angle drawer unit equipped with drawers each supported by a sliding guide for container or support or shelf object of the present invention;
- Figure 2 shows an exploded view of one of the sliding guide of figure 1;
- Figure 3 shows a perspective view of the guide of figure 2 in a closed condition;
- Figure 4 shows a view of the guide of figure 3 in an opened condition;
- Figure 5 shows a view of the guide of figure 3 in a release condition;
- Figure 6 shows a perspective view of a support or shelf arranged between corner walls and slidably supported by a sliding guide object of the present invention;
- Figure 7 shows a second embodiment of the sliding guide object of the present invention, having removed parts for better highlighting other parts.

[0008] With reference to Figures 1-5, numeral 1 indicates a sliding guide intended to centrally support a container 2, commonly a drawer or a shelf for an angular piece of furniture 10.

[0009] In Figure 6, the sliding guide 1 is designed to sustain a shelf 30 sliding onto a mostly horizontal support 27 fixed between two walls 31 arranged at an angle.

[0010] The sliding guide 1 consists of a fixed portion 3 and a movable portion 4, mutually combinable and sliding between a closed condition C, wherein the movable portion 4 is almost completely facing and superimposed on the fixed portion 3 and an opened condition A wherein the movable portion 4 is almost completely withdrawn from the fixed portion 3 and is marginally overlapped thereto.

[0011] The fixed portion 3 is fixed to the support 27 arranged almost horizontally in the angular furniture 10 or fixed between the two corner walls 31.

[0012] This fixed portion 3 comprises a longitudinal guide 8 on each of its sides a longitudinal support 6 is fixed.

[0013] The longitudinal guide 8 is shaped like a rectangular section tubular having a longitudinal opening 28 and an external end 11 and an inner wall 22.

[0014] A stop 9 is fixed outside the longitudinal guide 8 near its external end 11.

[0015] The longitudinal support 6 has four first through holes 20 designed to be each engaged by a first fixing element 23, for example constituted by a screw, for locking itself to support 27.

[0016] The movable portion 4 comprises a bar 15 with an inverted "T" shaped section having a longitudinal bracket 19 projecting laterally from the vertical wall or "T leg". The heads of the bar 15 are defined by an outer wall 25 and an inner wall 26.

[0017] The vertical wall, "T leg", of the bar 15 has third holes 32 designed to engage second fixing elements 24, for example constituted by screws or bolts, for locking the bar 15 to the drawer 2, in particular to its container bottom 18, or to the shelf 30.

[0018] The movable portion 4 can also comprises a longitudinal plane, known and not illustrated, also provided with through holes which acts as a thickness interposed between the bar 15 and the container bottom 18 of drawer 2 or of shelf 30.

[0019] The movable portion 4 further comprises a blocking means 14 constituted by a rod 29 which carries a pin 16 at an inner end and carries a handle 17 to the remaining external end.

[0020] The sliding member 7 is interposed between the fixed portion 3 and the movable portion 4 for facilitating the mutual sliding.

[0021] In the preferred embodiment of figure 2, the sliding member 7 consist of a plurality of wheels, four of which are shown in figure 2, which are rotatably supported by T bar 15 so allowing rolling friction of this latter 15 with respect the longitudinal guide 8 during the mutual sliding of fixed 3 and movable 4 portions.

[0022] In variants not illustrated but equivalent, the sliding member 7 could likewise comprises rollers and/or balls and/or bearings, which are together or as substitutions of the wheels of figure 2.

[0023] In a second embodiment shown in Figure 7, the sliding member 7 is constituted by a plurality of wheels pivoted inside the longitudinal guide 8 so as to contact the side walls of the bar 15 so as to guide and facilitate its sliding inside the longitudinal guide 8.

[0024] In variants not shown but equivalent of the second embodiment, the sliding member 7 has rollers and/or balls and/or bearings together or in place of the wheels shown in Figure 7.

[0025] During usage, the sliding guide 1 provides that the movable portion 4 is coupled to the fixed portion 3 so as to slide between a closed condition C, wherein the movable portion 4 is almost completely facing to or laid upon the fixed portion 3 and the container 2 or the shelf 30 stand above the support 27, and an opened condition A in which the movable portion 4 is almost completely removed from the fixed portion 3, or are only marginally overlapped, and the container 2 or shelf 30 protrude from support 27.

[0026] When the guide 1 is assembled, the head of the overturned T bar 15 is slidably inserted into the longitudinal guide 8 and the "T leg" or vertical wall of the bar 15 protrudes from the longitudinal opening 28.

[0027] The blocking means 14, therefore the rod 29, is rotatably supported by the longitudinal bracket 19 and is interposed between the fixed portion 3 and the movable portion 4 to prevent its decoupling in the passage between the closed condition C and the opened condition A and vice versa. During this step the release of movable portion 4 from fixed portion 3 is avoided because the handle 17 abuts the outer wall 25 of the bar 15 and the pin 16 abuts the inner wall 26 of the latter 15 until insisting into the stop 9 blocking the extraction of the movable portion 4 from the fixed portion 3.

[0028] With reference to Figure 5, the handle 17 acts as a rotatable grip to allow the pin 16 to disengage from the inner wall 26 of the bar 15 in correspondence with the transition from the opened condition A to a release condition S in which the bar 15 is removed completely from the longitudinal guide 8 and the movable portion 4 is thus uncoupled from the fixed portion 3.

[0029] The coupling between the two portions, movable 4 and fixed 3, occurs simply by inserting the head of the bar 15 into the longitudinal guide 8 and the "T leg" or vertical wall into the opening 28 while the pin 16 is kept raised by the stop 9, so avoiding interference, by means of the proper rotation of handle 17.

[0030] In the passage from the opened condition A to the closed condition C, the handle 17 is released so as to position itself almost perpendicularly in front of the head of the bar 15.

[0031] A shock absorber 12 is fixed at the outer end of the fixed portion 3 from which its piston rod 33 protrudes to contact with compliance the container 2 or the shelf 30 near the end phase of the passage from the opened condition A to the closed condition C.

[0032] To these two preferred embodiments it is possible to associate other equivalent forms, not shown, al-

ways providing the interposition of shock absorber 12 between the fixed portion 3 and the movable portion 4, but with the latter 12 fixed to the movable portion 4 near the outer wall 25 of the bar 15, or of the inner wall 26 of the latter.

[0033] A variant not shown provides that the shock absorber 12 is fixed to the furniture bottom or to corner wall bottom facing respectively the container 2 or the shelf 30 so that the piston rod 33 can contact with compliance the latter during the passage from the opening condition A to closing condition C.

[0034] The main advantage of the present invention is to provide a sliding guide for container or shelf which allows the support and the sliding of a container and/or of a shelf and/or of a triangular shaped surface which must be extracted and inserted respectively in a corner furniture or between two walls arranged at an angle.

[0035] Another advantage is to provide a guide allowing the complete extraction and re-insertion of the container or shelf from or into the relative furniture or corner niche.

Claims

1. Sliding guide for container (2) or shelf (30) consisting of at least one fixed portion (3), which can be fixed to a support (27) arranged almost horizontally in a furniture (10) or between two corner walls (31), and at least a movable portion (4) that can be fixed to the container (2) or to the shelf (30), with said fixed portion (3) and movable portion (4), mutually coupled and sliding between a closed condition (C), wherein the movable portion (4) is almost completely facing the fixed portion (3) and the container (2) or the shelf (30) overhang the support (27), and an opened condition (A) in which the movable portion (4) is almost completely withdrawn from the fixed portion (3) and the container (2) or the shelf (30) protrude from the support (27); said guide (1) being **characterized in that:**

- the fixed portion (3) comprises at least a longitudinal guide (8) fixed to at least a longitudinal support (6);
- the movable portion (4) comprises at least a bar (15) slidably inserted into the longitudinal guide (8) almost completely at closed condition (C) and almost partially at opened condition (A);
- at least a sliding member (7) is interposed between the fixed portion (3) and the movable portion (4) to facilitate the mutual sliding.

2. Guide according to claim 1 **characterized in that:**

- the fixed portion (3) further comprises a stop (9) fixed outside the longitudinal guide (8) near an external end (11);

- the movable portion (4) further comprises a blocking means (14), longitudinally supported by the bar (15), and provided with a pin (16) at an inner end thereof and the remaining external end of the blocking means (14) is provided with a handle (17);
 - said blocking means (14) being interposed between the fixed portion (3) and the movable portion (4) to prevent its decoupling during the passage between the closed condition (C) and the opened condition (A) and vice versa.
3. Guide according to claim 2 **characterized in that**, passing from the closed condition (C) to the open condition (A), the handle (17) always abuts the outer wall (25) of the bar (15) and the pin (16) always abuts the inner wall (26) of the bar (15) until abutting the stop (9) of the fixed portion (3), avoiding the release of the movable portion (4) from the fixed portion (3).
4. Guide according to claim 3 or claim 4, **characterized in that** the handle (17) acts as a rotatable grip for disengaging the pin (16) both from the inner wall (26) of the bar (15) and from the stop (9) of the fixed portion (3) during the passage from the opened condition (A) to the release condition (S) in which the movable portion (4) is released from the fixed portion (3).
5. Guide according to any of the previous claims 2-4, **characterized in that** the bar (15) carries a longitudinal bracket (19) for housing the blocking means (14).
6. Guide according to any of the previous claims, **characterized in that** the at least one sliding member (7) comprises at least one of roller and/or wheel and/or ball and/or bearing carried by at least a side of the bar (15).
7. Guide according to any of the previous claims, **characterized in that** the at least one sliding member (7) comprises at least one of roller and/or wheel and/or ball and/or bearing housed inside the longitudinal guide (8).
8. Guide according to any of the previous claims, **characterized in that** at least the longitudinal support (6) is provided with at least a first hole (20) intended to be engaged by at least a first fixing element (23) of the movable portion (4) to the support (27).
9. Guide according to any of the previous claims, **characterized in that** the bar (15) is provided with at least a third hole (32) designed to be engaged by at least one second fixing element (24) for blocking the bar (15) to the drawer (2) or to the shelf (30).
10. Guide according to any of the previous claims, **characterized in that** between the fixed portion (3) and the movable portion (4) a shock absorber (12) is interposed to softly dampen the speed of the drawer (2) or of the shelf (30) in the passage from the opened condition (A) to the closed condition (C).

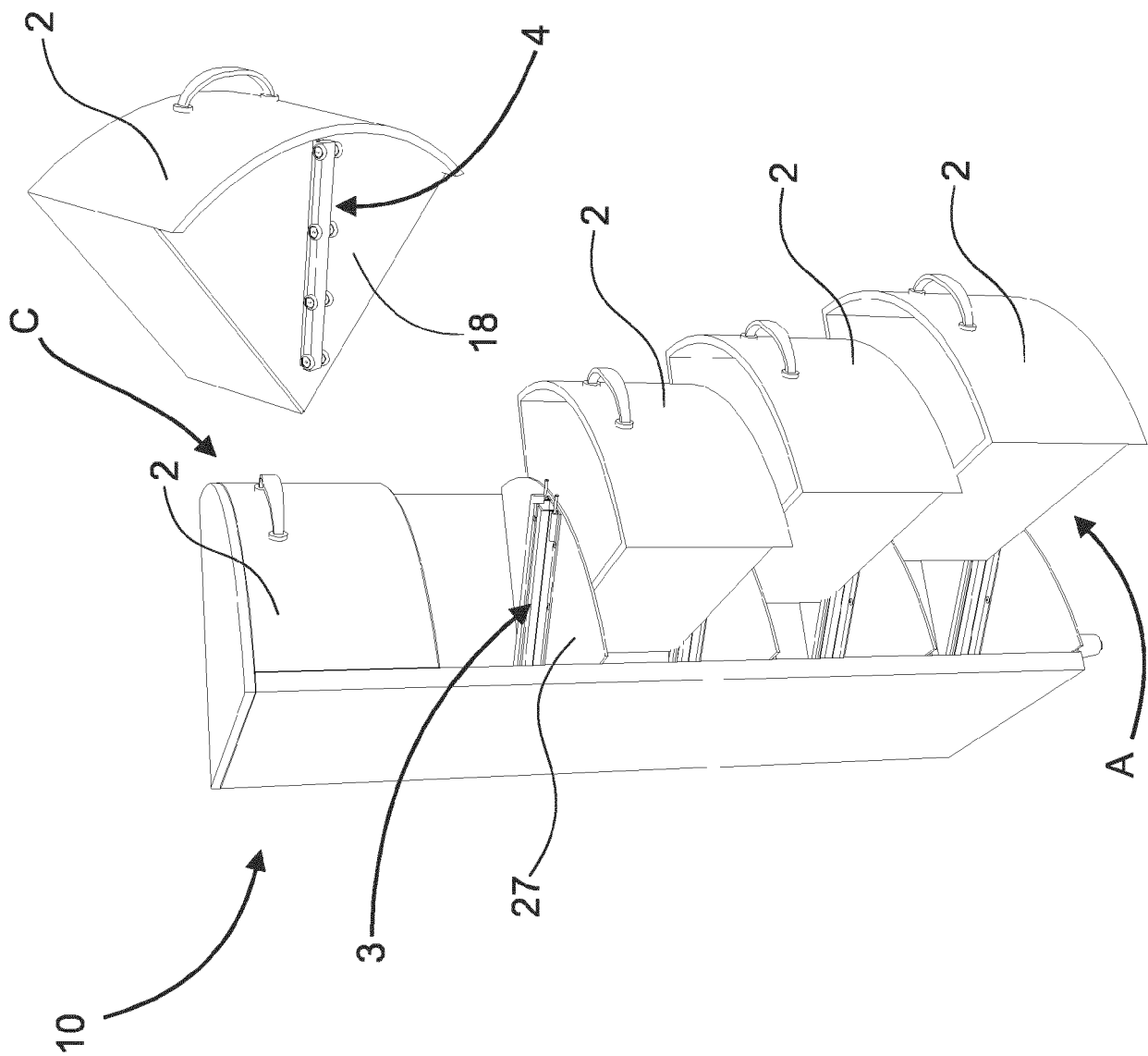


FIG. 1

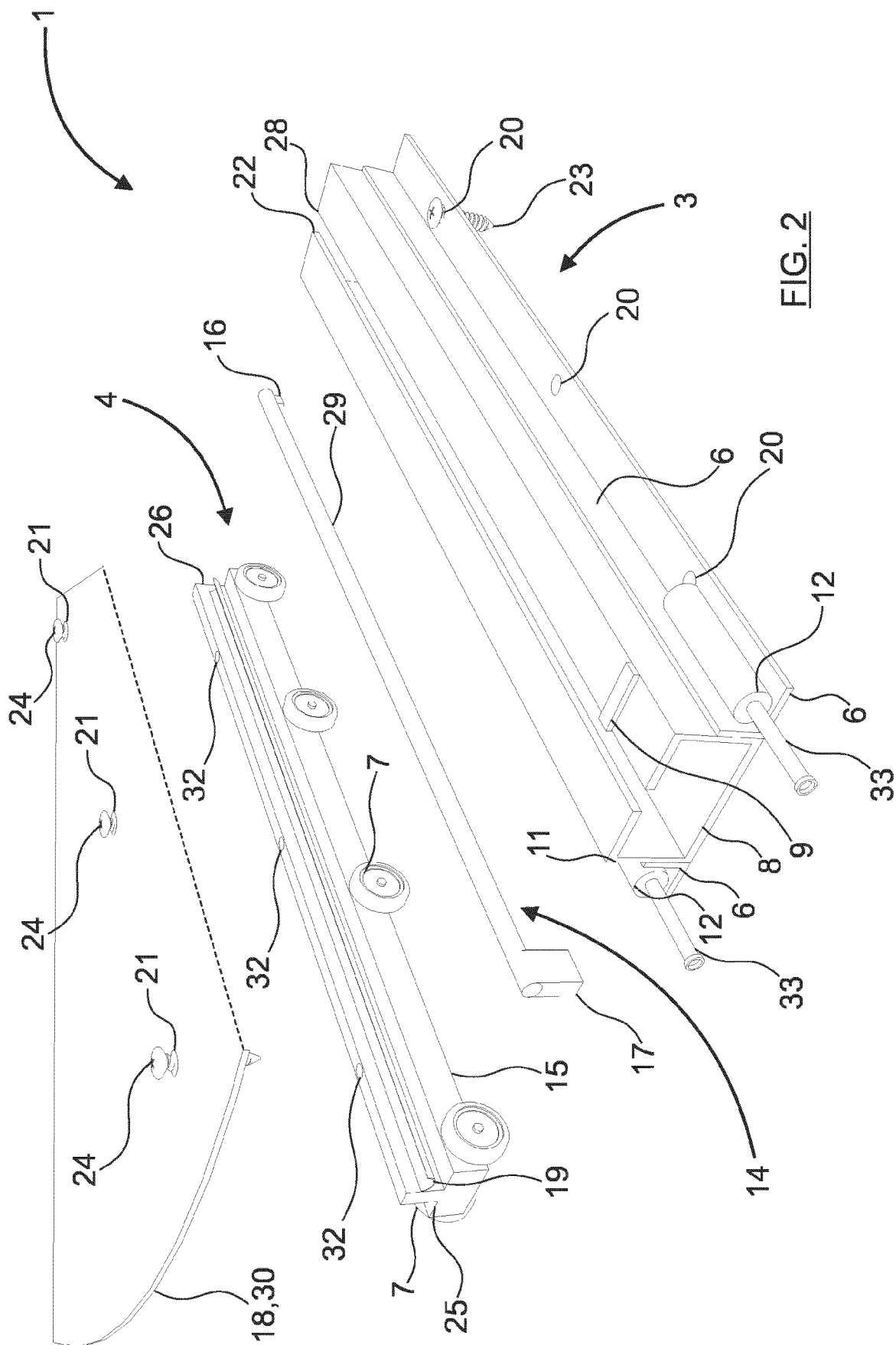


FIG. 2

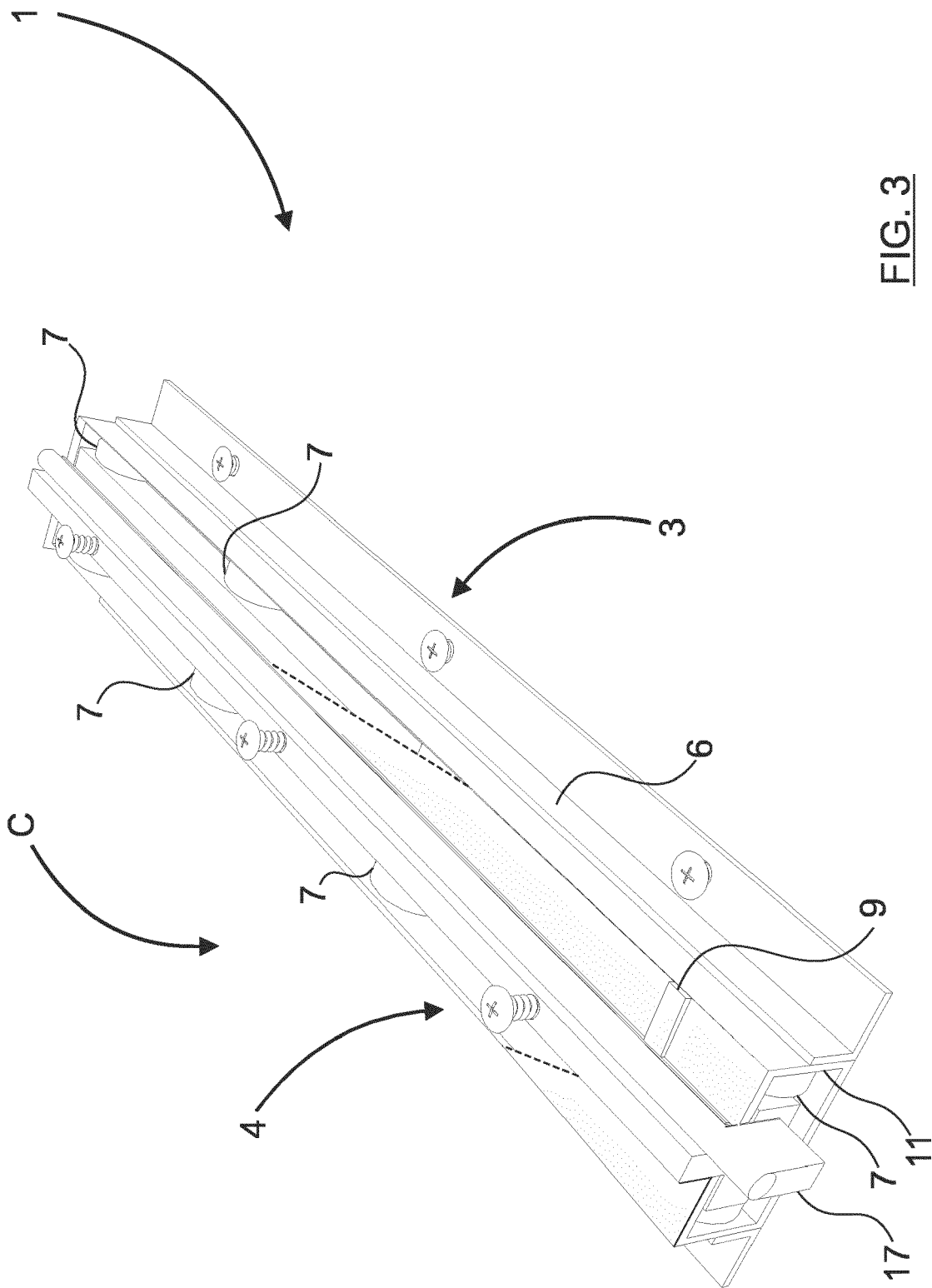


FIG. 3

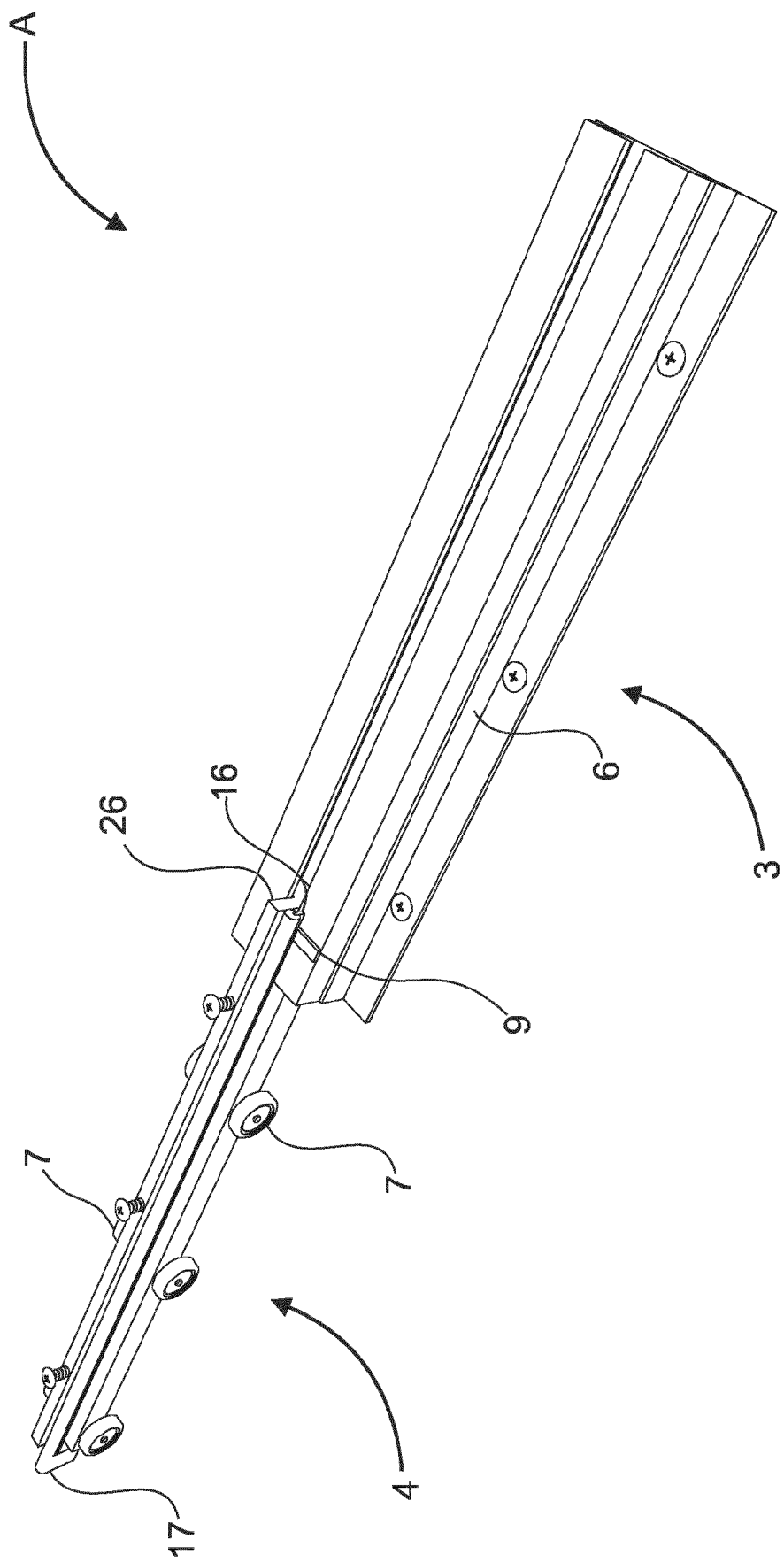
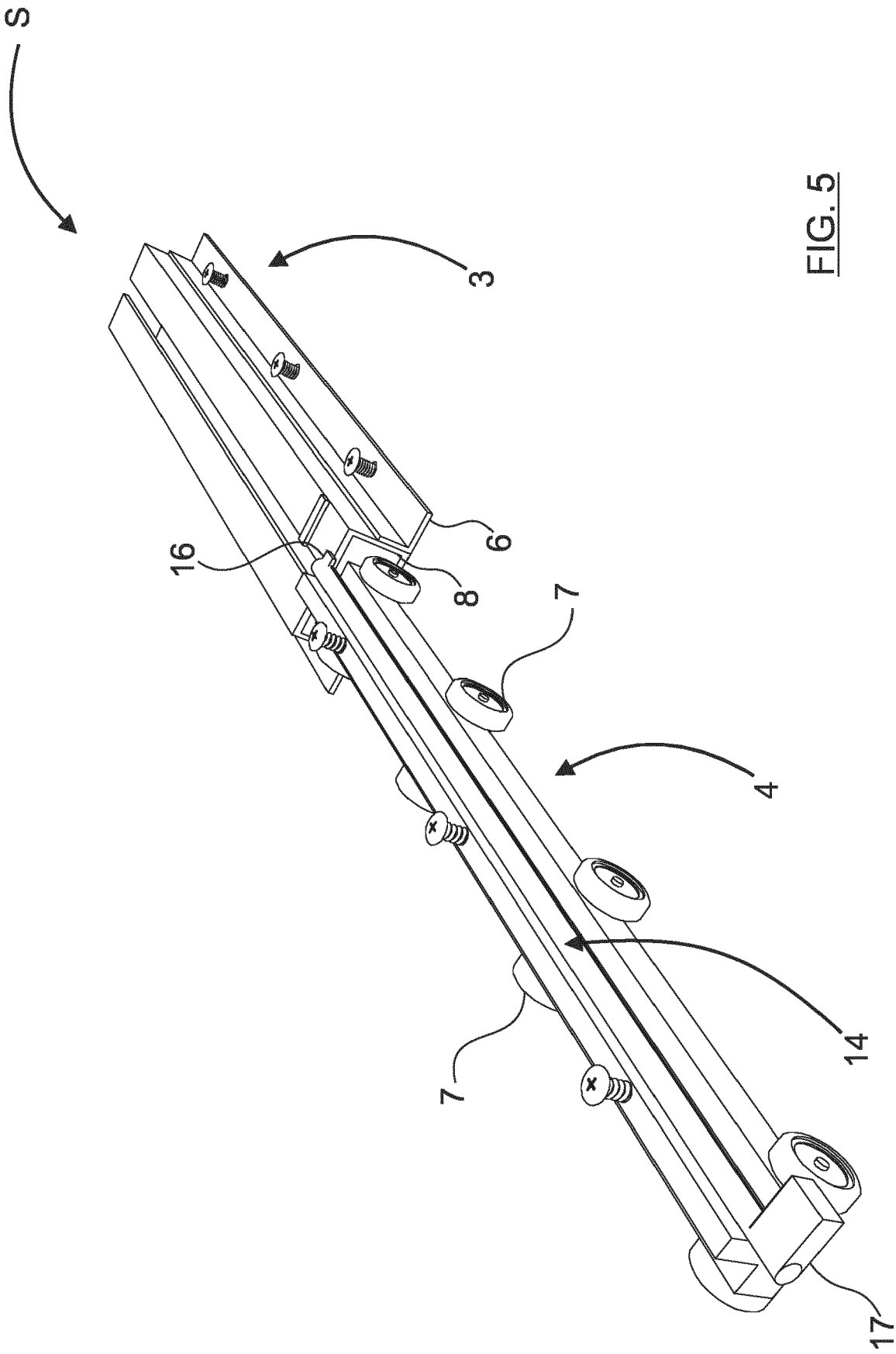


FIG. 4



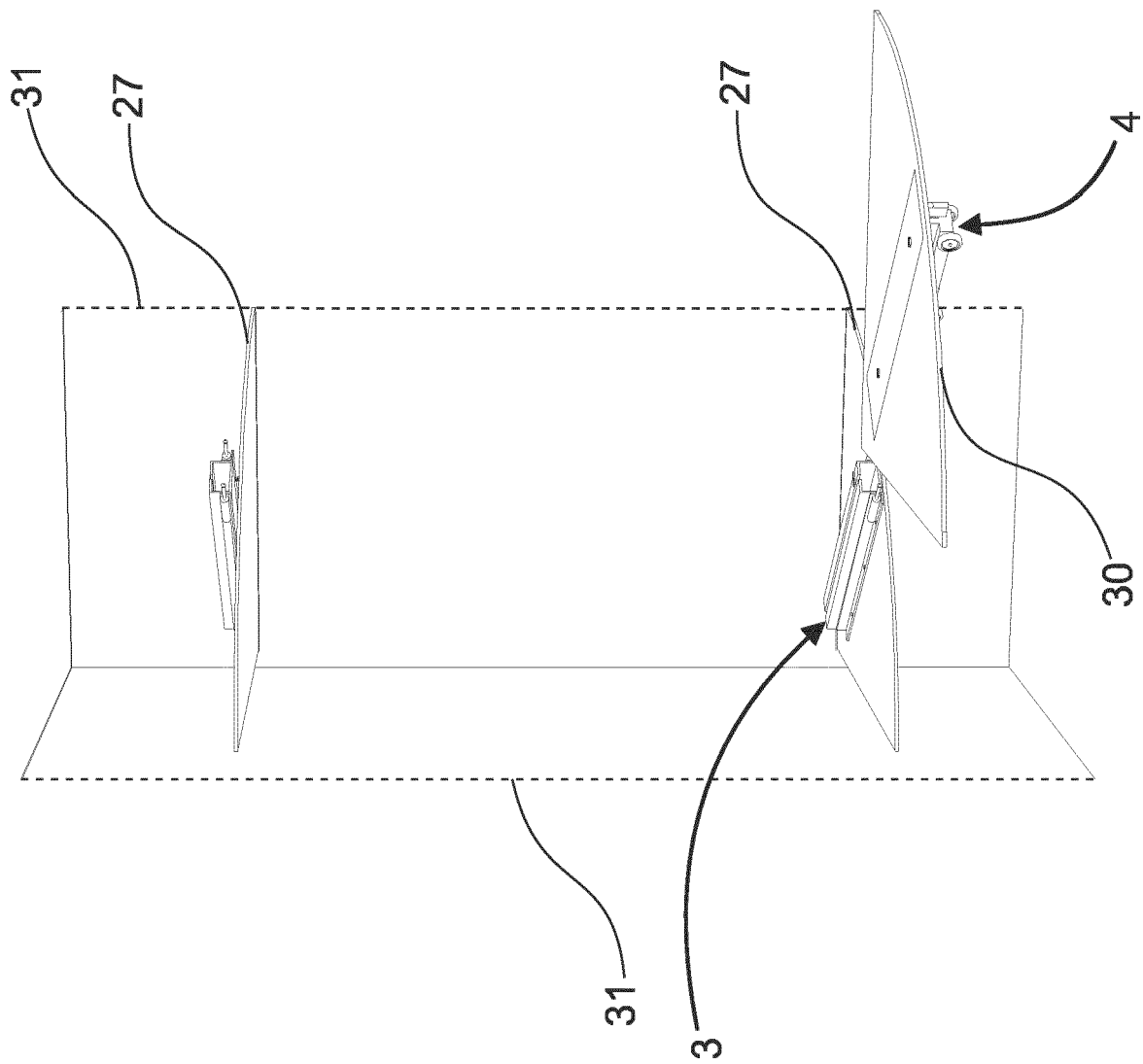


FIG. 6

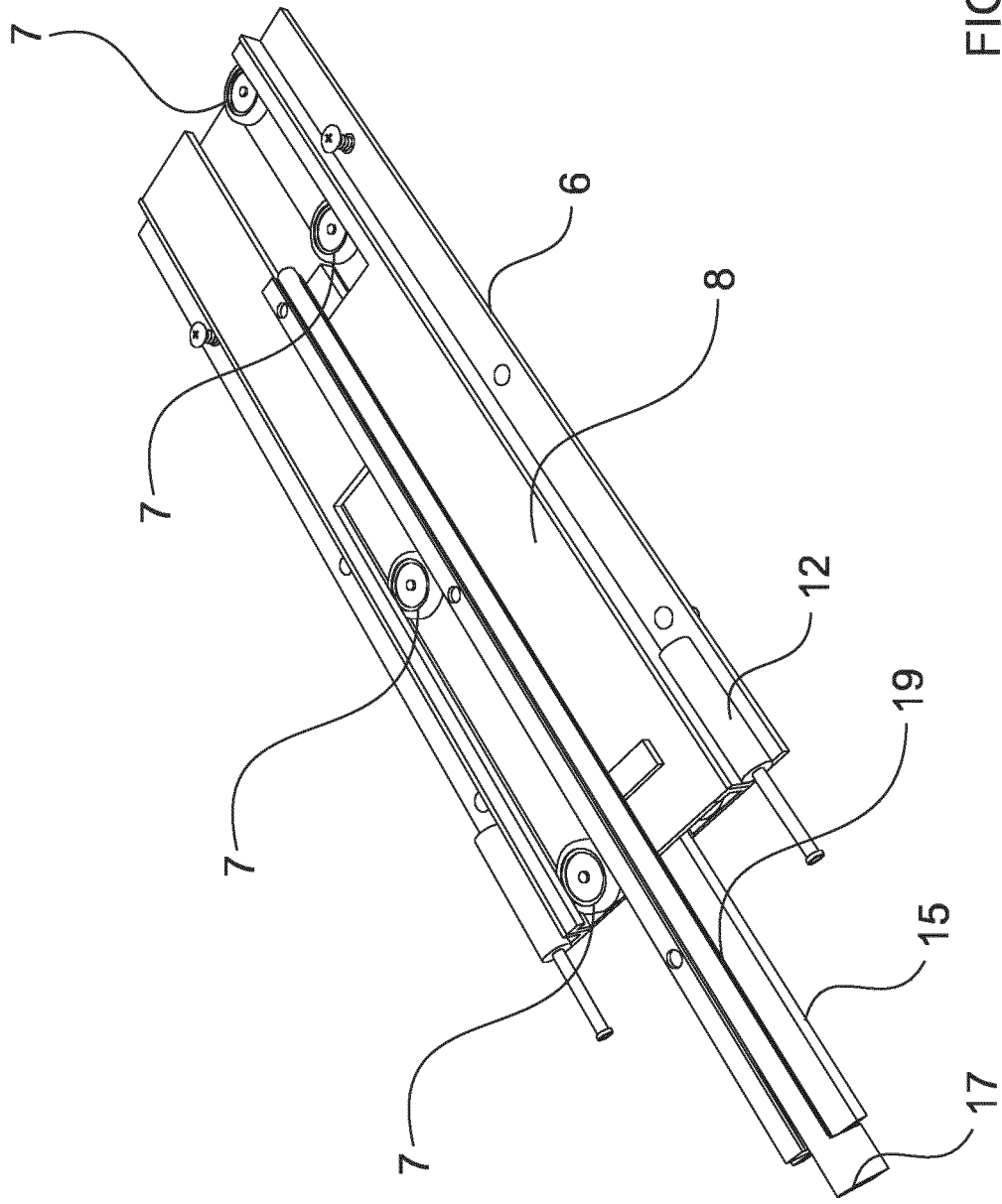


FIG. 7



EUROPEAN SEARCH REPORT

Application Number
EP 19 15 6304

5

10

15

20

25

30

35

40

45

50

55

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	EP 1 374 735 A1 (WESTFALIA PROFILTECHNIK GMBH & [DE]) 2 January 2004 (2004-01-02) * column 0005 - column 4, line 0014; figures 1-3 *	1,2,6-10	INV. A47B88/41 A47B88/487
X	US 5 813 736 A (BALLEW ANN [US]) 29 September 1998 (1998-09-29) * column 2, line 16 - column 6, line 31; figures 1-6 *	1,6,8-10	
X	US 2 074 371 A (JAMES CUMMINGS ET AL) 23 March 1937 (1937-03-23) * column 1, line 28 - column 2, line 43; figures 1-11 *	1,6,8,9	
			TECHNICAL FIELDS SEARCHED (IPC)
			A47B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 July 2019	Examiner Kohler, Pierre
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			

EPO FORM 1503 03/82 (P04C01)

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

EP 19 15 6304

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.

03-07-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1374735 A1	02-01-2004	DE 10228670 A1	22-01-2004
		EP 1374735 A1	02-01-2004
		US 2004007953 A1	15-01-2004
US 5813736 A	29-09-1998	NONE	
US 2074371 A	23-03-1937	NONE	