



2026:DHC:3242



* **IN THE HIGH COURT OF DELHI AT NEW DELHI**

% Judgment delivered on: 17.04.2026

+ C.A.(COMM.IPD-PAT) 488/2022

NIPPON STEEL CORPORATION

.....Appellant

versus

THE CONTROLLER OF PATENTS

.....Respondent

Advocates who appeared in this case:

For the Petitioner : Mr. Vineet Rohilla and Mr. Rohit Rangi,
Advocates.

For the Respondents : Mr. Sumit Nagpal, SPC with Mr. Tanmay Saini
and Mr. Kunal Khurana, Advocates.

CORAM:

HON'BLE MR. JUSTICE TUSHAR RAO GEDELA

J U D G M E N T

TUSHAR RAO GEDELA, J. (ORAL)

1. The present appeal has been filed under Section 117A(2) of the Patents Act, 1970 (hereinafter referred to as '*the Act*') seeking *inter alia* quashing and setting aside of the Order dated 26.05.2020 issued by the respondent refusing appellant's patent application no.10182/DELNP/2012 (hereinafter referred to as '*subject application*').

2. The appellant had filed a Japanese Application no. 2010-119482 on 25.05.2010 before the Japanese Patent Office. On 19.05.2011, the PCT International Application no. PCT/JP2011/061510 was filed by the appellant. On 23.11.2012, the Indian application no. 10182/DELNP/2012 was filed before the Indian Patent Office, Delhi. The request for examination was filed by the appellant on 26.11.2012. The First Examination Report was issued by the Patent office on 01.06.2018 *inter*



alia raising the following objections:

- Lack of novelty under Section 2(1)(j) of the Act.
- Lack of inventive step under Section 2(1)(ja) of the Act.
- Lack of industrial applicability
- Lack of unity of invention
- Lack of sufficiency of disclosure
- Objection under Section 3 of the Act
- Scope, definitiveness and other requirements

3. Upon receipt of such objections as per the First Examination Report *vide* the response dated 25.10.2018, the appellant filed its detailed substantial reply. The Patent office issued a notice of hearing dated 03.01.2020 scheduling the date of hearing on 04.02.2020. Post hearing written submissions in reply to the objections raised in the hearing notice was filed by the appellant on 18.02.2020. Consequent thereto, the learned Controller by the impugned order dated 26.05.2020 refused the acceptance of the patent application on the ground of lack of inventive step under Section 2 (1) (ja) of the Act. Based on the aforesaid, the present appeal was filed.

4. Heard learned counsel for the parties.

5. At the outset, Mr. Vineet Rohilla, learned counsel for the appellant states that the impugned order has to be quashed and set aside for the mere reason that it violates the principles of natural justice. He makes the aforesaid submission good by stating that other than to reproduce the prior art Document D3, D2 and D1 extensively, the learned Controller has not considered any of the submissions tendered by the appellant nor has he given any reasons which are *sine qua non* for an order of this nature to be upheld.



6. With the assistance of the learned counsel for the parties, this Court has perused the impugned decision.

7. From a perusal of the impugned order, it appears that under the heading “*SCIENTIFIC AND TECHNICAL ANALYSIS*”, the learned Controller appears to have extracted extensively from the cited Documents D1, D2 and D3. So far as the analysis is concerned, the same appears to be bereft of any application of mind or the reason which could reasonably construed as sufficient for the purpose of the conclusion that the learned Controller arrived at. In order to make it more clear, it is appropriate to extract the entire impugned order hereunder:

“DECISION

The Applicant filed this application No. 10182/DELNP/2012 for the grant of patent on 23/11/2012 for the invention titled "PROCESS FOR PRODUCTION OF UNIDIRECTIONAL ELECTROMAGNETIC STEEL SHEET".

In this matter, the facts that have come to my knowledge and made available to me can be traced as follows:

23/11/2012:- Application for grant of patent was filed.

01/06/2018:- First examination report (FER) was issued to the Applicant.

25/10/2018:- Reply to FER was received from the Applicant to the Patent Office.

03/01/2020:- Hearing notice was issued by scheduling hearing on date 04/02/2020.

04/02/2020:- Hearing was attended by the Applicant/ Patent Agent.

18/02/2020:- Written submission for Hearing held on date 04/02/2020 received by this office from the Applicant.

Latest Amended Claims

Claim 1

[Claim 1] *A method of manufacturing a grain-oriented electrical steel sheet comprising:*

heating a silicon steel slab at 1280°C or below, the silicon steel slab containing, in % by mass, Si: 0.8% to 7%, and acid-soluble Al: 0.01% to



0.065%, with a C content of 0.085% or less, a N content of 0.012% or less, a Mn content of 1% or less, and a S equivalent $Seq.$, defined by " $Seq. = [S] + 0.406 \times [Se]$ " where $[S]$ being S content (%) and $[Se]$ being Se content (%), of 0.015% or less, and optionally at least one selected from the group consisting of Cr: 0.3% or less, P: 0.5% or less, Sn: 0.3% or less, Sb: 0.3% or less, Ni: 1% or less, Bi: 0.01% or less, B: 0.01% or less, Ti: 0.01% or less, Te: 0.01% or less and Cu: 0.4% or less by mass, and the balance of Fe and unavoidable impurities;

hot rolling the heated silicon steel slab so as to obtain a hot-rolled

steel strip;

annealing the hot-rolled steel strip so as to obtain an annealed steel strip;

cold rolling the annealed steel strip so as to obtain a cold-rolled steel

strip;

decarburization annealing the cold-rolled steel strip so as to obtain

a

decarburization-annealed steel strip in which primary recrystallization

is caused;

coating an annealing separating agent on the decarburization-annealed steel strip; and

finish annealing the decarburization-annealed steel strip so as to cause secondary recrystallization, wherein

the method further comprises performing a nitriding treatment in which a N content of the decarburization-annealed steel strip is increased between start of the decarburization annealing and occurrence of the secondary recrystallization in the finish annealing,

the hot rolling the heated silicon steel slab comprises:

finish rolling with a finish temperature of 950°C or below; and

starting cooling within 2 seconds after completion of the finish rolling, and coiling at 700°C or below,

a heating rate of the hot-rolled steel strip within the temperature range from 800°C to 1000°C in the annealing the hot-rolled steel strip is 5°C/sec or above, and

characterized in that a cooling rate over a duration from the completion of the finish rolling up to a start of the coiling is 13°C/sec to 14°C/sec.

Claims 2 to 5

Claims 2 to 5 are dependent on Claim 1 directly and indirectly.

SCIENTIFIC AND TECHNICAL ANALYSIS

Upon perusal of records, I found that the objection raised in Hearing Notice dated 03/01/2020 with respect to lack of inventive step still stands,



over considering hearing held on date 04/02/2020 and written submission was filed thereafter. Technical Features of current amended claims are lacking in inventive step and are not allowable u/s 2(1) (ja) of the Act over considering cited documents in combination as:

D1:US5261971 A,

D2:US2009/126832 A1 and

D3: SHAQing-yuna, LIGui-yana, QIAOLi-feng, YANPing-yuan "Effect of Cooling Rate and Coiling Temperature on Precipitate in Ferrite of a Nb-V-Ti Microalloyed Strip Steel" Journal of Iron and Steel Research, International Volume 14, Issue 5, Supplement 1, September 2007, Pages 316-319

Document D3 discloses effect of cooling rate ($1 - 30^{\circ}\text{C/s}$) and coiling temperature ($650 - 550^{\circ}\text{C}$) on the fine precipitate in ferrite was studied on Gleeble simulator with a commercial Nb-V-Ti complex microalloyed strip steel. The result show that the interphase precipitations appear at the cooling rate of 1°C/s and 5°C/s . The volume fraction of general precipitation under 10nm will decrease with the increasing cooling rate at the coiling temperature of 650°C and 600°C . At 550°C , the volume fraction of general precipitation was apparently reduced at cooling rate of 30°C/s . This may be related to the slow kinetic of the precipitation at lower temperature. The lower coiling temperature at the same cooling rate after hot rolling will lead to more general precipitation. This was contributed to the higher thermodynamic driving force of the precipitation at lower coiling temperature. (Abst of D3)

D3 discloses also that precipitate in ferrite mainly focus on its morphology, size and orientation relationship with ferrite, the qualitative and quantitative characterization of NbC precipitation in ferrite remains incomplete¹⁵¹. For instance, the effect of TMCP parameters, such as cooling rate after hot rolling and coiling temperature, on the fine precipitation is poorly known for the microalloyed steel, especially for the Nb-V-Ti complex microalloyed steel. (Page 316 of D3)

D3 also discloses that Effect of cooling rate Fig.2 shows the effect of cooling rate after hot rolling on the general precipitation for sample coiling at 600°C and 550°C . The effect was almost the same for sample coiling at 650°C and 600°C . With increasing cooling rate, the size of precipitation decrease whiles its volume fraction increase. At the coiling temperature of 550°C , the effect of cooling rate are still the same with that of 650°C and 600°C except the cooling rate is 30°C/s at which the general precipitation was hardly seen, as shown in Fig.2 (h). Actually the microstructure of the sample coiling at 550°C with the cooling rate of 30°C/s Is show the highest dislocation density in all sample studied. It should have much more general precipitation as it nucleated at dislocation. So the fewer general precipitation may be contributed to the



slow kinetic of general precipitation at 550°C together with rapid cooling rate. At the same coiling temperature, the slower cooling rate always mean that the precipitate could take place at higher temperature for a longer period of time, promoting growth and coarsening of the precipitation. Thermodynamic driving force for precipitation is related to two closely connected factors, the degree of undercooling (ΔT) and the supersaturation of the solute. The faster cooling rate will lead to a larger undercooling and higher supersaturation of solute for precipitation and thus larger driving force, so more fine particles will occur at lower temperature. As the solubility data about microalloying element in ferrite are very limited, the explanation of what observed will be done based on further study in the future. In Effect of coiling temperature, effect of coiling temperature on the fine precipitate are shown in Fig.4 for samples coiling at 650°C, 600°C and 550°C at cooling rate of 20°C /s after hot rolling. It is clear that the fine precipitation under 10 nm increase in its volume fraction and decrease in its size when coiling temperature decrease. As mentioned previously, when the coiling temperature decrease, it will lead to larger undercooling, higher supersaturation of solute especially at faster cooling rate That mean a larger driving force for the precipitation, resulting in more and fine precipitation. The decreasing coiling temperature will also produce lower temperature transformation microstructure with high dislocation density and the dislocation is the preferential nucleation site for the fine precipitate. The higher driving force and more nucleation site for fine precipitation will produce more and more fine precipitation. (Page 317-318 of D3)

Document D1 discloses a process for the production of a grain-oriented electrical steel sheet comprising 0.021 to 0.075% by weight of C, 2.5 to 4.5% by weight of Si, 0.010 to 0.060% by weight of acid-soluble Al, 0.0030 to 0.0130% by weight of N, up to 0.014% by weight of S+0.405 Se and 0.05 to 0.8% by weight of Mn, with the balance being Fe and unavoidable impurities discloses a method of processing the grain-oriented electrical steel above comprising the steps of heating to a temperature of 1300°C or lower; hot rolling the steel slab; to obtain a hot-rolled steel sheet (strip); annealing the hot rolled steel sheet (strip); cold rolling the annealed steel sheet (strip); subjecting the cold rolled steel sheet to decarburization annealing, coating with an anneal separating agent and final finish annealing (column 4, lines 41 -64; column 6, lines 1-25 and column 14, lines 48-62). It discloses a hot rolling finishing temperature of 700 to 1150°C; starting cooling about 1 second after hot rolling (column 6, lines 1 -25); winding (coiling) at a temperature of 700°C or below (column 14, lines 10-17); and water cooling, after hot rolling to 550°C at 200 °C/second, which would be over a duration from the completion of finish rolling to coiling.

Document D2 discloses (a) the hot-rolled sheet is heated to a prescribed



temperature of 1000° C. to 1150° C., and after recrystallization is annealed for a required time at a lower temperature of 850° C. to 1100° C. Otherwise, (b) in the hot-rolled sheet annealing process decarburization is conducted to adjust the difference in the amount of carbon before and after decarburization to 0.002 to 0.02 mass %. In this way, the grain structure of the annealed steel sheet, or lamella spacing of the grain structure of the steel sheet surface layer, is adjusted to 20 µm or more.

When annealing as in (a), from the viewpoint of promoting the recrystallization of the hot-rolled sheet, the first-stage annealing may be conducted at a heating rate of 5° C./s or higher, and more preferably 10° C./s or higher, at a high temperature of 1100° C. or above for a period of 0 s or more and at a low temperature in the order of 1000° C. and for 30 s or more. From the viewpoint of maintaining lamella structure, cooling following the second-stage annealing may be conducted at a cooling rate of 5° C./s or more, and more preferably 15° C./s or more. (Para 92-94 of D2)

Considering scientific and technical analysis of documents D1:US5261971 A, D2:US2009/126832 A1 and D3: SHAQing-yuna, LIGui-yana, QIAOLi-feng, YANPing-yuan "Effect of Cooling Rate and Coiling Temperature on Precipitate in Ferrite of a Nb-V-Ti Microalloyed Strip Steel" (Journal of Iron and Steel Research, International Volume 14, Issue 5, Supplement 1, September 2007, Pages 316-319) in combination, present application for patent lacks inventive step still stands as the applicant fails to persuade the same. Features of current amended claims are not inventive over cited documents as above and are not allowable u/s 2(1) (ja) of the Act.

Hence present alleged invention cannot be considered as inventive as it has not made any significant technical advancement in the field over the cited documents as above.

Response/ arguments made under other para and other submissions of written submission have been fully considered accordingly.

Conclusion:

Based on above, I am of opinion that the present amended claims are not allowed. Therefore, I hereby refuse the instant application 10182/DELNP/2012 u/s 15 of the Patents Act, 1970 (as amended)."

The aforesaid portions in Yellow, Green and Blue have been highlighted by this Court only for the purpose of demonstrating that the contents therein are nothing other than, verbatim reproduction of what has



been stated in the prior art Documents D1 to D3. Other than that it is clear that in one paragraph, the learned Controller has decided the application one way or the other. In fact, the analysis made by the Assistant Controller in the impugned order is emphasized in bold by this Court.

“Considering scientific and technical analysis of documents D1:US5261971 A, D2:US2009/126832 A1 and D3: SHAQing-yuna, LIGui-yana, QIAOLi-feng, YANPing-yuan "Effect of Cooling Rate and Coiling Temperature on Precipitate in Ferrite of a Nb-V-Ti Microalloyed Strip Steel" (Journal of Iron and Steel Research, International Volume 14, Issue 5, Supplement 1, September 2007, Pages 316-319) in combination, present application for patent lacks inventive step still stands as the applicant fails to persuade the same. Features of current amended claims are not inventive over cited documents as above and are not allowable u/s 2(1) (ja) of the Act.

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[Emphasis supplied]

8. It is apparent that there is no reasoning whatsoever by any standard. Though the impugned order states that the response/arguments and other submissions have been fully considered, there is no reference to it at all. The order cannot be sustained for the aforesaid reasons.

9. It is important to note that this court in C.A. (COMM.IPD-PAT) 4/2022 titled ***“Agriboard International LLC. vs. Deputy Controller of Patents and Designs”*** decided on 31.03.2022 held that while raising the objection of lack of inventive step under Section 2(1)(ja) of the Act, the controller has to discuss the invention disclosed in the cited prior art as well as the claimed invention in the application under consideration. Thereafter



the controller has to discuss the manner in which invention in question would be obvious to a person skilled in the art. The relevant paragraphs of the decision are reproduced hereunder:

“24. In the opinion of this Court, while rejecting an invention for lack of inventive step, the Controller has to consider three elements-

• the invention disclosed in the prior art, • the invention disclosed in the application under consideration, and • the manner in which subject invention would be obvious to a person skilled in the art.

25. Without a discussion on these three elements, arriving at a bare conclusion that the subject invention is lacking inventive step would not be permissible, unless it is a case where the same is absolutely clear. Section 2(1)(ja) of the Act defines 'inventive step' as under:

(ja) "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.

26. Thus, the Controller has to analyse as to what is the existing knowledge and how the person skilled in the art would move from the existing knowledge to the subject invention, captured in the application under consideration. Without such an analysis, the rejection of the patent application under Section 2(1)(ja) of the Act would be contrary to the provision itself. The remaining prior arts which are cited by ld. Counsel having not been considered in the impugned order, the Court does not wish to render any opinion in this regard.”

10. This judgment was recently followed in (COMM.IPD-PAT) 86/2022 titled ***“Crystal Crop Protection Limited vs Sudpita Dey Assistant Controller of Patents and Designs & Ors”*** decided on 08.04.2026.

11. The learned Controller, under the impugned order has not provided any such reasoning and the order has merely reproduced the paragraphs from the cited prior arts D1 to D3. It is apparent that the Assistant Controller/Controller are *quasi* judicial authorities from whom it is expected that the orders shall contain reasons for either acceptance or



2026:DHC:3242



refusal. Any order which has no reasoning cannot become the bedrock of a decision of this nature. In that view of the matter, this Court is of the considered view that the impugned order is unsustainable in law and is quashed and set aside.

12. Consequently, the appeal is allowed to that extent and the matter is remitted back to the Controller for a *de novo* consideration of the entire subject application.

13. In the interest of justice, it is deemed appropriate that patent application no.10182/DELNP/2012 be placed before another Assistant Controller/Controller for a fresh consideration. The decision shall be taken accordingly.

14. It is further directed that the Assistant Controller/ Controller shall ensure that the subject patent application is disposed of within a period not exceeding four months from the date of receipt of this order. The appellant shall also be afforded hearing and other further hearings, as required, by the learned Controller.

15. It is clarified that the merits of the case have not been examined and the learned Controller shall decide the subject application in accordance with law without being influenced by any observations made by this court in this order.

16. The appeal is disposed of without any order as to costs.

TUSHAR RAO GEDELA, J

APRIL 17, 2026/anj