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Datasheet for the decision of 16 September 2014

Case Number: T 2371/12 - 3.2.08

Application Number: 08160531.3

Publication Number: 2042780

IPC: F16H61/688

Language of the proceedings: EN

Title of invention:
Twin clutch type speed change control system

Applicant:
Honda Motor Co., Ltd.

Headword:

Relevant legal provisions:
EPC Art. 84, 56
EPC R. 103(1)(a)

Keyword:
Claims - clarity - main request (no)
Inventive step - auxiliary request (yes)
Reimbursement of appeal fee - (no)

Decisions cited:

Catchword:

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Case Number: T 2371/12 - 3.2.08

D E C I S I O N
of Technical Board of Appeal 3.2.08
of 16 September 2014

Appellant: (Applicant)	Honda Motor Co., Ltd. 1-1, Minami-Aoyama 2-chome Minato-ku Tokyo 107-8556 (JP)
Representative:	Rupp, Christian Mitscherlich PartmbB Patent- und Rechtsanwälte Sonnenstraße 33 80331 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 24 July 2012 refusing European patent application No. 08160531.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	T. Kriner
Members:	M. Alvazzi Delfrate
	C. Schmidt

Summary of Facts and Submissions

I. By its decision posted on 24 July 2012 the examining division refused European patent application No. 08160531.3 on the grounds that the subject-matter of claim 1 of the main and the auxiliary request then on file did not involve an inventive step in view of the combination of

D7: EP -A- 1 770 315; and
D1: DE -A- 10 2006 008 207.

II. The appellant (applicant) lodged an appeal against that decision in the prescribed form and within the prescribed time limit.

III. Oral proceedings before the board of appeal were held on 16 September 2014.

IV. The appellant requested that the decision under appeal be set aside and that a patent be granted in one of the following versions (main and auxiliary requests in this order): main request as filed with letter dated 31 October 2012; auxiliary request I as filed at the oral proceedings before the board (in the following "first auxiliary request"), auxiliary request I as filed with letter dated 31 October 2012; auxiliary requests II to IV as filed with letter dated 6 August 2014. The appellant further requested reimbursement of the appeal fee.

V. Claim 1 according to the **main request** reads as follows:

"A twin clutch type speed change control system for a motorcycle (1) comprising an electronic control unit

(42), a transmission mechanism (47) having a plurality of gear trains for odd-ordinal gear positions and even-ordinal gear positions, and a pair of clutches (51a, 51b) linked respectively to both said odd-ordinal and even-ordinal gear position gear trains, and wherein each of said clutches (51a, 51b) is an oil hydraulic clutch which exhibits an engaging force based on an oil pressure supplied externally, said transmission mechanism (47) being capable of power transmission by selectively using one of said gear trains; and one of said clutches (51a, 51b) being engaged and the other of said clutches (51a, 51b) being disengaged during a normal operation with a fixed gear position so as to transmit power by use of one of said gear trains linked to said engaged clutch and to develop a condition where power transmission can be performed by use of a preliminarily selected one of said gear trains linked to said disengaged clutch, and, starting from this condition, said engaged clutch being disengaged and said disengaged clutch being engaged so as to perform changeover between said odd-ordinal gear position and said even-ordinal gear position; wherein during said normal operation, said disengaged clutch is moved by a minute amount toward the clutch engaging side by being supplied with a minute oil pressure of not less than the minimum oil pressure necessary for reducing the mechanical play in the disengaged clutch, and wherein during the running of the motorcycle (1) one of said clutches (51a, 51b) is engaged and the other of said clutches (51a, 51b) is disengaged based on a decision made by the electronic control unit (42) that judges that a timing for gear shift is reached; wherein when the electronic control unit (42) judges that a timing for gear shift is reached, one of said clutches (51a, 51 b) is disengaged and the other of said clutches (51a, 51b) is engaged, whereby the power transmission

is changed over to one for transmitting power by use of the gear trains corresponding to the next shift position which has preliminarily been selected."

Claim 1 of the **first auxiliary request** reads as follows:

"A method for operating a twin clutch type speed change control system for a motorcycle (1) comprising an electronic control unit (42), a transmission mechanism (47) having a plurality of gear trains for odd-ordinal gear positions and even-ordinal gear positions, and a pair of clutches (51a, 51b) linked respectively to both said odd-ordinal and even-ordinal gear position gear trains, and wherein each of said clutches (51a, 51b) is an oil hydraulic clutch which exhibits an engaging force based on an oil pressure supplied externally, said transmission mechanism (47) being capable of power transmission by selectively using one of said gear trains; and one of said clutches (51a, 51b) being engaged and the other of said clutches (51a, 51b) being disengaged during a normal operation with a fixed gear position so as to transmit power by use of one of said gear trains linked to said engaged clutch and to develop a condition where power transmission can be performed by use of a preliminarily selected one of said gear trains linked to said disengaged clutch, and, starting from this condition, said engaged clutch being disengaged and said disengaged clutch being engaged so as to perform changeover between said odd-ordinal gear position and said even-ordinal gear position; wherein during the running of the motorcycle (1) one of said clutches (51a, 51b) is engaged and the other of said clutches (51a, 51b) is disengaged based on a decision made by the electronic control unit (42) that judges that a timing for gear shift is reached; and wherein

when the electronic control unit (42) judges that a timing for gear shift is reached, one of said clutches (51a, 51 b) is disengaged and the other of said clutches (51a, 51b) is engaged, whereby the power transmission is changed over to one for transmitting power by use of the gear trains corresponding to the next shift position which has preliminarily been selected;
characterized in that during said normal operation, said disengaged clutch is moved by a minute amount toward the clutch engaging side by being supplied with a minute oil pressure of not less than the minimum oil pressure necessary for reducing the mechanical play in the disengaged clutch."

The other auxiliary requests play no part in the present decision.

VI. The appellant's arguments can be summarised as follows:

Main request

The claimed system was distinguished over the prior art by the feature according to which, during normal operation, the disengaged clutch is moved by a minute amount toward the clutch engaging side by being supplied with a minute oil pressure of not less than the minimum oil pressure necessary for reducing the mechanical play in the disengaged clutch. Although this feature related to the operation of the clutch, it could be identified in the claimed object, which was not merely a clutch but a system. Therefore, claim 1 of the main request clearly defined the matter for which protection was sought and complied with the requirements of Article 84 EPC.

First auxiliary request

The subject-matter of claim 1 of the first auxiliary request involved an inventive step because it was not obvious to combine D7 and D1 in order to reduce the noise in the clutch.

Request to refund the appeal fee

Since the examining division had changed its position on the inventive step of claim 1 in the course of the proceedings, it was justified to refund the appeal fee.

Reasons for the Decision

1. The appeal is admissible.

2. Main request

Claim 1 is directed to a twin clutch type speed change control system for a motorcycle. In this type of system, during normal operation one clutch is engaged while the other is disengaged. To change this condition the clutches are moved to disengage the engaged clutch while engaging the disengaged clutch. This is usually done by applying an oil pressure.

The appellant submitted that the claimed system was distinguished over the prior art by the feature according to which, during normal operation, the disengaged clutch is moved by a minute amount toward the clutch engaging side by being supplied with a minute oil pressure of not less than the minimum oil pressure necessary for reducing the mechanical play in the disengaged clutch. However, this feature relates to

a physical activity, namely the operation of the claimed system. The claimed system is, by contrast, a physical entity. It is not clear which structural feature of this system, if any, could be defined by said activity feature, given that the possibility of applying an oil pressure to engage/disengage the clutches was already present in the prior-art clutches.

Therefore, the claim does not clearly define the matter for which protection is sought, in particular the feature which allegedly distinguishes the claimed system from the prior art. Accordingly, it does not meet the requirements of Article 84 EPC.

3. First auxiliary request - clarity

Claim 1 of the first auxiliary request overcomes the objection above under Article 84 EPC, since it is directed to a method for operating a clutch, i.e. a physical activity.

4. First auxiliary request - inventive step

4.1 D7, which discloses a method in accordance with the preamble of claim 1, represents the most relevant prior art.

4.2 The object underlying the claimed method starting from D7 is to reduce the sound generated in the clutch.

This object is achieved in accordance with claim 1 by supplying the disengaged clutch during normal operation with a minute oil pressure of not less than the minimum oil pressure necessary for reducing the mechanical play in the disengaged clutch, which is thereby moved by a minute amount toward the clutch engaging side.

This movement takes place during the normal operation, i.e. does not cause the engagement of the disengaged clutch, and it is thus smaller than the movement occurring during the gear shift. When the clutch in the disengaged condition is moved in accordance with claim 1, a minute torque is given from the components on the side of the crankshaft to the component parts on the side of the transmission, whereby the plays in the rotating direction are reduced (see paragraph [0061] of the A publication). This reduces the sound based on the mechanical play between the component part on the drive source side and the component part on the gear train side which may be generated in the prior art method, wherein in the disengaged clutch a component part on the drive source side is rotated idly relative to a component part on the gear train side (see paragraph [0003] of the A publication).

4.3 The prior art, in particular the combination of D7 and D1, does not render it obvious to achieve the object above in accordance with claim 1.

It is true that D1 discloses a method of operating the clutch which comprises a movement of the disengaged clutch during normal operation to apply a small torque to the input shaft (see possibility c) in paragraph [0012]). However, the purpose of this measure is not the reduction of noise in the clutch, but the reduction of gear rattling ("Getrieberasseln"), which occurs in a transmission train when two flanks of a gear train in an inactive part of the transmission hit each other (see paragraph [0004]). Hence, in D1 the small torque is not applied to reduce the noise in the clutch, but to tackle a completely different problem.

Therefore, the person skilled in the art without hindsight of the present invention would have no reason to combine the teachings of D7 and D1 to achieve the object underlying the method of claim 1.

Accordingly, said method involves an inventive step.

5. Request to refund the appeal fee

According to Rule 103(1)(a) EPC the appeal fee is to be reimbursed in full where the board of appeal deems an appeal to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation.

The application in suit was refused on the grounds that the subject-matter of claim 1 did not involve an inventive step (see decision under appeal, points 2.1 and 2.2). The appellant submitted that the position of the examining division in respect of inventive step of the claimed subject-matter had changed in the course of the proceedings.

However, from the minutes of the oral proceedings before the examining division it emerges that the main reasons for the decision to refuse the application in suit on the basis of lack of inventive step were discussed at those oral proceedings (see the minutes, points 2. and 3.). Hence, irrespective of the alleged change of position of the examining division, the appellant had the possibility to present its comments on the grounds of the decision under appeal.

Therefore, the board cannot identify any substantial procedural violation in the examination proceedings.

Accordingly, the request for reimbursement of the appeal fee is rejected.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the examining division with the order to grant a patent in the following version:

   - claims 1 and 2 of auxiliary request I as filed at the oral proceedings,

   - the description (pages 1 to 26) as filed at the oral proceedings and

   - the drawings (figures 1 to 6) as published.

3. The request for reimbursement of the appeal fee is rejected.

The Registrar: The Chairman:

V. Commare T. Kriner

Decision electronically authenticated