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United States Patent [19]
Hu

[11] E **Patent Number: Re. 36,967**
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|---------------------------------------------------------------------------------------------|-----------|---------|----------------------|------------|
| [54] ANGULAR AUTO-ADJUSTING SKID-PROOF PAD SYSTEM ON A BABY WALKER | 4,699,392 | 10/1987 | Ku | 280/87.02 |
| | 5,366,231 | 11/1994 | Hung | 280/87.051 |
| | 5,462,300 | 10/1995 | Chien | 280/87.051 |
| [76] Inventor: Stephen Hu , No. 2, Ta-Tung Road,
Hsin-Chu Industrial Park, Taiwan | 5,560,626 | 10/1996 | Glazer et al. | 280/33.994 |
| | 5,697,669 | 12/1997 | Yemini | 297/188.1 |
| | 5,732,961 | 3/1998 | Theodoropoulos | 280/87.051 |

- [21] Appl. No.: **09/326,481**
[22] Filed: **Jun. 4, 1999**

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Assistant Examiner—Andrew J. Fischer
Attorney, Agent, or Firm—Pro-Techtor International Services

Related U.S. Patent Documents

- Reissue of:
[64] Patent No.: **5,865,451**
Issued: **Feb. 2, 1999**
Appl. No.: **08/965,292**
Filed: **Nov. 6, 1997**

- [51] **Int. Cl.⁷** **B62B 7/00**
[52] **U.S. Cl.** **280/87.051**; 280/47.38;
280/87.041
[58] **Field of Search** 280/87.051, 87.041,
280/87.042, 33.994, 47.34; 188/5, 20, 32;
403/329, 388, 386; 24/324, 662; 293/155,
128

[56] **References Cited**

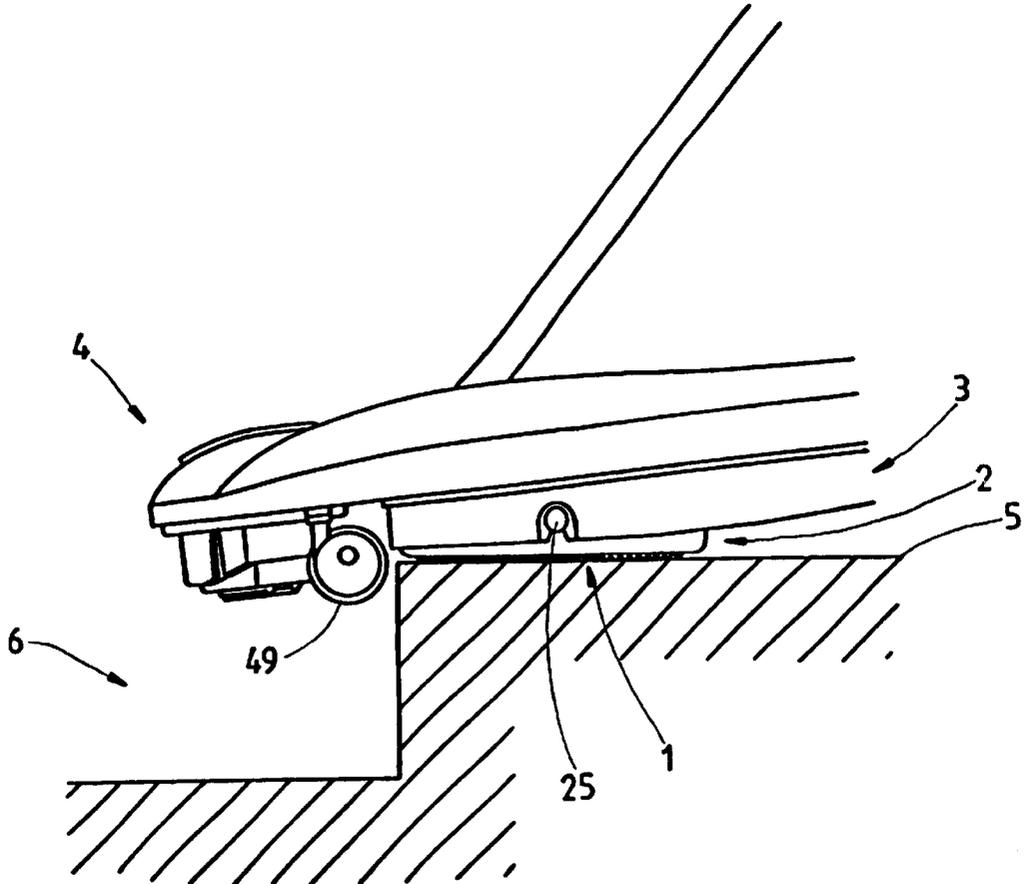
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[57] **ABSTRACT**

An angular [auto-adjustive] *auto-adjusting* skid-proof pad system on a baby [stroller] *walker*, which system is provided on the bottom of the chassis of the baby [stroller] *walker* with a plurality of skid-proof pad seats which are provided thereon with a plurality of skid-proof pads of the shapes of undulated plates, and are provided on either side thereof with a protruding axle for engaging an axle hole provided each on a side plate on the chassis, the skid-proof pad seats can thus be adjusted in angular positions in the axle holes; thereby, when the rollers of the baby [stroller] *walker* move out inadvertently into a stair way and are suspended in the air, the skid-proof pads can provide a braking function and prevent the baby [stroller] *walker* from falling down.

6 Claims, 7 Drawing Sheets



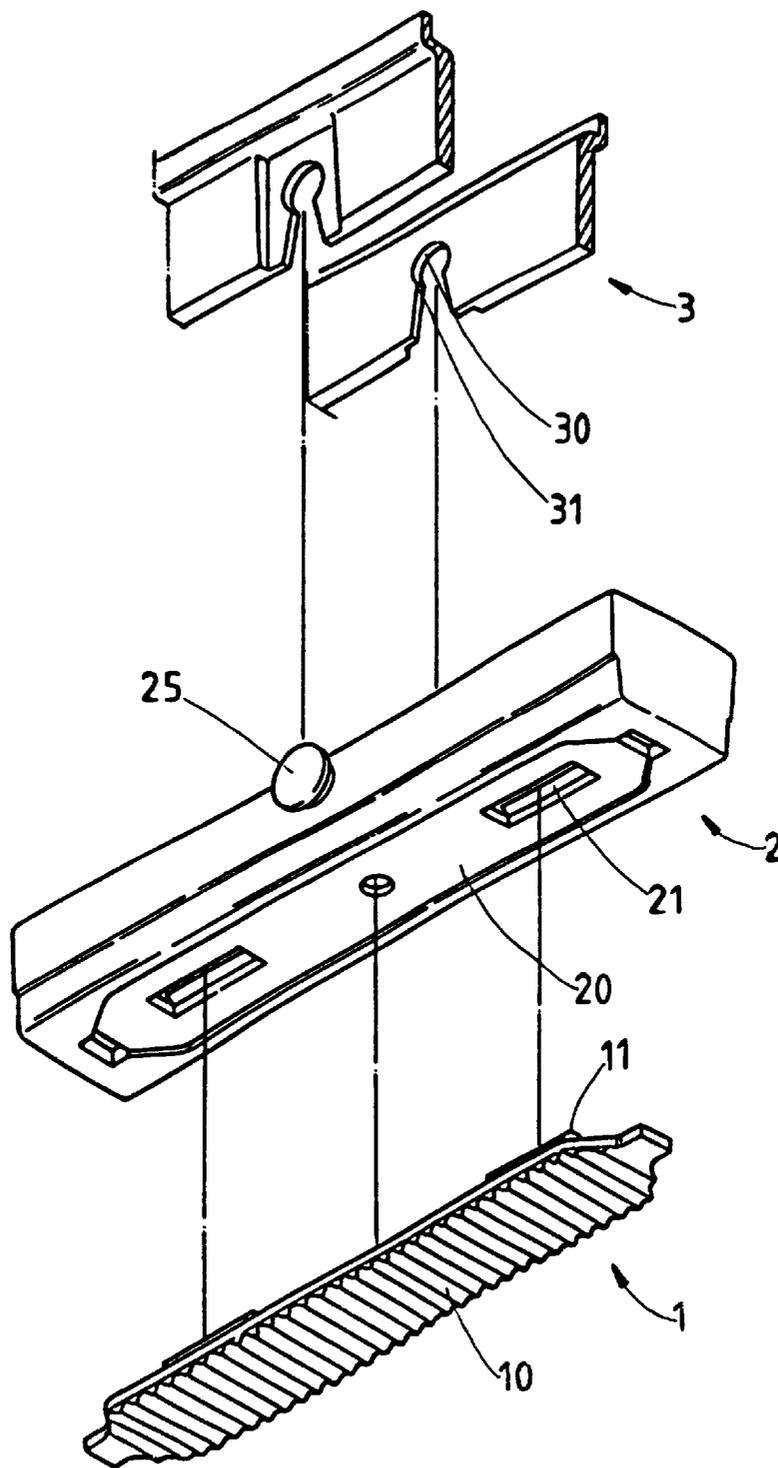


Fig. 1

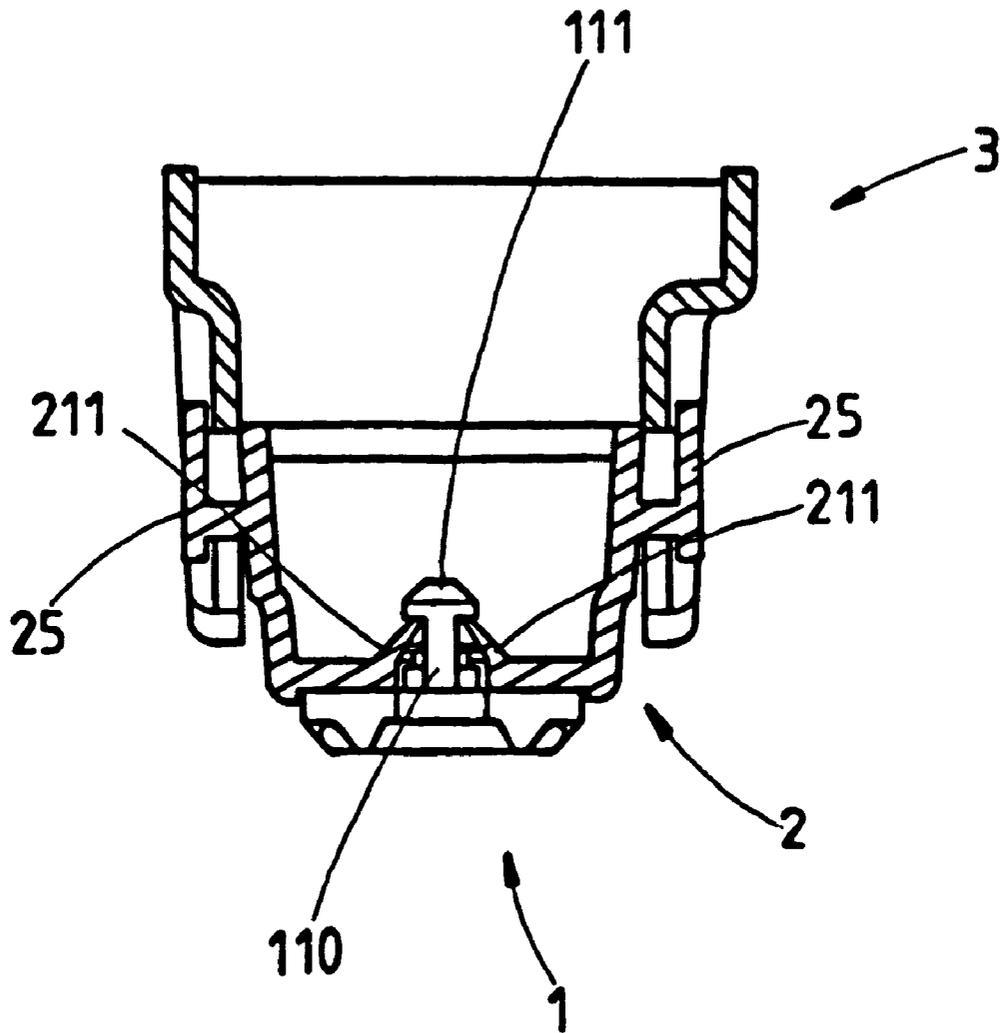


Fig. 2

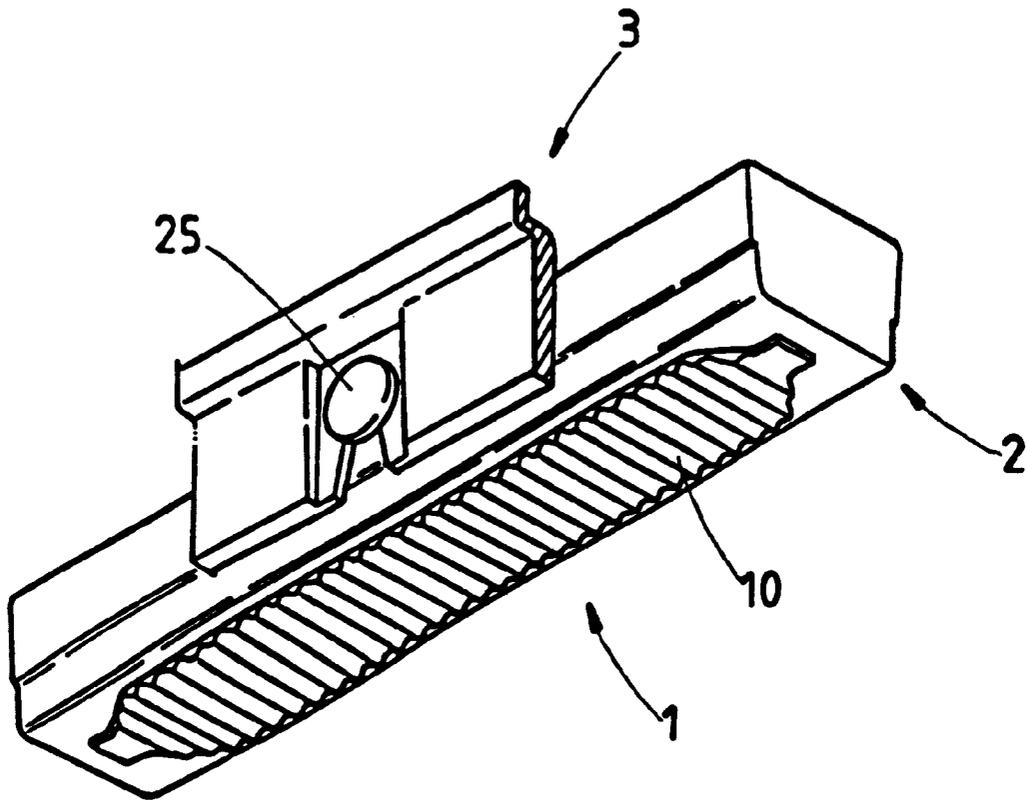


Fig. 3

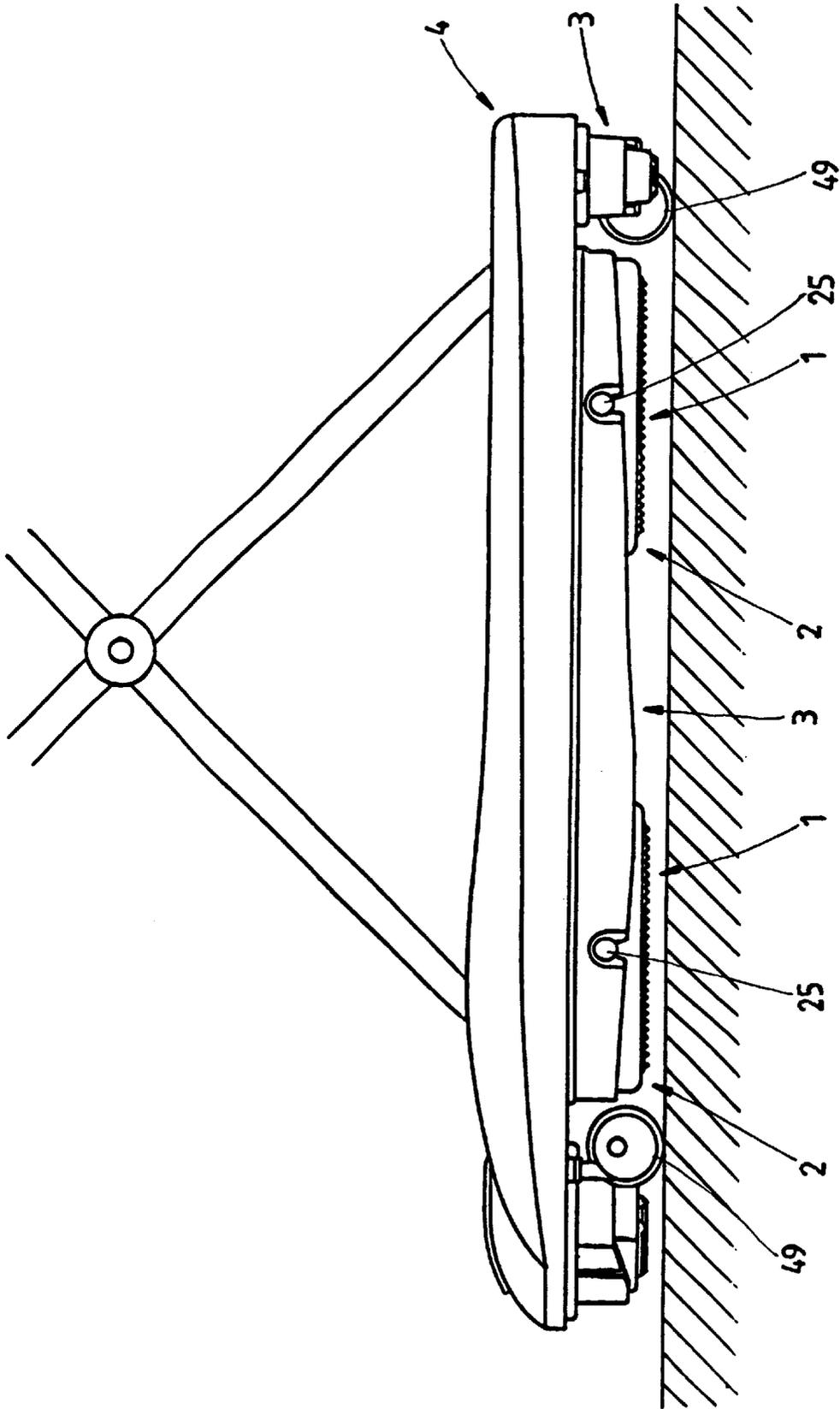


Fig. 4

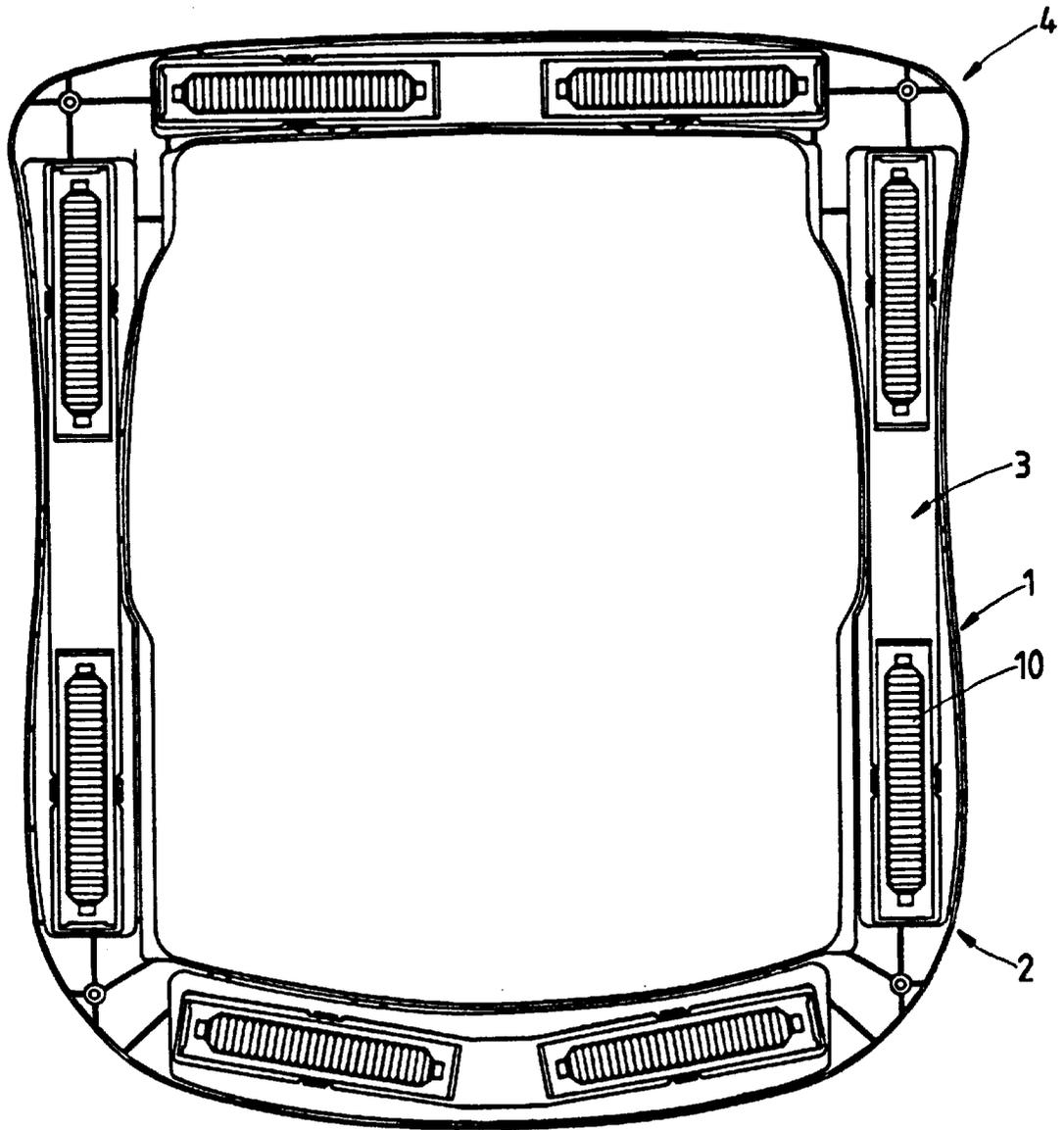


Fig. 5

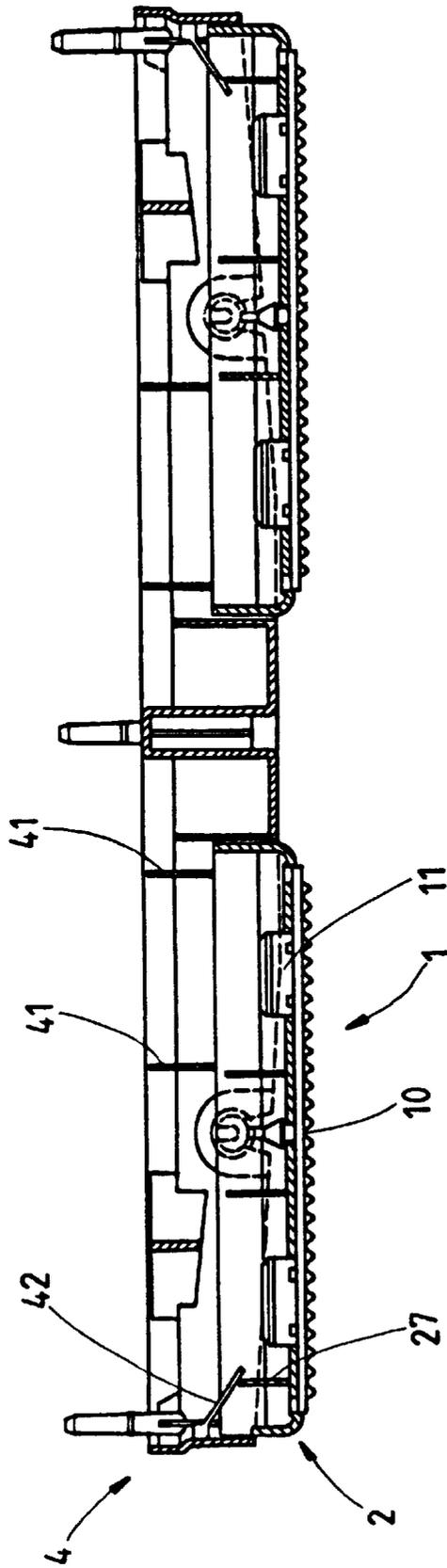


Fig. 6

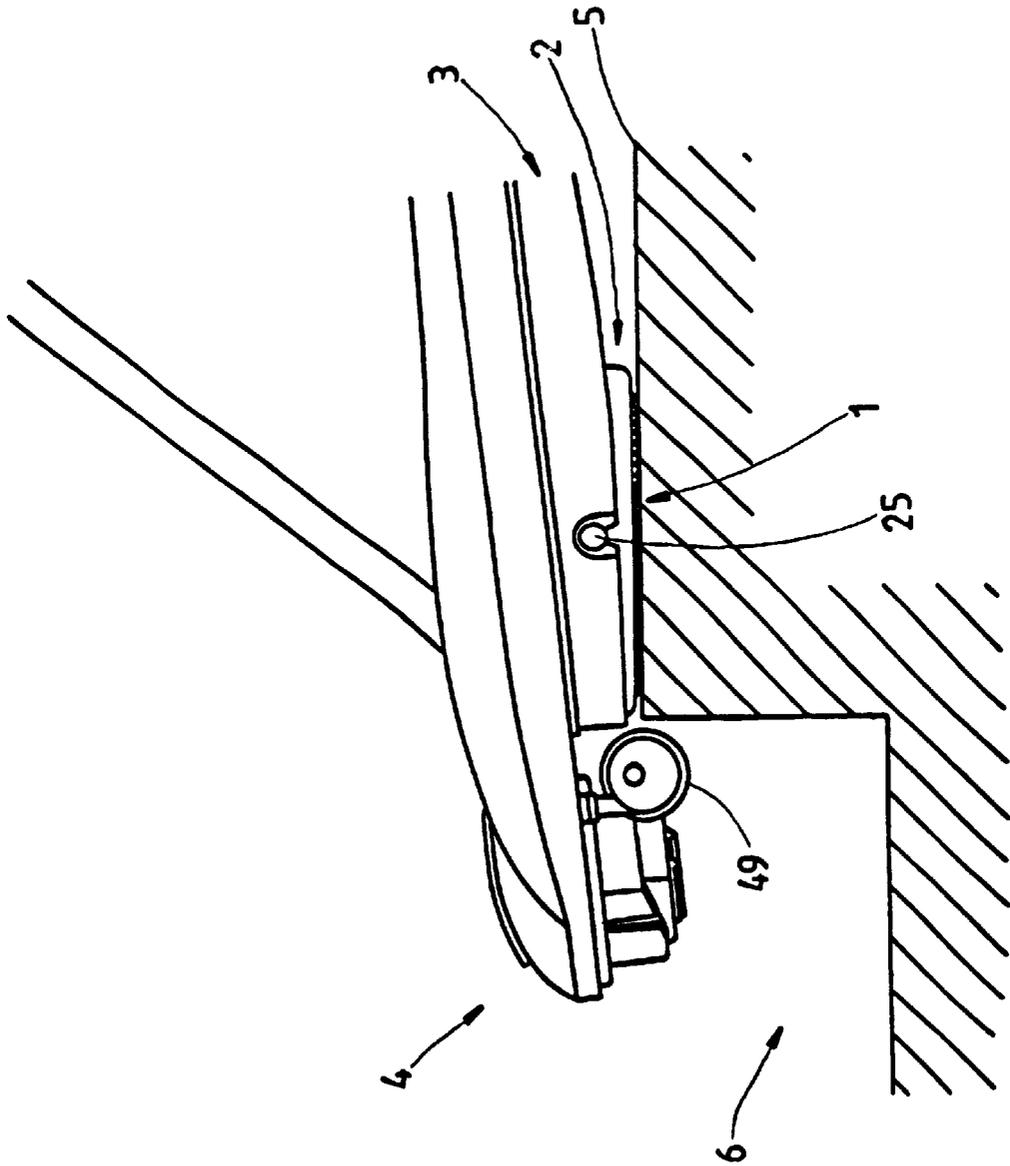


Fig. 7

ANGULAR AUTO-ADJUSTING SKID-PROOF PAD SYSTEM ON A BABY WALKER

Matter enclosed in heavy brackets [] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is related to an angular [auto-adjustive] *auto-adjusting* skid-proof pad system on a baby [stroller] *walker*, and especially to such a baby [stroller] *walker* having on the bottom of the chassis thereof a structure of which pads can be automatically adjusted in tilting angles thereof in pursuance of the tilting angle of a ground surface they touch.

2. Description of the Prior Art

A conventional baby [stroller] *walker* is [subjected] *subject* to falling down stairs when it is used at a place near the stairs[, the]. A baby sitting in the baby [stroller] *walker* therefore may be inadvertently hurt[; hence the]. Hence manufacturers are hurrying to study and develop a skid-proof or braking structure to prevent [from] such falling-down and from repeated occurrence of such tragedies.

There has been a baby [stroller] *walker* with skid-proof pads provided on the bottom of the chassis for the purpose of: preventing the baby [stroller] *walker* from further falling down by friction force of the skid-proof pads when the rollers of the baby [stroller] *walker* [rush out into] *move onto* a stair way. However, such skid-proof pads are not effective, [the reason is that] *because* when one roller of the baby [stroller] *walker* [rushes out and] is suspended in the air, the chassis is tilted, and evidently, the skid-proof pads mounted thereon are tilted too[, in]. In this way, contact between the skid-proof pads and the ground is not in a plane, rather, it is in a line, and friction force [hence] is not adequate to assure prevention of further falling down of the baby [stroller] *walker*.

SUMMARY OF THE INVENTION

Accordingly, the object of the present invention is to provide a baby [stroller] *walker* having a structure [of] *in* which a plurality of skid-proof pads on the bottom of the chassis of the baby [stroller] *walker* can be automatically adjusted in tilting angles thereof[, when]. When the rollers of the baby [stroller] *walker* [move out into] *move out into* a stair way and [is] *are* suspended in the air, even if the skid-proof pads mounted thereon are tilted, the auto-sensitive skid-proof pads still can be automatically adjusted in tilting angles and can be constantly parallel to the ground surface[, therefore,]. Therefore contact between the skid-proof pads and the ground is in a plane, and friction force [hence] is adequate to assure prevention of further falling down of the baby [stroller] *walker*.

The present invention will be apparent in construction of its structure and functions thereof after reading the detailed description of the preferred embodiment of the present invention in reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an analytic perspective view of the present invention;

FIG. 2 is a schematic sectional view showing construction of the present invention;

FIG. 3 is a perspective view of the [appearance of] the present invention;

FIG. 4 is a side view showing an assembled embodiment of the present invention;

FIG. 5 is a bottom view showing the assembled embodiment of the present invention;

FIG. 6 is sectional view showing the structure of the present invention;

FIG. 7 is a schematic view showing [practising] *practicing* of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[Referring firstly] *Referring first* to [FIG.] *FIGS.* 1 and 2 of the drawings, the present invention is comprised of: a plurality of skid-proof pads 1, a plurality of skid-proof pad seats 2, and pairs of side plates 3[, wherein, each]. Each skid-proof pad 1 is integrally assembled on a skid-proof pad seat 2, while the side plates 3 are provided for mounting and positioning and adjusting of angular positions of the skid-proof pad seats 2. Each skid-proof pad 1 is made of soft material providing skid-proof effect[, the]i . The function thereof is to obtain the skid-proof effect by friction force induced by contact thereof with the ground[, there]. There is an undulated plate 10 on the surface thereof, the bottom thereof is provided with a plurality of engaging members 11 protruding [downwardly] *downward*, and the engaging members 11 each [is] *are* comprised of an extension portion 110 and an enlarged end 111.

Each skid-proof pad seat 2 is provided thereon with a groove 20 for receiving a skid-proof pad 1[, the]. The groove 20 is provided with a plurality of engaging slots 21 for engagement of the engaging members 11 of the skid-proof pad 1, such as is shown in FIG. 2[, the]. Each of the engaging slots 21 [each] is provided with two opposite stop pieces 211 which have a gap therebetween[, when]. When the enlarged end 111 at the lower end of the skid-proof pad 1 is inserted into the gap between the stop pieces 211, the skid-proof pad 1 can be engaged with the skid-proof pad seat 2[, and the]. The skid-proof pad seat 2 is provided on either side thereof [mutually oppositely] with a protruding axle 25.

[The] *Each of the* side plates 3 are provided thereon [each] with an axle hole 30 which is provided on the top thereof with a reduced engaging neck 31[, the]. The protruding axles 25 of the skid-proof pad seat 2 can be placed in the axle holes 30 and are [not to be moved out] *secured therein* by locking of the reduced engaging necks 31 (as shown in FIG. 3)[.]. After putting the protruding axles 25 in the axle holes 30, the skid-proof pad seat 2 can be adjusted to any angular position between the side plates 3.

[Referring to FIG.] *FIGS.* 4 and 5 [which] show an embodiment of the present invention mounted on a baby [stroller] *walker*, wherein the side plates 3 are provided integrally on the lower portion of the chassis 4.

The skid-proof pad seat 2 is capable of random changing of its angular position by means of the protruding axles 25 and the axle holes 30, so that the skid-proof pad seat 2 is capable of [maintaining] *being maintained* in a parallel position to the ground surface [normally]. Referring to FIG. 6, a plurality of bracing sheets 41 and elastic sheets 42 are provided in the chassis 4, while the skid-proof pad seat 2 is also provided with a plurality of internal sheets 27, hence the skid-proof pad seat 2 can be maintained constantly in a parallel position to the ground [normally] by means of the bracing sheets 41 and elastic sheets 42; on the contrary,

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when the skid-proof pad seat 2 is tilted by virtue of an external force, the elastic sheets 42 will be bent and afterwards will [be recovered] recover when the force is removed.

Referring to FIG. 7, when a roller 49 [rushes out] moves off of a ground surface 5 to be suspended in the air in a stairway 6, the chassis 4 is tilted, however, the skid-proof pad seat 2 automatically adjusts its angular position to [parallel] be parallel to the ground surface 5 by means of the protruding axles 25 and the axle holes 30[the]. The contact area of the skid-proof pad 1 and the ground surface 5 is a [whole] plane which has better friction capability than [a] the linear contact area of the prior art, so that the baby [stroller] walker can be prevented from further dropping.

In conclusion, the angular [auto-adjustive] auto-adjusting skid-proof pad system of the present invention on a baby [stroller providing] walker provides the function of skid-proof and braking when any roller of the baby [stroller rushes] walker moves out of a ground surface to be suspended in the air in a stair way, and especially [providing] provides a friction contact plane capable of [automatical] automatically adjusting angular positions of the skid-proof pads to be constantly parallel to the ground surface[.]. The system can effectively prevent the baby [stroller] walker from the danger of falling down stairs[this mechanism with such function has never existed in the markets or been published, thus the present invention is provided with improveness and practicability, therefore],

[What I claim as new and desire to be secured by Letters Patent of the United States are:].

The above disclosure is not intended as limiting. Those skilled in the art will readily observe that numerous modifications and alterations of the device may be made while retaining the teachings of the invention. Accordingly, the above disclosure should be construed as limited only by the restrictions of the appended claims.

I claim:

1. An angular [auto-adjustive skid-resistant] auto-adjusting skid-proof pad system on a baby [stroller] walker, which system is provided on the bottom of the chassis of the baby [stroller] walker, and is comprised of a plurality of [skid-resistant] skid-proof pads, a plurality of [skid-resistant] skid-proof pad seats and pairs of side plates, wherein,

each of said [skid-resistant] skid-proof pads is integrally assembled on one of said [skid-resistant] skid-proof pad

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seats, and is provided on the surface thereof with a plurality of undulated plates, and is provided on the bottom thereof with a plurality of engaging members protruding [downwardly] downward;

each of said [skid-resistant] skid-proof pad seats is provided thereon with a groove for receiving one of said [skid-resistant] skid-proof pads, said groove is provided with a plurality of engaging slots for engagement with said engaging members of said one [skid-resistant] skid-proof pad, and said [skid-resistant] skid-proof pad seat is provided on either side thereof [mutually oppositely] with a protruding axle;

said side plates are provided thereon each with an axle hole which is provided on the top thereof with a reduced engaging neck;

by said members, said [skid-resistant] skid-proof pads can be engaged with said [skid-resistant] skid-proof pad seats, thus said [skid-resistant] skid-proof pad seats can be pivotally mounted between said side plates by means of said protruding axles.

2. An angular [auto-adjustive skid-resistant] auto-adjusting skid-proof pad system on a baby [stroller] walker as in claim 1, wherein, each of said engaging members of said [skid-resistant] skid-proof pads [each] is comprised of an extension portion and an enlarged end.

3. An angular [auto-adjustive skid-resistant] auto-adjusting skid-proof pad system on a baby [stroller] walker as in claim 1, wherein, each of said engaging slots [each] is provided with two opposite stop pieces.

4. An angular [auto-adjustive skid-resistant] auto-adjusting skid-proof pad system on a baby [stroller] walker as in claim 1, wherein, said side plates are integrally formed with said chassis of said baby [stroller] walker.

5. An angular [auto-adjustive skid-resistant] auto-adjusting skid-proof pad system on a baby [stroller] walker as in claim 1, wherein, said chassis is provided with a plurality of bracing sheets and elastic sheets for supporting said [skid-resistant] skid-proof pad seats constantly in [parallel] positions parallel to the ground surface.

6. An angular [auto-adjustive skid-resistant] auto-adjusting skid-proof pad system on a baby [stroller] walker as in claim 5, wherein, said elastic sheets are to be contacted by a plurality of internal sheets provided in said [skid-resistant] skid-proof pad seats.

* * * * *

**UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION**

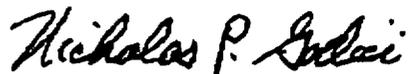
PATENT NO. : Re. 36,967
DATED : September 12, 2000
INVENTOR(S) : Rozzano, Michael J.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

IN THE CLAIMS:

Claim 25, Column 8, line 24, after "and a" delete "mojth" and replace with "--mouth --".

Signed and Sealed this
Twenty-ninth Day of May, 2001



Attest:

NICHOLAS P. GODICI

Attesting Officer

Acting Director of the United States Patent and Trademark Office