(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 163 173 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
17.03.2010 Bulletin 2010/11

(51) Int Cl.:
A47D 1/02 *(2006.01)* ***A47D 1/10*** *(2006.01)*
A47D 1/00 *(2006.01)*

(21) Application number: **08425598.3**

(22) Date of filing: **11.09.2008**

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

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(54) **Child seat applicable to chairs and the like**

(57) A child seat applicable to a chair (20) and the like, comprising a base frame (2) that can be fixed detachably to a chair (20), the seat comprising height adjustment means (50) which provide guided sliding between the seat (3) and the base frame (2).

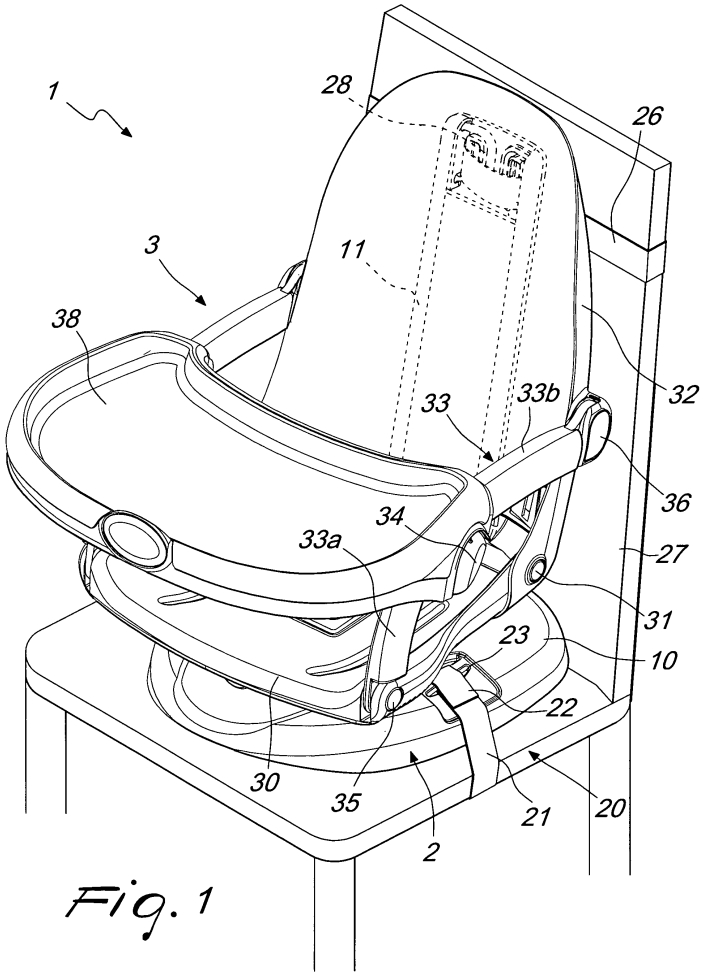

Fig. 1

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Description

[0001] The present invention relates to a child seat applicable to chairs and the like.

[0002] As is known, child seats applicable to chairs and the like, commonly known as chair booster seats, are currently commercially available and generally have a sitting portion that can be applied to a chair by means of straps and the like.

[0003] The most advanced solutions also offer the possibility to vary the height of the sitting portion with respect to the chair by means of mechanisms that are generally very complicated, since generally one acts on the legs that support the sitting portion.

[0004] Another problem arises from the fact that the straps for connection to the chair must be adjusted after positioning the sitting portion vertically, so that if one wishes to change the positioning height of the sitting portion it is necessary also to act on the fixing straps, making the operation complex and laborious.

[0005] The aim of the invention is to solve the problem described above by providing a child seat applicable to chairs and the like that can be connected easily to a chair, simplifying considerably all fixing operations.

[0006] Within this aim, an object of the invention is to provide a seat that is particularly versatile and capable of reducing considerably its space occupation when it is not used.

[0007] Another object of the present invention is to provide a seat which, thanks to its particular constructive characteristics, is capable of giving the greatest assurances of reliability and safety in use.

[0008] Still another object of the present invention is to provide a child seat applicable to chairs and the like that can be obtained easily starting from commonly commercially available elements and materials and is also competitive from a merely economical standpoint.

[0009] This aim and these and other objects that will become better apparent hereinafter are achieved by a child seat applicable to chairs and the like, comprising a base frame that can be fixed detachably to a chair and the like, a sitting portion being associated with said base frame with the interposition of height adjustment means, **characterized in that** said height adjustment means comprise means for guided sliding between said base frame and said sitting portion.

[0010] Further characteristics and advantages will become better apparent from the description of a preferred but not exclusive embodiment of a child seat applicable to chairs and the like, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a schematic perspective view of the seat, applied to a chair;
Figure 2 is a perspective view of the base frame;
Figure 3 is a perspective view of the seat in the folded position;
Figure 4 is a front view of the seat;
Figure 5 is a sectional view, taken along the line V-V of Figure 4;
Figure 6 is a sectional view of the placement of the sitting portion at the maximum usable height;
Figure 7 is a view of the step for the actuation of the safety element in order to disengage the height adjustment means;
Figure 8 is a view of the disengagement of the height adjustment means, with the possibility to lower the seat;
Figure 9 is a sectional view of a detail of the seat in the lowered position;
Figure 10 is a sectional view, taken along the line X-X of Figure 9;
Figure 11 is a schematic view of the seat with a support for stiffening the sitting portion;
Figure 12 is a sectional view of the stiffening support, illustrating in broken lines a different operating position.

[0011] With reference to the figures, the child seat applicable to chairs and the like, generally designated by the reference numeral 1, comprises a base frame 2, to which it is possible to connect a seat 3 whose height is adjustable.

[0012] In greater detail, the base frame 2 has a base body 10, which is advantageously flattened and from which a post 11 protrudes which, in the position for use, is directed upwardly.

[0013] The post 11 is pivoted by way of hinge means 12 to the base body 10, so that it is possible to fold, when not in use, the base body onto the rear face of the post 11.

[0014] The post 11 has a sawtooth contoured portion 15, which constitutes an element of the height adjustment means, as will become better apparent hereinafter.

[0015] Means for fixing the base frame are further provided which allow to apply the seat to a chair, generally designated by the reference numeral 20, with the possibility to perform height adjustment of the sitting portion without having to intervene on the fixing means.

[0016] The fixing means are constituted by a lower strap 21, which at one end forms a bend 22 that engages an interrupted crossmember 23 formed by the base body 10 and has, at the other end, an engagement element, generally designated by the reference numeral 24, which is inserted by snap action in a mating seat 25 formed on the opposite edge of the base body.

[0017] In a per se known manner, the engagement element 24 engages the lower strap 21, with the possibility of length adjustment, so as to achieve fixing to the chair.

[0018] The fixing means further have an upper strap 26, which can wrap around the back 27 of the chair and engages a labyrinth-like element 28 formed at the upper end of the post 11.

[0019] The seat 3 has, in its general outline, a sitting surface 30 that is pivoted by means of a first hinge 31 to a back 32.

[0020] Armrests 33 are also provided, which are con-

stituted by a lower portion 33a which is pivoted to an upper portion 33b by means of an intermediate hinge 34.

[0021] The armrests 33 are respectively pivoted to the sitting portion by means of a sitting surface hinge 35 and to the back by means of a back hinge 36.

[0022] With this arrangement, it is possible to fold the seat by moving the sitting surface 30 toward the back and achieving mutual contact between the lower portion 33a and the upper portion 33b of the armrests, assuming a flattened configuration as shown in Figure 3.

[0023] The seat 3 engages the post 11 thanks to the presence of a rear band 40, which forms, in cooperation with the rear face of the back 32, an insertion and guiding channel for telescopic coupling of the seat to the base frame.

[0024] The seat has, below the sitting surface, height adjustment means, generally designated by the reference numeral 50, which are constituted by guided sliding means, which have a pawl-like body 51 that mates with the sawtooth-shaped portion 15, performing positioning with the possibility to obtain free upward sliding, with a ratchet-like coupling of the pawl 51 on the sawtooth-shaped portion, while it provides a stable locking in the direction for lowering the sitting portion, said locking being removable by acting on the tension element 52 to which the pawl-like body 51 is connected.

[0025] The tension element 52 is arranged slidingly below the seat and there are elastic pusher means 53 which are constituted by a spring that acts between a first abutment 54, which is provided on the tension element 52, and a fixed abutment 55, which is formed at the lower face of the sitting surface 30.

[0026] The tension element 52 has, at the front, a grip recess 56, which is generally covered by a safety element 57 pushed by a safety spring 58 so as to prevent access to the grip recess.

[0027] The safety element 57 is able to slide, by way of a pressure applied from the outside with consequent compression of the spring 58, so as to allow access to the grip recess 56, which allows to pull on the pawl-like body 51, disengaging its teeth from the sawtooth-shaped portion 15, as shown in Figure 8, in order to be able to provide the free and easy downward sliding of the sitting portion.

[0028] By releasing the grip recess, the spring 53 automatically returns the teeth of the pawl-like body 51 into engagement with the sawtooth-shaped portion 15, thus locking the sitting portion, with respect to downward sliding, leaving instead the rising actuation free by way of the ratchet-like coupling that is provided.

[0029] With particular reference to Figures 11 and 12, the seat is provided with a support for stiffening the seat.

[0030] In greater detail, there is a strut 60, which at one end is pivoted at 61 to the lower face of the sitting surface 30 and at the other end engages abutment recesses 62 formed on the base frame, so that the strut 60, by connecting to the cantilever end of the sitting portion, acts as a stiffening support, which can be particularly useful in the case of heavier children.

[0031] It should be noted that the abutment recesses are advantageously equal in number to the sawtooth-shaped portion 15, so that a specific abutment recess is provided according to the various heights.

[0032] From what has been described above it is evident that the invention achieves the proposed aim and objects, and in particular the fact is stressed that a seat is provided in which there is first of all the possibility to provide connection to a chair with the possibility to provide height variation of the sitting portion, since the means for fixing to the chair are independent of the height positioning means.

[0033] Another important aspect is further constituted by the fact that the sitting portion is mated telescopically with the post, thus allowing to achieve a gradual height adjustment in a very simple manner, since no actuation is necessary for lifting except of course for the lifting action, while the possibility to lower the sitting portion again can be achieved easily by engaging the hand with the grip recess that is generally closed by the safety element in order to both prevent accidental actuations and prevent the child from acting on the tension element that is connected to the pawl-like body.

[0034] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0035] All the details may further be replaced with other technically equivalent elements.

[0036] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to requirements.

[0037] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A child seat applicable to chairs and the like, comprising a base frame (2) that can be fixed detachably to a chair (20) and the like, a seat (3) being associated with said base frame (2) with the interposition of height adjustment means, **characterized in that** said height adjustment means (50) comprise means for guided sliding between said base frame (2) and said seat (3).

2. The seat according to claim 1, **characterized in that** said base frame (2) comprises a base body (10) from which a post (11) protrudes on which said height adjustment means (50) are provided.

3. The seat according to the preceding claims, **char-**

acterized in that said base frame (2) comprises a base body (10) from which a post (11) protrudes, said post (11) being connected to said base body by way of hinge means (12) for the folding of said base body (10) onto the rear face of said post (11), with said seat in the position of nonuse.

4. The seat according to one or more of the preceding claims, **characterized in that** said seat (3) comprises a sitting surface (30) to which a back (32) is pivoted by means of a first hinge (31), armrests (33) being further provided which are constituted by a lower portion (33a) pivoted to an upper portion (33b), said armrests (33) being pivoted respectively to said sitting surface (30) and to said back (32).

5. The seat according to one or more of the preceding claims, **characterized in that** said guided sliding means comprise, on the rear part of said back (32), a rear band (40), which forms, in cooperation with said back (32), an insertion and guiding channel for said post (11) for telescopic coupling of said seat (3) to said base frame (2).

6. The seat according to one or more of the preceding claims, **characterized in that** said guided sliding means comprise a pawl-like body (51), which is accommodated slidingly below said sitting surface (30) and engages a sawtooth-shaped portion (15) formed on said post (11).

7. The seat according to one or more of the preceding claims, **characterized in that** said pawl-like body (51) can engage in a ratchet-like fashion with said sawtooth-shaped portion (15) during the step of lifting said seat (3) on said base frame (2).

8. The seat according to one or more of the preceding claims, **characterized in that** said pawl-like body (51) is connected to a tension element (52), which is positioned slidingly below said sitting surface (30), elastic pusher means (53) being further provided which have a first abutment, provided on said tension element (52), and a fixed abutment (55), which is formed on the lower face of said sitting surface (30).

9. The seat according to one or more of the preceding claims, **characterized in that** said tension element (52) has, at the front, a grip recess (56), which can be covered by a safety element (57) that is supported slidingly by said tension element (52).

10. The seat according to one or more of the preceding claims, **characterized in that** it comprises a safety spring (58), which acts on said safety element (57) in order to keep it detachably covering said grip recess (56) of said tension element (52).

11. The seat according to one or more of the preceding claims, **characterized in that** it comprises means for fixing said base frame (2) to a chair (20) and the like which are independent of said seat (3).

12. The seat according to one or more of the preceding claims, **characterized in that** it comprises a stiffening support constituted by a strut (60), which is pivoted at one end to the lower face of said sitting portion (30) and at the other end can engage in abutment recesses (62) formed on said base frame (2).

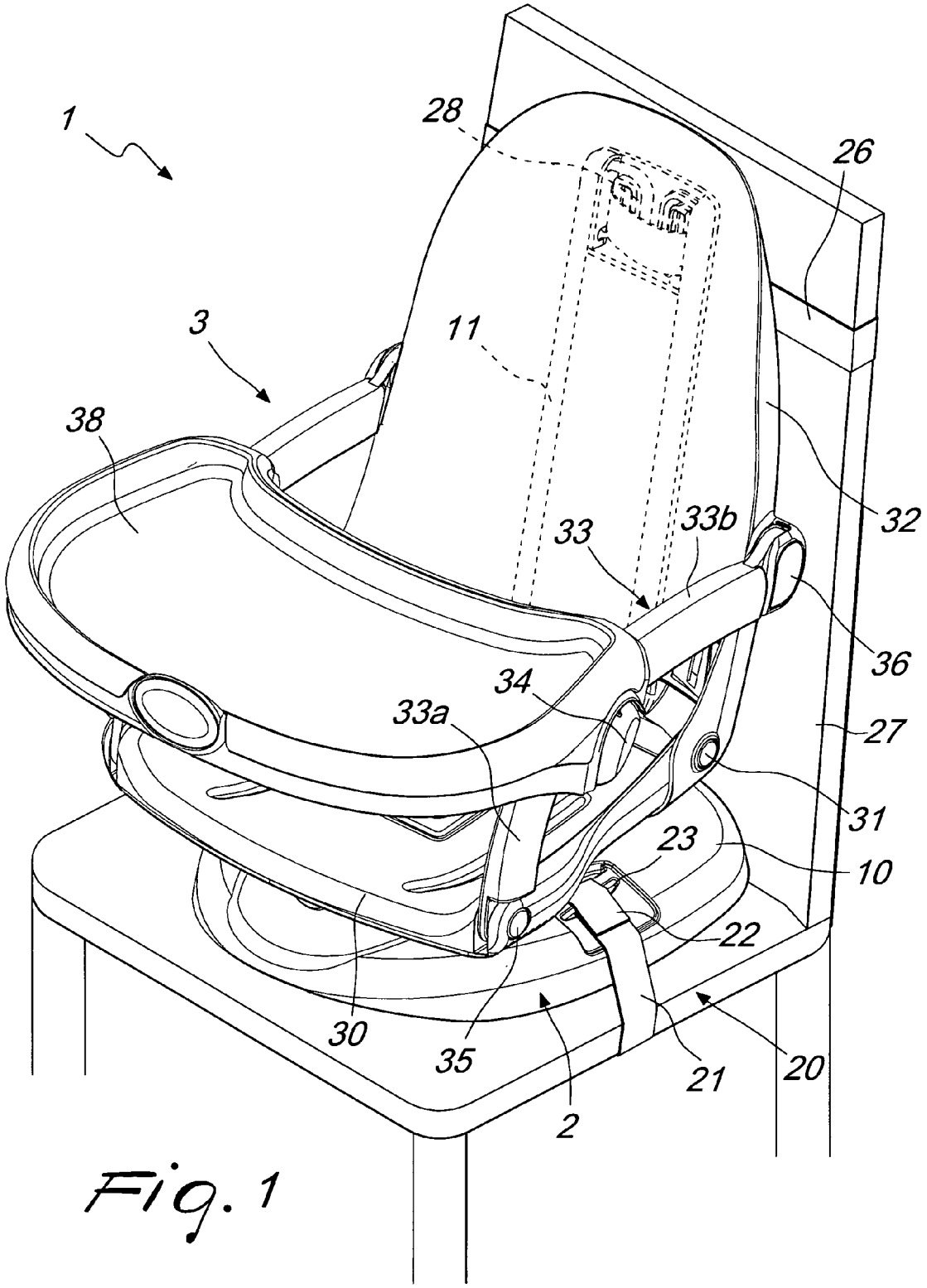

Fig. 1

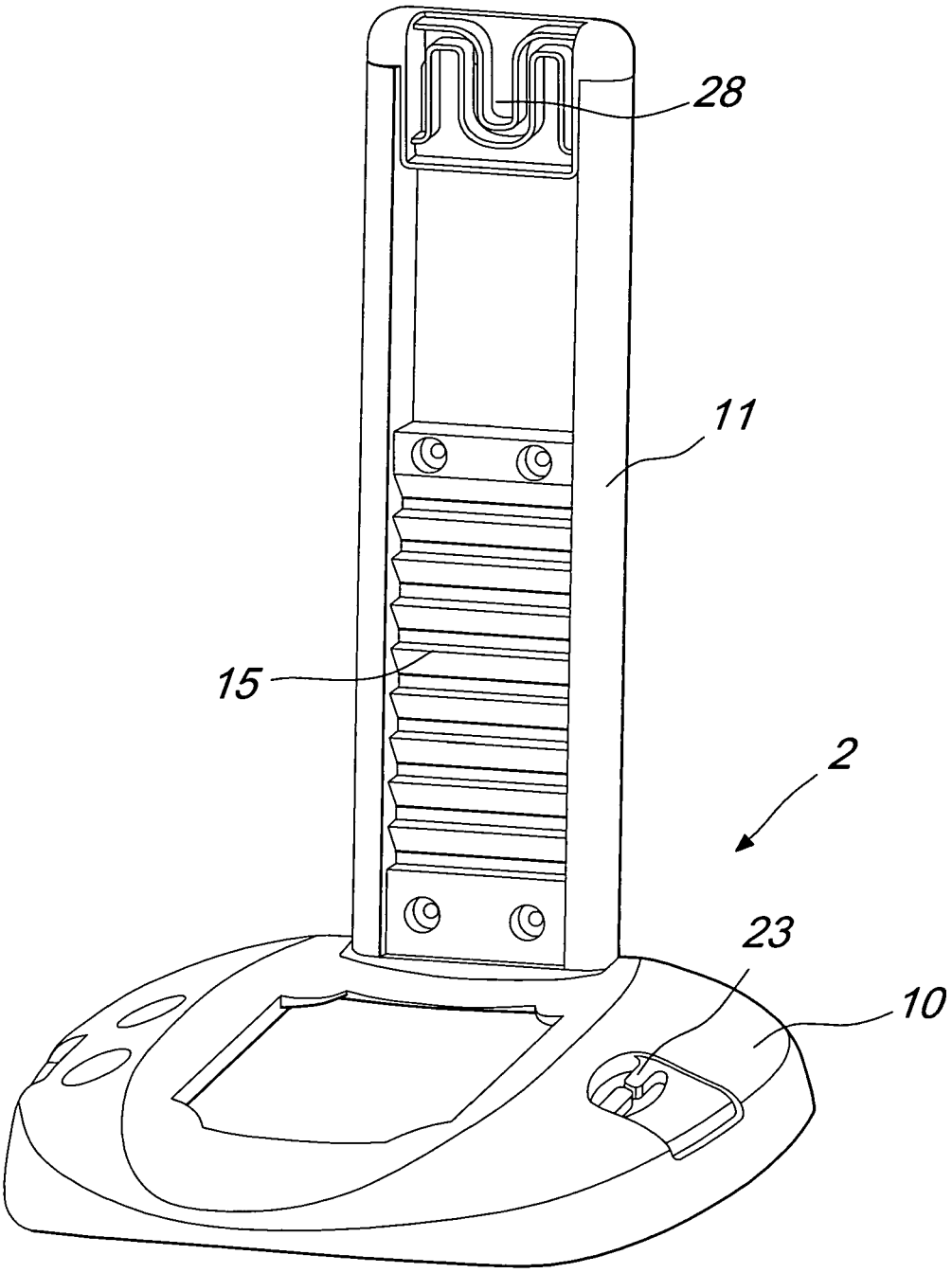

Fig. 2

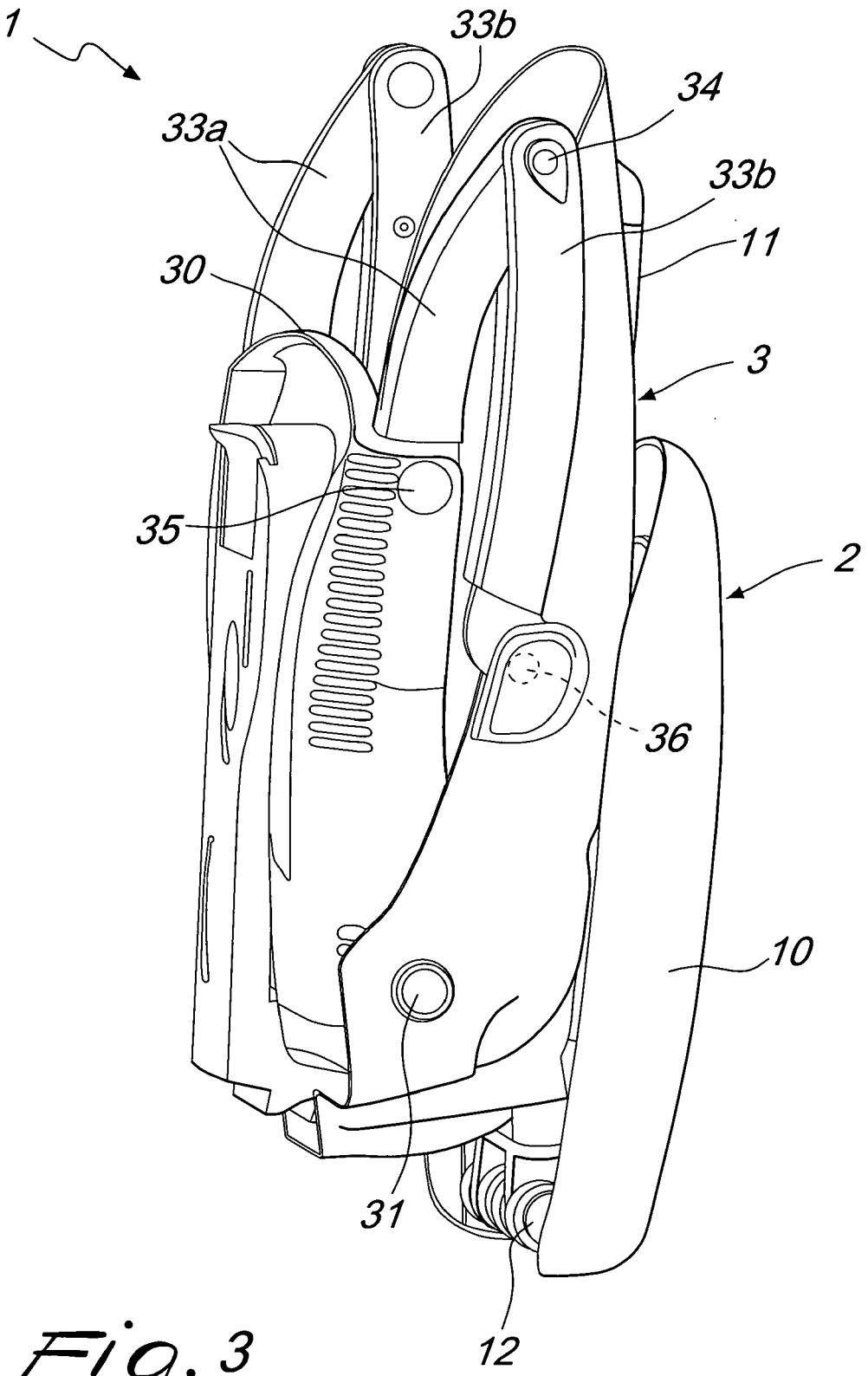

Fig. 3

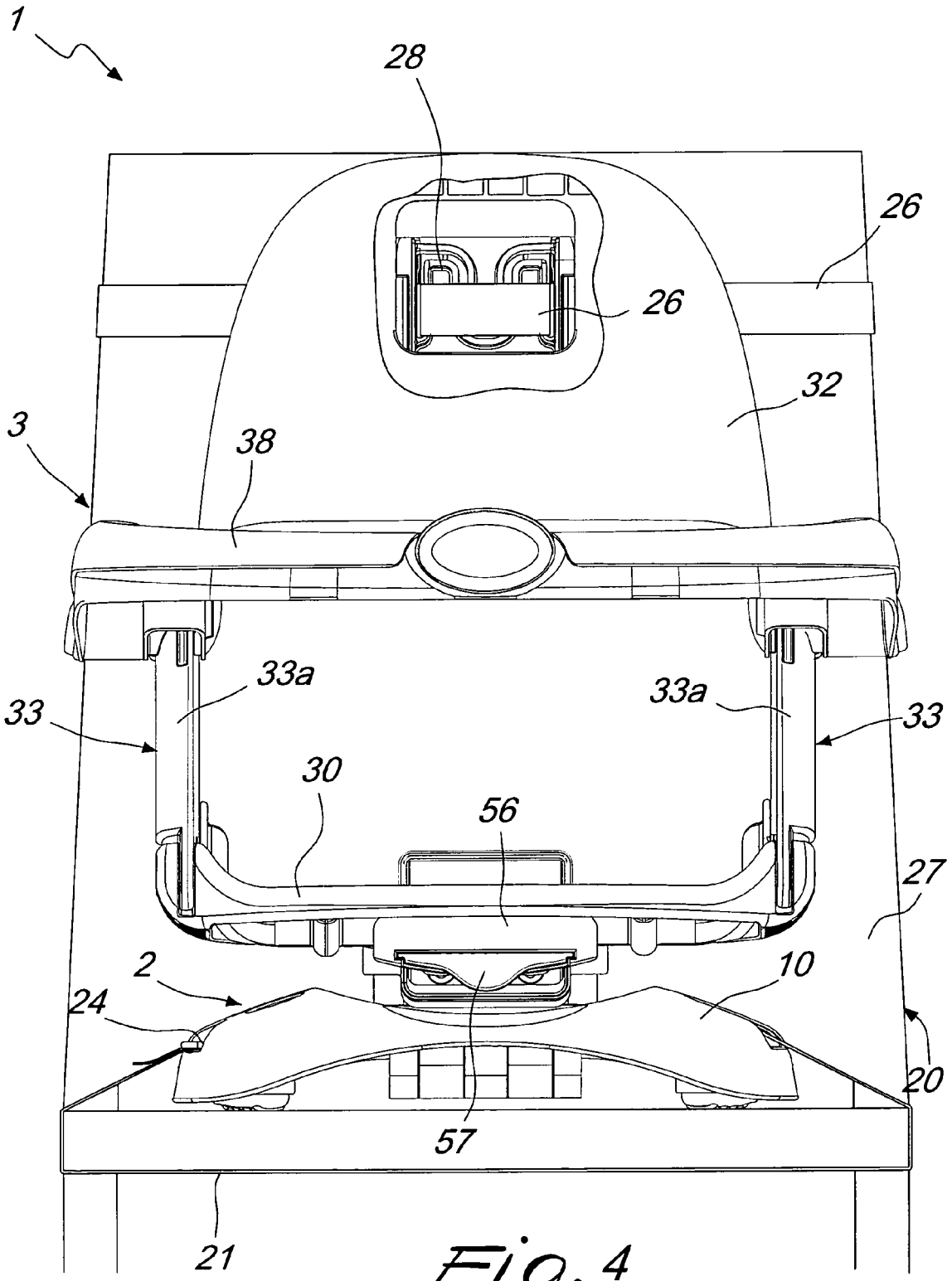

Fig. 4

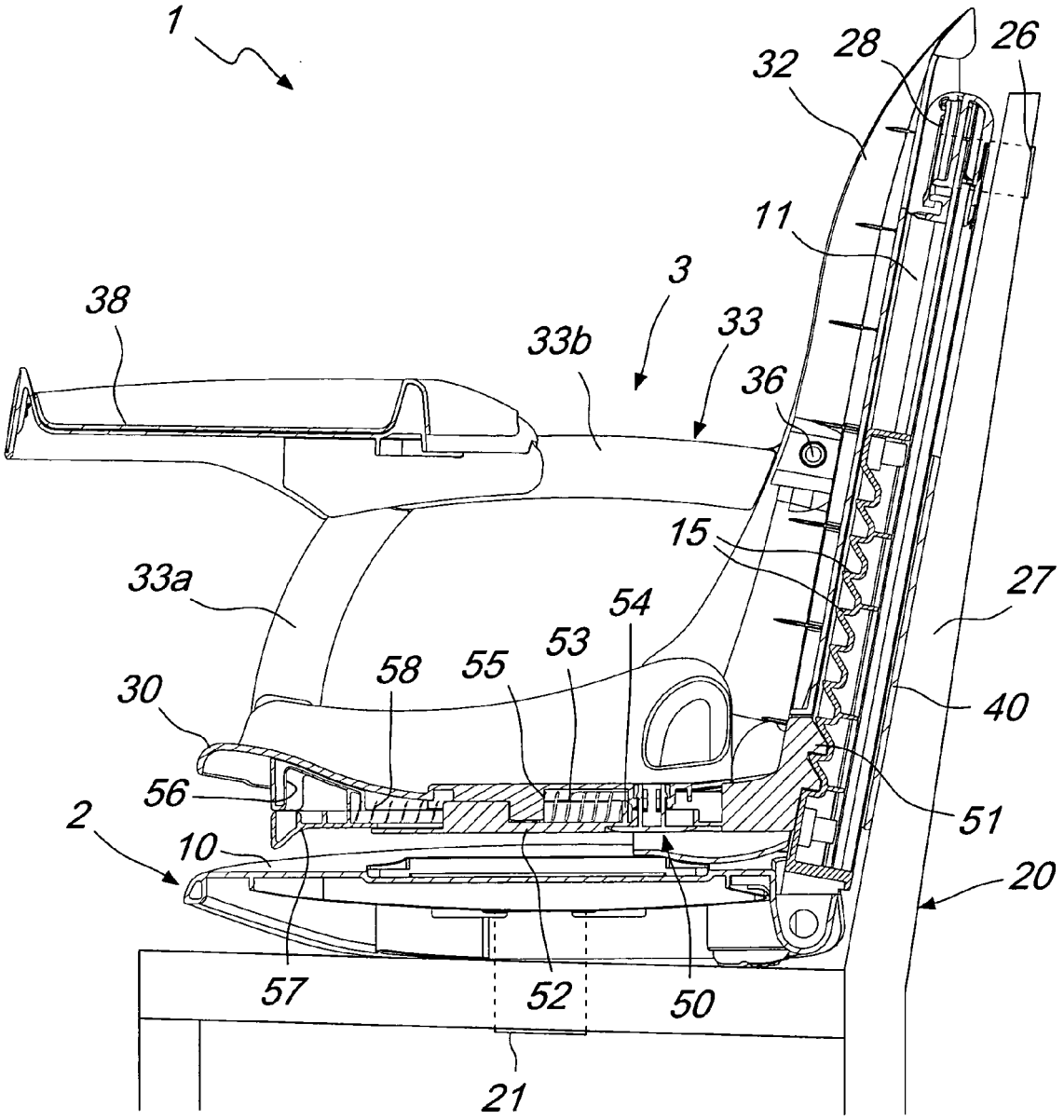
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Fig. 5

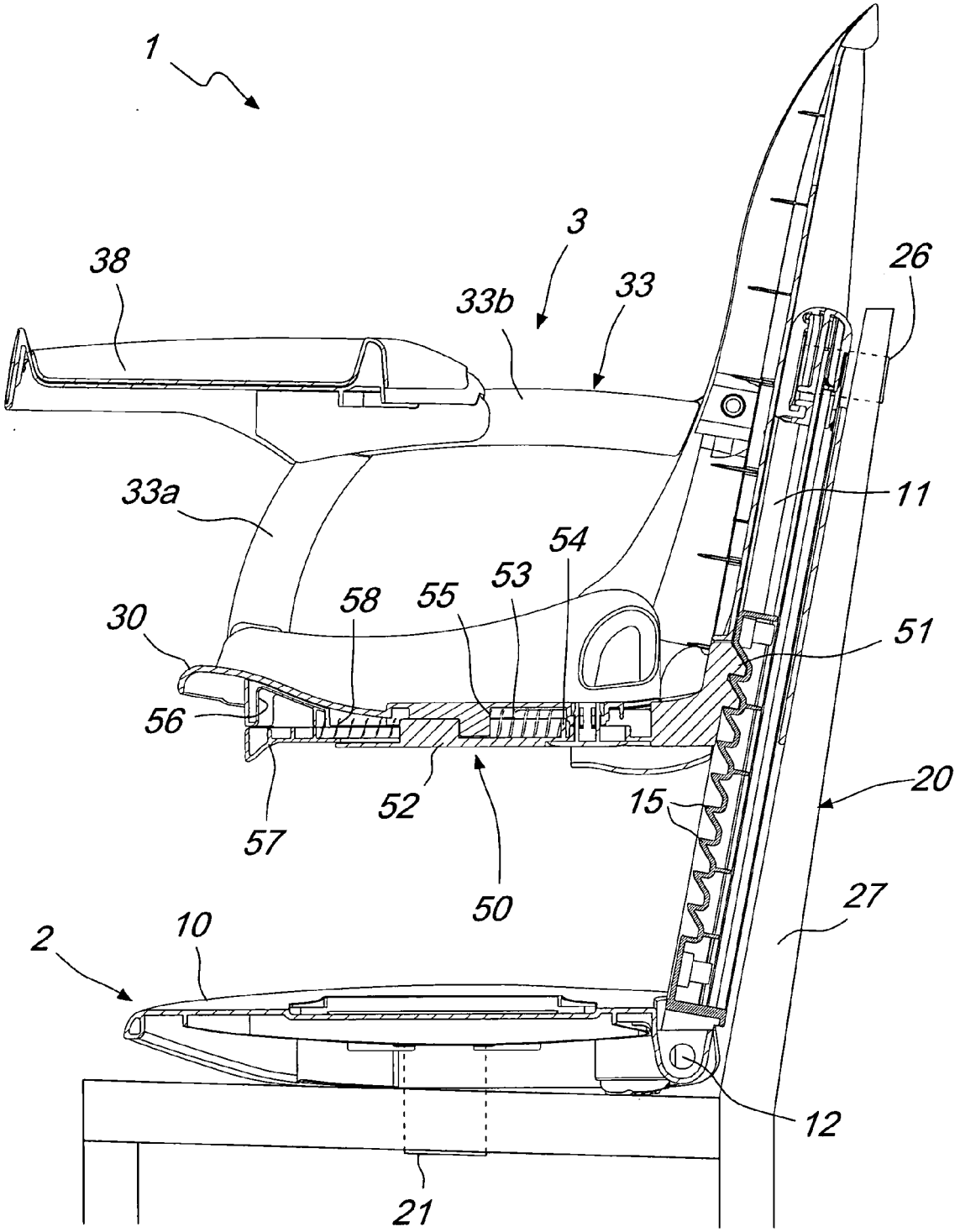

Fig. 6

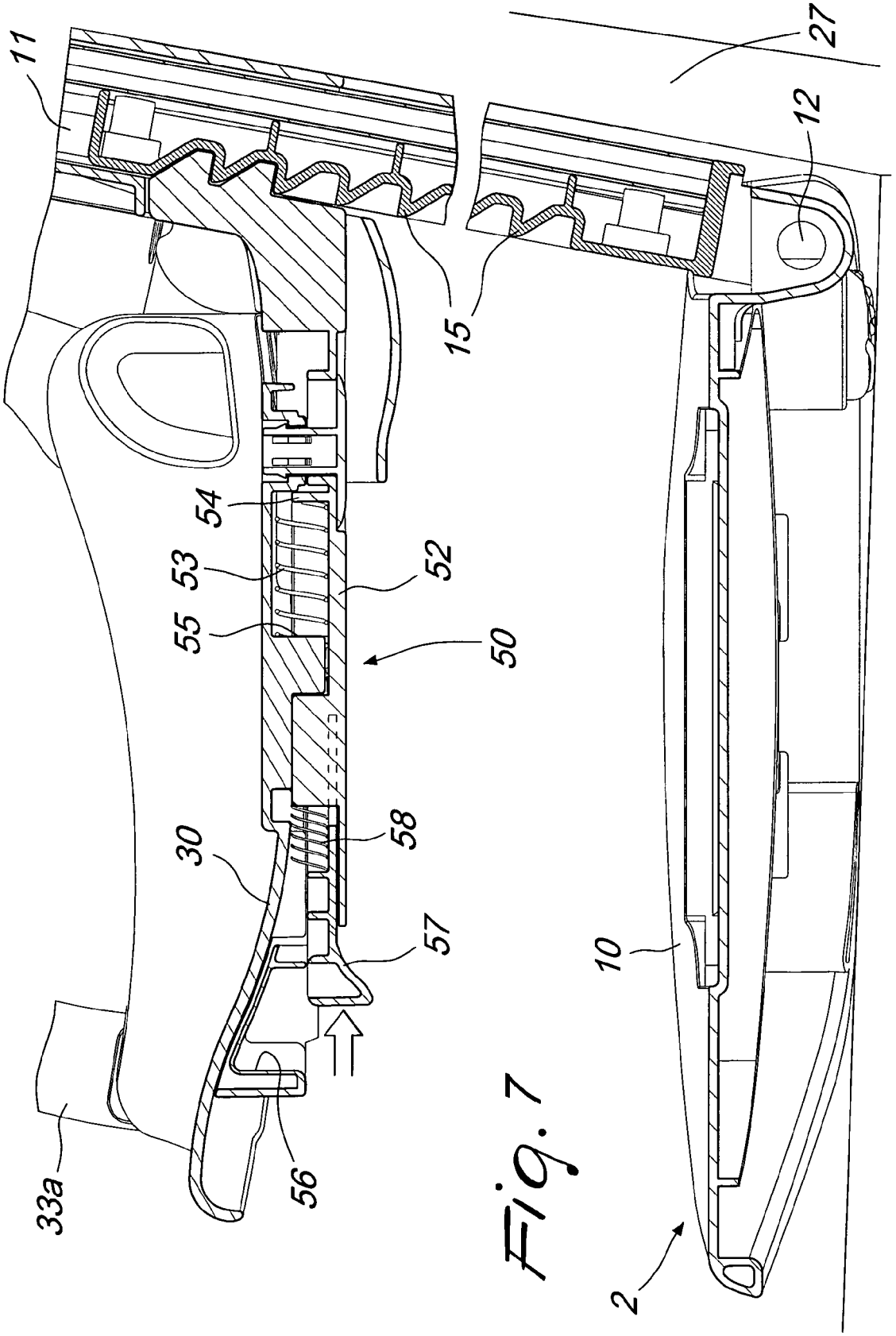

Fig. 7

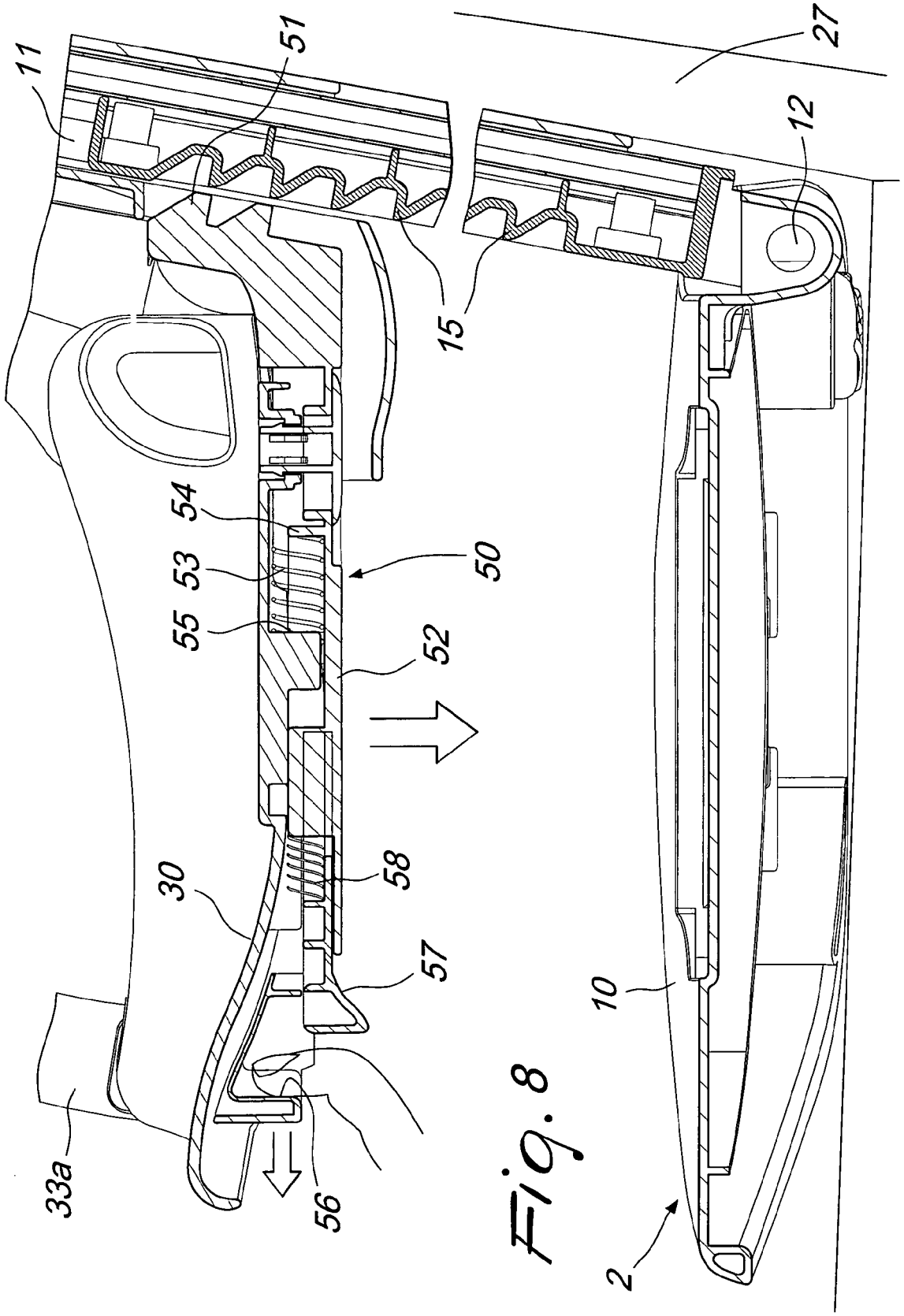

Fig. 8

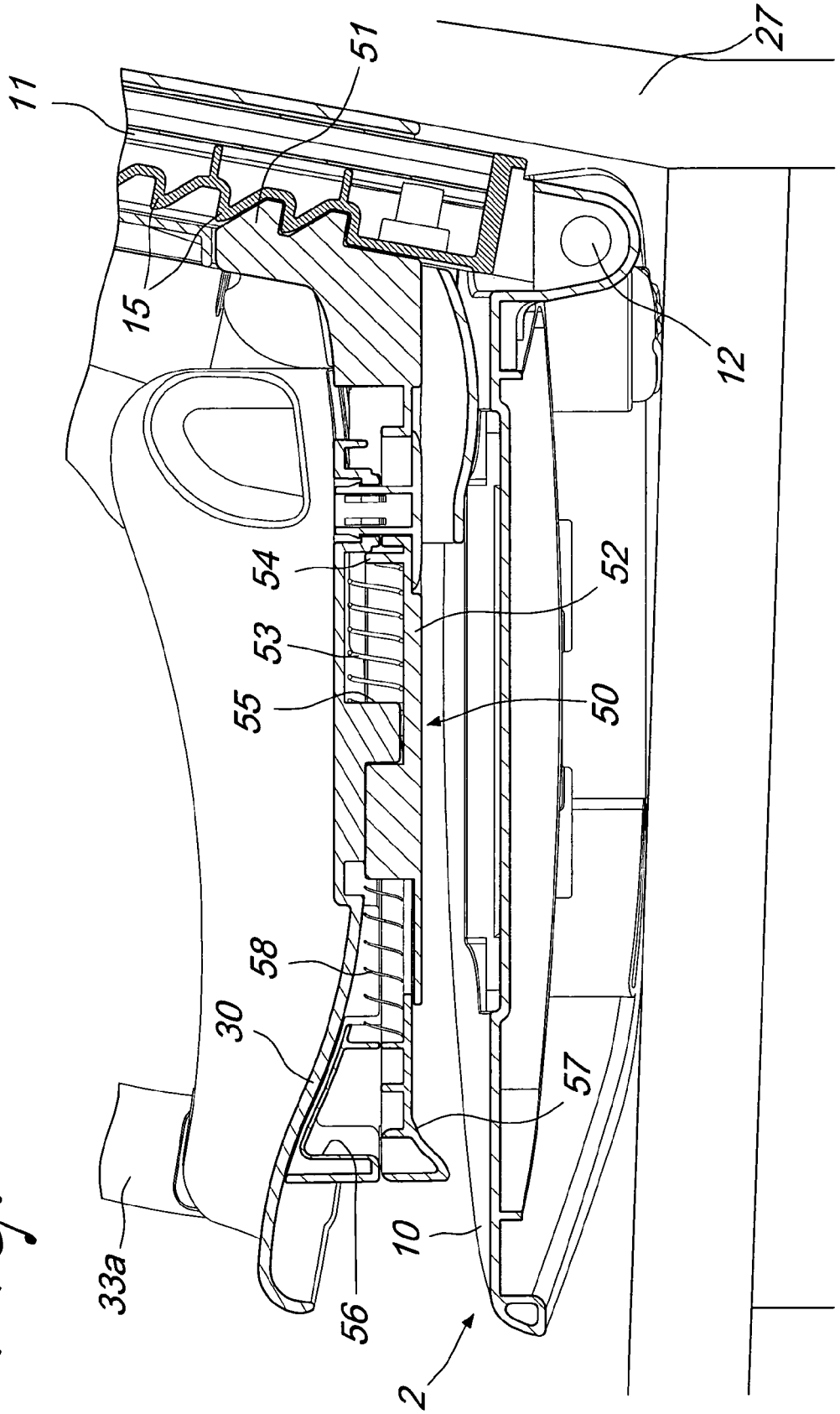

Fig. 9

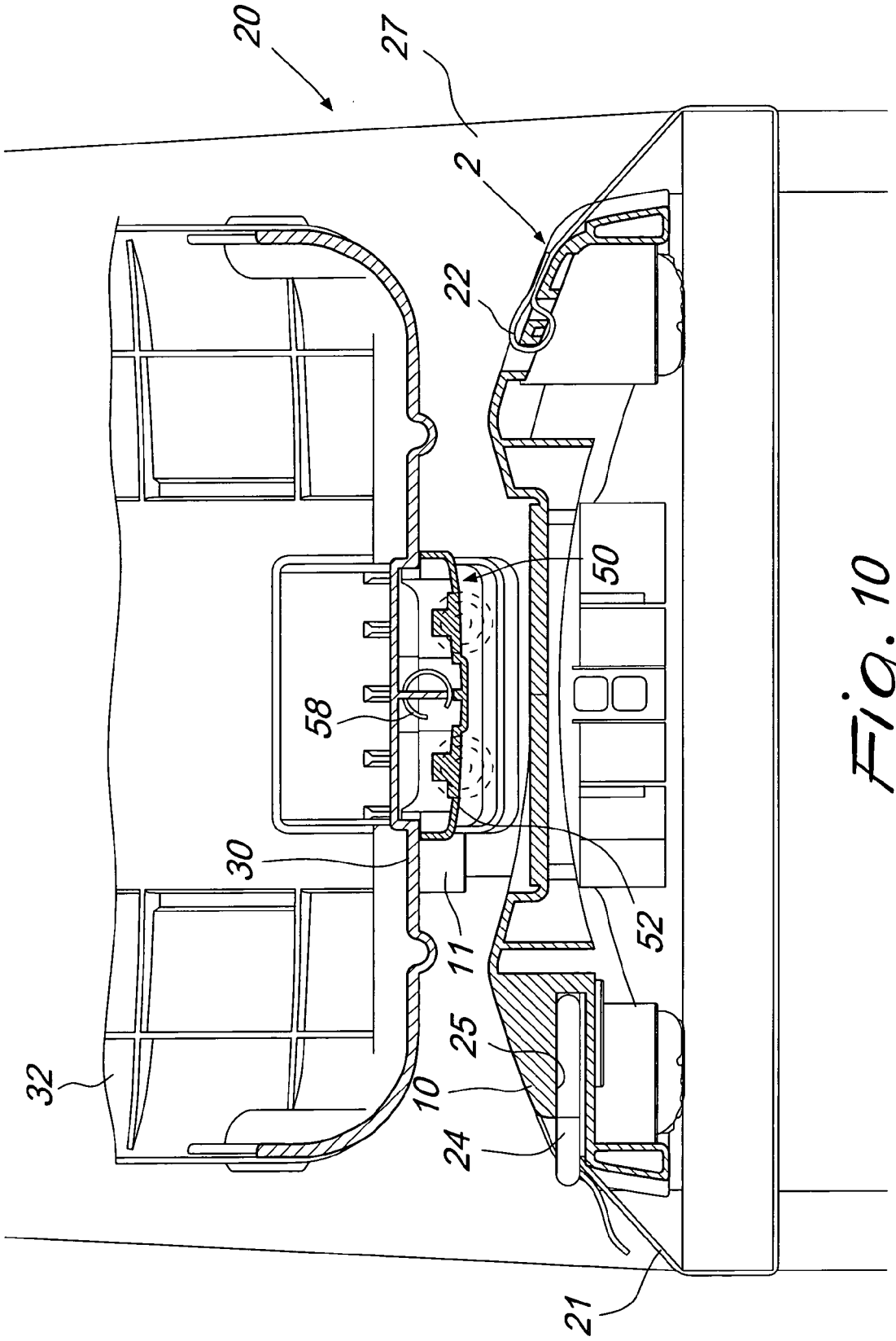

Fig. 10

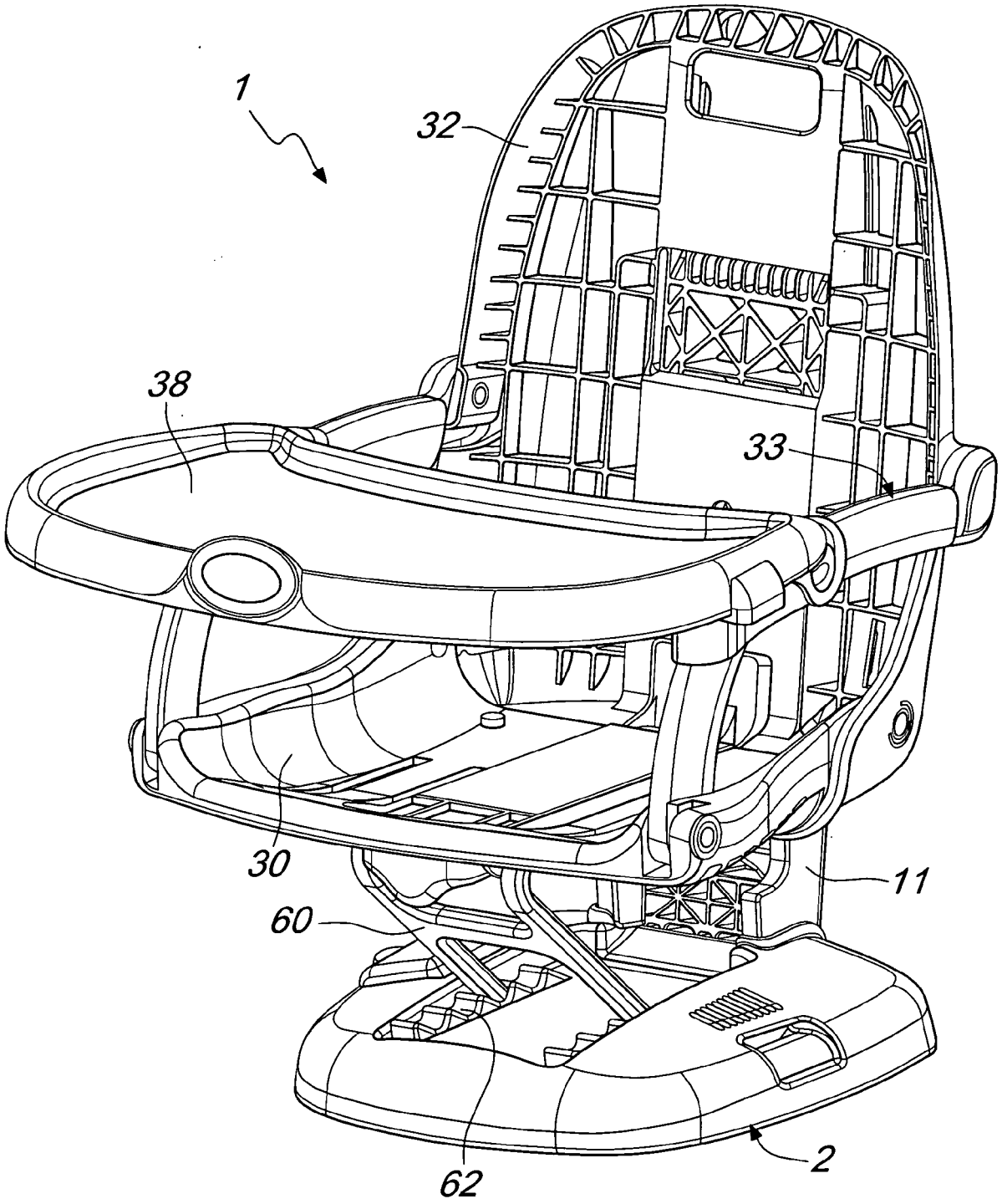

Fig. 11

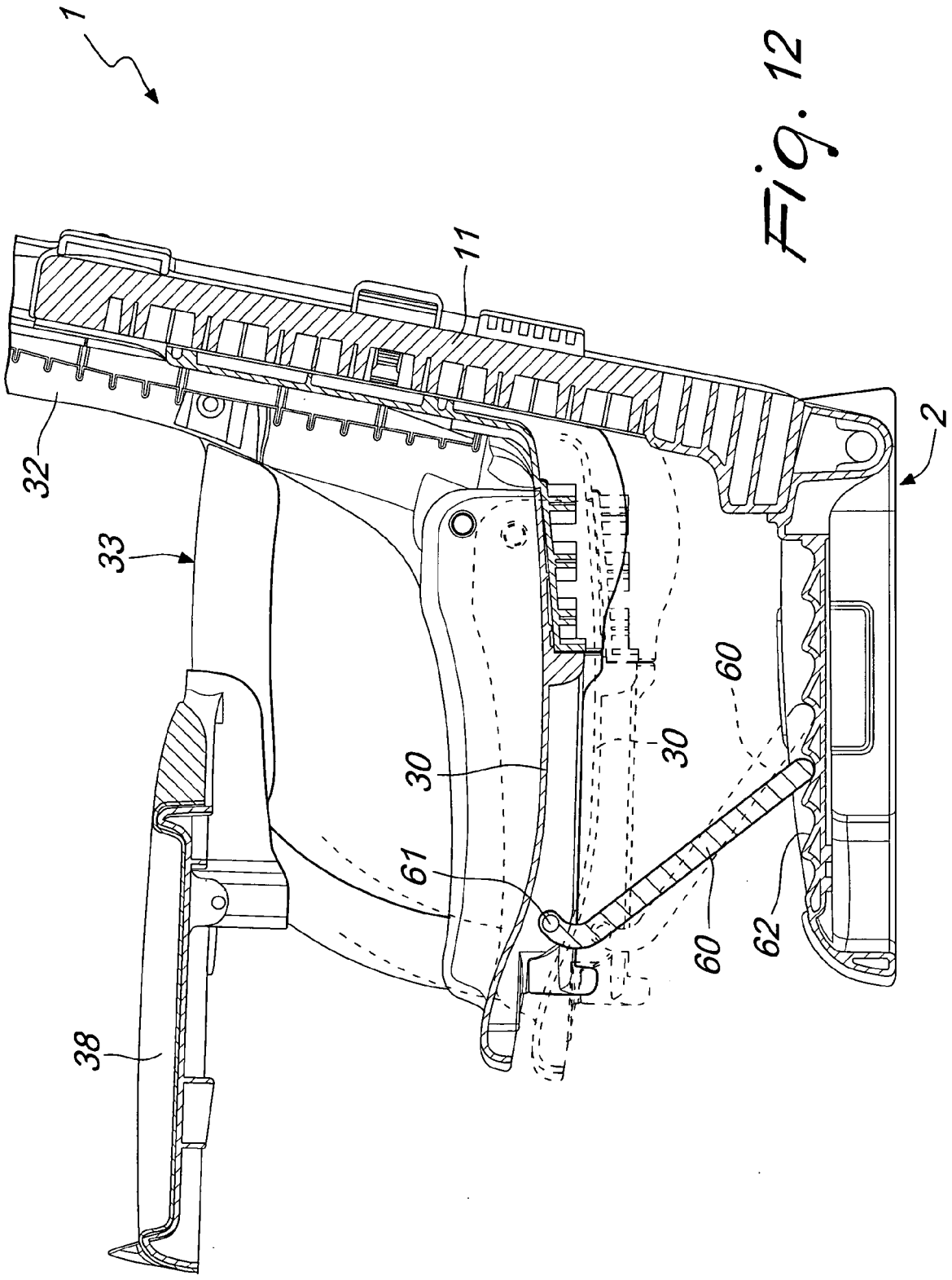

Fig. 12

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EUROPEAN SEARCH REPORT

Application Number
EP 08 42 5598

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X	FR 2 329 233 A (KELLER) 27 May 1977 (1977-05-27) * figures *	1,4	
X	US 6 676 213 B1 (DLUGOS) 13 January 2004 (2004-01-13) * figures *	1,2	TECHNICAL FIELDS SEARCHED (IPC) A47D B60N
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	6 February 2009	Kis, Pál

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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06-02-2009

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