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MOUNTING BRACKET FOR MOUNTING AN AWNING TO A BUILDING AND AWNING EQUIPPED WITH SAME

Description

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The invention relates to a mounting bracket for mounting an awning to a building, in particular to a vertically or horizontally standing part of a building, such as a building wall, underside of a ceiling or a roof beam, having the features set forth in the preamble of patent claim 1, as well as to an awning equipped with such a mounting bracket. Such mounting brackets are known, for example, from CN 2873925 Y or DE 200 01 537 U1.

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In the mounting bracket according to the first-mentioned prior art document, the base plinth, which can be mounted to the building, is provided with receiving openings in which the actual awning holder can be locked in place using screws. The awning holder comprises a row of holes arranged on a circular path so that it can be anchored to the base plinth in alignment with the receiving openings in different inclination positions. With this prior art, it is only possible to adjust the inclination by completely detaching the awning holder from the base plinth.

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Other common mounting brackets for fastening awnings to a building have a base plinth that can be mounted to the building and an awning holder connected thereto via a swivel joint that can be swivelled around a horizontal axis. The latter has a receptacle for a load-bearing awning part, such as the so-called awning housing, which is inserted into this receptacle and fixed in place accordingly.

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As the awning holder can be swivelled in relation to the base plinth, the inclination position of the awning holder can be adjusted to the angle of inclination of the awning. This is important because, for example, weather protection or conservatory awnings with a supporting frame comprising lateral
5 guide rails for guiding the awning's front profile when the awning fabric is extended require different angles of inclination of the lateral guide rails depending on the installation location and length of the guide rails.

It should also be noted with regard to the background of the invention that,
10 due to their bulkiness, such awnings are not delivered and installed as a whole, but rather successively in such a manner that, after the mounting brackets have been attached to the building, the nearest awning part, i.e. usually the awning housing, is connected to the awning brackets first. Due to the weight of the awning part, the awning holders then swivel downwards
15 with the awning housing under the influence of gravity. This in turn means that in the case of awnings with a low mounting height on the building or for the insertion of very long guide rails in particular, which require a flat angle of inclination of the awning, the latter must be swivelled upwards into the awning housing by hand, which considerably impairs the ease of installation.
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Accordingly, it is an object of the invention to design a mounting bracket of the generic type in such a manner that it achieves a considerably improved ease of assembly.

25 This object is achieved by a mounting bracket according to claim 1. Locking the swivellable awning holder on the base plinth in a raised initial swivel position is provided. This means that the awning holder remains in its raised position even when the first awning part, i.e. in particular the awning hous-

ing, is installed, which means that the other awning parts, such as in particular the lateral guide rails, can be inserted into the awning housing without any problems. The awning holder is then adjusted to the angle of inclination of the awning by releasing the locking mechanism when swivelling the awning holder, awning housing and guide rails.

The locking mechanism itself can be designed to be reversible, wherein the awning holder is held in its initial swivel position by a spring action with the effect of a reversible locking mechanism. Alternatively, an irreversible solution to the locking mechanism formed by a mechanical engagement part between the base plinth and the awning holder can be achieved by swivelling the awning holder during the initial adjustment of its inclination position by shearing during the assembly process of the awning. An irreversible solution requires less mechanical effort than a reversible design.

According to a preferred embodiment, the mechanical engagement part is formed in a particularly simple manner by a locking bolt, which preferably sits as a separate part in receiving bores in the base plinth and awning holder, which are aligned with each other in the initial swivel position of the awning holder.

A plastic material, in particular a polyamide such as PA6.6, has proven to be a particularly favourable material for the locking bolt with regard to a sufficiently stable locking mechanism in the initial state to withstand the weight of the awning housing and to ensure that the locking mechanism can be easily and irreversibly released during the assembly.

An advantageous embodiment of the invention further provides that the locking bolt is designed as a threaded bolt and, correspondingly, the receiving

bores are designed as threaded bores. This makes it easier to insert the locking bolt into its locking position.

5 A widely used type of mounting bracket provides a base plinth with two bearing cheeks between which the awning bracket is swivelled via a corresponding swivel joint. For this type of mounting bracket, a preferred embodiment of the locking mechanism is that a locking bolt is inserted between the awning holder on the one hand and the two bearing cheeks in the base plinth on the other.

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The invention also relates to an awning with the above-discussed locking mechanism of the awning holder. In order to avoid repetition in this context and with regard to further features, details and advantages of the invention, reference is made to the following description of an embodiment example with reference to the accompanying drawings, in which:

- Fig. 1 shows a perspective representation of a folding awning with the awning fabric extended,
- 20 Fig. 2 shows an exploded perspective representation of a mounting bracket,
- Fig. 3 shows a side view of the mounting bracket in its initial swivel position,
- 25 Fig. 4 shows a front view of the mounting bracket from the direction of arrow IV according to Fig. 3, partially cut along the section line IV-IV,

Figs. 5 and 6 show representations of the mounting bracket analogous to Figs. 3 and 4 after the awning holder has been swivelled and the locking mechanism has been released,

5 Figs. 7 and 8 show a side view and a perspective view of an awning housing mounted to a building wall using mounting brackets, and

Figs. 9 and 10 show a side view and a perspective view of a partially assembled awning.

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Fig. 1 illustrates the basic structure of the folding awning shown. The latter has a rectangular supporting frame 1 in a plan view, which is composed of lateral guide rails 3, 4 running in the direction of projection A of an awning cover 2 and end rails 5, 6 connecting their ends.

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With the one end rail, which in the present embodiment example accommodates the electric motorized drives with a corresponding control unit for the awning cover 2 and is accordingly referred to throughout the following as awning housing 5, the awning is mounted to a building wall 7 via corresponding mounting brackets 15, the opposite end rail 6 rests on supports 8, 9, which stand, for example, on a terrace 10 to be roofed over.

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In the embodiment example shown, the awning cover 2 is an awning fabric 12, which is fastened with its end 16 pointing in the direction of projection A in a projection profile 11 extending transversely to the direction of projection A and guided in the guide rails 3, 4 so as to be displaceably driven in this direction. The awning fabric 12 is also divided into individual strip zones 13 in the manner of a baldachin and is fastened with the edge of each of its zones 13 to a fabric supporting profile 14. The ends of the latter are freely

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guided in the guide rails 3, 4 so as to be displaceable in the direction of projection A and move under the influence of gravity and the pulling effect of the projection profile 11 from a retracted position of the awning with the folds of the individual strip zones 13 hanging downwards into the extended position shown in Fig. 1, in which the awning fabric 12 is pulled with the fabric supporting profiles 14 by the driven projection profile 11 in direction of projection A and is stretched flat when it reaches the end rail 4 on the projection side.

The structure of the mounting brackets 15 is now explained with reference to Figs. 2 to 4. These consist of a base plinth 17 to be attached to the building wall 7, which is formed in one piece from metal and has a base plate 18 with lateral bearing cheeks 19, 20 projecting from the plate plane. Axle receptacles 21, 22 for an axis of rotation 23 are provided in the latter in order to form a swivel joint 24 between the base plinth 17 and an awning holder 25. The latter has a bearing projection 27 on its base body 26, the dimensions of which fit between the two bearing cheeks 19, 20 and the central opening 28 of the base plinth 17 formed between them. An axle receptacle 29 is also moulded into the bearing projection 27, which is aligned with the two axle receptacles 21, 22 in the base plinth 17. The axis of rotation 23 inserted into the axle receptacles 21, 22, 29 and the mutual dimensioning of the bearing projection 27 and the central opening 28 allow the awning holder 25 to rotate between an upper position, as shown in Fig. 3 with an angle of inclination N of 5° , and a position swivelled significantly forward and downward with an inclination of more than 20° (not shown).

The awning holder 25 also has a receptacle 30 for the awning housing 5 on its base body 26 on the side facing away from the bearing projection 27, which is provided with an upper, hook-shaped gripping projection 31 and a

lower support web 32 for the awning housing. The awning housing 5 inserted into the receptacle 30 is secured in its position by retaining screws 33 engaging through the support web 32.

- 5 In order to fix the awning holder 25 in the initial swivel position shown in Fig. 3 prior to and during the assembly of the awning, a locking mechanism labelled 34 as a whole is provided between the base plinth 17 and the awning holder 25. On the one hand, this locking mechanism 34 has receiving bores 35, 36, each designed as threaded bores, in the two bearing cheeks 19, 20 of
- 10 the base plinth and the receiving bore 37 in the bearing projection 27 of the awning holder 25. These receiving bores 35, 36, 37 run parallel to the axis of rotation 23 and are aligned with each other in the initial swivel position shown in Fig. 3. On the other hand, the locking mechanism 34 has two locking bolts 38, 39, which are designed as separate parts and made of plastic
- 15 material, which are designed as threaded bolts and, in the initial swivel position of the awning holder 25, are each inserted into the receiving bores 35, 37 or 36, 37 between the bearing cheek 19 and bearing projection 27 or bearing projection 27 and bearing cheek 20 in such a manner that the swivelling movement about the axis of rotation 23 is blocked. The awning holder 25 is
- 20 thus initially fixed in the upper initial swivel position shown in Fig. 3.

In this position, only the awning housing 5 can be inserted into the awning holders 25 pre-mounted to the building wall 7 and secured using the retaining screws 33. The awning holders 25 with the awning housing 5 remain in

25 the initial swivel position due to the locking mechanism 34, in which the guide rails 3, 4 - and possibly, as shown in Fig. 10, an additional stabilizing rail 40 - can be placed on the forward-projecting connectors 41 with the flat angle of inclination N of about 5° , fixed there and placed on the supports 8, 9.

If the awning is now to be set up with a larger angle of inclination N of, for example, 15° , the guide rails 3, 4 (and, if necessary, the additional stabilizing rail 40) are lowered from the initial swivel position downwards until the desired angle of inclination is reached in accordance with the assembly method discussed above. In the process, the compliant locking bolts 38, 39 are sheared off by the rotation of the awning holder 25 and the resulting displacement of the receiving bores 35, 36, 37 relative to one another - see Figs. 5 and 6 - and accordingly the locking mechanism 34 of the swivel joint 24 is irreversibly released.

PATENTKRAV

1. Monteringsbeslag til montage af en markise på en bygning, navnlig på en vertikal eller horisontalt stående bygningsdel, såsom bygningsvæg (7), underside af
5 et loft eller en tagbjælke, omfattende

- en basissokkel (17), der kan monteres på bygningen,
- en markiseholder (25), som er forbundet svingbart dertil via et drejeled (24) omkring en horisontal rotationsakse (23) og omfatter en modtager (30) for en maskindel, navnlig et markisehus (5), hvorved svingbarheden af markiseholderen (25) bevirker, at markiseholderens (25) hældningsposition er tilpasset til markisens hældningsvinkel (N), og
- en låsemekanisme (34) for markiseholderen (25) på basissoklen (17) i en løftet udgangssvingposition,

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kendetegnet ved, at låsemekanismen (34) kan låses op ved drejning af markiseholderen (25) under montagen med henblik på justering af dens hældningsposition til hældningsvinklen (N) for markisen,

- hvorved markiseholderen (25) er holdt i sin udgangssvingposition ved hjælp af en fjederpåvirkning med virkning af en reversibel låsemekanisme, eller
- hvorved låsemekanismen (34) er dannet ved hjælp af mindst en mekanisk indgrebsdel mellem basissokkel (17) og markiseholder (20) og irreversibelt kan løsgøres ved skæring på grund af svingbevægelsen af markiseholderen (25) under den indledningsvise justering af dens hældningsposition.

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2. Monteringsbeslag ifølge krav 1, **kendetegnet ved, at** den mekaniske indgrebsdel er dannet ved hjælp af en låsebolt (38, 39).

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3. Monteringsbeslag ifølge krav 2, **kendetegnet ved, at** låsebolten (38, 39) er udformet som en separat del, der i udgangssvingpositionen for markiseholderen (25) sidder i, med hinanden flugtende, modtageboringer (35, 36, 37) i basissoklen (17) og markiseholderen (25).

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4. Monteringsbeslag ifølge krav 2 eller 3, **kendetegnet ved, at** låsebolten (38, 39) består af et plastmateriale.

5. Monteringsbeslag ifølge et af kravene 2 til 4, **kendetegnet ved, at** låsebolten (38, 39) er udformet som en gevind-låsebolt, og modtageboringerne (35, 36, 37) er udformet som gevindboringer.

6. Monteringsbeslag ifølge et af kravene 2 til 5, hvorved basissoklen (17) omfatter to lejevanger (19, 20), mellem hvilke markiseholderen (25) er lejret som svingbar, **kendetegnet ved, at** en respektiv låsebolt (38, 39) er arrangeret mellem dels markiseholderen (25) og dels de to lejevanger (19, 20) i tilsvarende modtageboringer (35, 36, 37).

7. Markise, omfattende et monteringsbeslag ifølge et af kravene 1 til 6.

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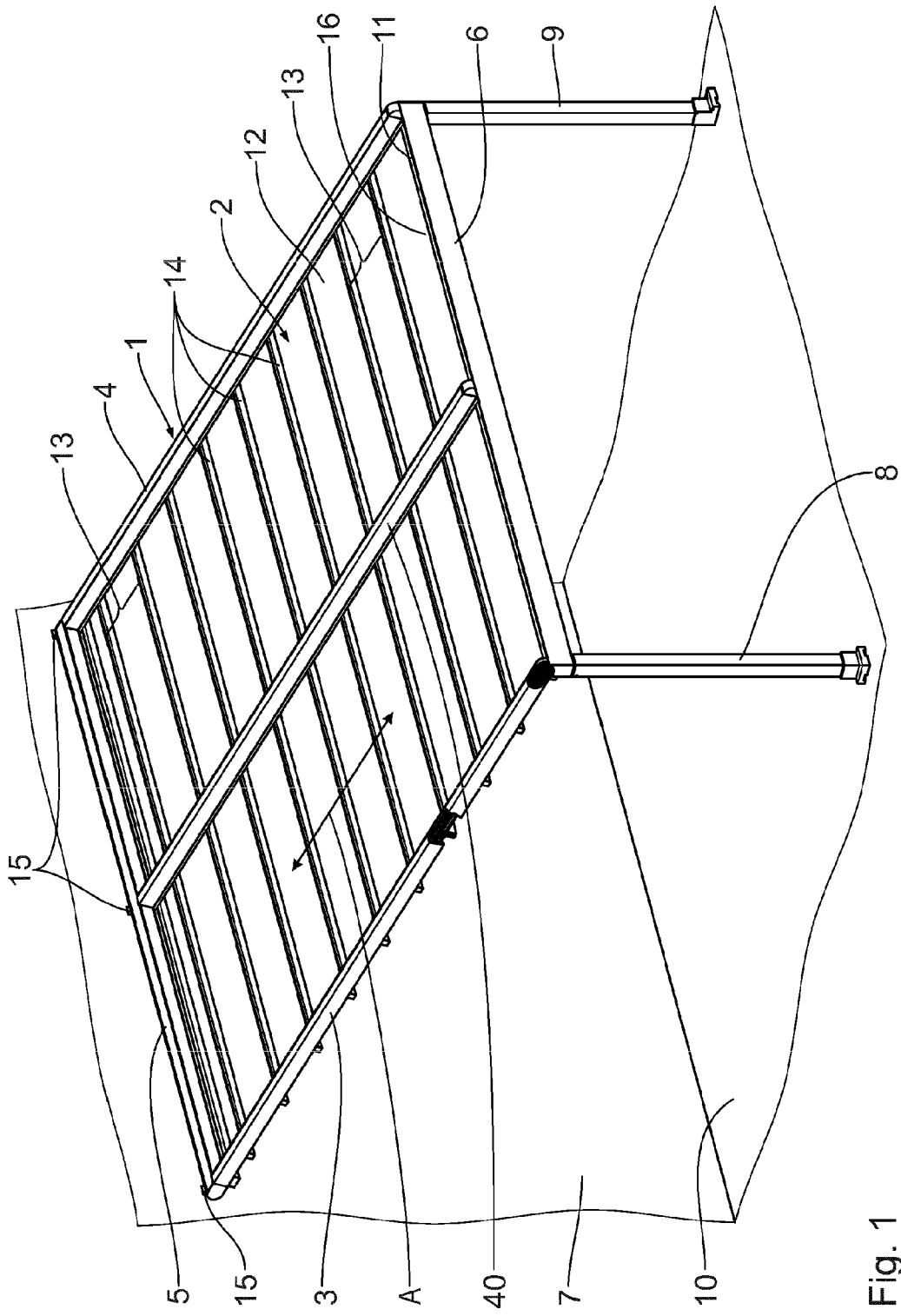


Fig. 1

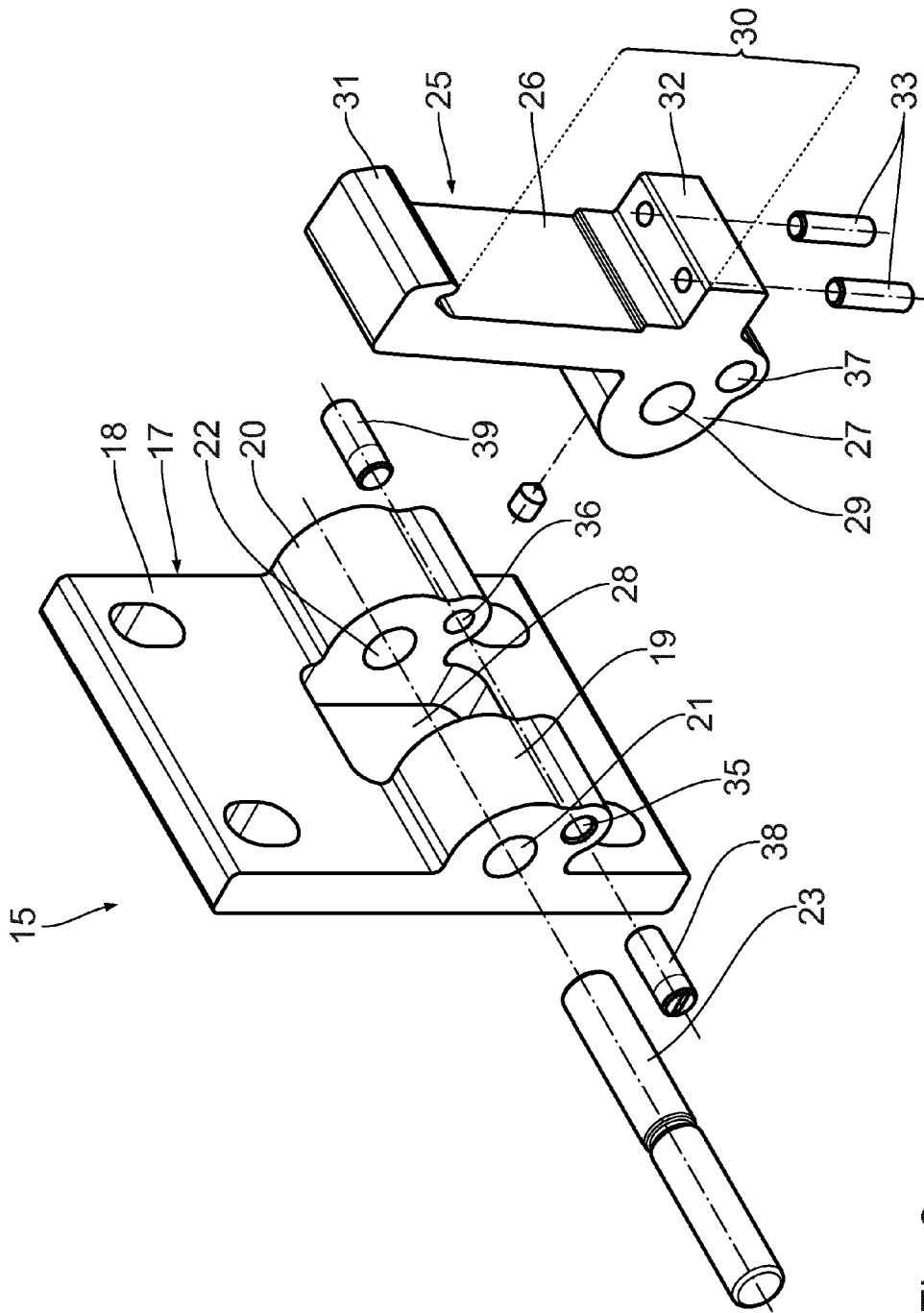


Fig. 2

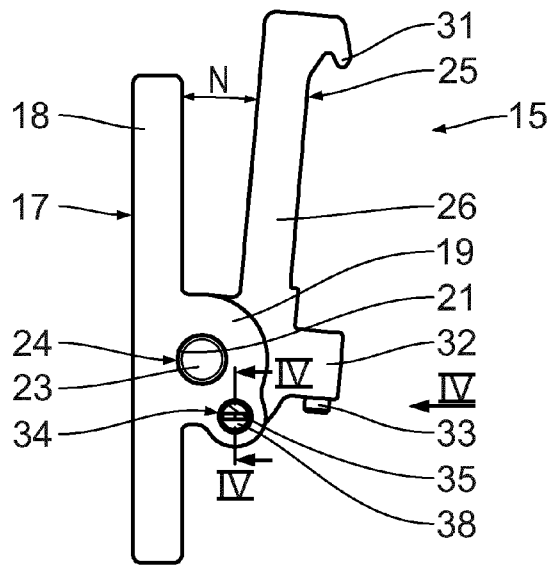


Fig. 3

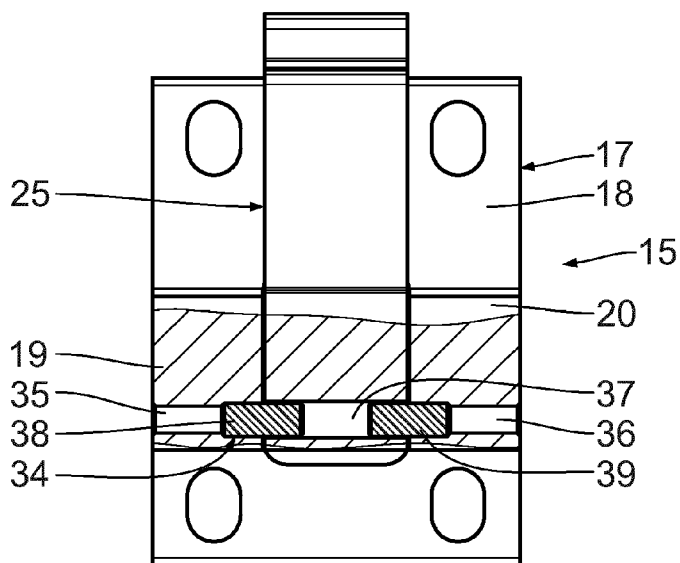


Fig. 4

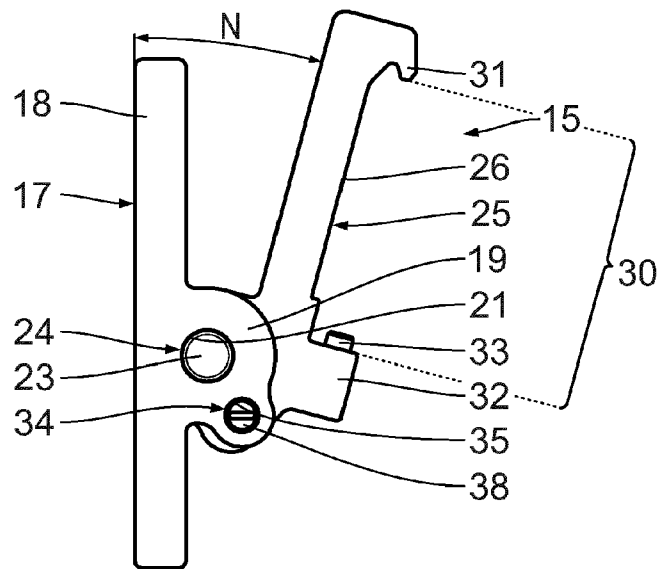


Fig. 5

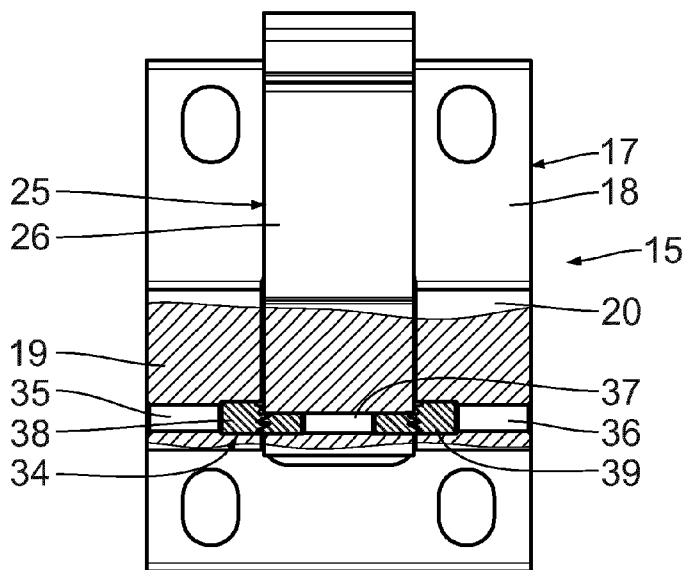


Fig. 6

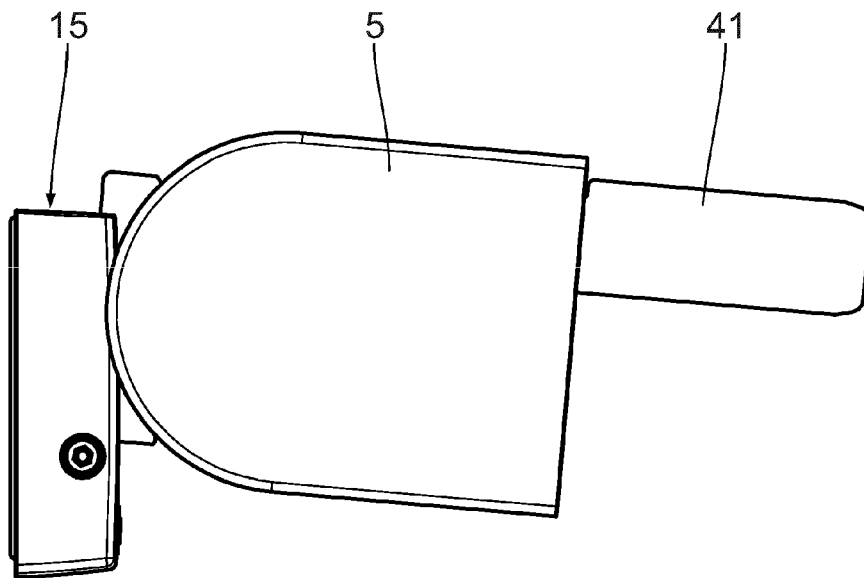


Fig. 7

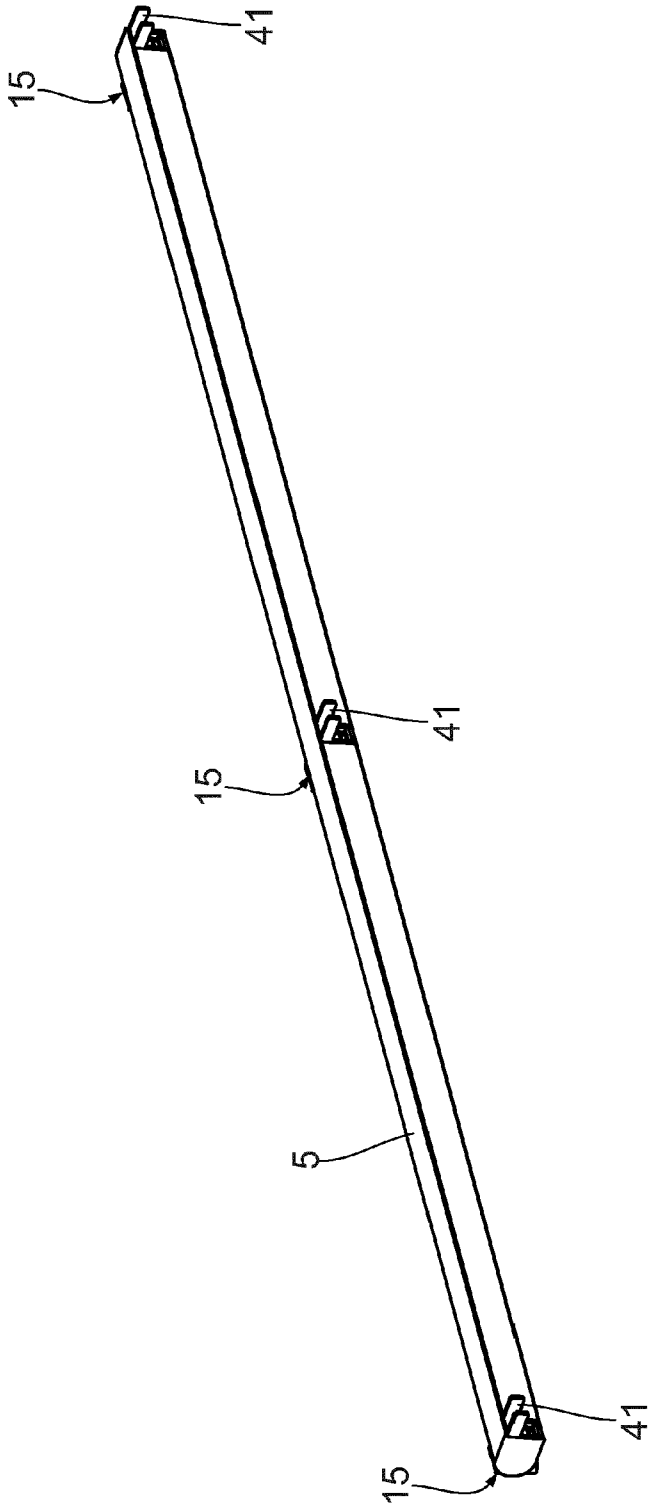


Fig. 8

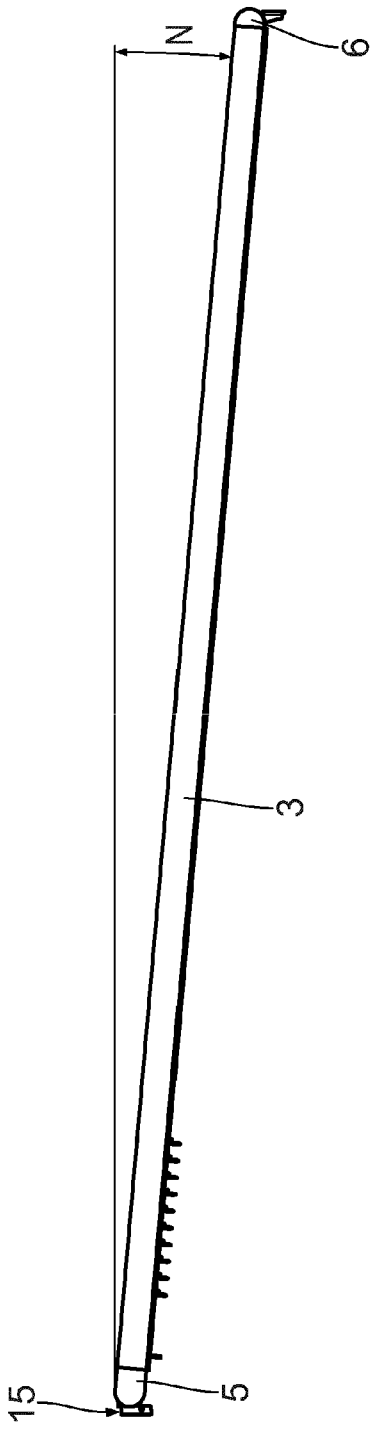


Fig. 9

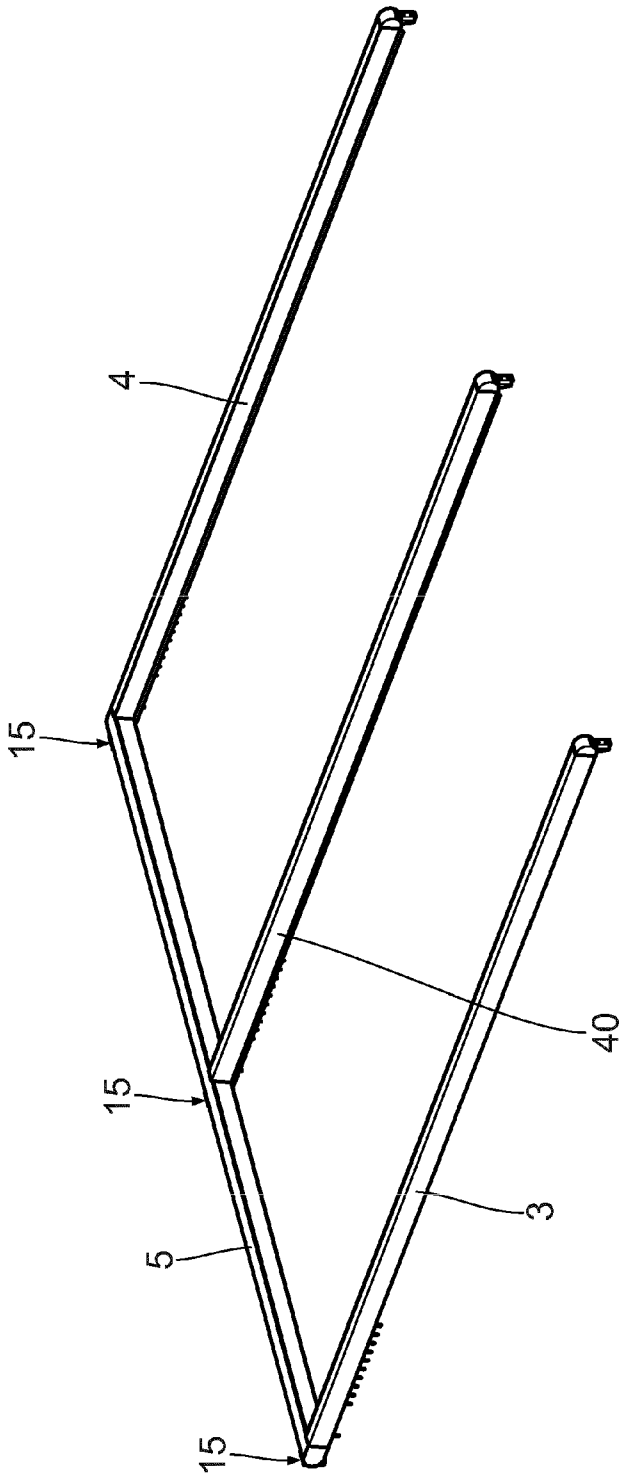


Fig. 10