



Annexure A

2024:DHC:4978



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

%

Reserved on: 14th May, 2024

Pronounced on: 4th July, 2024

+ CS(COMM) 628/2023 CC(COMM) 1/2024, I.A. 17218/2023, I.A. 17219/2023, I.A. 18297/2023, I.A. 5765/2024, I.A. 9850/2024, I.A. 9851/2024, I.A. 9852/2024 & I.A. 10717/2024.

ITW GSE APS & ANR.

..... Plaintiffs

Through: Mr. Pravin Anand, Ms. Vaishali R. Mittal, Mr. Siddhant Chamola and Mr. Gursimran Singh Narula, Advs.

versus

DABICO AIRPORT SOLUTIONS PVT LTD & ORS..... Defendants

Through: Mr. Saikrishna Rajagopal, Mr. Himanshu Bagai, Ms. Garima Sahney, Mr. Kushal Gupta, Ms. Deepshikha Sarkar and Ms. Bhanu, Advs. for D-1 to 3.

Ms. Bitika Sharma, Mr. Sudeep Chatterjee, Mr. Rohan Swarup, Mr. George Vithayathil and Mr. Rakesh Karela, Advs. for D-4.

CORAM:

HON'BLE MR. JUSTICE ANISH DAYAL

JUDGMENT

%

TABLE OF CONTENTS

A. Introduction.....	2
B. Brief Facts.....	3
C. Alleged infringing activities.....	7
D. Proceedings so far	8



2024:DHC:4978



E. Submissions on behalf of plaintiffs.....	11
F. Submissions on behalf of defendants	21
G. Submissions in rejoinder.....	25
H. Analysis.....	28
(i) Claim Construction.....	33
(ii) Invalidity of the Suit Patent and credible challenge	44
a. Lack of an inventive step	44
Prior Art D2 (US 4835977 (6/6/1989)).....	57
Prior Art D6 WO/1986/000977 (13/02/1986).....	58
Prior Art D14 (US 7207183).....	60
Finding on Lack of Inventive Step	61
b. Double Patenting.....	62
(iii) Infringement of the Suit Patent.....	63
a. Claim Mapping	65
I. Relief.....	70

I.A. 17216/2023 (Application under Order XXXIX Rule 1 and 2 CPC)

A. INTRODUCTION

1. This application under Order XXXIX Rules 1 and 2 of Code of Civil Procedure, 1908 (“**CPC**”) has been filed by plaintiffs as part of the suit seeking permanent injunction restraining defendants, and other persons acting for and on their behalf, from dealing with the impugned products manufactured by defendants and sold to airport authorities, either on an exclusive or on a principal to principal basis, as also from the act of using, making, selling, distributing, advertising, exporting, offering for sale,



2024:DHC:4978



importing or in any other manner, directly or indirectly, dealing in any product that infringes the subject matter of the plaintiffs' registered patent bearing number IN 330145 ("IN '145/ suit patent") and other attendant relief.

B. BRIEF FACTS

2. Plaintiff no.1, ITW GSE ApS, also known as AXA Power ApS is a Danish affiliate company of ITW and is the assignee of IN '145. It claims to be the leading supplier of Ground Power Units, Pre-Conditioned Air ("PCA") units, Cables and Hoses, as also claims to have delivered more than 90,000 units to customers in over 100 countries. Plaintiff No. 1 also claims to have manufactured and supplied PCA units, which are installed under the passenger boarding bridge or mounted on the apron at airports.

3. Plaintiff No.1 is the subsidiary of Plaintiff no. 2, Illinois Tool Works Inc., a corporation founded in 1912, and existing and functioning under the laws of the United States of America. Plaintiff No. 2 also claims to be an American Fortune 200 company. According to the plaint, plaintiff No. 2 is listed at the New York Stock Exchange and has a market capitalization of around US \$ 70 Billion, while plaintiff No.1's business falls under the specialty products category, which comprises about 11% of plaintiff No. 2's business.

4. Plaintiffs claim to employ about 46,000 people across 51 countries, as also to have 19,000 granted and/ or pending patents across the globe.

5. Plaintiffs' global revenue, as claimed, is as under:



2024:DHC:4978



Year	Revenue (in Millions of USD)
2022	15, 932
2021	14, 455
2020	12, 574
2019	14, 109
2018	14, 768
2017	14, 314
2016	13, 599
2015	13, 405
2014	14, 484

6. The subject matter of the present dispute relates to IN ‘145 titled “A Preconditioned Air Unit with Variable Frequency Driving”, registered in the name of AXA Power ApS. The suit patent relates to a PCA unit supplying preconditioned air, i.e., heated or cooled air, to an aircraft parked on the ground. IN ‘145 is directed to a PCA unit which has a variable frequency driver (“VFD”). The suit patent has been nationalized in India via a PCT application, and according to the plaintiffs, had been granted in major jurisdictions, such as EPO, USA, and Japan.

7. The bibliographic details of the suit patent are as follows:

Patent No.	330145
Patent Application No.	7032/DELNP/2011
Title of the Invention	A preconditioned air unit with variable frequency driving
PCT Publication No.	WO/2010/106520
International Filing Date	March 18, 2010



2024:DHC:4978



Date of publication (S. 11A)	December 21, 2012
Date of priority	March 20, 2009
Date of grant	January 24, 2020
Date of publication of grant (S. 43)	January 24, 2010
Date of expiry	March 18, 2030

8. The suit patent was granted on 24th January, 2020. The main independent claim of the suit patent, according to the plaintiff, is *claim 1* and the suit patent, claims the following principal subject matter:

- a. The invention discloses a compressor with a VFD in each of at least two refrigeration systems of a PCA unit and each VFD is configured for variations of the power of the respective compressor.
- b. This configuration is such that the PCA can adjust cooling performed by the PCA unit based on the type of aircraft, ambient temperature, humidity, cabin temperature, outgoing temperature, and outgoing airflow from the PCA.
- c. PCAs are known in the art to save parked aircrafts from operating their Auxiliary Power Unit (“**APU**”) Engine.
- d. This invention discloses a PCA that is more flexible and more efficient by operating compressors in multiple refrigeration systems



2024:DHC:4978



through variable frequency control which reduces costs and increases serviceability.

9. According to the plaintiffs, patents corresponding to the suit patent have been granted in favour of the plaintiffs in at least five other jurisdictions across the world, including in the US and the EU.

10. The US and EP patents corresponding to the suit patent are US 9771169 and EP 2408669 respectively. The family of patents corresponding to the suit patent claims priority from the Danish patent application bearing number PA 2009 00392 dated 20th March, 2009, and its member patents are all based, according to the plaintiff, on essentially the same subject matter i.e. a preconditioned air unit with variable frequency driving.

11. According to the plaintiffs, PCA units manufactured using the suit patent are installed at airports and the plaintiffs have earned a revenue of more than USD 100 million since 2010. Recently, plaintiffs have installed PCA units at the Doha Airport in Qatar. Plaintiffs have further installed several PCA units in India, particularly at airports in Mumbai and Bengaluru.

12. Plaintiffs have also secured another patent bearing number IN 310952 (“IN ‘952”) in relation to another invention pertaining to PCA units. IN ‘952 has the same priority date as the suit patent, i.e. 20th March, 2009. According to the plaint, the scope of the suit patent and IN ‘952 are



2024:DHC:4978



different, in that the latter focuses on modularity, which is not the subject matter of the suit patent (*a fact highly contested between the parties*).

13. Defendant No. 1, Dabico Airport Solutions Pvt. Ltd. is a company incorporated under the laws of India. Dabico Netherlands Holding BV, Defendant No. 2 is a subscriber in defendant No.1 company. In 2008, defendant No. 1 was acquired by Cavotec SA (“**Cavotec**”), a Swiss company; and in 2022, defendant No.1 was acquired from Cavotec by defendant No. 3, Fernweh Group LLC. Defendant No. 4 manufactures the allegedly infringing PCA units for defendant Nos. 1 to 3.

C. ALLEGED INFRINGING ACTIVITIES

14. The grievance of the plaintiff is that since 2020 and in subsequent years, the defendants have bid in tenders floated by Government for installation of PCA units and have won tenders at Goa, Hyderabad and Delhi Airports. The technical specifications of these PCA units offered by defendants, according to plaintiffs, correspond with the claims of the plaintiffs’ suit patent.

15. Plaintiffs claim to have put the defendants to notice of the infringement of the suit patent in UK and in India since 2020. On 8th June 2020, ITW first initiated written correspondence with Cavotec indicating that the PCA unit described on Cavotec’s website has all the features of Claim 1 of EP ‘669, the suit patent’s corresponding European patent. According to the plaintiffs, the defendants in their correspondence



2024:DHC:4978



continued to evade questions on how their PCA units infringe the suit patent.

16. In March, 2023, the plaintiffs also initiated pre-litigation mediation with defendants; however, due to absence of any progress on this front, mediation failed on 4th September, 2023.

D. PROCEEDINGS SO FAR

17. Summons were issued in the suit on 06th September, 2023. Since the defendants chose not to disclose their products, plaintiffs filed an application being I.A. 17217/2023 seeking inspection of defendants PCA units through a Local Commissioner, which was refused by this Court by order dated 01st November, 2023. In this order, defendants' submission that their operation & instruction manuals and the Government tenders' specifications are sufficient for adjudication for infringement was noted by the Court. The Court recorded the defendants' statement in para 34 that they would stand by their own manuals, to which the plaintiffs seek to map their claim. The relevant paragraph is produced as under:

“34.... Mr. Saikrishna Rajagopal also points out, in this context, that his client stands by the specifications and features of the defendants' PCAs as contained in the documents on the basis of which the plaintiffs claim to have undertaken its claim-mapping exercise. That being so, he claimed to soliloquize (or, as he put it, "ask himself) as to the justification for the plaintiffs seeking a physical inspection based mapping by a local commissioner. He submits that, once the plaintiffs have themselves claimed to have adduced sufficient evidence to



2024:DHC:4978



establish infringement of the suit patent by the defendants' PCAs, and the document and material on which the said mapping was done was not denied by the defendants, there is no justification, whatsoever, for the prayers in this application.

35. I entirely agree.”

18. A Counter Claim has also been filed by defendants, *inter alia*, seeking revocation of IN ‘145.

19. Mr. Pravin Anand, counsel for plaintiffs, drew attention to a tabulation provided in their replication, giving a feature-wise breakdown of claim number 1 of the suit patent, which is extracted as under:

Feature 1.1	A preconditioned air unit (10) for supplying preconditioned air to an aircraft parked on the ground, the preconditioned air unit comprising:
Feature 1.2	a housing (12) accommodating a flow duct (20) with an air inlet for ambient air and an air outlet for connection to the parked aircraft
Feature 1.3	a blower (30) connected with the flow duct (20) for generation of an air flow from the air inlet (22) toward the air outlet (25)
Feature 1.4	a plurality of refrigeration systems (36), wherein each refrigeration system comprises: at least one compressor (38); at least one condenser (40); at least one expansion valve (42); at least one evaporator (44) connected in a flow circuit containing a refrigerant, and



2024:DHC:4978



	wherein the at least one evaporator (44) interacts with the air flow in the flow duct (20); and at least one variable frequency driver (46, 54, 56) for power supply of the at least one compressor (38); and
Feature 1.5	the housing (12) further accommodates a central controller (60) that is configured for controlling operation of the preconditioned air unit (10) including the variable frequency drivers (46, 54, 56) of the plurality of refrigeration systems (36), characterized in that
Feature 1.6	at least one variable frequency driver (46, 54, 56) has a controller that is configured for variation of the output frequency of the at least one variable frequency driver (46, 54, 56)
Feature 1.7	and the central controller (60) is connected to at least one controller of the at least one variable frequency driver (46, 54, 56).
Feature 1.8	wherein the central controller (60) automatically adjusts the cooling performed by the preconditioned air unit (10) to at least one of: the selected type of aircraft, the ambient temperature, the humidity, the cabin temperature, the outgoing temperature and the outgoing airflow from the preconditioned air unit (10).



2024:DHC:4978



E. SUBMISSIONS ON BEHALF OF PLAINTIFFS

20. Mr. Pravin Anand expanded on the basic features of the suit patent, with a presentation to support his submissions. The relevant aspects of his submissions are as under:

21. The PCA units are used to introduce fresh conditioned air into an aircraft cabin while the aircraft is parked at a gate for maintenance. The air is filtered, heated or cooled, and moisture is removed before delivery to the aircraft.

22. Conventionally, aircrafts used their own auxiliary power units to power jet fuel driven air conditioning equipment which were not cost effective nor environmentally friendly. The PCA unit is the replacement of the APU when the aircraft is on the ground.

23. The PCA unit draws air from ambient temperature on the airfield and cools it down. Based on the temperature profile of each airport, the PCA unit is engaged from the time the passengers disembark from an aircraft and the aircraft is serviced, till the embarkation of the passengers on the aircraft.

24. The objective of the suit patent was to design a PCA unit that is able to automatically adjust cooling performance, according to at least one of the following conditions: type of aircraft, ambient temperature, humidity, cabin temperature.

25. The crux of the suit patent was to supply preconditioned air using ambient air through multiple refrigeration systems controlled through a



2024:DHC:4978



central controller, which manages the VFDs attached to the compressor. The job of the central controller was to automatically adjust the cooling of the PCA depending on the type of aircraft, the ambient temperature, humidity, cabin temperature etc.

26. The components of a PCA unit and its housing are represented as under:

Components of a PCA Unit and Housing (Figure 1 – Suit Patent)

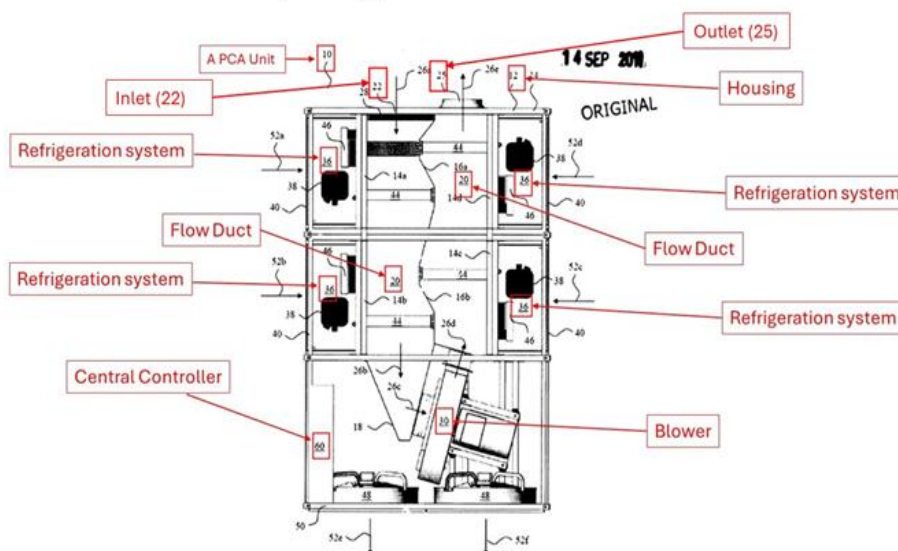


Fig. 1

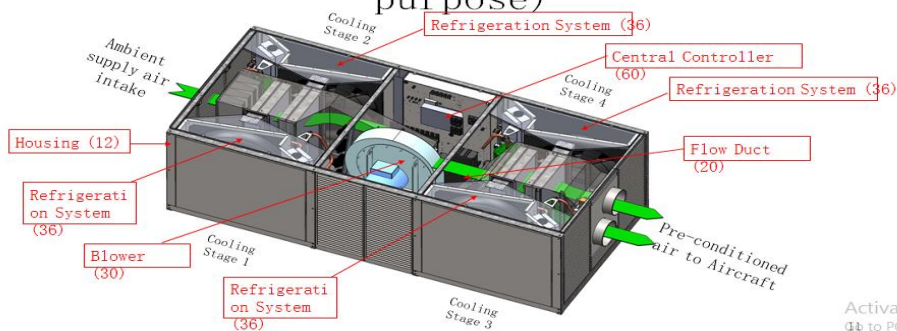
27. The 3D diagram for illustrative purposes has been provided by plaintiffs and extracted as under:



2024:DHC:4978



Components of a PCA Unit and Housing (3D – Diagram for illustrative purpose)

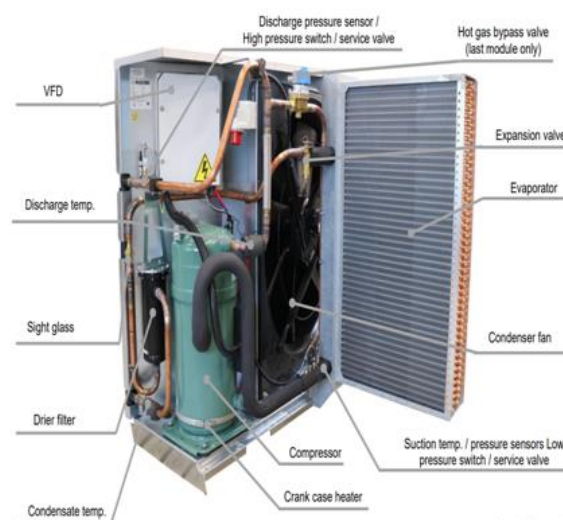


Activate V
Go to PC sett

28. Each refrigeration unit in the PCA comprises of an evaporator, compressor, expansion valve, condenser, air flow duct and VFD. The 3D diagram specifying these components in a refrigeration unit have been supplied by plaintiffs and extracted as under:

Components of 1 Refrigeration Circuit

- **Refrigeration** – It is the act of cooling i.e., removal of heat and discarding it at a high temperature.
- In a refrigeration cycle, a refrigerant passes through a circuit involving following components:
 - Compressor
 - Condenser
 - Expansion Valve
 - Evaporator
- These components essentially change the temperature and pressure of the refrigerant to produce cooling/heating.



Activate V
Go to PC sett



2024:DHC:4978



29. The refrigeration circuit involves the regular refrigeration cycle, but the refrigerant passes through a circuit involving these components, and it changes the temperature of the refrigerant to produce cooling or heating.

30. The compressor, which is the heart and soul of a refrigeration unit, was traditionally directly connected to the main power supply in conventional PCA units and, therefore, was limited by the supply. In the suit patent, the compressor is driven by the VFD which automatically adjusts the compressors operating speed to match the production of the compressed air. VFD essentially varies the frequency and voltage of the power supply. This allows the VFD to control the cooling requirements.

31. The VFD has a controller, configured for variation of the output frequency of the VFD, which in turn is connected to the central controller, which automatically adjusts the performance of each compressor, depending on the surrounding conditions.

32. In this background, Mr. Anand submitted, that the technical contribution of the suit patent, was a PCA unit, having at least two refrigeration systems, each system having a VFD controlled compressor, connected to a central controller. This allowed the individual compressors to run at different speeds, and therefore, managing the best and most efficient compressor speed mode. Without the suit patent, multiple refrigeration circuits will operate as per fixed capacity irrespective of their requirement, which could range from extreme hot in airports like Dubai to extreme cold in airports like Finland or seasonal variations in airports like



2024:DHC:4978



India. It also allows management of cooling in the event there is failure of any one refrigeration circuit, by varying the capacity of other circuits.

33. Plaintiffs' counsel submitted that while the suit patent (IN '145) was neutral to modularity, the plaintiffs other patent (IN '952) was a modular arrangement in which the refrigeration modules could be removed and readjusted in a modular process. The infringement claimed was *qua* the suit patent IN '145, and not IN '952.

34. Plaintiff's counsel claimed infringement of the suit patent by mapping it on various pieces of information of the defendants PCA unit as could be gleaned from:

- a) Brochure of defendants' PCA units when defendant No.1 to 3 used to trade under the brand *Cavotec*;
- b) Brochure and datasheets of defendant No.4, which is the manufacturer of *Cavotec* branded PCA units which are installed at various airports in India by defendant No.1.
- c) Operation, Maintenance & Trouble Shooting Manual for PCA unit (Model number PDX 60IS), which sets out details and specification of the defendants' PCA units.
- d) Tender documents (request for proposal) released on behalf of the airport authority at Goa, delineating the specification of the PCA unit. The defendants' bid under the tender was successful.



2024:DHC:4978



35. Plaintiffs further asserted that amongst the abovementioned documents, claim mapping with the Operation, Maintenance & Trouble Shooting Manual for PCA unit (*Model number PDX 60IS*) demonstrates the infringement of the suit patent unequivocally.

36. This was in context, as noted above, that defendant had not disclosed the product and plaintiffs' application for inspection by Local Commissioner, as noted above, was rejected by this Court.

37. The following aspects were highlighted by plaintiffs' counsel in relation to the claim for infringement, by giving a comparison of each feature of plaintiffs' PCA unit as shown in the tabulation at paragraph 19 above and relevant parts of the defendants' documents, especially the :

- i. *The operation and maintenance manual of the defendant's product specified that the product was a PCA unit.*
- ii. *The tender documents filed by the defendants would show that the PCA unit was in a housing which would map with feature 1.2.*
- iii. *Defendants' operation and maintenance manual would show that they used a blower which would map with feature 1.3.*
- iv. *The defendants' unit would show a plurality of refrigeration systems in the operation and maintenance manual which would map with feature 1.4 of the plaintiff's product.*
- v. *The defendants' operation and maintenance manual would show at least one variable frequency driver for power supply of at least one*



2024:DHC:4978



compressor with each refrigerant circuit having a compressor which was VFD controlled. This would map with feature 1.4 of the plaintiffs' unit.

- vi. *The defendants' operation and maintenance manual in the 'equipment description' and 'cooling mode' sections mentioned that the refrigeration circuits were connected to unit controls based upon a control architecture which could control how many circuits would operate and at what level depending upon the ambient and outlet air temperature sensors. This would map with feature 1.5 of the plaintiffs' unit.*
- vii. *Defendants' operation and maintenance manual while mentioning the variable frequency driver states that it controls and protects the compressor and its capacity based on the load requirement for maintaining output air temperature. This, according to the plaintiffs, maps to feature 1.6 of the plaintiffs' unit.*
- viii. *The automatic controls in the defendant's unit would determine how many circuits would operate and at what level, depending on input from ambient and air temperature sensors which maps to feature 1.7 of the plaintiffs' unit. The same would also map to feature 1.8 of the plaintiffs' unit.*

38. Similar mapping was done by the plaintiffs of their unit features with the RFP for Goa Airport, as the defendants were successful in winning the tender.



2024:DHC:4978



39. It was asserted by Mr. Anand that their PCA unit allowed each refrigeration system to operate at different operating conditions, enhancing its ability to deal with air having different air pressure and humidity. The VFD, therefore, achieved this purpose by being connected to each compressor in serial stages.

40. Plaintiffs had not intended to limit the scope of the claims to modularity and this was evident from the following: *firstly*, from independent claim 1 of the suit patent, which does not mention modularity and; *secondly*, since the complete specification of the patent merely elaborated on modular embodiment as an example, but does not disclaim a non-modular embodiment. Paragraph 74 of the complete specification was pointed out to state that no modular PCA units were part of the claims and the same is extracted as under:

“[74] Other preconditioned air units may be provided within the scope of the appended claims. For example, other preconditioned air units may be provided that are not modular. Also, preconditioned air units may be provided with different numbers of refrigeration systems, such as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 etc. refrigeration systems.”

41. On the issue of limitation, plaintiffs’ counsel relied upon various authorities which are enumerated as under, to essentially point out that it was improper to import a or “read-in” a limitation from the general discussion in specifications, embodiments and examples:



2024:DHC:4978



- i. *Donald S. Chisum, Chisum on Patents, A Treatise on the Law of Patentability, Validity and Infringement, Volume 5A*
- ii. *Conmark Communications, Inc. vs. Harris Corp*, 156 F.3d, 1182 (Fed. Cir. 1998)
- iii. *Teleflex, Inc. vs. Ficosa N. America Corp. and Ors.*, 299 F. 3d 1313, 1327 (Fed Cir. 2002)
- iv. *Terrell on the Law of Patents, 17th Edition*
- v. *Glaverbel SA vs. British Coal Corp. and Another*, [1995] R.P.C. 255.

42. Plaintiffs' counsel, *inter alia*, also pointed out various decisions of this Court to assert that patent rights in respect of claims are broader than the embodiments and that the reading of the claim should not be restrictive and limited, but should be read purposively. These decisions are enumerated below:

- i. *Ace Technologies Corp and Ors. vs. Communications Components Antenna Inc.*, 2023 SCC OnLine Del 2082 (decision of the Division Bench)
- ii. *F. Hoffman-La Roche Ltd. vs. Cipla*, 2015 SCC OnLine Del 13619 (decision of the Division Bench)
- iii. *Communication Components Antenna Inc. vs. Ace Technology Corp. and Ors.*, 2019: DHC: 3323 (decision of the Single Judge)



2024:DHC:4978



iv. ***Bayer Pharma Aktiengesellschaft vs. The Controller General of Patents and Designs***, 2024: DHC: 2395 (decision of the Single Judge)

43. Without prejudice to the submission by plaintiffs' counsel that the suit patent related to a non-modular PCA unit, it was further stated that the categorization was irrelevant as claims of the suit patent would be infringed both by a modular as well as a non-modular PCA unit.

44. It was submitted that plaintiffs have suffered irreparable harm having lost contracts for providing PCA units at several airports in India, including in Hyderabad, Goa and Delhi, claiming a loss of about US \$ 6 million in sales revenue.

45. Defendants had chosen not to secure patents in India but secured US2014/0102125 A1 in foreign jurisdictions through sister concerns such as Ipalco B.V., wherein the control unit performed a function similar to the suit patent. Moreover, balance of convenience was in favour of the plaintiffs since defendants failed to comment on claim chart mapping which should, therefore, be presumed to be correct.

46. Defendants have also withheld details of the infringing products from the Court and have not explained why the PCA units do not infringe the suit patent. The defence of non-modularity was raised only in the written statement. Defendant no.4, which is the manufacturer of the defendants PCA units, has not advanced any arguments and therefore would also have to be restrained in this regard.



2024:DHC:4978



F. SUBMISSIONS ON BEHALF OF DEFENDANTS

47. Mr. Saikrishna Rajagopal, counsel for defendants, effectively focused his submissions on the fact that despite the plaintiffs claim that their suit patent was non-modular, the essential features of the claim related to modularity, which feature is not present in the defendants' unit, which is integrated and not modular. He highlighted the following aspects:

48. A PCA unit effectively uses the same mechanism as that of conventional air conditioning system using the conventional refrigeration cycle which has been known since 1800s. It is, therefore, incapable of being patented under Section 3(d) and Section 3(f) of the Patent Act, as it is using the very same technology in a different environment. The claim itself mirrored a conventional air conditioning unit.

49. What is claimed by the plaintiffs as the principal inventive step is only the VFD controlled by a central monitoring unit used for optimization.

50. PCA however was not an inventive step as compared to earlier prior arts like an HVAC, and was a new name for an already existing technology.

51. There were four essential elements of a PCA unit - plurality, modularity, refrigeration units and controller. The modularity of refrigeration systems was well known in the prior art. Modularity was an essential aspect, which the defendants did not implement. The refrigeration units involved compressors, which is the basic component in a refrigeration



2024:DHC:4978



cycle. Furthermore, VFD controllers were well known before the priority date and were employed in multiple systems.

52. On modularity, prior art WO/1986/000977 (13/2/1986) [“D6”] was relied upon, which mentions both modular constructions permitting additional slave modules to be added to increase the capacity and the ability to manage shutdown of one module using a control circuit. The modularity enabled plug and play type operation of individual refrigeration systems. In a modular system, malfunctioning refrigeration unit could be replaced without the need to shut down the entire system, while in a non-modular system the entire unit has to be shut down for repair and maintenance. Plaintiffs’ earlier patent IN ‘952 had modularity and the suit patent is also essentially modular in its scope.

53. VFD compressors were well known before the priority date of the suit patent and were employed in multiple refrigeration systems. For this, defendants counsel relied upon Prior Art US7207183 [“D14”].

54. To assert its claim around modularity of the plaintiffs’ unit, defendants counsel highlighted parts of the specifications of the suit patent that clearly mentioned that the plurality of refrigeration systems were implemented in a modular fashion; the said extracts are as under:

“[47] Each of the self-contained cooling modules 36 can be installed in the housing 12 of the main unit without interfering with the refrigeration system of the module 36 so that assembly and possible disassembly of self-contained cooling modules 36 in the pre-conditioned air unit housing 12 can be performed by persons without



2024:DHC:4978



specific skills in the field of refrigeration systems. The self-contained cooling modules 36 may be manufactured at one site particularly suitable for manufacturing of refrigeration systems for subsequent integration with housings 12 of the main unit at a separate site particularly suitable for manufacturing flexibility and decreasing manufacturing cost of the preconditioned air unit without having to perform the cumbersome task of emptying the preconditioned air unit for refrigerant is made possible.”

55. Defendants counsel relied upon the decision in **Allergan Inc. vs. The Controller of Patents**, C.A (Comm IPD-PAT) 22/2021 to assert that the claims would have to be read in the light of specifications and the claims and accompanying specifications could not be dichotomized. In this regard, other decisions relied upon were: **Edward H. Philips vs. AWH Corporation, Hopeman Brothers, Inc. and Lofton Corporation**, 415 F. 3d 1303; **Nature Simulation Systems Inc vs. Autodesk, Inc.**, 23 F.4th 1334; **Nautilus Inc. vs. Biosig Instruments, Inc.**, 572 U.S 898 (2014).

56. It was also highlighted that, as for the plaintiffs, the problems in the prior art were cost, efficiency, flexibility and serviceability. In order for the suit patent to provide an answer to these problems, it had to be a modular PCA unit with a VFD compressor and a central controller and therefore, the plaintiff's argument that the claims of the suit patent were non-modular is not sustainable.

57. It was further argued that the suit patent is invalid on the following grounds: *firstly*, obviousness and lack of inventive step under Section 64 (1)(f); *secondly*, double patenting under Section 64 (1)(j) as also under



2024:DHC:4978



Section 53(4); *thirdly*, non-compliance of Section as per Section 64 (1)(m) was placed; and *fourthly*, it was submitted that the suit patent is not patentable under Section 64 (1)(k) read with Section 3(d) and 3(f) of the Patents Act.

58. Defendants’ counsel submitted that the PCA units were well discovered in the prior arts and reliance was placed on prior arts: US4835977 (6/6/1989) [“D2”] and US7461516B2.

59. Multiple and modular refrigeration systems were present in prior art D6 well as DE202008002015U1 (29/05/2008) [“D20”].

60. To the plaintiffs’ contention that the prior arts were non-analogous, defendants counsel relied on the ***KSR International Company v Teleflex Inc. Et Al.***, 550 U.S. 398 (2007).

61. It was submitted that the suit patent was a new use of a known apparatus which was not patentable under Section 3(d) of the Patent Act or was merely an arrangement of known devices and, therefore, was not patentable under Section 3(f) of the Patent Act.

62. Defendants also alleged that plaintiffs engaged in double patenting, since they filed two patent applications, one resulting in IN ‘952 and the second in the suit patent. According to the defendants, the specifications of the two patents were similar, and they essentially dealt with the same invention, same implementation, and providing the same solution to the same problem. Diagrammatic figures used for the two patents were also similar, as also the working statements. It was submitted that only one stray



2024:DHC:4978



line of modularity has been added to the suit patent, which is to be disregarded, since the specifications do not teach non-modularity. It was alleged that the plaintiffs misrepresented the Patent Office and, therefore, the suit patent was liable to be revoked under Section 64. Reliance for this was placed on decisions in *F. Hoffman-LA Roche Ltd. and Anr. vs. Cipla Ltd.*, 2009 (110) DRJ 452 (DB), *Glaverbel S.A. vs. Dave Rose & Ors.*, 2010 SCC OnLine Del 308, and *Sotefin SA vs. Indraprastha Cancer Society and Research Center & Ors.*, 2024: DHC: 2154. It was submitted that double patenting makes the patent vulnerable and invalid.

G. SUBMISSIONS IN REJOINDER

63. Mr. Anand submitted in rejoinder that the main problem which was being solved by the suit patent was not serviceability, but of control and management of the life of the compressor and ability to adjust cooling, depending on ambient conditions.

64. It was stated that the invention in the suit patent was neutral to the issue of modularity (reference was made to paragraph [74] of the specifications), and it was only the cooling modules that were “self-contained”. Further, it was submitted that since the claim did not limit itself to modularity, it essentially covered all options of modularity and non-modularity.

65. Plaintiff's counsel also stated that the challenge to the validity of the suit patent by the defendants was fanciful and not credible, since weightage had to be given to the Patent Office having granted the patent after scrutiny.



2024:DHC:4978



66. Reliance was placed on the decision of Division Bench of the Court in ***Intex Technologies vs. Telefonaktiebolaget LM Ericsson***, 2023: DHC: 2243 in particular on para 129 thereof.

67. On the issue that there was lack of inventive step in the suit patent, the plaintiffs' counsel relied upon the decision in ***Avery Dennison Corporation vs. Controller of Patents and Designs***, 2022 SCC OnLine Del 3659, which summarizes various principles and approaches for determining whether a patent lacks an inventive step, as also on the extract from a book on patent law authored by Justice Prathiba M. Singh. it was argued that the starting point of an inventive step analysis is to determine the state of the art at the time the invention was conceived, and whether on the priority date of the plaintiff's patent, a person skilled in the art would have thought it was obvious, given the technology prevalent and the common general knowledge, to have a central controller regulate multiple VFD run compressors on each refrigeration system.

68. It was submitted that the defendants defence on obviousness or lack of inventive step, therefore, had to fail as: *firstly*, the defendant had to combine 20 prior arts of different technical fields to state that the suit patent lacked inventive step, which was contrary to the principle enunciated in ***Prism Cement Limited vs. Controller of Patents and Designs***, 2020 SCC OnLine IPAB 25, where in para 32, it was observed that greater the number of documents which must be combined to reach the invention, higher is the likelihood that it has an inventive step; *secondly*, defendants failed to identify a person skilled in the art; *thirdly*, defendants claim that



2024:DHC:4978



conventional air conditioning was already covered is not borne out since PCA and HVAC units are not comparable; *fourthly*, defendants could not justify as to how its own sister concern Ipalco B.V. filed the US patent US2014/0102125 A1 (wherein the control unit performed a function similar to the suit patent.) 2 years after the priority date of the suit patent and was granted protection in the United States on 2nd February, 2020 (*later assigned in the name of defendant no. 2.*)

69. On mosaicing, Mr. Saikrishna Rajagopal, counsel for plaintiffs, countered by stating that it was legitimate to establish prior art through mosaicing, to which Mr. Anand stated that mosaic applies if one prior art links to another prior art.

70. Furthermore, it was submitted that reference to an old prior art of conventional refrigeration system cannot lead to an inference that it was obvious. The passage of at least 23 years since the prior art D6 shows that the invention was not obvious and reliance was placed on ***Avery Dennison*** (*supra*) for this assertion.

71. It was stated that in the prior art US7207183 (13/10/2005) the VFD was linked to a compressor in parallel whereas in the plaintiffs' case the VFD was connected to all the compressors.

72. On the issue of double patenting raised by defendants, it was submitted that there is no mention of the same in the Patents Act. However, the closest reflection of the concept would be in Section 64 (1)(a) and Section 13 (1)(b). It was further submitted that the scope of independent



2024:DHC:4978



claim 1 was significantly different and covered different aspects of the PCA units. IN '952 covered mechanical arrangements of refrigeration systems, that is, compartments and configuration of the compartments in the PCA unit. Furthermore, the two patents have the same priority date, and therefore, plaintiffs cannot be accused of evergreening.

73. Moreover, the First Examination Report issued by the Controller on 16th October, 2017 indicated that there were separate examination reports of both the inventions on the same date and therefore, there was no misrepresentation or suppression by the plaintiffs, the Patent Office being clearly aware of both the inventions which had been independently secured.

74. Lastly, plaintiffs' counsel submitted that defendants' contention that invalidity would also be on account of Section 3(d) and 3(f) of the Patent Act was not sustainable since the patent was not a process claim and also it was not a mere arrangement or rearrangement or duplication of devices functioning independently "*in a known way*".

H. ANALYSIS

75. Heard counsel for parties, and perused the material on record.

76. Plaintiffs claim that defendants' PCA unit infringes the plaintiffs suit patent IN 'I45, which is for a PCA unit with at least one VFD, supervised by a controller that is configured for variation of the output frequency. Plaintiffs specifically assert that they are not claiming monopoly over PCA units, which were known in the art, and that it is the presence of VFDs for



2024:DHC:4978



at least two compressors which distinguishes the suit patent. Therefore, plaintiffs' relief for infringement is based on this distinguishing feature.

77. For the purposes of further analysis, independent claim no.1 of the suit patent is extracted below (with parts of characterization underscored since it forms the crux of the invention; reference may be made to ***Guala Closures SPA v. AGI Greenpac Limited***, 2024 SCC OnLine Del 3510, a decision rendered by Justice Prathiba M Singh on 8th May 2024):

“A preconditioned air unit (10) for supplying preconditioned air to an aircraft parked on the ground, the preconditioned air unit comprising:

a housing (12) accommodating a flow duct (20) with an air inlet for ambient air and an air outlet for connection to the parked aircraft;

a blower (30) connected with the flow duct (20) for generation of an air flow from the air inlet (22) toward the air outlet (25);

a plurality of refrigeration systems (36), wherein each refrigeration system comprises:

at least one compressor (38);

at least one condenser (40);

at least one expansion valve (42);

at least one evaporator (44) connected in a flow circuit containing a refrigerant, and wherein the at least one evaporator (44) interacts with the air flow in the flow duct (20); and

at least one variable frequency driver (46, 54, 56) for power supply of the at least one compressor (38); and

the housing (12) further accommodates a central controller (60) that is configured for controlling operation of the preconditioned air unit (10) including the variable frequency drivers (46, 54, 56) of the plurality of refrigeration systems (36), characterized in that:



the at least one variable frequency driver (46, 54, 56) has a controller that is configured for variation of the output frequency of the at least one variable frequency driver (46, 54, 56); and the central controller (60) is connected to at least one controller of the at least one variable frequency driver (46, 54, 56); wherein the central controller (60) automatically adjusts the cooling performed by the preconditioned air unit (10) to at least one of: the selected type of aircraft, the ambient temperature, the humidity, the cabin temperature, the outgoing temperature and the outgoing airflow from the preconditioner air unit (10).”

78. The essential feature-wise breakdown of claim 1 as provided by plaintiffs is again reproduced as under for ease of reference:

Feature 1.1	A preconditioned air unit (10) for supplying preconditioned air to an aircraft parked on the ground, the preconditioned air unit comprising:
Feature 1.2	a housing (12) accommodating a flow duct (20) with an air inlet for ambient air and an air outlet for connection to the parked aircraft.
Feature 1.3	a blower (30) connected with the flow duct (20) for generation of an air flow from the air inlet (22) toward the air outlet (25).
Feature 1.4	a plurality of refrigeration systems (36), wherein each refrigeration system comprises: at least one compressor (38); at least one condenser (40); at least one expansion valve (42); at least one evaporator (44) connected in a flow circuit containing a



2024:DHC:4978



	refrigerant, and wherein the at least one evaporator (44) interacts with the air flow in the flow duct (20); and at least one variable frequency driver (46, 54, 56) for power supply of the at least one compressor (38); and
Feature 1.5	the housing (12) further accommodates a central controller (60) that is configured for controlling operation of the preconditioned air unit (10) including the variable frequency drivers (46, 54, 56) of the plurality of refrigeration systems (36), characterized in that
Feature 1.6	at least one variable frequency driver (46;54;56) has a controller that is configured for variation of the output frequency of the at least one variable frequency driver (46, 54, 56)
Feature 1.7	and the central controller (60) is connected to at least one controller of the at least one variable frequency driver (46;54;56).
Feature 1.8	wherein the central controller (60) automatically adjusts the cooling performed by the preconditioned air unit (10) to at least one of: the selected type of aircraft, the ambient temperature, the humidity, the cabin temperature, the outgoing temperature and the outgoing airflow from the preconditioned air unit (10)

79. The crux of the suit patent was to supply preconditioned air using ambient air through multiple refrigeration systems, controlled through a central controller, which manages the VFDs attached to the compressor.



2024:DHC:4978



The job of the central controller was to automatically adjust the cooling of the PCA unit depending on the type of aircraft, the ambient temperature, humidity, cabin temperature etc.

80. This was an improvement on a conventional PCA unit which was directly connected to the main power supply and was therefore, limited by it. Per the suit patent, the compressor, which is the heart and soul of a refrigeration unit, was driven by the VFD, allowing adjustment to the compressor's operating speed, depending on the variable cooling requirements. While the VFD controlled a compressor, the VFDs in turn were connected to a central controller, which would do the job of management of various refrigeration units, allowing each of the refrigeration units to function independently at varying capacities to adjust to the external requirements.

81. The plaintiffs claimed that defendants have been selling PCA units, which infringe the suit patent and have bid in tenders floated by the government, since 2020, including on tenders floated for airports at Goa, Hyderabad and Delhi.

82. According to plaintiffs, defendants were put to notice of the infringement of the plaintiffs' patent in UK, and in India. However, defendants remained evasive in their response. Subsequently, in March 2023, pre-litigation mediation was initiated by the plaintiffs. As the attempt at mediation was unsuccessful, plaintiffs filed the present suit. Therefore, the instant application for interim relief has been pressed by plaintiffs.



2024:DHC:4978



83. For the purposes of claiming infringement, first the claims are to be constructed and, thereafter, the claims are to be compared with the defendants' product.

84. For construction of claims, various judicial tests have been adopted to interpret the patent specifications and claims, *inter alia* the pith and marrow test, the test of purposive construction etc. This aspect will be adverted to a bit later.

85. As regards the second step of comparison, if substantive elements of claims can be found in the defendants' product through direct comparison or other methods, the defendants' product would be deemed to infringe the patent. Essentially, the defendant's product has to be compared with the claims of the patent to establish infringement. For the purposes of comparison, trivial variations do not matter. The Court has to make an assessment that the defendant's product is producing the same effect (reference be made to ***RX Prism Health Systems Private Limited v Canva Private Limited and Others***, 2023 SCC Online Del 4186).

(i) Claim Construction

86. Let us first deal with the first issue of claim construction.

87. The rival contentions on claim construction hinge on the issue of modularity of the PCA units. On one hand, defendants submit that the claims ought not to be constructed in isolation from the specifications; and when constructed through the prism of the specifications, the claims of the suit patent import an essential element of modularity to the invention, and



2024:DHC:4978



therefore, at the very threshold, there is no infringement, since the defendants' product is non-modular. To this, plaintiffs' counsel asserts that the claims have to be given their ordinary and plain meaning, and that "*reading-in*" a limitation into the claim through the specifications is impermissible. Plaintiffs contend that nowhere in the claims, read as they are, is there a claim of modularity, and the claims when read with the specifications are agnostic to the concept of non-modularity.

88. As per the plaintiff, the essential feature of the suit patent is the ability of the PCA unit to automatically adjust cooling performance, according to at least one of the conditions i.e. type of aircraft, ambient temperature, humidity, cabin temperature, outgoing temperature, and outgoing airflow from the PCA unit. This was achieved by driving the compressor through a VFD, and in turn controlling the various compressors with VFDs by a central controller.

89. A bare perusal of claim 1 of the suit patent shows that the claim is for a PCA unit comprising a housing, with a blower, and a plurality of refrigeration systems. Each of the refrigeration systems comprises at least one compressor, at least one condenser, at least one expansion valve, at least one evaporator, and at least one VFD, which in turn is controlled by a central controller.

90. In itself, claim 1 does not speak of modularity. Modularity essentially involves using a modular system, in that, sets of components can be attached or detached, without disturbing the other components. Importantly,



2024:DHC:4978



the other patent granted to the plaintiffs, being IN '952, with the same priority date, seems to in fact specifically advert to modularity.

91. The suit patent, on the other hand, focuses on the aspect of the VFD attached to the compressor and the management of various VFD's through a central controller. The comparative between claim no. 1 of the two patents is provided by plaintiff and extracted as under:

<u>Claims of IN' 145</u>	<u>Claims of IN' 952</u>
1. A preconditioned air unit (10) for supplying preconditioned air to an air to an aircraft parked on the ground, the preconditioned air unit comprising: a housing (12) accommodating a flow duct (20) with an air inlet for ambient air and air outlet for connection to the parked aircraft; a blower (30) connected with a flow duct (20) for generation of an air flow from the air inlet (22) toward the air outlet (25); a plurality of refrigeration systems (36), wherein each refrigeration system comprises: at least one compressor (38); at least one condenser (40); at least one expansion valve (42); at least one evaporator (44)	1. A preconditioned air unit (10) for supplying preconditioned air to an aircraft parked on the ground, the preconditioned air unit (10) comprising a main unit with a housing (12) accommodating a flow duct (20) with an air inlet (22) for ambient air an and an air outlet (25) for connection to the parked aircraft, a blower (30) connected with the flow duct (20) for generation of an air flow from the air inlet (22) toward the air outlet (25) and a plurality of compartments (34), each of which is configured for accommodation of a self-contained cooling module (36) comprising: at least one refrigeration system,



2024:DHC:4978



connected in a flow circuit containing a refrigerant, and wherein the at least one evaporator (44) interacts with the air flow duct (20); and
 at least one variable frequency driver (46, 54, 56) for power supply of the at least one compressor (38); and
the housing (12) further accommodates a central controller 60 that is configured for controlling operation of the preconditioned air unit (10) including the variable frequency drivers (46, 54, 56) of the plurality of refrigeration systems (36), **characterized in that:**

the at least one variable frequency driver (46, 54, 56) has a controller that is configured for variation of the output frequency of the at least one variable frequency driver (46, 54, 56); and

the central controller (60) is connected to at least one controller of the at least one variable frequency driver (46, 54, 56); wherein the central controller (60) automatically adjusts the cooling performed by the preconditioned air unit (10) to at least one of: the selected type of aircraft, the ambient temperature, the humidity, the cabin temperature, the outgoing

each of which includes at least one compressor (38), at least one condenser (40), at least one expansion valve (42), and at least one evaporator (44) connected in a flow circuit containing a refrigerant, **and wherein each compartment is configured so that the at least one evaporator (44) interacts with the air flow in the flow duct (20) when the self-contained cooling module (36) is installed in the compartment, and wherein at least one self-contained cooling module (36) is installed in the plurality of compartments (34).**



2024:DHC:4978



<u>temperature and the outgoing airflow from the preconditioned air unit (10).</u>	
--	--

92. *Ex facie*, it seems that while IN '952 focuses on the mechanical arrangement i.e. modularity, the suit patent relates to the electrical and functional aspects of a PCA unit. *Prima facie* this Court is agreeable with the plaintiff on this assessment. However, defendants' submission that the specifications of the suit patent essentially point to modularity and claims have to be construed in that light, needs to be examined in some detail.

93. Defendants point out to the use of the phrase “*plurality of refrigeration systems*” in claim 1 and submit that the reference numeral “36” used in the claim has been referred to as a “*self-contained cooling module*” throughout the specifications. In particular, attention has been drawn towards specifications [47], [49], and [51], which are extracted as under:

“[47] *Each of the self-contained cooling modules 36 can be installed in the housing 12 of the main unit without interfering with the refrigeration system of the module 36 so that assembly and possible disassembly of self-contained cooling modules 36 in the pre- conditioned air unit housing 12 can be performed by persons without specific skills in the field of refrigeration systems. The self-contained cooling modules 36 may be manufactured at one site particularly suitable for manufacturing of*



refrigeration systems for subsequent integration with housings 12 of the main unit at a separate site particularly suitable for manufacturing of airport ground equipment in general thereby increasing manufacturing flexibility and decreasing manufacturing cost of the preconditioned air unit 10. Further, the self-contained cooling module 36 may be stored as a spare part including the refrigerant, whereby repair of a preconditioned air unit without having to perform the cumbersome task of emptying the preconditioned air unit for refrigerant is made possible.

[49] Preferably, the self-contained cooling modules 36 are removably installed in the housing 12 of the main unit facilitating separation of an installed self-contained cooling module from the housing 12, e.g. utilizing screws, nuts and bolts for fastening each of the self-contained cooling modules 36 to the housing 12 and utilizing electrical connectors (not shown) to establish the required electrical interconnections between the cooling module and the housing 12 when the cooling module 36 is inserted in the housing 12 of the main unit 10.

[51] The removability of the modules 36 enhances the serviceability of the preconditioned air unit 10 since a possible malfunctioning self-contained cooling module can be separated from the housing 12 of the main unit 10 and replaced with a functioning module 36 with a minimum of down time of the preconditioned air unit 10. One cooling module 36 can be replaced in approximately 20 minutes. In the event that a functioning cooling module 36 is not available for substitution of the malfunctioning cooling module 36, the preconditioned air unit 10 will continue operation with the remaining cooling modules 36 i.e. the preconditioned air unit 10 remains fully operational, however with a lowered cooling capacity. Further, the malfunctioning module 36 can be moved for repair at a separate site particularly



suitable for repair of refrigeration systems. Also, the possible requirement of dismounting and moving the entire preconditioned air unit for repair of a cooling circuit is hereby reduced.

Preferably, the self-contained cooling module 36 has physical dimensions suitable for movement by a fork lift truck 47 as illustrated in Fig. 4 facilitating transportation of the module 36, e.g. for storage, assembly into a preconditioned air unit 10, and service. For example, a malfunctioning module 36 can be removed from the housing 12 with a fork lift truck 47 and a properly functioning module 36 can be installed in the housing 12 with a fork lift truck 47.”

94. To this, plaintiff’s counsel has drawn attention to paragraph [74] of the specifications, which specifically provides that other preconditioned air units may be provided in the scope of the appended claims, including ones which are not modular. On this basis, the plaintiffs claim that the complete specification merely elaborates a modular embodiment as an example, but does not disclaim a non-modular embodiment. Paragraph [74] of the specifications is extracted below:

“[74] Other preconditioned air units may be provided within the scope of the appended claims. For example, other preconditioned air units may be provided that are not modular. Also, preconditioned air units may be provided with different numbers of refrigeration systems, such as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 etc. refrigeration systems.”

(emphasis added)

95. The additional argument of the defendants is relatable to paragraph [4] of the specifications wherein the problem stated to be solved by the



2024:DHC:4978



invention is of cost, efficiency, flexibility and serviceability of PCA units. This, the defendants submit, can only be resolved by an apparatus which is modular in nature. Paragraph [4] of the specifications is extracted below:

“[4] Cost, efficiency, flexibility, and serviceability remain an issue in known preconditioned air units.”

96. Even though, various specifications do refer to the PCA containing a self-contained cooling module in their respective compartments (see for example specification [18], [33], [46], [48], [49], [51], reference may also be made to specification [41] where it is stated that the invention can be embodied in different forms and should not be construed as limited to the embodiments set forth herein. Paragraph [41] of the specifications is produced below:

“[41] The present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which exemplary embodiments of the invention are shown. The invention may, however, be embodied in different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments were provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art.”

(emphasis added)

97. It is also apparent from the reading of the specifications that the predominant aspect of the suit patent is of a compressor being driven by a VFD and details various aspects of how a VFD would control the respective compressors, as well as the central controller configured for controlling the operation. In this regard, reference may be made to



2024:DHC:4978



specifications [8] - [12], [15]-[17],[21]-[23],[25], [55]-[58], [60]-[62], [67]-[69].

98. Plaintiffs’ counsel’s submission that the fundamental principle is not to “*read in*” or import structural and functional limitations in the claim, or cut down or extend the clear meaning or language of the claim by reference to the body of specifications, and the reliance on *Chisum on Patents*, *Terrell on the Law of Patents*, 17th Edition, and ***Glaverbel SA vs. British Coal Corp*** (*supra*) appeals to this Court.

99. *Chisum on Patents* categorically proscribes the importation of limitations from the general discussion, embodiments and examples in the specifications. In this regard, the following extract is relevant:

“[A] Reading In or Importing Structural and Functional Limitations Into a Claim. The first caveat is that it is improper to import (i.e. “*read in*”) a limitation from the specification’s general discussion, embodiments and examples. Further, “[g]eneral descriptive terms will ordinarily be given their full meaning; modifiers will not be added to broad terms standing alone. This caveat bars the “*reading in*” of functional or process limitations as well as structural ones. Thus, it has been held improper to read a limitation on how an apparatus was used into a claim to the apparatus. Or a limitation on how a claimed structure was manufactured. On the other hand, an express structural limitation on a claim may be properly defined by reference to functional characteristics.”

100. *Terrell on the Law of Patents* echoes the same principle when it comes to claim construction, and states that it is not legitimate to cut down or extend the clear meaning of the claim. In coming to this conclusion,



2024:DHC:4978



reliance was placed on the decision in **Glaverbel SA vs. British Coal Corp** (*supra*) where the Court held that a patent is to be construed objectively, through the eyes of a skilled addressee. The Court also held that the whole document must be read together, the body of specifications with the claims. But if the claim is clear, the monopoly sought by the patentee cannot be extended or cut down by reference to the rest of the specifications and the subsequent conduct is not available to aid the interpretation of a written document.

101. These aspects have also been recognized by the Division Bench of this Court in **Ace Technologies** (*supra*), when it observes that patent rights are in respect of the claims and are broader than the preferred embodiments in the following paragraph:

“42. In our view, the said contentions are not destructive of the other. We agree with the contention that the embodiments cannot be read to expand the scope of the Claims. The question whether the appellants have raised a credible challenge to the Suit Patent is required to be considered in context of the Claims because the patent rights are in respect of the Claims and are broader than the preferred embodiments. However, the description of the Suit Patent and the preferred embodiments are relevant to interpret and understand the Claims.

43. In *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries* (*supra*), the Supreme Court had observed as under:—

*“43. As pointed out in *Arnold v. Bradbury*, [[1871] 6 Ch. App. 706] the proper way to construe a specification is not to read the claims first and then see what the full*



2024:DHC:4978



description of the invention is, but first to read the description of the invention, in order that the mind may be prepared for what it is, that the invention is to be claimed, for the patentee cannot claim more than he desires to patent. In Parkinson v. Simon, [(1894) 11 RPC 483] Lord Esher, M.R. enumerated that as far as possible the claims must be so construed as to give an effective meaning to each of them, but the specification and the claims must be looked at and construed together.”

44. *The claims cannot be read in isolation. It is necessary that the same be read in the context of specifications and the description of the patent. There is no dispute that the specifications and description of the patent are necessary for interpreting and understanding the claims. However, the specifications cannot broaden the claim. As stated above, the monopoly that the Patents Act grants is in respect of the specific claims and not the preferred embodiments.*”

(emphasis added)

102. A clear enunciation of the nuanced assessment required during claim construction is provided by the United States Court of Appeals (Federal Circuit) in **Conmark Communications** (*supra*) where it was stated as part of the discussion that: “*we recognize that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification*”.

103. The defendants attempt to distinguish these authorities and decisions, are unmerited. It was essentially asserted that a purposive construction of the claim must be adopted, and that such construction of the claim would result in interpreting the claimed term “*plurality of refrigeration systems*”



2024:DHC:4978



to be modularly interpreted, as that is the only embodiment sufficiently disclosed and enabled in the specification, while the non-modular embodiment was not “*enabled*”. However, this argument may not be sustainable. As stated above, the claim along with the specifications, seem to focus on the application of the VFD to the compressor, the variable controlling factor, and the overall central controller. The plurality of refrigeration systems as claimed, does not in itself assert modularity and, therefore, the claims would have to be seen as granted and it would be improper to read a critical limitation into the claims. As noted above, the difference with IN ‘952 is also dispositive in this regard, where modularity has been specifically claimed.

104. In any case, defendants have been unable to present any evidence of the fact that their PCA unit is non-modular in nature. The only submission canvassed before the Court was that the suit for infringement was not filed in relation to plaintiffs’ patent IN ‘952 because defendants PCA unit was non-modular in nature. However, no *prima facie* evidence has been presented in this regard.

(ii) Invalidity of the Suit Patent and credible challenge

a. Lack of an inventive step

105. Having accepted *prima facie*, the plaintiffs’ position that the claims are ‘agnostic’ to modularity and focus only on the VFD plus central controller, the defendants primary challenge then, as categorically



2024:DHC:4978



submitted, is that the suit patent ought to be revoked for being invalid due to lack of an inventive step and for being obvious in light of the prior art.

106. In this context, relying upon the decisions in **Glaverbel S.A. vs. Dave Rose & Ors.**, 2010 SCC OnLine Del 308, and **F. Hoffman – LA Roche Ltd. & Anr. vs. Cipla Ltd.**, 2009 (110) DRJ 452 (DB), and **Sulphur Mills Limited vs. Shree Ram Agro India & Ors.** 2024: DHC: 2154, defendants argue that if there exists a credible challenge to the validity of the suit patent, interim injunction cannot be granted in favour of the plaintiff.

107. Relying upon the decision in **F. Hoffman – LA Roche** (*supra*), another Division Bench of this Court in **Natco Pharma vs. Novartis AG and Another**, 2024 SCC OnLine Del 3064, recently expounded the law on this subject. According to the said decision, in order to raise a credible challenge to the validity of the suit patent, the defendant needs to merely show that the patent is vulnerable to being invalidated. Unless such credible challenge is made, the question as to validity of the suit patent is required to be determined at the stage of trial. Relevant observations in **Natco Pharma** (*supra*) are extracted below:

“43. Unless there is no real prospect of the defendant to succeed in its challenge and an appropriate application to allow the action is made prior to framing of issues, the questions as to the validity of the patent asserted, are required to be determined at the trial. However, at the stage of interim relief, the defendant has to establish its assertion that its defence is not insubstantial and sets out a credible challenge to the validity of the patent. The defendant is not required to establish that the patent is



2024:DHC:4978



invalid, it has to merely show that the patent is vulnerable. If the challenge raised to the validity is substantial, the threshold standard for resisting an interim injunction in this regard - subject to other relevant considerations-would be met. In this context, it is relevant to refer to the decision of the Division Bench of this Court in F. Hoffmann-LA Roche Ltd. v. Cipla Ltd.⁷. In the said case, the Division Bench had rejected the contention that the defendant had a heavy burden to discharge and would have to establish a stronger prima facie case than the plaintiff. The Division Bench had also not accepted the contention that since there is a multi-level examination of opposition to the grant of patent, it ought to be accorded the highest weightage. The relevant extract of the said decision is set out below:

“53. The plea of the plaintiff that since there is a multilayered, multi-level examination of the opposition to the grant of patent it should accorded the highest weightage, is not entirely correct. The contention that there is a heavy burden on the defendant to discharge since it has to establish that it has a stronger prima facie case of the plaintiff is contra indicated of the decisions in the context of Section 13(4). Reference may be made to the decisions in *Biswanath Prasad Radhey Shyam v. Hindustan Metal Industries*, (1979) 2 SCC 511 : AIR 1982 SC 1444 : Supp (1) PTC 731 (SC), *Standipack Pvt. Ltd. v. Oswal Trading Co. Ltd.*, AIR 2000 Del 23 : (1999) 19 PTC 479 (Del), *Bilcare Ltd. v. Amartara Pvt. Ltd.*, (2007) 34 PTC 419 (Del), *Surendra Lal Mahendra v. Jain Glazers*, 1980 SCC OnLine Del 219. In *Beecham Group Ltd. v. Bristol Laboratories Pty Ltd.*, (1967-1968) 118 CLR 618 and *Australian Broadcasting Corporation v. O'Neill*, (2006) 229 ALR 457 it was held that the defendant alleging invalidity bears the onus of establishing that there is “a serious question” to be tried on that issue. In *Hexal Australai Pty Ltd. v. Roche*



2024:DHC:4978



Therapeutics Inc., 66 IPR 325 it was held that where the validity of a patent is raised in interlocutory proceedings, “the onus lies on the party asserting invalidity to show that want of validity is a triable question.” In *Abbot Laboratories v. Andrx Pharmaceuticals Inc.* (decision dated 22nd June 2006 of the U.S. Court of Appeals for the Federal Circuit 05-1433) the Court of Appeals followed its earlier ruling in *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339 where it was held (at 1359): “In resisting a preliminary injunction, however, one need not make out a case of actual invalidity. Vulnerability is the issue at the preliminary injunction stage, while validity is the issue at trial. The showing of a substantial question as to invalidity thus requires less proof than the clear and convincing showing necessary to establish invalidity itself.” (emphasis supplied) In *Erico Int’l Corpn v. Vutec Corpn* (U.S. Court of Appeals for the Federal Circuit, 2007-1168) it was held that the “defendant must put forth a substantial question of invalidity to show that the claims at issue are vulnerable.”

54. In the present case, the grant of a patent to the plaintiffs for Erlotinib Hydrochloride as a mixture of Polymorphs A and B will not ipso facto entitle them to an interim injunction if the defendant is able to satisfy the court that there is a serious question to be tried as to the validity of the patent. The use by the learned Single Judge of the expressions “strong credible challenge”, “arguable case” or that the defendants claim being not unfounded, cannot be termed as vague and inconsistent since they convey the same meaning in the context of the strength of the defendant's challenge.

55. The question before this Court is when can it be said that the defendant has raised a credible challenge to the validity of a patent held by the plaintiff in an infringement action? During the course of the argument it was



2024:DHC:4978



suggested by counsel that the challenge had to be both strong and credible. Also, the defendant resisting the grant of injunction by challenging the validity of the patent is at this stage required to show that the patent is “vulnerable” and that the challenge raises a “serious substantial question” and a triable issue. Without indulging in an exercise in semantics, the Court when faced with a prayer for grant of injunction and a corresponding plea of the defendant challenging the validity of the patent itself must enquire whether the defendant has raised a credible challenge. In other words, that would in the context of pharmaceutical products, invite scrutiny of the order granting patent in the light of Section 3(d) and the grounds set out in Section 64 of the Patents Act, 1970. At this stage of course the Court is not expected to examine the challenge in any great detail and arrive at a definite finding on the question of validity. That will have to await the trial. At the present stage of considering the grant of an interim injunction, the defendant has to show that the patent that has been granted is vulnerable to challenge. Consequently, this Court rejects the contentions of the plaintiffs on this issue and affirms the impugned judgment of the learned Single Judge”

44. It is also relevant to refer to the decision of the learned Single Judge of this Court in Astrazeneca AB v. Intas Pharmaceuticals Ltd. In the said case, the learned Single Judge rejected the contention that since the suit patents were old, they should be presumed to be valid. The learned Single Judge did so for two reasons. First, the learned Single Judge found - much like in the present appeal where it is the stated case that ELT-O is covered under both IN' 176 and the suit patent IN' 161 - that there was an overlap in the genus patent and the species patent. And second, that the presumption of validity exists only till such time the patent is challenged and the



2024:DHC:4978



challenge is credible. The relevant extract of the said decision is set out below:

“51. Furthermore, the argument advanced on behalf of the plaintiffs that since the suit patents are old and thus, should be presumed to be valid cannot be accepted for two reasons.

i. First, there is a period of overlap between the genus patent i.e. IN 147 and the species patent i.e. IN 625. The defendants, in this case, chose to wait [in line with arguments advanced in their defence of the suit actions] till such time the validity period of the genus patent i.e. IN 147 expired.

ii. Second, as indicated above, the scheme of the Act does not foreclose the right of the defendants in defence to an infringement action to question the validity of the patent. Section 107 of the Act, expressly confers a right on the defendants to raise, in defence, in an infringement suit, all those grounds on which the patent can be revoked under Section 64 of the very same Act. Therefore, the judgment in Bristol-Myers Squibb Company v. J.D. Joshi, 2015 SCC OnLine Del 10109, if read in context, would demonstrate that it has not emasculated the right of the defendant, as conferred under the Act, to challenge the validity of the patent. The presumption of validity exists only till such time the patent is challenged - a challenge which is credible and no further. In my opinion, if the plaintiffs' argument was to be accepted, then, it would have to be held that the older the patent, the stronger the firewall. Such an interpretation, in my view, would be contrary to the plain words of the Statute.

45. The appeal against the said decision was dismissed by the Division Bench of this Court as being without any merit.



2024:DHC:4978



46. In the present case, the learned Single Judge held that even if a prima facie ground for revocation is made out, revocation is not automatic as the patent authority retains discretion not to revoke the patent if not absolutely necessary. And, the vulnerability to revocation must also be adjudged on the same standard. The learned Single Judge also concluded that this standard is therefore, high rather than low. It was further observed that the credible challenge occupies a higher pedestal than challenge, which is merely worthy of consideration. The learned Single Judge held that “When an infringer seeks to defend infringement on the ground that the patent he infringes is invalid, the onus, to prove such invalidity heavily lies on him. This standard has to be met, when applying the principle of “credibility””. The standard as articulated in the impugned judgment is in clear variance with the decision of the Division Bench of this court in F. Hoffmann-LA Roche Ltd. v. Cipla Ltd.⁷. In the said case, the Division Bench had expressly rejected the contention that the defendant has a heavy burden to discharge as it has to establish a stronger prima facie case. It is apparent that in the present case, the learned Single Judge has applied a higher standard for examining whether a credible challenge to the validity of a patent is made out, than as explained by the Division Bench. In effect, the learned Single Judge has read in a presumption as to the validity of the patent, where none exists. Obviously, a challenge to a patent, that is insubstantial, would be wholly insufficient to resist an order of interdiction. However, if a prima facie ground of revocation is made out, the threshold standard of credible challenge is met notwithstanding the discretion vested with the patent authority in regard to revocation of the patent. The fact that the patent authority may have the discretion not to revoke the patent despite a ground for the same being established, is not a relevant consideration for granting an interim injunction



2024:DHC:4978



restraining the infringement of a patent on the ground that the defendant has not met the threshold standard of a credible challenge to the validity of the patent, if a prima facie ground for revoking the patent is made out.

47. If the defendant raises a substantial challenge, which merits a trial, the question whether an injunction ought to be granted would necessarily have to be determined on other considerations for grant of such injunctions including balance of convenience and irreparable harm.

(emphasis added)

108. In order to analyse whether there is a credible challenge to the validity of the suit patent, it is required to be seen whether the submission as to lack of inventive step merits any consideration in the facts of the case. 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.”

109. A Single Bench of this Court in **Avery Dennison** (*supra*), summarized the different approaches followed by Courts over the years to determine whether the suit patent lacks an inventive step. In order to analyse whether a credible challenge to the validity of the suit patent has been raised by the defendant, and whether the suit patent lacks an inventive step, reference may be made to the following paragraphs from **Avery Dennison** (*supra*):



2024:DHC:4978



“11. For determining inventive step or lack thereof, various approaches and tests have emerged over the years from decisions of courts/authorities as also from examination guidelines of patent offices from different jurisdictions. The same include:

i. Obvious to try approach:

- *This approach involves an analysis of whether in view of the teachings/solutions proposed in the prior art, it was obvious to try and arrive at the subject invention.*

ii. Problem/solution approach:

- *This approach considers whether in the light of the closest prior art and the objective technical problem, the solution claimed in the invention would be obvious to the skilled person. If the skilled person can decipher the solution being claimed, then the subject matter is held to be obvious.*

- *This test has been discussed by the Division Bench in F. Hoffmann-La Roche Ltd. v. Cipla Ltd., (2016) 65 PTC 1 (Del).*

iii. Could-Would Approach

- *In this approach the question that is raised is whether there is any teaching in the prior art as a whole that would and not simply could have prompted a skilled person, with the knowledge of the objective technical problem, to either modify or adapt the closest prior art to arrive at the subject matter of the claims.*

iv. Teaching Suggestion Motivation (TSM test)

- *This test originated in the USA as per which, if by the Teaching, Suggestion or Motivation from the prior art, an ordinary skilled person can modify the prior art reference or combine prior art references to arrive at the claimed invention, then the subject matter being claimed is obvious.*

- *However, the application of this test ought not to be done in a narrow manner as held by the US Supreme Court in the case of KSR International v. Teleflex, 550 US 398 (2007).*



15. The tests laid down in *Windsurfing (supra)* were again considered by the England and Wales Court of Appeals in *Pozzoli Spa v. BDMO SA*, [2006] EWHC 1398 (Ch) and modified by Jacob LJ as under:

- “1. (a) Identify the notional “person skilled in the art”
- (b) Identify the relevant common general knowledge of that person;
2. Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
3. 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 the claim as construed;
4. Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?”

16. The *Id.* Division Bench of this Court in *F. Hoffmann-La Roche Ltd. (Supra)* added a further step as elaborated below:

“Step No. 1 To identify an ordinary person skilled in the art,

Step No. 2 To identify the inventive concept embodied in the patent,

Step No. 3 To impute to a normal skilled but unimaginative ordinary person skilled in the art what was common general knowledge in the art at the priority date.

Step No. 4 To identify the differences, if any, between the matter cited and the alleged invention and ascertain whether the differences are ordinary application of law or involve various different steps requiring multiple, theoretical and practical applications,

Step No. 5 To decide whether those differences, viewed in the knowledge of alleged invention, constituted steps which would have been obvious to the ordinary person



2024:DHC:4978



skilled in the art and rule out a hindsight approach ”

17. Further, this Court in *Bristol-Myers Squibb Holdings (supra)* has summarised some of the principles which can be used determine whether an invention is obvious or not.

The said principles are:

“(i) A hindsight reconstruction by using the patent in question as a guide through the maze of prior art references in the right way so as to achieve the result of the claim in the suit, is required to be avoided.

(ii) The patent challenger must demonstrate the selection of a lead compound based on its promising useful properties and not a hindsight driven search for structurally similar compounds.

(iii) There should be no teachings away from the patent in question in the prior art.

(iv) Mere structural similarity cannot form the basis of selection of lead compound in a prior art and the structural similarity in the prior art document must give reason or motivation to make the claim composition.

(v) Though mosaic of prior art documents may be done in order to claim obviousness, however, in doing so, the party claiming obviousness must be able to demonstrate not only the prior art exists but how the person of ordinary skill in the art would have been led to combine the relevant components from the mosaic of prior art.

(vi) It has to be borne in mind, small changes in structures can have unpredictable pharmacological effects and thus, structural similarity alone is not sufficient to motivate to selection of the lead compound.

(vii) Though it would be tempting to put together a combination of prior arts but this requires a significant degree of hindsight, both in selection of relevant disclosures from these documents and also in disregarding the irrelevant or unhelpful teachings in them.”

...



2024:DHC:4978



20. This Court in the case of *Agriboard International LLC. v. Deputy Controller of Patents & Designs* [C.A.(COMM. IPD-PAT) 4/2022 dated 31st March, 2022] held that while rejecting an application for lack of inventive step, discussion on the prior art, the subject invention and manner in which the subject invention would be obvious to a person skilled in the art would be mandatory. Merely arriving at a bare conclusion that the subject invention lacks inventive step would be contrary to Section 2(1)(ja) of the Act itself, is insufficient. The relevant portion of the judgment reads as under:

“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



2024:DHC:4978



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 Id. Counsel having not been considered in the impugned order, the Court does not wish to render any opinion in this regard.”

(emphasis added)

110. In the said decision, the Court also reiterated, in para 32, that fundamental principles governing an analysis on inventive step include: *firstly*, that the simplicity of the invention does not defeat an invention; *secondly*, that the inventive step has to be assessed on the basis of the date of priority of the subject patent and not after the publication of the same i.e. it is not permissible to do a hindsight analysis or an *ex-post facto* analysis.

111. It is within the above broad matrix that the Court will analyse whether there exists a credible challenge to the suit patent. Challenging the validity of the suit patent under Section 3(d) of the Patents Act, the defendants relied upon 20 prior art documents. Of these, special focus was laid on three prior art documents: US 4835977 (6/6/1989) [“**D2**”] priority arts WO/1986/000977 (13/02/1986) [“**D6**”], US7207183 (13/10/2005) [“**D14**”].

112. Before the prior arts are analysed, it is relevant to carve out the inventive concept in the suit patent. The inventive concept of the suit patent is that at least one variable frequency driver attached to a compressor in the refrigeration unit of the PCA, supervised by a controller that is configured for variation of the output frequency of at least one variable frequency driver. The central controller is connected to at least one



2024:DHC:4978



controller of at least one variable frequency driver wherein the central controller automatically adjusts the cooling performed by the preconditioned air unit according to factors such as ambient temperature, humidity, cabin temperature, outgoing airflow and temperature from the PCA.

113. Let us now analyse and compare the three prior arts cited by defendants with the suit patent.

Prior Art D2 (US 4835977 (6/6/1989))

114. Defendants counsel drew attention to D2 and submitted that it also relates to an aircraft air-conditioning system and, more particularly to apparatus and method of cooling the passenger cabin of a parked aircraft. A perusal of the original and complete specification of D2 reflects that its scope and objective is completely different to that of the suit patent. The abstract for D2 clearly states that the invention relates to a method and apparatus for air-conditioning parked aircraft, in which air at a temperature below the freezing point of water is provided under pressure to the aircraft. D2 departs from conventional mechanization of air conditioning systems by supplying air cooled below the freezing point of water. The prior art merely discloses a PCA unit, of which there is no denial by the plaintiff that they were well known, and the plaintiff does not claim inventiveness in a PCA unit *per se*, but in the VFD controller and the central controller configuration, which this prior art does not possess or claim. Moreover, the prior art focuses on maintaining a constant low temperature and managing



2024:DHC:4978



humidity through periodic defrost cycles and using heat exchangers. In contrast, in the suit patent, the central controller automatically adjusts cooling based on multiple parameters, with specific focus on variable frequency drivers for efficient energy management. Therefore, it is clear that the suit patent and D2 deal with different inventive concepts and D2 cannot be used to mount a challenge to the suit patent.

Prior Art D6 WO/1986/000977 (13/02/1986)

115. Insofar as prior art D6, WO/1986/000977 (13/02/1986), is concerned, it merely teaches about a “Modular Refrigeration System” and not a PCA unit. Moreover, it is not the plaintiffs’ case that modular refrigeration systems were unknown in the state of the art.

116. As per D6, the modular units work in master-slave setup such that one modular unit acts as a master unit, controlling operations of all other units. D6 does not disclose a VFD, and a central controller that automatically adjusts the cooling performed by a PCA unit. The defendants have failed to disclose the relationship between a master-slave set up and the control operation of the suit patent.

117. According to the averments made in the written statement, prior art D6, involves a modular construction aimed at increasing the capacity of the refrigeration system resulting from changes in load criteria of the air-conditioning installation. In D6, in the event of a malfunction in one of the modules, that module may be shut down by the control circuits while permitting continued operation of the other modules. Counsel for



2024:DHC:4978



defendants placed specific reliance on the following paragraphs relating to prior art D6:

“Depending on the fault, the defective module may be repaired in situ while the system is in operation, or the defective module may be remove [sic] from the assembly for repair, a spare module being incorporated in the assembly to replace the removed, defective module or the assembly being permitted to operate without a replacement”.

118. A bare perusal of the above paragraph reflects that the primary focus of prior art D6 is modularity. However, in the previous section on claim construction this aspect has been analysed, and the Court is *prima facie* of the opinion that the suit patent is neutral to the aspect of modularity. Furthermore, D6 *prima facie* is not a PCA unit and it does not have the inventive concept involved in the suit patent, in that it does not have any variable frequency driver that has a controller configured for variation of the output frequency of at least one variable frequency driver. This difference between D6 and the suit patent would not be an obvious step for a person skilled in the art.

119. Moreover, D6 was published on 13th February, 1986, after a time gap of 23 years from the suit patent, and indicates that the patent granted cannot be defeated on ground of obviousness. In this regard, paragraph 36 of the decision in **Avery Dennison** (*supra*) is relevant and is produced as under:

“36. One of the sure tests in analysing the existence of inventive step would also be the time gap between the prior



art document and the invention under consideration. If a long time has passed since the prior art was published and a simple change resulted in unpredictable advantages which no one had thought of for a long time, the Court would tilt in favour of holding that the invention is not obvious”.

(emphasis added)

Prior Art D14 (US 7207183)

120. Defendants have relied upon D14 as being the closest prior art. Notably, D14 *prima facie* appears to be a chiller system and not a PCA unit. In this regard, plaintiffs’ submission that mere use of known refrigeration components would not make the chiller system a prior art to PCA units finds favour with the Court. Indeed, as submitted by plaintiffs, if defendants’ approach is adopted, all innovations in the field of air-conditioning would be non-eligible for patents.

121. Furthermore, D14 does not disclose a central controller but a control panel that is able to control the operation of 1 refrigeration circuit, having 1 VFD controlling compressors in parallel. The inventive step of the suit patent, on the other hand, hinges in the ability of the central controller to control multiple refrigeration systems (each having 1 VFD controlling 1 controller) at the same time in a PCA unit.

122. Pertinently, as has been submitted by plaintiffs, D14 teaches about how a VSD may be used to achieve the same desired voltage and frequency of the corresponding motors based on a common instruction from the VSD. The objective of the suit patent, however, is for the central controller to



2024:DHC:4978



ensure that all compressors are able to operate at different operating frequency, to ensure that each refrigeration circuit/system is operating at desired conditions. D14 clearly states that the drawback of using 1 VSD for each compressor would make the chiller system more expensive. Therefore, prior art D14 and the suit patent have *prima facie* differences which do not constitute an obvious step for a person skilled in the art. No challenge to the suit patent can be countenanced in light of prior art D14.

Finding on Lack of Inventive Step

123. A perusal of the prior arts brought into focus by the defendants, namely D2, D6 and D14 reflects that there is a clear improvement and categorical difference between the said prior arts and the invention in the suit patent. Also, these prior arts are used to combine different elements in order to somehow demonstrate lack of inventiveness. This is what is termed as *mosaicing* of unrelated documents which is not permissible in inventive step analysis, unless the documents are inter-linked or cross-referenced.

124. It is settled law that while *mosaicing* of prior arts may be permitted, the party claiming obviousness must be able to demonstrate that not only do the prior arts exist, but also how a person of ordinary skill in the art would have been led to combine the relevant components from the mosaic of prior arts. In this context, the decision in ***Prism Cement*** (*supra*), as relied upon by the plaintiff, is instructive. Justice Manmohan Singh (Retd.) made the following observation in para 32 of the said decision:

“32. *The greater the number of documents which must be*



2024:DHC:4978



so combined to reach the invention, the more likely on the whole that there is an inventive step, but regard must be paid to the nature of features which are combined.”

125. In the present case, the defendants have failed to establish how, even upon *mosaicing* of the different prior arts cited, a person skilled in the art may be able to take obvious steps leading towards the inventive concept in the suit patent. Defendants have failed to substantiate their claim that the inventive concept in the suit patent would be obvious to a person skilled in the art. Therefore, at the interim stage, no case for invalidity on the ground of lack of inventive step has been made out by the defendants.

b. Double Patenting

126. Defendants counsel submitted that the suit patent should also be revoked under Section 64(1)(j) of the Patents Act, which deals with revocation of patents obtained on a false suggestion or representation. Essentially, it was argued that the plaintiffs engaged in misrepresentation by failing to disclose the suit patent to the Controller examining IN ‘952, considering both patents are substantially similar to each other.

127. This submission is belied by the fact that the First Examination Report for both, the suit patent and IN ‘952, was issued by the same Controller, Mr. Amit Singh, on the same date, that is 16th October, 2017. Therefore, it cannot be presumed that the Indian Patent Office was unaware of the two inventions, or that the plaintiffs secured the suit patent by making a false suggestion or representation.



2024:DHC:4978



128. Having thus analysed defendants' key submissions to establish that the suit patent is invalid (*on the ground of lack of inventive step and double patenting*), this Court is of the opinion that defendants have been unable to mount a credible challenge to the validity of the suit patent. The suit patent does not, at this stage, appear vulnerable to being invalidated on the above grounds.

(iii) Infringement of the Suit Patent

129. The next issue which needs to be examined of clam mapping in order to assess the plaintiffs claim for infringement.

130. This Court culled out the principles governing patent infringement in India in ***SNPC Machines (P) Ltd. v. Vishal Choudhary***, 2024 SCC OnLine Del 1681. Relevant paragraphs of the same are extracted below:

35.

The following principles can be culled out collectively from the aforementioned decisions, since all of them rely upon the same previous sources while articulating them from different perspectives:

A) *Infringement is to be adjudged objectively and defendant's intention may not be material to determine this question; the emphasis however has to be on mapping of 'essential elements'.*

B) *Whether elements which are missing in the defendant's products are so essential or substantial that the absence would entitle the plaintiff to an injunction.*

C) *Patent infringement analysis, comparison of elements of the suit patent's claims is to be done with the elements/claims of the infringing products.*

D) *There can be a case of **non-literal***



2024:DHC:4978



infringement where each and every component of patent specification is not found in the infringing products i.e. all elements of a claim may not entirely correspond with the infringing product, but it still can be a case of infringement.

E) It is the **pith and marrow** of the invention claimed that is required to be looked into. This test had been referred to in *Clark v. Adie*, [L.R.] 2 App. Cas. 315 [House of Lords].

F) Non-essential or trifling variations or additions in the product would not be germane, so long as substance of the invention is found to be copied.

G) Pure literal construction is not to be adopted, rather **doctrine of purposive construction** should be applied.

H) **Doctrine of equivalents** is to be examined and applied if the substituted element in the infringing product does the same work, in substantially the same way, to accomplish substantially the same result. The source of this doctrine traces its origin to an old decision in *Winans v. Denmead*, 15 How. 330, 14 L.Ed. 717 which was cited with approval in *Graver Tank and Manufacturing Co. v. Linde Air Products Co.*, 339 US 605 (1950) (Supreme Court of United States).

I) The essential feature in an infringing article or process are of no account. If the infringing goods are made with the same object in view, which is attained by the patented product, then a minor variation does not mean that there is no piracy. Some trifling or unessential variation has to be ignored. This principle was cited by the Division Bench of this Court in *Raj Prakash v. Mangat Ram*, ILR (1977) 2 Del 412.

J) While product v. product comparison shall not to be determinative of infringement as opposed to the granted claim v. product comparison, an essential comparison between the products of the plaintiffs and the defendants may be necessary.

K) The triple identity test is important - focusing on



2024:DHC:4978



function, way the elements serve the function and the result obtained is suitable for analyzing mechanical device (cited in Warner-Jenkinson Co. Inc. v. Hilton Davis Chemical Co., 520 US 17 (1997) (Supreme Court of United States).

131. It is within this legal matrix that the Court will now analyse the claim mapping submitted by plaintiffs.

a. Claim Mapping

132. It is noted that plaintiff has relied on certain documents as noted above to assert their claim mapping, since defendants have not provided any specification of the product, and the Court has rejected plaintiffs' application for appointment of Local Commissioner to inspect defendants PCA unit by judgment dated 1st November, 2023. By judgment dated 01st November, 2023, this Court had noted the submissions of defendant's counsel that they stood by specifications and features of the defendants PCA unit as contained in the following documents:

- i. Two of the documents i.e. the brochure of the defendants PCA units when defendant nos. 1 to 3 used to trade under the brand *Cavotec*, and the brochure and data sheet of defendant no.4 who manufactured the *Cavotec* products have been filed on 04th September, 2023.
- ii. Three other documents, i.e. the Operation, Maintenance and Troubleshooting Manual for PCA unit model PDX 45 IS and for PDX 60 IS of the defendant as well as the tender documents (RFP),



2024:DHC:4978



released by the airport of Goa, delineating the specifications of the PCA unit required, where defendants bid was successful, were filed as confidential documents on 05th September 2023. These documents were filed as confidential documents *vide* I.A No. 17220/2023 by plaintiff on the basis that these documents had been supplied by the defendants as part of their communication who assert that they must be kept confidential as they contain third party information.

133. Plaintiffs' counsel in the submissions through the presentation adverted to the Operation Manual for PDX 60IS Model, filed as confidential documents to show that the various features of the suit patent map clearly to the defendants' product.

134. Since the documents are being placed confidentially before the Court, relevant extracts from the said document, Operation Manuals, are not being adverted to. The Court has examined the same and tabulates the various features of the suit patent claim that map with relevant aspects of the defendant's equipment as described in the Operation Manual.

Plaintiffs claim	Features of the defendants' product
Feature 1.1 A preconditioned air unit (10) for supplying preconditioned air to an aircraft parked on the ground, the preconditioned air unit comprising:	Extracts from the Manual categorically provide that the equipment is a PCA unit supplying preconditioned air to the aircraft mounted on a passenger boarding bridge.
Feature 1.2	The diagram from the diagrammatic



2024:DHC:4978



A housing (12) accommodating a flow duct (20) with an air inlet for ambient air and an air outlet for connection to the parked aircraft.	representation from the Operating Manual shows that the defendants' equipment is also in housing with air inlet and outlet to the parked area.
Feature 1.3 A blower (30) connected with the flow duct (20) for generation of an air flow from the air inlet (22) toward the air outlet (25).	The diagram of the defendants' products shows the existence of a blower connected with the duct going from inlet to the outlet.
Feature 1.4 A plurality of refrigeration systems (36), wherein each refrigeration system comprises: at least one compressor (38); at least one condenser (40); at least one expansion valve (42); at least one evaporator (44) connected in a flow circuit containing a refrigerant, and wherein the at least one evaporator (44) interacts with the air flow in the flow duct (20); and at least one variable frequency driver (46, 54, 56) for power supply of the at least one compressor (38); and	The diagram reference figure 1-3 of the Operating Manual does show a plurality of refrigeration systems where each refrigeration system comprises, at least one compressor, condenser, one expansion valve, evaporator in a circuit containing refrigerant where the evaporator interacts with air flow in the duct. Most importantly, it also shows that the compressor is connected to a variable frequency driver
Feature 1.5 The housing (12) further accommodates a central controller (60) that is configured for controlling operation of the preconditioned air unit (10)	The extracts from the Operating Manual describing the equipment, the cooling mode, unit control system, and the controller in Sections 1.1.4, 1.2.1, 1.2.4 and 1.2.4.1 show the presence of the controller incorporating various valves



2024:DHC:4978



including the variable frequency drivers (46, 54, 56) of the plurality of refrigeration systems (36), characterized in that	pressures and temperature sensors which coordinates the refrigeration circuit.
Feature 1.6 The at least one variable frequency driver (46, 54, 56) has a controller that is configured for variation of the output frequency of the at least one variable frequency driver (46, 54, 56)	Section 1.2.4.2 of Operating Manual which provides for a VFD states that the compressor VFD controls and protects the compressor and controls the compressor capacity based on the load requirement for maintaining the output air temperature.
Feature 1.7 And the central controller (60) is connected to at least one controller of the at least one variable frequency driver (46, 54, 56).	Section 1.2.1 of the Operating Manual describes the cooling mode of the defendants' equipment categorically and states that each refrigeration circuit operates independently except for the coordinating effect of the control. Automatic controls determine how many circuits should operate and at what level depending upon input from the ambient and outlet air temperature sensors.
Feature 1.8 Wherein the central controller (60) automatically adjusts the cooling performed by the preconditioned air unit (10) to at least one of: the selected type of aircraft, the ambient temperature, the humidity, the cabin temperature, the outgoing temperature and the outgoing airflow from the preconditioned air unit (10)	The above element is already referenced above in relation to VFD in Section 1.2.4.2 and cooling mode in Section 1.2.1 and Section 1.2.4.



2024:DHC:4978



135. These various features were also mapped with the RFP of the Goa airport. It is but obvious that defendants' product would have complied with the RFP since they won the tender. The relevant specification of the RFP to which the defendants' product would have mandatorily complied would be as under: a PCA system, contained in a housing, with a blower, multiple refrigeration units, with evaporators, compressors, condensers, expansion valves, compressors having individual VFDs, a central controller, which would supervise and diagnose internal and external faults and control all the VFDs.

136. It is evident at least *prima facie* that the specifications of the defendant's product as evident through the Operation Manual for PDX 60IS Model and the Goa tender does map to the suit patent claims. More importantly, since the defendants have chosen not to provide any other information and restricted their non-infringement argument during submissions, to the claim of non-modularity, there is no real rebuttal on the issue of mapping. The Court is therefore persuaded, at least *prima facie*, to accept the claim mapping submitted by the plaintiffs.

137. The plaintiffs' argument that defendants' non-infringement defense was contrary to Rule 3B (vi) of Delhi High Court Rules Governing Patent Suits 2022, as it obligated the defendant to describe the productive technology used by the defendant to justify its defense of non-infringement, is possibly merited in these circumstances. As nothing else has been provided by defendants to side step or rebut the specific mapping claims;



2024:DHC:4978



this Court is inclined to accept them *prima facie* at this stage, however, subject to the final adjudication post the trial.

I. RELIEF

138. In view of the above, the Court is of the opinion that plaintiffs have made out a *prima facie* case for interim injunction, and the grounds stated for irreparable harm and balance of convenience are also in favour of plaintiffs. Considering that the defendants have already won certain tenders with airports in India, the same will not be displaced, since it may effect third party rights and may also cause loss to the State Exchequer. However, the interim injunction as under will operate for the future:

- a) *The defendants, and all those acting for and, on their behalf, shall be restrained from manufacturing, selling, promoting, distributing, dealing in any manner with the PCA unit bearing model number PDX 60IS or any other product i.e. a Pre-conditioned Air Unit (PCA) [for the purposes of aircraft air-conditioning while on the ground], which infringes plaintiffs registered patent no. IN 330145.*
- b) *The defendants shall file an affidavit disclosing their turnover from the existing deployment of the model number PDX 60IS or any other product i.e. a Pre-conditioned Air Unit (PCA) [for the purposes of aircraft air-conditioning while on the ground], which infringes plaintiffs registered patent no. IN 330145, within a period of 4 weeks in a sealed cover.*



2024:DHC:4978



139. I.A. 17216/2023 under Order XXXIX Rule 1 and 2 of CPC is accordingly allowed, and disposed of in the above terms.

CS(COMM) 628/2023 CC(COMM) 1/2024, I.A. 17218/2023, I.A. 17219/2023, I.A. 18297/2023, I.A. 5765/2024, I.A. 9850/2024, I.A. 9851/2024, I.A. 9852/2024 & I.A. 10717/2024.

1. List before the Joint Registrar (Judicial) on 21st August, 2024.
2. Judgment be uploaded on the website of this Court.

(ANISH DAYAL)
JUDGE

JULY 04, 2024/RK