Judicial Scrutiny of Inventive Step in India: A Case Comment on Pinnacle Engines Inc. v. Assistant Controller of Patents & Designs

Case Details

Title: Pinnacle Engines Inc. v. Assistant Controller of Patents & Designs
Court: Madras High Court
Date of Decision: April 30, 2024
Judge: Hon'ble Mr. Justice Senthilkumar Ramamoorthy
Citation: 2024:MHC:1951
Case Number: (T) CMA (PT) No.17 of 2023

Parties Involved:

The appellants, Pinnacle Engines Inc. (USA) and TVS Motor Company Ltd. (India), are the patent holders seeking protection for their invention related to internal combustion engines. The respondent, the Assistant Controller of Patents & Designs, Chennai, is responsible for examining patent applications. There is no alleged infringer in this case, as the dispute concerns a patent grant rather than infringement. The appellants challenged the rejection of their patent application before the Madras High Court.

Legal Provision Invoked:

The appellants filed their appeal under Section 117-A of the Patents Act, 1970, which provides a mechanism for challenging decisions made by the Controller of Patents. They argued that the rejection of their application did not properly assess the inventive step, as required under Section 2(1)(ja) of the Act.

Relief Sought by Appellants:

The appellants requested the court to **overturn the rejection** of their patent application and direct the Controller to grant the patent. They argued that their invention introduced novel design improvements that were neither anticipated nor rendered obvious by existing prior art references.

Outcome:

The Madras High Court set aside the rejection order, ruling that the Assistant Controller had failed to provide sufficient reasoning. The Court remanded the case for reconsideration by a different officer, instructing that a decision be made within three months.

Background & Technical Context

The invention in question relates to **opposed piston internal combustion engines**, a type of engine where two pistons move towards each other in a single combustion chamber. The key innovation claimed by the appellants is the introduction of non-collinear axes of translation,

which deviates from the traditional collinear design found in most opposed piston engines. By inclining the cylinder bores, the invention creates a V-shaped configuration, which allows for improved space utilization, enhanced combustion efficiency, and a more compact engine design.

Another significant improvement in the claimed invention is the opposite rotation of crankshafts**,** which helps reduce vibrations and improves engine stability. Additionally, the invention introduces a crank offset between each piston and its respective crankshaft, which minimizes mechanical friction and wear, leading to longer engine life and better efficiency. These features were central to the patent claims as they provided significant advantages in automotive applications.

The patent application originally contained 24 claims, but after initial objections from the Patent Office, the appellants amended it to 20 claims, emphasizing the crank offset and opposite crankshaft rotation as distinguishing features. However, the Assistant Controller of Patents rejected the application, arguing that these features were obvious in light of prior arts D1, D3, and D5. While these prior art references described opposed piston engines, they did not disclose the specific combination of non-collinear axes, crank offset, and opposite crankshaft rotation.

The appellants countered this rejection by asserting that their invention addressed key engineering challenges not resolved in prior art, such as better lubrication, improved combustion chamber accessibility, and reduced engine weight. They maintained that none of the cited prior arts individually or collectively suggested their specific configuration, and that their invention provided a distinct and non-obvious improvement over existing technology.

Upon review, the Madras High Court found that the Assistant Controller had failed to provide adequate reasoning for rejecting the patent. The rejection order merely stated that the claimed features were obvious without explaining how they were derived from prior art. Since the prior art did not explicitly disclose the combination of features claimed in the invention, the Court ruled that the patent application required re-examination. However, instead of granting the patent outright, the Court remanded the case for a fresh review, directing that the reconsideration be conducted by a different officer.

This ruling reinforces the principle that patent rejections must be well-reasoned and supported by a detailed prior art analysis. It highlights the importance of ensuring that innovative technical advancements are fairly evaluated, particularly in complex fields such as automotive engineering.

Statement of Facts

The dispute in this case revolves around Pinnacle Engines Inc. and TVS Motor Company Ltd., who sought a patent for an **opposed piston internal combustion engine** with **non-collinear** axes of translation, opposite crankshaft rotation, and a crank offset. The Patent Office, through the Assistant Controller of Patents & Designs, rejected the application, citing a lack of inventive

step, asserting that the claimed features were obvious in light of prior art references D1, D3, and D5.

The appellants argued that their invention represented a **s**ignificant technical advancement over conventional opposed piston engines and that the specific combination of non-collinear axes, crank offset, and opposite crankshaft rotation was not disclosed in any of the cited prior art references. They emphasized that their design improved efficiency, reduced engine size, and enhanced durability, making it a novel and non-obvious innovation.

The cause of action arose when the Patent Office rejected the application despite the appellants amending their claims to better highlight the novel features. The appellants subsequently filed an appeal under Section 117-A of the Patents Act, 1970**,** arguing that the rejection lacked a proper analysis of inventive step. They contended that the Assistant Controller failed to explain how prior art references rendered their invention obvious, and instead merely listed existing technologies without conducting a comparative assessment.

During the lower proceedings, the Patent Office upheld the rejection, maintaining that the claimed modifications were a mere design variation and lacked inventive merit. However, the appellants challenged this conclusion, stating that the Patent Office did not adequately consider the advantages conferred by their invention, including reduced mechanical friction, better lubrication, and improved combustion chamber accessibility.

The appellants sought relief in the form of overturning the rejection order and directing the Controller of Patents to grant the patent. They asserted that their invention met all statutory requirements for patentability and that the Assistant Controller's order was arbitrary and lacked detailed reasoning.

The Madras High Court ruled in favor of the appellants, finding that the rejection order was unreasoned and failed to consider the technical advancements claimed. The Court emphasized that a mere assertion of obviousness without substantive analysis was insufficient grounds **for** rejecting a patent. It set aside the rejection order and directed that the patent application be **re-**examined by a different officer within three months, ensuring a fair and thorough reconsideration.

This case underscores the necessity for comprehensive prior art analysis in patent assessments and highlights the role of the judiciary in ensuring that innovative advancements receive fair evaluation under Indian patent law.

Procedural History (PH)

The case originated when Pinnacle Engines Inc. and TVS Motor Company Ltd. filed their patent application with the **Indian Patent Office** under Application No. **8612/CHENP/2012**. Following a **First Examination Report (FER)** issued in **2018**, the applicants amended their claims in response to objections raised by the examiner regarding lack of inventive step.

Despite these amendments, the Assistant Controller of Patents rejected the application on September 24, 2020, citing prior art references D1, D3, and D5.[1]

The appellants subsequently filed an appeal before the Madras High Court under Section 117-A of the Patents Act, 1970, arguing that the rejection order lacked proper reasoning and failed to evaluate the novelty of the claimed invention. They asserted that the Patent Office did not sufficiently analyze the technical advancements and advantages offered by their invention.

The Madras High Court reviewed the case and found that the Assistant Controller's rejection order did not provide a detailed assessment of how the cited prior art rendered the invention obvious. The Court ruled that the rejection was unreasoned and arbitrary, setting aside the decision. However, instead of granting the patent outright, the Court remanded the case for reconsideration by a different officer, instructing that a final decision be made within **three months**.

This procedural journey highlights the significance of thorough analysis in patent examination and the judiciary's role in ensuring fairness in the assessment of technical innovations.

Issues

Substantive Issues:

1. Whether the claimed invention satisfies the **inventive step** requirement under **Section 2(1)(ja) of the Patents Act, 1970**, considering the cited prior art references.
2. Whether the combination of **non-collinear axes of translation, opposite crankshaft rotation, and crank offset**constitutes a patentable improvement over conventional opposed piston engines.
3. Whether the Assistant Controller of Patents correctly applied the principles of **novelty and non-obviousness** in evaluating the patent application.

Procedural Issues:

1. Whether the rejection order issued by the **Assistant Controller of Patents** was legally sufficient, given that it lacked a **detailed reasoning and comparative assessment** of prior art.
2. Whether the **misinterpretation of prior art references** (D1, D3, and D5) led to an erroneous rejection of the patent application.
3. Whether the **failure to provide proper justification for rejecting the inventive step argument** constitutes a procedural error requiring reconsideration of the patent application.

[1] Indian Patent Office, 'Patent Examination Guidelines' (2021) https://www.ipindia.gov.in/writereaddata/Portal/Images/pdf/Patent_Examination_Guidelines.pdf accessed 10 March 2025.

Judgment

Precedents Considered: The court referred to *Novartis AG v. Union of India & Others*, emphasizing that an invention must demonstrate significant technical advancement beyond prior art to be patentable. The case reaffirmed that minor modifications lacking inventive step do not qualify for patent protection. Additionally, the court considered *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries*[2], which highlighted that obviousness must be assessed from the viewpoint of a skilled person in the field, requiring a clear motivation from prior art.

Issue-by-Issue Examination:

1. Inventive Step and Patent Validity:
    - *Appellants' Position:* The appellants asserted that their invention introduced a novel combination of non-collinear axes of translation, opposite crankshaft rotation, and crank offset, which was neither anticipated nor rendered obvious by cited prior art.[3]
    - *Respondent's Position:* The Patent Office contended that the modifications were well-known in the field and did not constitute an inventive step.
    - *Court's Analysis:* The court found that the rejection order lacked a comparative assessment of prior art and failed to explain why the claimed invention would be obvious to a skilled person. The absence of explicit disclosure of the claimed combination in prior art suggested that the invention could not be deemed obvious without further analysis.
2. Procedural Adequacy of the Rejection Order:
    - *Appellants' Position:* The appellants contended that the Assistant Controller's order lacked detailed reasoning and failed to provide a structured justification for rejection.
    - *Respondent's Position:* The respondent maintained that prior art sufficiently demonstrated the lack of inventive step.
    - *Court's Analysis:* The court found that the rejection order was arbitrary and did not meet the legal standard for patent examination. It emphasized that patent

[2] *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries* [1979] 2 SCC 511 (SC).

[3] European Patent Office (EPO), 'Inventive Step Guidelines' https://www.epo.org/law-practice/legal-texts/html/guidelines/e/g_vii_5.htm accessed 12 March 2025.

rejection orders must contain clear reasoning and comparative analysis to ensure fairness and transparency.

3. Procedural Errors and Patent Examination Standards:
    - The court noted that procedural lapses in the examination process affected the fair evaluation of the invention. Examiners must provide a step-by-step reasoning rather than assume obviousness based on broad similarities.
    - The court reaffirmed that a fair patent assessment requires considering whether a claimed modification significantly advances technology rather than being a minor variation of existing knowledge.

Court's Decision:

1. Patent Validity: The court did not conclusively rule on the validity of the patent but emphasized that further detailed examination was necessary.
2. Remedies Ordered: The court set aside the rejection order and remanded the case for reconsideration by a different officer to ensure an unbiased evaluation.
3. Procedural Correction: The court mandated that the Patent Office issue a fresh decision within three months, incorporating a detailed comparative analysis of prior art.

The judgment reinforced the necessity of reasoned decision-making in patent examination and emphasized that patent authorities must thoroughly analyze inventive step claims before rejecting applications.

Holding

The Madras High Court held that the rejection order issued by the Assistant Controller of Patents & Designs was procedurally flawed and lacked a well-reasoned explanation for the alleged lack of inventive step. While the court did not directly grant the patent, it determined that the rejection was unjustified due to inadequate assessment and reasoning. The court ruled that a reconsideration of the patent application was necessary, ensuring a fresh and unbiased evaluation.

The court reiterated that patent examiners must **conduct a proper legal and technical analysis**, explicitly comparing the claimed invention with prior art, and not merely assume obviousness based on superficial similarities. It emphasized that the assessment of inventive step must be rigorous and supported by clear reasoning rather than broad assertions.

Additionally, the court acknowledged that the patent application had been pending for a considerable period and that procedural delays should not impede genuine innovation. It highlighted that the reconsideration must be conducted fairly and expeditiously, ensuring that patent examination standards are upheld while providing due consideration to technological advancements. The judgment reinforced the need for transparency in decision-making and underscored the role of patent authorities in fostering an environment that encourages research and development.

By setting aside the rejection and ordering a fresh review, the court reinforced the principle that **decisions in patent matters must be backed by thorough reasoning and an evidence-based approach** rather than conclusory statements. The ruling serves as a crucial reminder that procedural fairness and substantive legal analysis must go hand in hand in intellectual property rights adjudication.

Rule of Law/Legal Principle

The court applied key legal principles from the **Patents Act, 1970**, particularly **Section 2(1)(ja)**, which defines an inventive step as a **technical advancement or an economic significance** that is not obvious to a skilled person in the field. The court reaffirmed that merely combining known features does not negate an invention's novelty unless prior art explicitly teaches or suggests such a combination.

The distinction between **novelty and inventive step** was emphasized, clarifying that an invention must not only be new but also **non-obvious**. The court stressed that **obviousness must be assessed objectively**, determining whether a skilled person, upon reviewing prior art, would have been led to the claimed invention without undue effort. Mere aggregation of existing elements does not qualify as an inventive step unless it leads to a **new and unexpected technical advantage**.

The court relied on Novartis AG v. Union of India[4], where it was held that incremental innovations must demonstrate substantial improvement in efficacy or functionality. It also referred to Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries, which established that obviousness must be determined based on whether a skilled practitioner would have found the modification apparent. Furthermore, the Windsurfing International Inc. v. Tabur Marine (Great Britain) Ltd[5]**.** test for obviousness was considered, which involves:

1. Identifying the person skilled in the art and their general knowledge.
2. Determining the inventive concept within the claim.
3. Analyzing the differences between prior art and the invention.
4. Assessing whether these differences would have been obvious to a skilled person.

The ruling reinforced that patent examination must be fact-driven, ensuring that prior art analysis explicitly identifies teachings or suggestions that would lead a skilled person to the claimed invention. The decision also addressed **claim construction principles**, asserting that claims must be **interpreted in their full context** rather than arbitrarily broadened or narrowed.

Reasoning

[4] *Novartis AG v. Union of India* [2013] 6 SCC 1 (SC).

[5] *Windsurfing International Inc. v. Tabur Marine (Great Britain) Ltd* [1985] RPC 59 (CA).

The court's reasoning in this case focused on three key areas: claim construction, application of law to facts, and policy considerations.

1. **Claim Construction:**
    - The court emphasized that **patent claims must be read in light of the complete specification**, ensuring that the claimed invention is interpreted fairly and in accordance with its technical disclosure. It criticized the Assistant Controller for failing to properly assess how the claimed elements—such as the non-collinear axes of translation, opposite crankshaft rotation, and crank offset—differed from prior art.
    - The ruling reaffirmed that **claims should not be narrowly construed to reject an invention outright**, nor should they be arbitrarily broadened to include elements that are not explicitly disclosed in the patent.
2. **Application of Law to Facts:**
    - The court applied **Section 2(1)(ja) of the Patents Act, 1970**, stating that the inventive step requirement necessitates a **technical advancement** that is not obvious to a person skilled in the art.
    - It found that the Assistant Controller had **failed to demonstrate how the claimed invention was obvious**based on prior art. The court pointed out that the rejection lacked a structured, comparative analysis explaining why a skilled person would have been led to combine the cited prior art elements in the same manner as the appellants' invention.
    - The court held that the **mere existence of similar prior art does not automatically render an invention obvious**; rather, there must be an explicit motivation, suggestion, or teaching in prior art that leads a skilled person to make the claimed modifications.[6]
3. **Policy Considerations:**
    - The ruling underscored the importance of **balancing patent rights with public interest**. The court acknowledged that while patents should not be granted for trivial modifications, **genuine technological advancements must be recognized and protected** to incentivize innovation.
    - The decision reinforced that **procedural fairness in patent examination is crucial** for maintaining confidence in the intellectual property system. The court noted that an improperly reasoned rejection discourages investment in research and development, ultimately hindering technological progress.

[6] Christopher Wadlow, *The Law of Passing-Off: Unfair Competition by Misrepresentation* (5th edn, Sweet & Maxwell 2016).

- It emphasized that the **patent system should not stifle innovation through arbitrary rejections**, as doing so would **discourage inventors from pursuing novel solutions to existing technological challenges**.

The court's reasoning, therefore, was centered on ensuring that **inventive step assessments are conducted rigorously, transparently, and in accordance with established legal principles**. By setting aside the rejection order and mandating a fresh review, the judgment reinforced the principle that **intellectual property rights must be evaluated fairly, ensuring that patent protection is granted only to deserving innovations**.

Concurring/Dissenting Opinions

The case was adjudicated by a **single-judge bench**, and as such, there were no separate concurring or dissenting opinions. However, the judgment implicitly addressed potential alternative perspectives that could arise in similar cases concerning **claim construction, prior art analysis, and inventive step evaluation**.

While the court found that the **Assistant Controller had failed to provide adequate reasoning** for rejecting the patent, an alternative viewpoint might have emphasized that **incremental advancements** in known technologies should be subject to stricter scrutiny to prevent overbroad patent monopolies. A more conservative approach to patentability could argue that the modifications in the claimed invention—such as **the crankshaft orientation and non-collinear axes of translation**—do not significantly depart from known techniques and should not merit patent protection.

On the other hand, a stronger pro-innovation stance might argue that **any technical improvement, regardless of scale, contributes to industrial progress** and should be encouraged through patent protection, provided it meets statutory requirements. This perspective would stress that the **balance between innovation and preventing undue monopolization** should favor granting patents where possible, rather than imposing excessively high thresholds for inventive step.

Although no formal dissent existed in this case, these differing interpretations underscore the ongoing debate in **intellectual property law** regarding the scope and limits of patentability, particularly in rapidly evolving technological fields.

Critical Evaluation

The judgment in *Pinnacle Engines Inc. v. Assistant Controller of Patents & Designs* presents a well-reasoned critique of procedural shortcomings in patent examination. One of its greatest strengths lies in its emphasis on reasoned decision-making. The court correctly identified that the Assistant Controller had failed to provide a structured and analytical justification for rejecting the patent application. By highlighting this deficiency, the ruling reinforces the

principle that patent authorities must **articulate clear and legally sound reasons** when assessing inventive step.

Another strength of the judgment is its alignment with **established patent law principles**. The court reaffirmed that obviousness cannot be presumed merely because elements of an invention exist in prior art. Instead, it must be demonstrated that a person skilled in the art would find it obvious to combine such elements in the claimed manner. This approach adheres to global patent[7] law standards, including the Windsurfing International Inc. v. Tabur Marine testand the Novartis AG v. Union of India ruling, ensuring that inventive step assessments are rigorous and legally sound.

However, a notable limitation of the judgment is that it did not conclusively determine whether the claimed invention meets the inventive step requirement. By remanding the case for reconsideration rather than issuing a definitive ruling, the court extended the uncertainty surrounding the patent's fate. While this ensures procedural fairness, it also leaves room for prolonged delays, which can **impact the commercial viability of innovative technologies**.

From a technical perspective, the ruling does not delve deeply into whether the claimed modifications such as the non-collinear axes of translation and opposite crankshaft rotation amount to a significant technological advancement. While the court rightly pointed out that the rejection order lacked a detailed analysis, it did not provide a robust independent evaluation of how the invention improves upon existing designs. A more comprehensive technical assessment could have strengthened the judgment's impact on clarifying the threshold for inventive step in mechanical engineering patents.

The broader impact of this ruling on **innovation and competition** is significant. By emphasizing the need for **reasoned patent examination**, the judgment discourages arbitrary rejections and ensures that genuine innovations receive due consideration. This creates a more predictable and transparent patent system, fostering greater investment in research and development. At the same time, the ruling does not automatically endorse all incremental advancements as patentable, maintaining a balance between incentivizing innovation and preventing monopolistic overreach.

In conclusion, the judgment serves as an important precedent for improving the quality of patent examination in India. While its procedural fairness and adherence to legal principles are commendable, a more substantive analysis of the technical merits of the invention would have further strengthened its impact. Nonetheless, the ruling contributes to a more robust and transparent intellectual property framework, ultimately benefiting innovators, businesses, and the broader technology sector.

[7] World Intellectual Property Organization (WIPO), 'Patentability Requirements' https://www.wipo.int/patents/en/ accessed 12 March 2025.