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**Datasheet for the decision
of 15 October 2010**

Case Number: T 1156/08 - 3.2.01

Application Number: 00961108.8

Publication Number: 1132220

IPC: B60B 33/00

Language of the proceedings: EN

Title of invention:
Caster

Applicant:
KAYABA INDUSTRY CO., LTD.

Opponent:
-

Headword:
-

Relevant legal provisions:
-

Relevant legal provisions (EPC 1973):
EPC Art. 56

Keyword:
"Inventive step (main and auxiliary request: no)"

Decisions cited:
-

Catchword:
-



Case Number: T 1156/08 - 3.2.01

D E C I S I O N
of the Technical Board of Appeal 3.2.01
of 15 October 2010

Appellant:

KAYABA INDUSTRY CO., LTD.
World Trade Center Bldg.
2-4-1, Hamamatsu-cho
Minato-Ku
Tokyo 105-6190 (JP)

Representative:

Hager, Thomas Johannes
Hoefer & Partner
Patentanwälte
Pilgersheimer Strasse 20
D-81543 München (DE)

Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 19 December 2007
refusing European application No. 00961108.8
pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: S. Crane
Members: C. Narcisi
G. Weiss

Summary of Facts and Submissions

- I. The European patent application No. 00 961 108.8 was refused by the decision of the Examining Division posted on 19 December 2007. The Examining Division decided that the subject-matter of claim 1 as filed on 27 September 2005 was not new over D1 (US-A-2 830 545) and D3 (JP-A-11 091 303). Against this decision an appeal was filed by the Applicant on 29 February 2008 and the appeal fee was paid at the same time. The statement of grounds of appeal was filed on 29 April 2008.
- II. Oral proceedings were held on 15 October 2010. The Appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims 1 and 2 (main request) or in the alternative of claim 1 (auxiliary request), both requests filed with letter dated 10 September 2010.

Claim 1 according to the main request reads as follows:

"Caster comprising:

a bracket (2) which is adapted for being connected with a body of a vehicle,

a link (3) which is connected with said bracket (2) and capable to pivot around a horizontal axis,

a wheel (4) which is connected with the link (3) in a rotatable manner, and

a compressible rubber block (40) which is mounted between the bracket (2) and the link (3) and which deforms according to the motion of the link (3), characterized in that

the compressible rubber block (40) has an initial compressible part (41) which is interposed across the bracket (2) and the link (3), a cylindrical compressible part (42) which is disposed the outer periphery of the initial compressible part (41), and a disk-shaped metallic retainer (43) which is disposed the outer periphery of the initial compressible part (41) and is arranged on the upper surface of the cylindrical compressible part (42), when the compressible rubber block (40) is compressed, deformation begins firstly from the initial compressible part (41) and after this deformation, the cylindrical compressible part (42) is compressed according to contact between the retainer (43) and the bracket (2)."

Claim 1 according to the auxiliary request differs from claim 1 of the main request in that its characterizing part reads as follows:

"characterized in that
the compressible rubber block (40) has an initial compressible part (41) which is interposed across the bracket (2) and the link (3), a cylindrical compressible part (42) which is disposed the outer periphery of the initial compressible part (41), and a disk-shaped metallic retainer (43) which is disposed the outer periphery of the initial compressible part (41) and is arranged on the upper surface of the cylindrical compressible part (42), wherein an upper part of the initial compressible part (41) is engaged with a spacer (15) of the bracket (2) and a low part is engaged to a spacer (16) of the link (3) through the cylindrical part (42), when the compressible rubber

block (40) is compressed, deformation begins firstly from the initial compressible part (41) and after this deformation, the cylindrical compressible part (42) is compressed according to contact between the retainer (43) and the bracket (2)."

III. The Appellant's submissions may be summarized as follows:

The subject-matter of claim 1 of the main request corresponds to the embodiment of figure 6 of the application (see published application, hereinafter designated as EP-A), which is described in detail in paragraphs [0048] and [0049] of EP-A. These paragraphs altogether disclose the inventive concept of the present invention, which resides in the specific properties of the cushioning arrangement. This includes the compressible rubber block interposed between the bracket and the link, and having an initial and a cylindrical compressible part, with a retainer being disposed on the upper face of the cylindrical compressible part. As a result, after deformation of the initial compressible part, the elastic recovery force applied by the compressible rubber block increases rapidly when the bracket contacts the retainer. The retainer distributes the force load uniformly and equally on the upper face of the cylindrical compressible part. In this manner shocks produced by the road surface acting on the wheel are effectively absorbed. A shock absorber having this functioning principle is not known from D6 (JP, 50-1214, Y) or from any of the cited documents. In particular D6 discloses a uniform compression of the rubber block as a whole and it does not disclose a

metallic retainer located on the upper surface of a cylindrical compressible part. Hence, even if the skilled person were to envisage a combination of D1 or D3, both disclosing the preamble of the claim, with D6, this would not lead to the claimed subject-matter which therefore involves an inventive step.

Claim 1 of the auxiliary request includes with respect to claim 1 of the main request the additional feature that "an upper part of the initial compressible part (41) is engaged with a spacer (15) of the bracket (2) and a low part is engaged to a spacer (16) of the link (3) through the cylindrical part (42)". This feature acts to limit the amount of compression to be achieved and thus in particular avoiding complete compression of the initial compressible part. This feature, which is not shown or suggested in D8 (Japanese Utility Model Application No. 87386/1980 (Laid open No. 10542/1982) (Kubota Ltd.)) or by the further available prior art additionally contributes to distinguish the invention over prior art D1 or D3. Consequently the subject-matter of this claim likewise involves an inventive step.

Reasons for the Decision

1. The appeal is admissible.
2. A caster according to the preamble of claim 1 of the main or auxiliary request is undisputedly shown by D1 and D3. D1 particularly shows in figure 7 to 10 a compressible rubber block 86 mounted between the bracket 22a, 76 and the link 80, 81, where upon

application of a load on the caster construction the upper wall 81 of the link moves towards the lower wall 76 of the bracket (D1, column 6, second paragraph). Arrangements of this type pose the technical problem that, due to the uniform compression of the rubber block over its entire surface, the shock absorption may not be very effective upon initial relative movement of the link and the bracket if the rubber material is too hard. Conversely, contact between the link and the bracket may result if the rubber material is too soft (see EP-A, paragraph [0003]). Thus, in order to achieve the desired shock absorbing properties over the whole range of permissible relative motion of the link and the bracket the skilled person would look for other shock absorbers comprising compressible rubber blocks. In order to solve the mentioned problem, these should provide shock damping at a first compression rate for smaller external acting forces upon initial relative movement of the link and the bracket, whereas for larger loads leading to larger relative movements shock damping at a second compression rate implying a stiffer resilience of the rubber block is needed. Shock absorbers having these properties are well known in the art, such as for instance from D4 (US-A-4 559 669), D5 (Japanese Utility Model Application No. 66289/1993 (Laid-open No. 35837/1995), Mitsubishi Seikou K.K.), D6 or D7 (JP-A-9 300931). The skilled person would particularly retain D6 since, as mentioned above, the main interest lies in having a shock absorber showing a clear cut distinction between two separate damping or compression behaviours over the given range of the applied force (D6, figure 3). The skilled person would moreover note that D6 discloses a retainer-like flange 5 (D6, figure 1) being located above an outer

peripheral cylindrical portion of the rubber block. This retainer clearly applies the load evenly and uniformly on the outer cylindrical part of the rubber block after initial compression of its upper initial compressible part. According to a known constructional alternative which comes within his customary practice (see for instance D8, figure 2), it is obvious for the skilled person to protect the initial compressible part from excessive compression by the obvious use of a spacer attached to the upper bracket element. Consequently, the retainer would no longer be attached to the upper bracket element but would instead be formed as a separate and distinct constructive element located on the upper surface of the outer cylindrical part of the rubber block. Compression of the upper initial compressible part then occurs upon application of the load only until a contact between the spacer and the retainer is established, which prevents further compression of the initial compressible part while compression of the outer cylindrical part is initiated. In an obvious manner the skilled person would finally likewise provide a spacer attached to the outer cylindrical part and to the link to protect the outer cylindrical part of the rubber block from excessive compression. Thus the obvious combination of D1 and D6 together with his common general knowledge would lead the skilled person to the subject-matter of claim 1 according to both the main and to the auxiliary requests.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

A. Vottner

S. Crane