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Aktenzeichen / Case Number / N^o du recours : T 326/88 - 3.2.1

Anmeldenummer / Filing No / N^o de la demande : 85 200 190.8

Veröffentlichungs-Nr. / Publication No / N^o de la publication : 0 152 157

Bezeichnung der Erfindung: Swivel caster

Title of invention:

Titre de l'invention :

Klassifikation / Classification / Classement : B60B 33/00

ENTSCHEIDUNG / DECISION

vom / of / du 24 November 1989

Anmelder / Applicant / Demandeur : SKF Transportwielen B.V.

Patentinhaber / Proprietor of the patent /
Titulaire du brevet :

Einsprechender / Opponent / Opposant :

Stichwort / Headword / Référence :

EPÜ / EPC / CBE Article 56 EPC

Schlagwort / Keyword / Mot clé : "Inventive step (yes)"

Leitsatz / Headnote / Sommaire

Europäisches
Patentamt

Beschwerdekammern

European Patent
Office

Boards of Appeal

Office européen
des brevets

Chambres de recours



Case Number : T 326/88 - 3.2.1

D E C I S I O N
of the Technical Board of Appeal 3.2.1
of 24 November 1989

Appellant : SKF TRANSPORTWIELEN B.V.
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Decision under appeal : Decision of Examining Division 075
of the European Patent Office
dated 13.01.88 refusing European
patent application No. 85 200 190.8
pursuant to Article 97(1) EPC

Composition of the Board :

Chairman : F. Gumbel
Members : P.R. Alting v. Geusau
J.-C. Saisset

Summary of Facts and Submissions

- I. European patent application No. 85 200 190.8 filed on 5 February 1985 claiming priority of 13 February 1984 (NL 8 400 460) and published on 21 August 1985 was refused by a decision of the Examining Division dated 13 January 1988.
- II. The decision was based on Claim 1 filed on 23 July 1987 and claims 2 to 4 renumbered from claims 3 to 5 as published.

The reason given for the refusal was that the subject-matter of claim 1 did not involve an inventive step when taking into account the teachings of the prior art disclosed in EP-A-0 028 042 and US-A-4 084 288.

- III. An appeal was lodged against this decision on 3 March 1988 together with payment of the appeal fee. The Statement of Grounds of Appeal was submitted on 11 May 1988 and contained arguments as to why claim 1 filed on 23 July 1987 was considered to include inventive subject-matter.
- IV. In a communication dated 6 July 1989 the Board gave a preliminary opinion in that valid claim 1 did not meet the requirement of inventive step and also appeared to lack essential features of the invention contrary to Article 84 EPC. It was set out in the communication which features disclosed in the application would appear to be necessary to meet the object of the present application.
- V. With letter filed 3 October 1989 the Appellant presented new claims 1 to 4 and new pages 1 and 2 of the description. He requests the grant of a patent on the basis of these new claims.

The text of the new claims is as follows:

"1. Swivel caster, in particular for application in a so-called roller platform, including a swivel fork (28) with a body (30) and two legs (29,29') extending from it and forming one unit with it, which legs extend into an upward rim around the body with a caster-wheel (47) between said legs which rotates by means of pivot bearings (44,45) mounted on an axle (41) through the legs, and a base plate (36) with openings for attaching the swivel caster, which plate is connected to the body of the swivel fork by means of a solid truncated pin (31) mounted perpendicular to the body, which pin is attached to one of these components, and at least one bearing construction which inner race (32) is directly attached to the said pin and which outer race (33) is directly attached to the other component, in such manner that the swivel fork can swivel around the center-line of the said pin with regard to the base plate, and the caster-wheel can rotate around the centre-line of the axle through the legs, whereby the latter centre-line crosses the extension of the centre-line of the truncated pin perpendicularly, characterized in that the body (30) of the swivel fork consists of a closed substantially flat section and the legs (29,29') extend into the upward rim (30') on one side only, so that this rim (30') runs only along the surface section of the body (30) between the legs (29,29') which, with regard to the axis of rotation of the caster-wheel (47), lies on the opposite side of the centre-line of the truncated pin (31), which pin (31) is welded to the bottom of the body (30) away from the legs (29,29') and that an annular dust hood (37) is mounted over the top part of a bearing (32,33,34,35,35') directed toward the caster-wheel (47), and over the free upper rim of the casing (36'), whereby this hood has an outer rim bent downward, in the direction of the casing and which

pivot bearing is a double-sealed standard bearing (32,33,-34,35), which outer race (33) is directly attached to said annular casing (36') which rises upward from the base plate (36) with which it forms one unit or to which it is connected.

2. Swivel caster according to claim 1, characterized in that a sealing plate (38) is mounted against the bottom of the base plate (36), whereby the entire bottom of the pivot bearing (32,33,34) is sealed against outside influences.

3. Swivel caster according to claim 2, characterized in that the sealing plate (38) has essentially the same size and outline as the base plate (36), having corresponding openings (39) surrounded by upward collars (39') which fall within the openings in said base plate (36).

4. Swivel caster according to claims 1 - 3, characterized in that said caster-wheel (47) rotates on two standard ball bearings (44, 45) which are mounted on said axle (41,43) supported by the legs (29,29') of said swivel fork (28)."

Reasons for the Decision

1. The appeal complies with Articles 106 to 108 and Rule 64 EPC and is therefore admissible.
2. The formal admissibility of the claims under consideration has been investigated with the following result.
 - 2.1 Claim 1 finds its basis in original claims 1 and 2 in conjunction with

- page 5, lines 25 to 28 (double-sealed standard bearing)
- page 3, lines 12 to 16 (a substantially flat body section)
- page 5, lines 23 & 24; fig. 4 (a solid truncated pin welded to the fork body)
- page 5, lines 24 to 30; fig. 4 (the races of the standard bearing are directly attached to their respective components).

It is noted that present claim 1 now includes all features which are considered essential for the intended use of the swivel caster in so-called roller platforms and provides high rigidity, easy assembly and increased dirt and moisture protection. (Page 3, lines 8 to 16 of the original description).

Present claim 1 thus also meets the requirements of Article 84 in conjunction with Rule 29(3) EPC that it should contain all essential features of the invention.

2.2 The subject-matter of claims 2 to 4 is unchanged in relation to original claims 3 to 5.

2.3 All claims are therefore formally acceptable.

3. Novelty

None of the documents on file discloses the combination of features of claim 1 under consideration. Novelty of the subject-matter of claims has not been disputed in the proceedings before the EPO and therefore needs not be substantiated in detail.

4. Inventive step

The nearest prior art is considered to be disclosed in the reference contained in the present application of which details are shown in Fig. 1 (see also original page 1, line 18 to page 2, line 25 of the description). The features of the precharacterising part of claim 1 relate to this known swivel caster.

The subject-matter of claim 1 differs from this prior art by the features indicated in the characterising part of claim 1.

These features have the effect that water and dirt dropping on the body of the swivel fork is easily discharged, the sealing is improved and the caster can be manufactured in a relatively cheap and simple manner while maintaining high rigidity.

The objective problem which underlies the swivel caster defined in the present claim 1 relates therefore to an improvement of the known caster to provide a construction for application in so-called roller platforms and having the above effects.

A variety of swivel casters is disclosed in the documents cited in the search report of the current application showing the use of double-sealed standard bearings (FR-A-2 325 523), cup-shaped seals (US-A-4 084 288) or an upward rim on one side only of the fork bottom (EP-A-0 028 042).

However none of these known swivel casters is intended for use in roller platforms which requires an "upside-down" mounting of the caster and therefore different sealing requirements nor does any of the documents contain a hint to improve the roller platform swivel caster according to

the precharacterising part of claim 1 to avoid its drawbacks by means of the particular combination of features contained in the characterising part of claim 1. Thus no lead to the subject-matter of claim 1 can be derived from the cited documents. In particular, there is no lead in the prior art to the idea of completely closing the body of the swivel fork thus making it necessary to attach the truncated pin of the vertical bearing construction by welding. On the other hand, this brings forth a very strong and dirt- and moisture-proof design (of course together with the further features of the claim) enabling it for the specific use in roller platforms aimed at in the present invention.

Having particularly regard to the document EP-A-0 028 042 which was considered by the Examining Division as reflecting the closest prior art, the following is noted:

As contended by the Appellant who is also the holder of the patent granted on the above European patent application, the caster shown in this prior art document is not intended and not suitable to be used in a so-called roller platform due to the open and lightweight construction of its main parts including the hollow configuration of the truncated pin, and having regard to the bearing construction which comprises a relatively high number of single parts. In the Board's view this appears to be reasonable. It follows that this known caster does not belong to the same category of casters to which the subject-matter of present claim 1 belongs and for which protection is sought.

Moreover, it is clear that the above prior art caster does not fulfil the wording of the preamble of present claim 1, since it does not show a "solid" truncated pin and since its inner and outer races are not "directly" attached to their respective components.

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Concerning the characterising features of present claim 1, the above document does not disclose

a closed, substantially flat configuration of the bottom part of the swivel fork;

a welding connection between the solid truncated pin and the bottom of the body on its side away from the legs;

the use of a double-sealed standard bearing and its combination with a specifically shaped dust hood.

Hence, given these numerous differences in constructional details, the non-suitability of the prior art construction for the specific use intended with the present invention, and the absence in this document of any discussion of the objects to be achieved with the invention, EP-A-0 028 042 cannot, in the Board's view, render the subject-matter of claim 1 obvious in the sense of Article 56 EPC, even if the general technical knowledge of a skilled person is included in the considerations.

The swivel caster according to claim 1 is therefore considered to include an inventive activity.

5. It follows that claim 1 is acceptable under Article 52(1) EPC. The same applies to dependent Claims 2 to 4 which concern particular embodiments of the invention according to independent claim 1 (Rule 29(3) EPC).
6. The description and the drawings are in agreement with the actual wording and scope of the claims. The description also complies with Rule 27(1)(c) and 27(1)(d) EPC. Hence these documents appear to be suitable for the grant of a patent.

7. Some editorial amendments have been communicated in a telephone call dated 24 November 1989 to the Appellant and agreed by him.

Order

For these reasons, it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance with the order to grant the patent on the basis of the following documents:

Claims: 1 to 4 filed on 3 October 1989

Description: pages 1 & 2 filed on 3 October 1989,
pages 4 to 6 as published, renumbered 3 to
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Drawings: 1/2 and 2/2 as published.

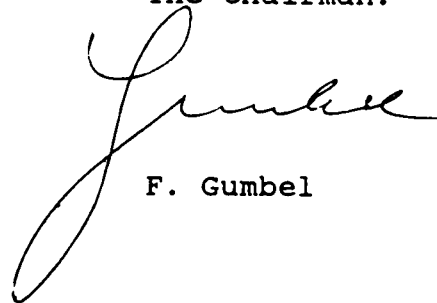
With the amendments in claim 1 and in the description agreed to by the Appellant.

The Registrar:



S. Fabiani

The Chairman:



F. Gumbel

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