
(2013) 05 IPAB CK 0007

In the Intellectual Property Appellate Board

Case No : M.P. Nos. 21/2010, 30/2010, 46/2011 In ORA/07/2009/PT/CH

Enercon (India) Limited

APPELLANT

Vs

Aloys Wobben

RESPONDENT

Date of Decision : 31-05-2013

Acts Referred:

Patents Act, 1970 — Section 2(1)(j), 2(1)(ja), 3, 10, 58, 58(1), 59, 64, 64(1)(e), 64(1)(f), 117D, 140,

Citation : (2013) 56 PTC 412 (IPAB)

Hon'ble Judges : Prabha Sridevan, J;D.P.S. Parmar, Technical Member

Bench : Division Bench

Advocate : R. Parthasarathy, Praveen Anand

Final Decision : Allowed

Judgement

D.P.S. Parmar, Technical Member

1. This application u/s. 64 read with section 117D of the Patents Act, 1970 is filed for revocation of patent No. 200608 (herein referred to as 608)

granted to Aloys Wobben for invention ""A Wind Power Installation"". This application for revocation was filed by Enercon India Limited. From the

records in Intellectual Property Appellate Board (IPAB), it was observed that this matter was heard by the earlier Board on 19.10.2010 and orders

were reserved. Since the Hon'ble Technical Member Shri Chandrasekaran retired on 02.12.2010, decision was not issued. So this case was listed to

be heard again. In the meantime, the matter was transferred to the new counsel for the respondents. On completion of all the formalities, the matter

was heard on 07.06.2012 and 08.06.2012.

2. Mr. R. Parthasarathy, learned counsel appeared for the applicant and Mr. Praveen Anand learned counsel represented the respondent. Both the

counsel, besides arguing the matter at length, have also filed their written submissions on the preliminary issue as well as on merits.

Preliminary objections by respondent

locus standi

3. Mr. Praveen Anand learned counsel for the respondent raised the issue of locus standi and licensee estoppel. So far as the preliminary objection

taken by the respondent questioning the locus-standi of the applicant to move the revocation application as a "person interested" under S. 64 of the

Patents Act, 1970 is concerned this question has already been decided against the respondent by this Board in the cases between the same parties in

ORA/43/2009/PT/CH and others by order dated 16.11.2010. We will call it the First Batch. This application forms part of the Second Batch which

had to be heard again. The Board was pleased to hold that the applicant has "a known and general interest" together with "commercial interest" by the

grant of the patent in question and therefore, they are definitely "persons interested". All the revocation applications in the First Batch were allowed

and the patents were revoked. The respondent has challenged these orders in the Hon'ble Madras High Court and the writ petitions are pending. In

ORA/6/2009/PT/CH this Board has already decided that the applicant is a 'person interested'. (Para 10)

10. Here, the applicant as an interested person has been enjoying the benefit of the technical know-how of the respondent. There is no denial that the

applicant has established an industry on the basis of this. If the licence has been removed or revoked, then, the applicant in the course of business will

be prevented from selling the machinery, and the respondent is already suing for infringement. If the applicant succeeds in demolishing the patent in

accordance with law, then the infringement suit must fail and the applicant's commercial interest will be secured. Therefore, the applicant herein

passes the test of Ajay Industrial Corporation case. In any event, the definition of 'person interested' is not restrictive, but inclusive. Therefore, unless

it is shown that the challenge to the patent is frivolous and with a view to extract more money from the patent holder, we are bound to examine the

patentability of the invention. We are not sure how far the conduct of the party will weigh with us while deciding a revocation petition. Though S. 64

used the words, 'may be revoked', if the revoking applicant proves obviousness

under section 64(1)(f) or that the invention does not involve any inventive step, the IPAB cannot say that it is true that the invention is obvious but since S. 64 gives us the discretion, we will not revoke the patent. That will set the Patent Law on its head. Therefore, the fact that the applicant has not behaved in an unexceptional fashion towards the respondent will not weigh with us if the applicant proves that the invention is not patentable, on the ground that either it is not an invention under S. 3 or since the invention is anticipated or that it does not satisfy the definition of S. 2(1)(j) and 2(1)(ja) or if the grounds under S. 64 are made out. The patent monopoly is not given lightly. If the applicant has not paid the royalty or has displayed bad faith, the respondent can sue the applicant for compensation elsewhere. On that ground an inventor cannot have an unworthy patent protected. We are therefore satisfied that the applicant has the locus standi to file this revocation application. We are not inclined to differ from the views of the earlier Bench in his regard.

We are adopting this decision as the facts and circumstances of this case are same.

Licensee estoppel

4. The issue of licensee estoppel was also raised in ORA/6/2009/PT/CH. We are not dealing with this issue here as we have already dealt with it in

ORA/6/2009/PT/CH and we adopt the same in this case. (para 16)

16 ...So we have the Act which says that the conditions which restrict the right of a licensee from challenging the patent are illegal and we have the

opinion of the U.S. Supreme Court explaining why a licensee is entitled to invalidate the patent. This restriction imposed by S. 140, is another indicator

of the public interest angle in patent law. While the law shall protect the rights of the property owner, it will not restrict the rights of the interested

person to challenge the grant, so that unworthy patents are restored to the public domain. Because of the costs of the litigation and the very special

nuances of the technology, it may very well be that the licensee alone is capable of challenging the patent. He has the funds and the knowledge to

launch the attack on the subject matter of the invention. This is why the U.S. Supreme Court held that it would be inequitable to restrict him from

attacking the patent by any condition in the contract. The Parliament has specifically introduced this provision in our Patents Act which is a special

enactment as far as patents are concerned and hence it will prevail over the general rules relating to contract. Therefore no licensee can be estopped

from challenging the patent. This objection is rejected.

Respondent's MP for additional documents

5. The respondent has also filed a common Miscellaneous Petition (M.P. No. 11/2013) for reception of additional evidence after this Board had

reserved orders and the said MP seeks to introduce about 38 documents which had been produced before the High Court have been produced as

additional evidence. The applicant objected to reception of these documents. These 38 documents include pleadings filed in the various proceedings

between the parties. As far as we are concerned the Hon'ble Supreme Court had refused to grant any interim relief to the respondent in respect of

the orders passed in the writ petitions filed against the orders of the IPAB in the First Batch. The pleadings filed before the Company Law board or

the Hon'ble High Courts will form the basis for the decisions in those proceedings. No document or order has been produced in these additional

documents which has a bearing on the issues raised here. Therefore we are not allowing this MP.

6. After the orders were reserved, the learned counsel for the applicant produced the order of the Company Law Board dated 14.12.2012 in C.P.

Nos. 82 & 83 of 2011 by which C.P. 82 of 2011 filed by Enercon GmbH was dismissed and C.P. No. 83 of 2011 filed by Enercon (India) Ltd. was

ordered.

Miscellaneous Petition No. 46/2011 for amendment

7. The learned counsel for the respondent filed a Miscellaneous Petition No. 46/2011 for amendment of the claims. The learned counsel Shri R.

Parthasarathy counsel for the petitioner objected to the amendment in the claims.

8. The learned counsel submitted that in this matter, the pleadings were complete in March 2010 and hence the proposal to amend the

specification/claims at this late stage, in October 2011, deserves to be rejected. The Petitioner served an M.P. for amendment almost 23 months after

the revocation application was filed. In addition no amendments were proposed in the counter statement. The revocation petition was heard by earlier

Bench on 17.10.2010 and order was reserved.

9. The learned counsel submitted that it is also pertinent to note that the Notice for rehearing of all the matters was given in February, 2011 and yet

the amendments are being proposed after a delay of 8 months from the date of notice of hearing. Thus, this delay disentitles the patentee from the

exercise of the discretion by the IPAB. The matters were listed on 8th August, 2011 on which date, the Hon'ble IPAB was pleased to fix the date of

next hearing as 21.11.2011. Even as per the admission of the Patentee in the present petition, despite the counsel for the patentee receiving the

documents in May, 2011, amendments are being proposed in October, 2011, clearly to delay the proceedings and to have the matters adjourned on

21.11.2011. The learned counsel submitted that it may be seen from the above dates and events that there is an inordinate delay in making the present

amendment to the specification/claims.

10. The learned counsel submitted that Section 58 of the Patents Act, 1970 empowers the Appellate Board to allow the Patentee to amend the

complete specification in any proceedings before the Board. Section 58(1) is discretionary and the discretion may not be exercised in case where the

patentee has delayed the moving of application for amending the specification claims.

11. The learned counsel submitted that the reason given in the petition for amendment is that the new counsel got the documents only in February

2011 and hence became aware of the subject matter only then and that he came to the conclusion that the specification needed amendment when

their team visited Germany. Such a contention cannot be a reason to allow amendment. The patentee was always aware of his patent and change of

counsel cannot be a reason for moving the amendment at this late stage. It appears to be a ploy to delay the hearing.

12. The learned counsel submitted that in fact, the amendments brought forth in the present Petition are not such that would have required the alleged

plant visit. It is an old tactic of the Petitioner who has been constantly trying to stall the proceedings and cause delay even when he was represented

by the old counsel. In view of the above, it is not open for the Petitioner to move for amendment of specification at this stage.

13. Without prejudice to the above submission, In any case, The learned counsel submitted that the amendments do not satisfy the requirements of

Section 58 and 59 of the Act and that the amended claims are also invalid under Section 64 of the Act.

AMENDMENT SOUGHT:

14. The Amendment petition states that the amendments are sought to bring out clarity and further explain the inventive step and novelty.

15. Mr. Anand submitted that petition for amendment of the claims had been filed because of new perspectives and insight gained as a result of the

understanding of the technologies. The respondent has carefully contended that the amendment should not be considered as an admission of the

deficiency in the claims. By the amendment, original claims 1, 2, 4 and 8 are merged to form amended claim 1. Claim 3, 5, 6, 9 has been renumbered

as claims 2, 3, 4, 5 respectively. Original claims 7 and 10 were deleted. In the specification in page 4 line 12 the word ""rotor"" is replaced by 'stator' and

in page 7 line 15 numeral and figure '30%' is replaced by '300'.

16. We also sought the opinion of the Controller of Patents relating to the amendment sought by the patentee vide IPAB Order Sheet dated

08/06/2012.

17. On 10th August 2012, the information of the Assistant Controller of Patents and Designs, Chennai was received wherein it was stated that

The original claim 1 relates to a wind power installation with a synchronous machine with a rotor and a stator wherein the stator has at least two

independent three-phase systems which are electrically isolated from each other, and the synchronous machine has means to limit the short-circuit

torque to a maximum of four times the rated torque, preferably to twice the rated torque. The same is recited in para 2, page 5 of the complete

specification. Whereas the said means to limit the short-circuit torque was deleted from the amended claim 1 and recites that the synchronous

machine not having any mechanical safety device between the stator and a common axle journal carrying the rotor and the stator.

From the pages 1 to 4 of the complete specification, the applicant has stated that the object of the invention is to simply the synchronous machine in its

structure and to limit the short-circuit torque. Thus the solution to the technical problem of limiting the short-circuit torque to a maximum of four times

the rated torque, preferably to twice the rated torque remains unsolved. Hence it is evident that the amended claims do not have any technical

enhancement over the prior art stated in page 3 of the complete specification.

Therefore the proposed amendments in the claims are not allowable u/s. 2(1)(j) of the Patents Act, 1970.

18. In order to provide fairness and in the interest of justice both the parties were provided with copy of the Controller opinion on amendments vide

order dated 28.01.2013 for filing written notes within ten days of the communication of order.

19. In the written note filed by the counsel for applicant he agreed with opinion of the Controller that the proposed amendments are not allowable

under section 2(1)(j). He submitted that the object of invention is to have a synchronous machine having means to reduce the short-circuit torque to

less than twice the rated torque. The original claim 1 clearly recited this object. In the proposed amendments a specific portion of the claim 1 ""wherein

the synchronous machine has means which always limit the short-circuit torque which occurs in the case of a short-circuit at the stator winding to a

maximum of four times the rated torque, preferably to twice the rated torque"" has been removed from amended claims. He contended that the very

premise of the granted claims was reduction of short circuit torque and now the same is missing in the proposed amendments. This alters the scope of

claim substantially. According to counsel this amendment cannot be said to be a disclaimer, correction or explanation.

20. Mr. Anand counsel for respondent in the written note submitted that said amendment of the claims is by way of disclaimer, clarification and have

resulted in narrowing down of the scope of original claim. On the opinion of the controller he submitted that it is not the part of the law relating to

amendment under section 58 and 59 that there should be a technical advance over the prior art due to the amended claims. He submitted that the

amended claims are narrower in scope than the original claims. The learned counsel also argued that the amended claims are having technical

advancement over the prior art cited in page 3 of the specification.

21. We do not find the opinion of the Controller helpful as he has not addressed the issue of allowability of the amendments under section 59. We will

examine the allowability of the amendments now based on the arguments of the applicant and the respondent. If claimed amendment is narrower than

the original claim and it brings clarity and explains the inventive step and

novelty, we are bound to consider it. However we cannot allow an amendment that does not stand the test of Section 59. If the amendment falls within the scope of the original claim and does not claim anything beyond it, we may consider whether our discretion should be exercised for granting the amendment in lieu of revoking the patent.

22. At first we will look at the original claims 1, 2, 4 and 8 which the inventor now seeks to merge into amended claim 1.

Claim 1

A wind power installation with a synchronous machine with a rotor and a stator, wherein the stator has at least two independent three phase systems which are electrically isolated from each other, wherein the synchronous machine (has means which always limit the short-circuit torque which occurs in the case of a short-circuit) at the stator winding to a maximum of four times the rated torque, preferably to twice the rated torque.

Claim 2

The wind power installation as claimed in claim 1, wherein the rotor does not have a damper cage or damper windings.

Claim 4 reads as under:

The wind power installation as claimed in any one of the preceding claims, wherein the rotor has pole shoes of a substantially arrow shaped configuration.

Claim 8

The wind power installation as claimed in any one of the preceding claims, wherein no mechanical safety element which releases the stator in the event of a short-circuit is provided between the stator and the axle journal.

The amended claim 1 read now as

A wind power installation with a synchronous machine comprising:-

a stator having at least two independent three phase systems which are electrically isolated from each other;

a rotor having pole shoes of substantially arrow-shaped configuration and not having damper cage or damper windings; and

said synchronous machine not having any mechanical safety device between the stator and a common axle journal carrying the rotor and stator.

23. The respondent has invoked section 58 to seek amendments. Section 58

allows us to use our discretion to amend if we decide that the patent is invalid. However the limitation under section 59 particularly relates to amendment of claims "" No amendment of ...a complete specification ...shall be made ...and no amendment of a complete specification shall be allowed, the effect of which would be that the specification as amended would claim ...or that any claim of the specification as amended would not fall within the scope of any claim of the specification before the amendment.

24. Now if we look at the amended claim 1 it has added a term ""comprising"", which makes the claim, open ended. Such claims are construed to be inclusive of any other components, elements, aspects, or features. Therefore, introduction of term 'comprising' amounts to widening of the scope of the granted claim. It may also be seen that in the amended claim two negative limitations viz. ' not having damper cage'; 'not having any mechanical safety device' are added which in fact states what this invention does not have. Further the deletion of the positive limitation that ""wherein the synchronous machine has means which always limit the short-circuit torque which occurs in the case of a short-circuit at the stator winding to a maximum of four times the rated torque, preferably to twice the rated torque."" in amended claim 1 broadens the scope of the claim as granted as it will now covers all the synchronous machine which do not limit short circuit torque. These amendments cannot be permitted when the respondent has only specifically claimed one form of positive limitation and now seeks to amend claims couched in such broad terms as to cover such means which always limit the short-circuit torque without limitation of maximum of four times of rated torque. The respondent also cannot now claim the synchronous machine which do not limit short circuit torque when in the original claims he claimed the synchronous machine has means which always limit the short-circuit torque. Therefore the amendments sought in claims are not allowable under section 59.

25. The counsel for applicant also raised the issue of belated amendment and submitted that belated amendments shall not be allowed. In relation to belated amendments in *May and Baker Ltd.'s patent* (1948) 65 R.P.C. 255, the Court had to consider whether the amendment of a chemo-therapeutic patent must be allowed. The Court held that if the claims made by the unamended specification are covetous that ""should in itself be a ground for

refusing the amendment as a matter of discretion."" In ORA/14/2009/PT/MUM VRC Continental Ltd. Vs. Uniroyal And Others dated 24.8.2012, this

Board had relied on Matbro Ltd. v. Machingan (GB) Ltd. [(1973) RPC 823] in relation to belated amendments and held that,

a clear distinction between instances where a patentee knows of prior art which he genuinely, and quite properly in the circumstances, thinks is

irrelevant, and other instances where, though he learns of or has been warned of objections which are available against his patent as a result of prior

art, yet he takes no steps to put his specification right by way of amendment, or still worse, knowingly persists in retaining it in the unamended and

suspect form. In the latter cases delay is culpable because potential defendants and the general public are entitled to plan their activities on the

assumption that the patentee, though warned, has decided not to amend. If the patentee, by his conduct, lulls the public into a false sense of security he

cannot thereafter be allowed to change his mind and ask for amendment, or at any rate without adequate protection being granted to the public.

and refused to allow the amendments. We find this is applicable to this case also and refuse to allow the belated amendments.

26. We are also convinced that the amendments of claims as sought by the patentee are beyond the scope of claims as originally granted. We decided

to proceed with the matter based on the patent specification on record.

Merits

27. Now we shall deal with the merits of the case.

Claim Construction

28. The counsel for the respondent submitted that claims of the invention must be construed properly to understand the scope of the invention. Claim 1

states

A wind power installation with a synchronous machine with a rotor and a stator, wherein the stator has at least two independent three phase systems

which are electrically isolated from each other, wherein the synchronous machine has means which always limit the short-circuit torque which occurs

in the case of a short-circuit at the stator winding to a maximum of four times the rated torque, preferably to twice the rated torque.

29. The counsel for respondent submitted that ""Means-plus-function"" claims are allowable in various jurisdictions as well as in India. As illustrated by

the following:

- Donaldson case law on page 9, held in great detail, that

means-plus-function language in claim must be construed in light of specification and interpreted in light of corresponding structure and material, or

acts and equivalents to extent that specification provides a disclosure regardless of context. Therefore, if one employs means-plus-function language in

a claim, one must set forth in the specification an adequate disclosure showing what is meant by that language.

- Landis Section 3.25 teaches

The effect of ""means-plus-function"" language is to incorporate into that element and limitation of the claim the embodiment disclosed in the

specification, that is, all or any of the disclosed embodiments, and all equivalents of that embodiment both during ex parte examination by the examiner

and for an infringement. Thus the scope of claim element is as broad as the invention.

- Similarly, Guidelines of EPO and 35 USC 112 Practice Guidelines of USPTO establish the fact of considering means-plus-function claims.

30. The counsel for respondent submitted that claim 1 comprises the following features:

Feature 1: A wind power installation

Feature 2: A synchronous machine

Feature 3: a rotor

Feature 4: a stator

Feature 5: the stator has at least two independent three-phase systems, which are electrically isolated from each other

Feature 6: the synchronous machine has means, which always limit the short-circuit torque, which occurs in the case of a short circuit at the stator

winding, to a maximum of four times the rated torque, preferably to twice the rated torque.

31. The counsel for respondent submitted that subsequent claims of the patent further qualify one or more of the afore-mentioned features of Claim-1

in accordance with different embodiments. According to the counsel the claimed invention is directed to a wind power installation with a synchronous

machine. A synchronous machine comprises a rotor and a stator. The stator has

at least two independent three-phase systems and thereby the total generated power is divided equally between them resulting in a correspondingly scaled-down short-circuit current and a proportionately reduced short-circuit torque, when a short-circuit fault occurs at the output of or internally to anyone of them. The independent three-phase systems are electrically isolated from each other thereby avoiding any increase in current (and corresponding increase in torque) if a short-circuit were to occur between a terminal of one system and another of a different system. The reactance of each system can be designed to be increased to a multiple of the earlier reactance value as it is required to handle a fraction of the rated current, thereby further reducing the short-circuit current in the event of a short-circuit across its terminals. In addition to the feature of multiple independent and isolated windings there are additional means to limit the short-circuit torque at the stator winding to a maximum four times the rated torque, preferably to twice the rated torque.

32. The counsel for the respondent submitted that two embodiments of the additional means for limiting the short-circuit torque have been disclosed in the body of the specifications and claimed in subsequent claims. These 2 embodiments are:

- (i) eliminating damper cage/damper windings from generator rotor;
- (ii) arrow-shaped rotor pole shoes

33. Arguing on the claims interpretation the counsel for applicant submitted that independent Claim 1 of the impugned Patent is directed towards a wind power installation with a synchronous machine with a rotor and a stator, wherein

the stator has

at least two independent three phase systems which are electrically isolated from each other, wherein

the synchronous machine has

means which always limit the short-circuit torque which occurs in the case of a short-circuit at the stator winding to a maximum of four times the rated torque, preferably to twice the rated torque.

34. The counsel for applicant contended that it is fundamental principle of claim construction that in a claim which uses the expressions ""wherein"" or

characterized by'", the features preceding the said word(s) are admitted to be known in the prior art.' Thus the invention or the inventive step lies in

the words succeeding the above said expressions. Therefore, the following can be said to be the elements of the invention in claim 1

a) A stator having at least two independent three-phase windings.

b) Means to limit the short-circuit, torque.

Obviousness

35. The counsel for applicant submitted that the closest prior art documents are GB2268343A 05.01.1994 [""Control of Synchronous Machine""] and

US4761602A. 02.08.1988 [""Compound Short-circuit Induction Machine and Method of its Control""]. He submitted that the technical problem

addressed by the invention in the prior art is, inter-alia, the control of output torque in a motor/generator. The problem addressed in the impugned

patent is to control torque in a short-circuit situation.

36. The counsel for applicant submitted that Claim 1, would be obvious to anyone ordinarily skilled in the field of electrical engineering in the light of

the combination of the two prior art documents. He submitted that these two references teach independent and/or isolated windings. US'602 discloses

that

The stator windings are divided into at least two independently fed sets of inductively uncoupled multiple winding's. These inductively uncoupled sets

are formed by phase coils concentrated around consequent poles of similar polarity."" (Column 3, lines 62 to 66).

Claim 14 states that

In a three-phase asynchronous alternating current induction machine, the combination comprising:

housing means;

stator means within said housing means and having at least two independently fed sets of three-phase stator winding means, each of said sets having

associated, pairs of phase coils;

37. The counsel for applicant submitted that a stator disclosed in US '602 ""at least two independent three-phase system"", as claimed in claim 1, was

known. Moreover, it also shows that winding means are ""inductively uncoupled"", thereby implying that they are isolated from each other.

38. The counsel for applicant submitted that UK '343 Patent also describes-
an armature having a core wound with a field winding and an armature winding,
the field winding having three pairs of three phase windings
successively shifted by a phase angle of 120 and generating a magnetic field
flux, the armature windings having three pairs of three phase windings
successively shifted by a phase angle of 120 and substantially proceeds by an
angle of 90 from the field winding and
A rotor rotatably received in the armature and magnetized in a predetermined
direction by the field magnetic flux."" (Page 6, line 1 to 11)

39. The counsel for applicant submitted that Claim 2 of UK '343 recites
a first controller serving as a power source of said first winding and controlling
rotational frequency of said motor; and a second controller serving as a
power source of said second winding.

40. The counsel for applicant submitted that Fig. 12. Of UK '343 along with its
description on [page 16 lines 28 to 36) and [page 17 lines 1 to 16)
discloses a three phase synchronous motor. UK '343 also discloses ""a second
controller (131) serving as a power source and controlling output value
or torque value of said motor"". Further US '602 discloses ""second winding
means relative to the other for controlling the operating speed parameters of
the said machine

41. The counsel for applicant submitted that combined teaching of UK '343
Patent and US '602 Patent clearly show that independently fed sets of
three phase stator windings were known in the art. He submitted that
independently fed means that the windings are isolated. The following
conclusions can be reached from above references: According to the counsel the
above references indicates that using the second winding means
(which is an independently fed winding) can be a means to control the output
torque of the machine.

42. The counsel for applicant submitted that a person having ordinary skill in the
art would be motivated to combine and use the above features set out
in the prior art and provide the solution as claimed in Claim 1. The motivation
originates from the fact that when the above features have been
described to be capable of controlling or limiting the output torque of the
machine, they certainly cover the capability to control the torque generated
under a short-circuit situation. It cannot be denied that there is substantial

benefit to combine the above features in the light of the said technical problem. Thus, there is nothing inventive in providing independent three-phase systems.

43. The counsel for applicant submitted that in the description of the impugned patent [Page 7, Para 3, Line 2], it is stated that separate three-phase windings lead to division of electric power in the winding and as these windings are isolated, short-circuit in one set of winding would affect only that half of the total winding. The effect of these two three-phase independent winding is that whenever the short circuit occurs, consequent current generated is reduced to half of what it would have been, had there been a single winding. In this circumstance, it is obvious to a skilled person that the subsequent torque generated due to short circuit would also reduce. This is because a skilled person when confronted with the technical problem addressed by Claim 1 would find that reduction in short-circuit torque by employing independent windings, as claimed, is a natural consequence of reduction in overall short-circuit current due to division of windings. Therefore, there is no inventive step in providing at least two independent sets of three-phase windings.

44. The counsel for applicant submitted that Canadian Patent 2,295,156, dated 21.1.1999 [Synchronous Alternator For use in a Wind Power Plant], discloses that

If the time behavior of a component current, or a sum of several component currents, is matched to the time behavior of the voltage induced in the stator, whereby the time curve of the induced voltage is essentially trapezoidal, then the use of rounded edges on the lower as well as at the upper corners of the trapezoid can minimize torque momentum fluctuations". (Page 3, line 1 to 5).

45. The counsel for applicant submitted that claim 1 of the impugned patent has ""means to limit torque"". It describes that one of the claimed means is the arrow head shape of poles on the rotor'. Fig. 7 in the '156 patent, is the same as arrow head shaped poles. Therefore this clearly shows that the arrow head shape of a pole would be a means to limit torque fluctuations, which can be easily construed as means to limit short-circuit torque.

46. The counsel for applicant submitted that the ""means to limit short circuit torque"" have also been described, in '608 patent to include the elimination

of damper windings. The inventor in '343 is referring to elimination of windings in a synchronous machine which are ""squirrel cage type"". The UK'343 patent describes that

Also the synchronous motor according to the present invention does not need the silicon steel plate for the rotor-nor provide slots therein and with a winding of squirrel cage type made of aluminium, copper or the like, and does not generate heat by an Induced current as compared with a conventional induction motor-(Page 21, Lines-7-13).

47. The counsel for applicant submitted that it is well known in the art that, while induction motors require a squirrel cage winding for the purpose of starting and limiting oscillations, the same role is played by amortisseur winding in a synchronous machine. The meaning of amortisseur is 'damper'.

This clearly goes on to show that UK'343 patent, by elimination of ""squirrel cage type"" winding, is actually talking about elimination of damper windings, as claimed in Claim 1 of '608 patent. In the light of the above, it can be said that a skilled person would find it obvious to eliminate damper windings.

48. The counsel for applicant submitted that hence the subject matter of Claim 1, is obvious to a person having ordinary skill in the art.

49. The learned counsel for the applicant submitted that the subject matter of the application is obvious and does not involve any inventive step u/s.

64(1)(f) in view of disclosure in CA 2295156.

50. The counsel for applicant contended that claimed invention is obvious in view of disclosure in CA 2295156. The CA '156 Patent is titled,

Synchronous alternator/or use in wind power installation."" CA '156 Patent also relates to synchronous generator, for a wind power plant, having rotor

and stator. [para 1]. Thus, elements (a) and (b) are disclosed in '156 Patent. He submitted that the object of CA'156 Patent was to design a

synchronous generator so as to reduce noise generated from the said generator during operation of the wind power installation. He submitted that Fig.

I shows a wind turbine is connected to a 6 phase (two 3-phase system) generator which gives output to a rectifier. Thus, element (c) is also disclosed in CA' 156 Patent.

51. The counsel for applicant submitted that it also disclosed that the six phase winding on the stator, which is equivalent to 'two 3-phase systems in

claim 1(2x3=6), has a phase shift of 30 degrees between them [page 145, para 1]. In this regard, reference was made to Fig. 10, where the six phase windings have been disclosed [page 153]. According to the learned counsel a combined reading of the above references would clearly indicate that there is an electrical angle of 300 between the phases on the stator. This electrical angle (30 degrees) between the two 3-phase systems is what causes the electrical isolation between the phases in the stator windings of the claimed invention. Fig. 3b of the impugned patent discloses the above said two independent 3-phase winding arrangement. Comparison of Fig. 3b of the impugned patent, [page 33] and Fig. 10 of the CA'156 Patent, [page 153], would show that both are identical. Thus, it was submitted that CA '156 also discloses electrical isolation between the two three-phase windings on the stator, which is element (d) of claim 1. With regard to element (e) of claim 1, i.e. ""means that always reduce short-circuit torque"", it was pointed out that claim is directed towards a combination of two means disclosed in the specification that reduce short circuit. The first means, according to the impugned specification, is the division of stator windings in two 3-phase systems. The second means is the 'elimination of damper cage' from the generator. The third means is ""provision of pole heads of the rotor in arrow-shaped configuration"". Thus, it was submitted that claim 1 is directed towards the first means combined with any of the second or third means to reduce short-circuit torque.

52. The counsel for applicant submitted that the claim language uses the term ""means"" in element (e) which can be any one of the second or third means. This is because it is well settled that when a claim contains a genus term (means), any specie from the said genus, if found in the prior art, would show that the genus itself is known. Thus, in order to show-disclosure of ""means"", as claimed in claim 1, in a prior art, -it is sufficient to show one of the means i.e. either the second or third means in the prior art.

53. The counsel for applicant submitted that in this regard, Fig. 5, 6 and 7, [page 153] clearly disclose the arrow-shaped configuration of the pole heads of the generator-rotor. The said figures must be read with description at page 143, para 1, 2 and 4, which disclose that the pole pieces have the shape of an arrow, when seen from the top. He submitted that comparison of Figure 6 and 7 of CA'156 with figure 4a and 4b of the impugned patent, shows

that figures of CA '156 Patent are identical with that of the impugned patent. Thus, CA'156 Patent clearly discloses arrow-shaped configuration of the rotor pole heads.

54. The learned counsel submitted that the impugned specification discloses "arrow-shaped configuration" of the pole heads as a "means" to reduce short circuit torque. Thus, in view of the above, CA '156 Patent clearly discloses the "means" claimed in claim 1 of the impugned patent. He contended that it can be concluded that the two means/measures claimed in claim 1 i.e. two 3-phase winding systems on the stator and "means" to reduce short circuit torque, i.e. arrow shaped rotor poles, are clearly disclosed in CA'156 Patent.

55. The learned counsel for the applicant relied on the decision of Court of appeal of United Kingdom in 1985 RPC 55 (Windfurfing International Inc Vs. Tabur Marine Great Britain Limited). He pointed out that the question of obviousness involves analysis of the following four steps, viz.,

- a) Identifying inventive step embodied in the patent.
- b) Inputting to a normal skilled but unimaginative addressee what was common general knowledge in the art at the priority date.
- c) Identifying difference, if any, between the matter cited and the alleged invention and
- d) Decide whether this difference constitutes a step which would have been obvious to a skilled man, found without any knowledge of the alleged invention.

56. The learned counsel submitted that the above approach to obviousness was also restated by the High Court of Justice, Chancery Division, Patent

Courts in 2007 EWHC 2636 (Pat) between Mr. Aloys Wobben and Vestas' Celtic Wind Technology Ltd.,

Para 141 of this decision which is relevant is extracted here below.

141. The correct approach to the issue of obviousness has recently been restated by the Court of Appeal in Pozzoli v. BDMO SA 120071 EWCA Civ

5 88:

- i) (a) Identify the notional "person skilled in the art
- (b) Identify the relevant common general knowledge of that person;
- ii) Identify the inventive concept of the claim in question or if that cannot readily

be done, construe it;

iii) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or

claim as construed;

iv) Ask whether, viewed without any knowledge of the alleged invention as claimed, those differences constitute steps which would have been obvious

to the person skilled in the art or do they require any degree of invention?

Respondents reply

BACKGROUND OF THE INVENTION

57. The learned counsel for respondent submitted that there are certain fundamental technical issues that have a direct bearing on the working of the

invention. One such basic concept relates to the difference between an electrical generator comprising two independent 3-phase windings as distinct

from an electrical generator comprising a single 6-phase windings. He submitted that a synchronous generator of the kind addressed by the present

invention has its output produced by windings on its stator. It is a multi-phase generator, which implies that the stator has multiple windings. The

number of stator windings is equal to the total number of phases. An electrical generator comprising either a single six--phase set of windings or two

independent three phase system (i.e. in both cases a total of six phases) will therefore has 6 windings on the stator. Both the single-6-phase

arrangement, as well as the 2-independent-3-phase-arrangement provides only 6 output terminals for all the 6 windings:

58. The counsel submitted that the primary difference between the single-6-phase winding arrangement and the 2-independent-3-phase-windings

arrangement, lies in the manner in which the 6 windings are connected to each other as well as to the 6 output terminals. The single-6-phase-winding

arrangement is as shown below:

59. The counsel submitted that this single-6-phase-winding-arrangement does not provide any electrical isolation between the 6-phases (windings).

However the 2-independent-3-phase-winding-system provides a different connection arrangement as shown given below results in 2 electrically

isolated sets of 3-phase windings.

60. According to the counsel the invention relates to synchronous machines,

such as synchronous generators, have long been used in wind power installations. This generator comprises essentially a stationary, outer circular "stator", which carries the generating windings, and an inner concentrically mounted "rotor", which is free to rotate about the concentric axis. The generator rotor is mechanically coupled to the rotor of the wind power installation by means of a hollow shaft which rotates about an inner stationary supporting shaft which is part of a foundation structure known as the "axle journal". The stator is supported by a "stator carrier" which is mechanically attached to the axle journal. The relative movement of the rotor with respect to stator induces an electric voltage in the stator. The electric voltage in turn results in an electric current based on the electrical load experienced by the generator at its terminals. The electric current in the stator results in a rotary force, i.e. a torque that acts both on the rotor and on the stator in a manner that tends to oppose the relative motion. He submitted that while constructing such wind power installations, possible faults have to be considered, such as short-circuit at connecting terminals or within the stator winding during operation. Such short-circuit can result in a current of a very high amplitude. Such extreme and sudden current results in a corresponding high opposing torque on the stator and the rotor. These short-circuit torque can have peak values up to 6 to 8 times the torque that the generator is designed to withstand (known as "rated torque"). Although such situation happens extremely rarely yet results in very high mechanical stresses on the construction of the synchronous machine and can lead to severe and catastrophic damage to the generator as well as to the entire wind power installation.

61. The counsel submitted that in order to avoid expensive damage under such fault conditions, it is known in the state of the art to provide mechanical safety devices and that one known safety arrangement uses "shearing pin couplings". This mechanical attachment of the stator carrier to the axle journal is by means of the shearing pin couplings. The design of shearing pins is deliberately made such that these elements rupture under the influence of high torque i.e. more than 4 times the rated torque. Accordingly, if a short-circuit torque occurs, the shearing pins break and the stator carrier is no longer attached to the axle journal and becomes free to rotate. As a result there is no relative motion between the stator and rotor thus there is no

power generation i.e. no voltage and current are induced in the stator winding and correspondingly the "short-circuit" condition vanishes. In this

manner further damage to other components of the wind power installation is prevented and the transmitted torque is limited to a maximum of four

times the rated torque and the drive train is guaranteed 1:0 be safe and the installation are safe-guarded, however the generator can no longer operate.

The generator repair/replacement is a very expensive and time consuming process requiring special arrangements involving high cost and substantial

time.

62. The counsel submitted that the main objective of the present invention is to simplify the generator structure in a manner that always limits the

short-circuit torque to a maximum of four times the rated torque and preferably to twice the rated torque, without the use of any shearing pins thereby

avoiding the above disadvantages.

63. The counsel submitted that while the Petitioner has relied on GB 2268343 (hereinafter referred as GB'343) and US 4761602 (hereinafter referred

as US '602) as the closest prior art in their 'pleadings. They have limited their oral submissions to only one prior art CA 2295156 (hereinafter referred

to as '156) for invalidating IN'608 and have therefore surrendered the contentions that were based on the GB '343 and US '602 prior arts.

64. The counsel submitted that CA '156 addresses the problem of noise generated during the operation of wind power plants and does not provide any

teaching whatsoever on reducing short-circuit torque and is therefore irrelevant to the analysis of the present patent. This patent merely relates to the

minimization of torque fluctuations in order to reduce noise and not to the magnitude of the torque itself.

65. The counsel submitted that each claim has to be analyzed for invalidity for a patent to be held invalid. According to law, each and every claim of a

patent has to be invalidated separately for alleging a patent to be invalid. However, no such analysis has been provided by the Petitioner. He relied on

Hallen Co. v. Branbanita (UK) Ltd. where it has been held that

Each claim must be construed to see whether it contained a number of discrete claims." and also ".therefore submitted that to ascertain whether a

patent was a valid, invalid or partially valid, it was necessary to look at the claims and that unless there was a claim which was completely valid the

patent was invalid.

66. The counsel submitted that the petitioner has failed to discover any prior art which discloses the above features. The counsel submitted that the

Para 15 of the revocation petition only states the ground for obviousness and there are no pleadings in regard to the anticipation of IN '608. The

Petitioner has deliberately given up the ground of anticipation because there was no prior art document which actually anticipates the impugned patent

IN '608. Therefore, petitioner's argument of inherent anticipation during oral proceedings in regard to CA '156 should be dismissed.

67. The counsel submitted that it is settled in law that in order to anticipate a patent's claim a single prior publication must reveal all the features of the

claim as illustrated in the case law

In ""Farbwerke Hoechst Aktiengesellschaft Vormals Meister Lucius & Bruning a Corporation etc. Vs. Unichem Laboratories and Ors."" (in Para 15,

line 3 to 6) it was held that

to anticipate a patent, a prior publication or activity must contain the whole of the invention impugned; i.e., all the features by which the particular

claim attacked is limited. In other words, the anticipation must be such as to describe, or be an infringement of the claim attacked.

68. The counsel submitted that in view of the admissions of the petitioner in their pleadings, that CA '156 does not cover all features of IN'608 and

therefore, is not relevant in respect of anticipation of IN '608. Following table gives claim-feature"" analysis chart against a single prior publication

CA'156.

69. The counsel for the respondent contended that with the above analysis it is clear that CA '156 does not cover all features of IN '608 and therefore

in accordance with law on anticipation does not anticipate of IN '608.

Obviousness

70. The counsel for the respondent submitted that Section 64(1)(f) of the Indian Patents Act, 1970 reads as:

that the invention so far as claimed in any claim of the complete specification is obvious or does not involve any inventive step, having regard to what

was publicly known or publicly used in India or what published in ?India or elsewhere before the priority date of claim.

The term 'inventive step' is defined in Section 2(j)(a) of the Indian Patents Act, 1970 as:

Inventive Step means a feature of an invention that involves technical advance as compared to the existing knowledge or having economic

significance or both and that makes the invention not obvious to a person skilled in the art.

71. The counsel for the respondent submitted that EP Guidelines for Substantive Examination on Obviousness are

Thus the question to consider, in relation to any claim defining the invention, is whether before the filing or priority date valid for that claim, having

regard to the art known at the time, it would have been obvious to the person skilled in the art to arrive"" at something falling within the terms of the

claim. If so, the claim is not allowable for lack of inventive step. The term ""obvious"" means that which does not go beyond the normal progress of

technology but merely follows plainly or logically from the prior art, i.e. something which does not involve the exercise of any skill or ability beyond

that to be expected of the person skilled in the art. In considering inventive step, as distinct from novelty (see IV, 9.3). It is fair to construe any

published document in the light of knowledge up to and including the day before the filing or priority date valid for the claimed invention and to have

regard to all the knowledge generally available to the person skilled in the art up to and including that day.

72. The counsel for the respondent submitted that when applying the law on obviousness the following case laws must be considered.

In ""Albert Wood and Amcolite Ltd. V. Gowshall Ltd."" it was held that

the method of dissecting a combination into its constituent elements, and then examining each element to see whether it was obvious or not, is to be

applied with great caution as tending to obscure the fact that the selection of the elements presupposes the conception of the combination and the

result to be obtained.

73. The counsel for the respondent contended that the technique of separate, analysis of individual elements of a patent without considering the effect

of the combination of the individual components is not correct. The combination of the individual components has to be shown to be obvious. He

submitted that applicant is clearly dissecting the combination of the elements of

IN '608 and analyzing them in a piece-meal manner.

74. Relying on ""Vickers & Sons & Co. Ltd. V. Siddel"" where it was held that

There is no doubt about the law applicable to such a question, though it is often difficult to apply it to the circumstances of a particular case, and its

application is perhaps most difficult when the alleged invention consists of a new apparatus combining known elements. If the apparatus be valuable

by reason of its simplicity, there is a danger of being misled by that very simplicity into the belief that no invention was needed to produce it; But

experience has shown that not a few inventions, some of which have revolutionized the industries of this country, have been of so simple a character

that when once they were made known it was difficult to understand how the idea has been so long in presenting itself, or not to believe that they must

have been obvious to everyone.

The counsel argued that simplicity is no bar to grant of a patent. Even though components of a patent may be known individually, their combination

may be inventive and the fact that such a combination appears to be simple does not render the invention obvious.

75. Relying on ""General Tire & Rubber Company vs. Firestone Tyre & Rubber Company Limited"" (on Page 506, Para 3, lines 9-30) where it was

held that

The first is that in the judgment of Fletcher Moulton, L. L. in *British Westinghouse v. Braulik* (1910) 27 R.P.C. 209. Though it was quoted in the first'

instance judgment, [1970] F.S. R. 313-C, it provides such an apt warning against an ex post facto analysis of an invention of the type which the

appellants sought to apply in the instant case that it merits citation. ""I confess that I view with suspicion arguments to the effect that a new

combination, bringing with it new and important consequences in the shape of practical machines, is not an invention, because, when it has once been

established, it is easy to show how it might be arrived at by starting from something known, and taking a series of apparently easy steps. This ex post

facto analysis of invention is unfair to the inventors and in my opinion it is not countenanced by English patent law.

Nobody, however, has told me, and I do not suppose anybody ever will tell me, what is, the precise characteristics or quality the presence of which

distinguishes invention from a workshop improvement The truth is that, when

once it had been found that the problem had waited solution for many years and that the device is in fact novel and superior to what had gone before and has been widely used, and used in preference to alternative devices, it is, I think, practically impossible to say that there is not present that scintilla of invention necessary to support the patent.

the counsel argued that ex post facto analysis must be avoided in determining obviousness. He contended that in determining obviousness it is to be

decided whether on the priority date, it was obvious for all practical purposes to take a particular step and to what extent human intervention was

required—a question of fact which must be answered objectively with reference to the individual claims and without the benefit of hindsight and ex post

facto analysis and reconstruction. Further, the test of obviousness was also set out in ""Apotex Inc. and Sanofi-Synthelabo Canada Inc. and Sanofi-

Synthelabo and Minister of Health"" on Page 17, Para 1 recites,

The test for obviousness is not to ask what competent inventors did or would have done to solve the problem. Inventors are by definition inventive.

The classical touchstone for obviousness is the technician skilled in the art but having no scintilla of inventiveness or imagination; a paragon of

deduction and dexterity, wholly devoid of intuition; a triumph of the left hemisphere over the right. The question to be asked is whether this mythical

creature (the man in the Clapham omnibus of patent law) would, in the light of the state of the art and of common general knowledge as at the

claimed date of invention, have come directly and without difficulty to the solution taught by the patent. It is very difficult test to satisfy.

76. The counsel for the respondent submitted that in order to assess inventive step in an objective and predictable manner, ""problem-and-solution

approach"" which is practised by the EPO, needs to be applied.

problem-and-solution approach"", comprises three main stages:

a) determining the ""closest prior art"";

b) Identifying the difference between the claimed invention and the closest prior art

1. determining the technical effect caused by the identified differences

2. based on the technical effect defining the ""objective technical problem"" to be solved, and

c) considering whether or not the claimed invention, starting from the closest prior art and the objective technical problem, would NOT ""could"" have been obvious to the skilled person.

Expert evidence

Applicants Expert

Mr. Dilip Trasi (Applicants 1st expert)

77. The counsel for the applicant also relied on Expert Evidence filed by Mr. Dilip Trasi who is an Electrical Engineer with Masters degree with 34

years of experience in this field. He submitted that Mr. Trasi has given an analysis of obviousness of claim 1 in view of CA '156 Patent, which clearly

discloses elimination of damper cage winding. In para 13 of the expert evidence of Mr. Dilip Trasi is indicated why claim 2 is obvious in view of '343

Patent which clearly discloses elimination of damper cage winding. Expert while citing US patent No. 4550267, submitted that this patent discloses

four sets of, independent, 3-phase, stator windings, which shows the first means to reduce short circuit torque were known in the art.

Mr. D.K. Bhatnagar (Applicants 2nd expert)

78. He also submitted that Mr. D.K. Bhatnagar who is an electrical engineer having 17 years of experience in the field of synchronous and induction

motors and generators. He compared the US '602, CA '156, US' 276, US' 231 with impugned patent and expressed his opinion that Independent sets

of three phase windings on a stator are well known in the art. Opposed patent recites arrow shaped pole heads of rotor and 'omission of the damper

cage, without damper winding' as claimed 'means'. The '156 Patent discloses use of arrow head poles and '343 Patent about elimination of the squirrel

cage windings. The squirrel cage type of winding is the same as damper cage winding. According to the expert the subject matter of claims of

impugned patent is a result of combination of the above cited prior art.

Respondents expert

79. The Prof. Dr. Ulf Schuemann, of Germany expert of respondent has, stated that the fig. 6 and 7 of CA'156 Patent look similar to the pole piece in

the impugned patent [para 7.3, lines 4-6] The expert stated that the '156 Patent is different from impugned patent because CA'156 Patent relates to

normal working of the generator while impugned patent talks about fault

condition in the generator. [Para 7.3, lines 7-11]

80. The counsel for applicant submitted that respondents expert has nowhere denied that the technical features, such as two independent three phase windings or the arrow shaped configuration of the rotor pole heads, are not present in CA'156 Patent. The counsel submitted that the learned expert is merely reiterating the respondent's view without any basis. In fact, his statement is contrary because at page 2, para 6.3, third last sub-para, he had stated that designing a synchronous machine must involve consideration of short circuit conditions. Thus, he admitted that while a machine is designed for ""normal operation"", the fault conditions are always considered. Thus, when CA '156 Patent relates to normal conditions, consideration of fault conditions, even if not expressly disclosed, is inherently present. Besides, there is no such thing as generators for normal operation and generators for fault conditions. Faults occur on generators during normal operation only.

Invention

81. Before we proceed further let us identify the inventive concept to which the claimed invention relates. Let us see what the invention as claimed by the respondent is?

82. It is well known that in synchronous machines operating as generators or motors the current is produced in the windings of stator on the rotation of rotor. The problem that is identified in these machines is that in case of short circuits in the stator windings an abnormally high torque is produced which could be as high as 6-8 times of the rated torque of the machine. Such high torque can cause irreparable damage to the machine. It also requires very high level of maintenance and provision for preventive features like safety devices with shearing pin coupling. When the shearing pin breaks it permits the stator also rotate about the axle journal to limit the transmitted torque to maximum four times the rated torque. These installations are also known to have damper cage/damper windings which limit the said torque by 30%.

83. The object of the claimed invention is to find an alternative way to reduce the short-circuit torque to less than twice the rated torque. In order to reduce the said short-circuit torque to less than twice the rated torque, the invention provides for two independent three-phase windings in the stator, which are spatially and/or electrically isolated. This means now one independent

phase system has 50% of the total power of the synchronous machine. Such independent winding systems have been stated to limit the short circuit torque.

84. The inventor claims that by at least two independent three-phase system of the stator the short circuit torque is limited in such a way that the damper cage (damper winding) in such wind motors is not required now. Further shearing pin is also not necessary in the claimed wind power installations. It is also claimed that the torque is further reduced by use of arrow-shape pole shoe of the rotor. The arrow shaped pole heads of the rotor causes dynamic decoupling of the exciter flux with the stator flux within a groove.

85. Therefore the invention provides a wind power installation with a synchronous machine with a rotor and a stator, wherein the stator has at least two independent three-phase systems which are electrically isolated from each other, wherein the synchronous machine has means which always limit the short-circuit-torque which occurs in the case of a short circuit at the stator winding to a maximum of four times the rated torque. There is no negative limitation in claim 1 as granted.

86. Inventive concept embodied in the Claim 1 of the impugned Patent can be identified as

- A. a wind power installation with a synchronous machine with a rotor and a stator
- B. stator has at least two independent three phase systems
- C. Three phase systems are electrically isolated from each other
- D. This synchronous machine has means which always limit the short-circuit torque
- E. the short-circuit torque occurs in the case of a short-circuit at the stator winding
- F. Means as stated in D always limit this short circuit torque to a maximum of four times the rated torque, preferably to twice the rated torque.

87. Fig 3b shows the arrangement of individual phases of the two different three phase system over a large region of the stator.

88. Fig 4(a) and 4(b) shows the arrow-shaped configuration of the pole heads of the rotor. Fig 4(b) is given below

89. If we compare the impugned patent with CA '156 we find both patents relate to a synchronous generator with a rotor and a stator for wind power

plants. This generator is a polyphase generator which has a ring shaped stator inside which a rotor is free to move. This rotor is directly connected to the rotor of wind power plant. Object of the CA'156 is noise reduction whereas in impugned patent it is reduction of torque. CA'156 disclose that 'if the time behaviour of a component current or a sum of several components currents is matched to the time behavior of the voltage induced in the stator, whereby the time curve of the induced voltage is essentially trapezoidal, then the ...can minimize torque moments fluctuations.'" And to achieve this it discloses changing the pole shoe design to essentially arrow-shaped. The Impugned patent at page 5 discloses "'arrow-shaped configuration'" of the pole heads as a "'means'" to reduce short circuit torque[line 1--8]. Thus, in view of the above CA '156 Patent clearly discloses the "'means'" claimed in claim 1. It further states that with this configuration of pole shoe head with or without other means noise reduction is achieved. If we compare figure 7 of CA'156 and fig 4(b) of Impugned patent they are identical. This is also a torque limiting means as disclosed in the CA'156 which always limit (reduce) the torque. Figure 10 of CA'156 showing individual phases of 6 phase is identical with figure 3(b) of impugned patent showing individual phases of the two different three phase systems. Both of these figures depict the layout windings in the stator which has 6 phases and each phase is separated by 300 (page 12 line 1-2).In the impugned patent the electrical angle of each phase is also 300 (page 7 line 14). In a three phase system, it is known that for a 3-phase system, there are two primary types of polyphase motor/generator connections, Delta, and Y (also known as a Star connection). For a Delta connection, the phases are connected in a triangular configuration. In a Y connection the phases are connected in 3-armed, or "'Y'" shaped configuration. The counsel for the respondent in the oral arguments tried to distinguish this known polyphase motor connections. According to the counsel for the respondent the inventor has used Y shaped configuration which resulted in the mechanical and electrical separation of two three phase system. When we see the specification and claim 1 as granted this we find that this feature is neither disclosed in the specification nor claimed. Therefore we do not consider it necessary for the purpose of comparison with prior art. Moreover when the alternatives are known there is no inventive step in finding the best out of them.

90. We find all the features of the invention as claimed are taught in the CA'156 except presence of two independent three phase systems. In CA '156 polyphase synchronous generator is of type E-66 of Enercon GmbH and in IN '642 it is tested for the E-66 (Page 8-9 of specification). Prof. Dr. Ulf Schuemann expert of the respondent has not denied that the technical features, such as two independent three phase windings or the arrow shaped configuration of the rotor pole heads, are not present in CA'156 Patent. He stated that ""the fig. 5 to 7 of CA'156 Patent showing a pole piece Might look similar to parts of the impugned patent"". The invention claims to limit the short circuit torque which makes safety elements like shearing pin completely unnecessary. To limit the short circuit torque the (a) rotor in the invention has atleast two independent three phase windings. (b) the damper cage is omitted. (c) and pole heads of rotor are arrow shaped, briefly this is what the invention is (vide claim 1, 2 & 4), CA'156 claims to reduce noise by making the pole head arrow shaped. Trasi says that ""reduction in short circuit torque by employing independent windings is obvious and a natural consequence of reduction in overall short circuit current due to division of windings"". The respondents expert stated, that the CA'156 Patent is different from impugned patent because CA'156 Patent is ""directed to normal operation but not fault conditions"". Every machine, synchronous or any other is made to function in normal as well as fault condition. We do not find this reasoning convincing as short-circuit in the wind power generation is expected for which preventive or curative measures are known to be made such as damper cages/shearing spindle. It is known that torque is directly proportional to the sum of all component currents. It is known that 6 phase system can be split into two independent 3 phase system and in normal condition electrically it will function identically as poly phase system. This can also be inferred from the identical individual phase winding diagram of impugned patent in fig 3 and in fig 10 of CA'156. This alternative arrangement of winding is not an inventive advancement for application in the known synchronous machine with means such as arrow shaped pole heads. We find the statement of the inventor in specification that 'As a further measure for reducing the torque involved, it is proposed that the pole heads of the rotor are of an approximately arrow-shaped configuration' [page 5 line 1-2] as misleading when in CA'156 based on DE 19729034 [the respondent's own patent] this arrow-shaped configuration

of the pole head has been disclosed and claimed (claim 5). In view of teaching of CA'156 we find that claimed invention does not involve an inventive step and it is liable to be revoked under section 64(1)(e).

91. Section 10 provides that all the claims in a complete specification shall have one (invention) inventive step or group of inventive features linked so

as to form a single inventive concept. We find that the invention claimed in claim 1 is not inventive in view of CA'156, all the subsequent claims being

dependent on claim 1 could at the most add only minor variations of feature which would not impart any inventive step into the dependent claims. In

other words dependent claims rise or fall with the independent claim 1. Finally, we find the claims as originally granted cannot be accepted as they

lack inventive step and when the conduct of the respondent is one of the reasons for not allowing the amendment, we are inclined to allow the

revocation application. Therefore, Patent No. 200608 is revoked.