BESCHWERDEKAMMERN DES EUROPÄISCHEN PATENTAMTS

BOARDS OF APPEAL OF THE EUROPEAN PATENT OFFICE

CHAMBRES DE RECOURS DE L'OFFICE EUROPEEN DES BREVETS

Internal distribution code:
(A) [ ] Publication in OJ
(B) [ ] To Chairmen and Members
(C) [X] To Chairmen
(D) [ ] No distribution

Datasheet for the decision of 10 December 2010

Case Number: T 0866/10 - 3.2.04

Application Number: 05733684.4

Publication Number: 1740282

IPC: A63G 1/24

Language of the proceedings: EN

Title of invention:
Amusement ride

Patentee:
ANTONIO ZAMPERLA S.p.A.

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56

Relevant legal provisions (EPC 1973):
-

Keyword:
"Novelty (yes)"
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

Europäisches Patentamt | European Patent Office | Office européen des brevets

Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 0866/10 - 3.2.04

D E C I S I O N
of the Technical Board of Appeal 3.2.04
of 10 December 2010

Appellant: ANOTNIO ZAMPERLA, S.p.A.
Via Monte Grappa, 15/17
I-36077 Altavilla Vicentina (Vicenza) (IT)

Representative: Kiriczi, Sven Bernhard
Schneiders & Behrendt
Mühlthaler Straße 91d
D-81475 München (DE)

Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 20 October 2009 refusing European patent application No. 05733684.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: A. de Vries
Members: M. Poock
T. Bokor

Summary of Facts and Submissions

I. The Appellant lodged an appeal, received 22 November 2009, against the decision of the Examining Division posted 20 October 2009, refusing the European patent application No. 05 733 684.4 and paid the required fee on 23 November 2010. The grounds of appeal were received 15 February 2010.

In its decision the Examining Division held that the application did not meet the requirements of Articles 52(1) and 54 EPC for lack of novelty having regard to the following document:
D1: US-A-3 666 264.

During the appeal proceedings the Board also considered the following document:
D2: FR-626 890

II. Oral proceedings before the Board were held 10 December 2010.

III. The Appellant requests that the decision under appeal be set aside and that a patent be granted on the basis of the following documents:

Claims:
No.: 1 to 11 as filed during the oral proceedings before the Board
Description:
Page 1 filed with letter of 31 August 2007
Pages 1a,2,2a filed during the oral proceedings before the Board
Pages 3 to 9 as originally filed

Figures:

1 to 4 as originally filed.

IV. The wording of the independent claims is as follows:

1. "An amusement ride (1), comprising:
a central unit (10) configured to rotate about a central axis;
a plurality of carriages (5a, 5b, Sc, 5d) positioned circumferentially around the central unit (10) and pivotably coupled to the central unit (10) by a respective cantilever arm (7a, 7b, 7c, 7d), the carriages (5a, 5b, 5c, 5d) rotatable about the central axis in accordance with rotation of the central unit (10); and
an arrangement configured
– to move the carriages (5a, 5b, 5c, 5d) upwardly during the rotating step at at least one first predetermined circumferential position,
– after the moving and during the rotating, to abruptly drop the carriages (5a, 5b, 5c, 5d) at a second predetermined circumferential position after the upwardly moving, and
after the dropping and during the rotating, to resiliently oscillatingly bounce the carriages (5a,5b, Sc, 5d),
wherein the cantilever arms (7a, 7b, 7c, 7d) are arranged to interact with bellows (12a, 12d) to damp a pivoting motion of the cantilever arms (7a, 7b, 7c, 7d) and the oscillatory motion of the carriages (5a, 5b, 5c, 5d)".

9. "A method for operating an amusement ride (1) having a plurality of carriages (5a, 5b, 5c, 5d), wherein the

carriages (5a, 5b, 5c, 5d) are pivotably coupled to the central unit (10) by cantilever arms (7a, 7b, 7c, 7d), the method comprising:
rotating the carriages (5a, 5b, 5c, 5d) on a central unit (10) about a central axis;
moving the carriages (5a, 5b, 5c, 5d) upwardly during the rotating step at at least one first predetermined circumferential position;
after the moving step and during the rotating step, abruptly dropping the carriages (5a, 5b, 5c, 5d) at a second predetermined circumferential position after the upwardly moving step;
after the dropping step and during the rotating step, resiliently oscillatingly bouncing the carriages (5a, 5b, 5c, 5d), and
the cantilever arms (7a, 7b, 7c, 7d) interact with bellows (12a, 12d) to damp a pivoting motion of the cantilever arms (7a, 7b, 7c, 7d) and the oscillatory motion of the carriages (5a, 5b, 5c, 5d)."

Reasons for the Decision

1. The appeal is admissible.

2. *The Claimed Invention*

The application concerns an amusement ride with plural carriages each pivotally coupled to a central unit via a cantilever arm and rotating about the unit. The cantilever arm interacts with bellows to damp pivoting motion. To make movement less monotonous each carriage is made to move upwardly at at least one predetermined circumferential position (in the main embodiment by

means of a ramp), then abruptly dropped and thereafter "resiliently oscillatingly bounced" in the terminology of the claim. *Bouncing*, it is noted, is understood in its usual sense of "rebounding after impact", see for example the corresponding entry in the Oxford English Dictionary. The resultant overall movement is a main periodic oscillation due to the repeated upward movement and a superimposed damped oscillation due to the damped bouncing.

Claims are to the amusement ride itself with an arrangement configured to carry out these movement steps, and to a method of operating an amusement ride.

3. *Allowability of Amendments*

Independent method claim 9 is a straightforward combination of originally filed claims 11 and 13, with clarifying amendments. In particular the claim now correctly states that bouncing takes place during the *rotating* rather than the moving step. Furthermore, the bellows now also act, as they must do, to damp the oscillatory motion of the carriages, see description page 9, lines 3 to 5.

Claim 1 to the ride is based on original claim 1 but incorporates from method claim 9 its central idea rephrased in structural terms.

The amendments to claim 1 and claim 9, which are also redrafted in one part form, have a clear basis in the application as filed. Likewise, the dependent claims find a basis in the originally filed dependent claims.

The Board concludes that the amendments to the claims do not add subject-matter extending beyond the content of the application as filed, Article 123(2) EPC. It draws the same conclusion as regards the amendments to the description, which comprise citation and summary of the relevant prior art (Rule 42(1)(b) EPC) and an adaptation to the new claims (Article 84 EPC).

4. *Novelty*

4.1 D1, see figure 2 to 4, discloses a similar amusement ride and method of its operation in which carriages 20 coupled to a central support 12 via a cantilever arm 14 during rotation about the support are urged upwardly over a ramp 40. The cantilever arm interacts with a bellows or air bag 30 to damp movement of the carriage and the cantilever rigidly attached thereto.

D1 does not expressly indicate whether the carriage "bounces" after it drops from the ramp. Whether or not it does so depends on the overall damping effect of the assembly. It is evident from straightforward physics considerations that damping above critical level will suppress any oscillations and there will be no rebound after impact. Only when damping is low enough will the system continue to oscillate though at decreasing amplitude; there the carriage can be said to bounce.

The D1 assembly includes, in addition to the airbag 30, shock absorbers 36 between the carriage and the support arm 22 and under the tire (on the ramp). It further includes a landing ramp 44 in continuous relation with the jump ramp 40 downwardly curved (column 2, lines 5 to 7) to conform with the landing path of the carriage

support wheel to cushion its landing (column 1, lines 15 to 17). The wheel and cushioning assembly and the ramps together simulate the action of a ski jump, see the abstract. These passages suggest that the ride should be smooth and cushioned, implying, if anything, that the system be overdamped. Therefore, if anything can be inferred from D1 regarding the amount of damping it is that the assembly of wheels, bellows and shock absorbers act to critically damp any oscillations that might occur upon impact.

The Board concludes that there is *no* direct and unambiguous teaching in D1 to "resiliently oscillatingly bounce" the carriages after dropping as required in claims 1 and 9. This feature constitutes the sole difference of the claimed subject-matter over D1.

4.2 The only other pertinent prior art ride involving a ramped drop and oscillations is disclosed in D2. During rotation the carriage 1, coupled to central support 4 via a cantilever arm 2 and suspended resiliently by means of a spring 7, travels over a ramp 14, drops and is then made to oscillate due to spring 7, page 2, lines 19 to 28. However, the D2 ride does not include bellows, nor does it involve bouncing, i.e. rebound upon impact, as required by claims 1 and 9. The carriage rather hovers in the air after leaving the ramp, suspended resiliently by the spring 7.

4.3 In the light of the above, the Board finds that the ride and method of its operation of claims 1 and 9 respectively are novel, Article 52(1) with Article 54 EPC.

5. *Inventive Step*

5.1 The Board considers D1 to represent the closest prior art. Apart from other structural and functional similarities its ride also shares with the invention a bellows to soften or damp the effects of impact after drop, a feature not found elsewhere.

5.2 The sole difference of the claimed ride and method over this prior art resides in the feature of the carriage being "resiliently oscillatingly bounced" after an abrupt drop from the ramp by an appropriately configured arrangement. This feature produces a damped oscillatory motion of the carriages which is experienced as a smooth and undulating "jumping around" motion, description page 9, lines 3 to 5, different to the cushioned, ski-jump like motion in D1. In comparison thereto the ride has a less monotonous quality, description page 1, final paragraph. The technical problem can be formulated accordingly, as how to produce a different motion that is experienced as less monotonous.

5.3 The claimed solution of "bouncing" the carriage after dropping it (method claim 9) by an appropriate configuration of the corresponding arrangement (apparatus claim 1) is not known from any of the cited prior art documents. Nor does the Board consider it to be obvious to the skilled person, a mechanical engineer designing amusement rides, from his common general knowledge. It is his general aim to make rides ever more interesting and common knowledge might suggest to him to experiment with number, height and/or length of

the ramps or possibly even different ramps. However, the idea of bouncing the carriage when it comes off the ramp marks a significant departure from D1's main teaching in that it sacrifices its idea of a cushioned landing. In the Board's view such a surprising departure does not normally arise from common skill, but is rather indicative of inventive activity. It therefore holds that adoption of this measure in the ride and method of operation of claims 1 and 9 involves an inventive step as required by Article 52(1) with Article 56 EPC.

6. The application meets the requirements of Articles 52(1) in combination with Articles 54 and 56 EPC, and of Article 123(2). As all other requirements of the EPC appear to be met, the Board concludes that the application is now ready for grant pursuant to Article 97(1) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following documents:

Claims: 1 to 11 as filed during the oral proceedings before the Board.

Description: Page 1 filed with letter of 31 August 2007,
pages 1a,2,2a filed during the oral proceedings before the Board,
pages 3 to 9 as originally filed.

Drawings: Figures 1 to 4 as originally filed.

The Registrar The Chairman

G. Magouliotis A. de Vries