2023:MHC:5222

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IN THE HIGH COURT OF JUDICATURE AT MADRAS

Judgment reserved on	19.09.2023
Judgment pronounced on	29.11.2023

CORAM:

THE HON'BLE MR. **JUSTICE SENTHILKUMAR RAMAMOORTHY**

(T) CMA (PT) No.47 of 2023

[OA/28/2020/PT/CHN]

1. KURARAY CO. LTD.
   1621, Sazaku, Kurashiki-shi,
   Okayama, 7100801, Japan.

2. MEBIOL INC.
   1-25-8, Nakahara, Hiratsuka-shi,
   Kanagawa, 2540075, Japan,
   Through its Authorized Representative
   Mr.Prashant Philips ... Appellants

v.

The Assistant Controller of Patents & Designs,
The Patent Office,
Intellectual Property Office Building,
G.S.T.Road, Guindy,
Chennai-600 032. ... Respondent

PRAYER IN (T)CMA(PT)/47/2023: This Civil Miscellaneous Appeal filed under Section 117-A of the Patents Act, 1970, to allow

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the present appeal and set aside the impugned order of the Assistant Controller of Patents & Designs dated 30.12.2019 in 2394/CHENP/2013 and hold that the claimed invention in the present case is patentable under Section 2(1)(ja) of the Act; and to direct the Controller to grant the patent.

For Appellants : Ms.Vindhya S. Mani
Mr.Kiran Manokaran
for M/s.Lakshmikumaran & Sridharan

For Respondent : Mr.Rajesh Vivekanandan, DSG

JUDGMENT

Background

The appellants challenge an order dated 30.12.2019 by which Application No.2394/CHENP/2013, which is the national phase application derived from PCT Application No.PCT/JP2011/070596, was rejected.

2. The appellants filed the above mentioned application for grant of patent in respect of an invention entitled "FILM FOR

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PLANT CULTIVATION" by specifying 28.09.2010 as the priority date. The claimed invention relates to a process involving use of polyvinyl alcohol film (PVA film) of particular specifications in plant cultivation. The appellants identified a problem in plant cultivation, i.e. the necessity to use material that has good permeability as regards nutrients while preventing root penetration and the consequent putrefaction. The claimed invention was aimed at providing a solution to this problem. Five original claims were set out in the complete specification. Upon examining the complete specification, the First Examination Report (FER) was issued on 30.08.2017. In the FER, the following two prior arts were cited: US 4603077 A(D1); and US 2010/027/2938(D2) with a publication date of 28.10.2010. Objections were raised with regard to lack of inventive step of original claim 1 by referring to column 6, lines 11-23 of D1 and to original claim 2 by referring to paragraphs [0008], [0067] and [0068] of D2. Further objections under Section 3(d) and (h) and

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Section 10(5) were also raised.

3. The appellants responded thereto on 30.11.2017. In the reply, the appellants pointed out that the International Search Report(ISR) acknowledged novelty, inventive step and industrial applicability of the claimed invention. The appellants also pointed out that D2 has a publication date subsequent to the priority date of the claimed invention and, therefore, does not qualify as prior art. D1 was differentiated by pointing out that it teaches an invention describing a water-absorbing laminate that prevents excess moisture formation while retaining heat in greenhouses. The other objections were also dealt with. In the hearing notice, most of the objections were maintained but the objection under Section 3(h) was limited to original claim 5. Pursuant to a hearing on 03.07.2019, the appellants also submitted written submissions on 14.08.2019.

4. In the written submissions, the appellants highlighted

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the criticality of the birefringence and swelling degree requirements for achieving the unexpected excellent results in the claimed invention. Without prejudice, original claims 1,2 and 5 were given up and original claims 3 and 4 were submitted as the amended claims. In effect, the two substance/product claims and the plant cultivation claim were given up. Eventually, by impugned order dated 30.12.2019, the application was rejected on the ground that the claimed invention is obvious and does not satisfy the requirements of Section 2(1)(ja) of the Patents Act, 1970 (the Patents Act).

Contentions

5. Learned counsel for the appellants submitted that the claimed invention relates to the method of use of a PVA film for plant cultivation, which ensures high nutrient permeability and low root penetration. She invited my attention to the complete specification and, in particular, to internal page 6 thereof where

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the mode for carrying out the invention is set out. She also pointed out that the PVA film should exhibit two properties: the thickness-wise-directional average value of birefringence should be within the ranges specified at internal page 7 of the complete specification; and the swelling degree of the film should be within the broad range of 150 to 180%. With regard to birefringence, she pointed out that, if the PVA film was below the specified range, roots would penetrate easily and, if above the specified range, nutrient permeability would deteriorate. As regards swelling degree, she pointed out that, if the swelling degree of the film is more than 180%, roots would penetrate easily, whereas, if the swelling degree were to be less than 150%, nutrient permeability would deteriorate.

6. By referring to internal pages 20 to 22 of the complete specification, she pointed out that the methods for forming the PVA film of requisite specifications were disclosed therein. Such

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methods involve stretching, drying and subjecting the film to heat treatment. All the above steps are required to be carried out as per specifications set out in current claims 1 and 2. She next invited my attention to the methods for measuring: the thickness-wise-directional average value of birefringence; swelling degree; penetration resistance; and nutrient permeability. After referring to the root penetration test, she referred to Table 1 of the complete specification at internal page 47 thereof and pointed out that PVA films exhibiting thickness-wise-directional average value of birefringence and swelling degree within the specified ranges were tested on three parameters: penetration resistance; nutrient permeability; and root penetration test. On all the three parameters, she pointed out that examples 1 to 4 of Table 1 indicate that the claimed invention fulfils requirements. By contrast, with reference to comparative examples 1 to 12 of Table 1, she pointed out that one or more of the parameters were not satisfied in comparative examples 1 to 12.

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7. Learned counsel next submitted that, in the impugned order, the respondent relied upon prior art document, D1, which relates to an invention entitled "water-absorbing laminate and production process thereof", and was granted US Patent No.4,603,077. According to learned counsel, as regards D1, even the title of the invention indicates that it is a laminate and, therefore, consists of more than one layer. With reference to the abstract of the invention, she pointed out that the invention is of a water absorbing laminate comprising a water absorbing film and non-woven fabric. She further pointed out that the problem addressed by D1 is to prevent the formation of excessive moisture and prevent drops of water from falling while maintaining heat retention properties. In effect, she submitted that the invention is intended for use in green houses. In order to further substantiate this submission, she referred to the background of the invention, the description of the preferred embodiments thereof and the

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purpose of the invention from page 138 of the appeal paper book, which is as under:

> *"…. In addition, since the water-absorbing film of the present invention has a higher water vapor permeability than that of a film made of PVA alone, it is extremely effective for preventing excessive humidification and water drops from dropping within cover culture facilities. Furthermore, since the water-absorbing film of the present invention exhibits an extremely low permeability to gases other than water vapor, when the film is laminated with a nonwoven fabric, it is very effective for realizing the excellent heat-retaining properties of the resultant laminate in cooperation with the presence of the fiber layers of the nonwoven fabric."*

8. Therefore, she submitted that prior art document D1 teaches the use of a laminate comprising a PVA film and a non-woven fabric. In fact, she pointed out that the two layers are required to form an integral combination for purposes of preventing excessive humidification while maintaining heat

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retention properties. According to learned counsel, even the purpose of the cited prior art is completely different from that of the claimed invention. Since the cited prior art does not teach, motivate, or suggest the claimed invention and, in fact, teaches away there from by suggesting the use of a laminate, she submitted that the rejection of current claims 1-2 warrants interference.

9. In support of these submissions, learned counsel referred to and relied upon the following judgments:

(i) *FMC Corporation v. The Controller of Patents, 2022/DHC/004443,* particularly paragraph 19, with regard to unreasoned orders.

(ii) *Manohar v. State of Maharashtra, (2012) 13 SCC 14, particularly paragraph 17,* with regard to a reasoned decision being an aspect of natural justice.

(iii) *Agriboard International LLC. v. Deputy Controller of Patents & Designs (Agriboard International), 2022:DHC:1206*, particularly paragraphs 24 and 25, for the principle that it is mandatory to discuss the prior art

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and compare the same with the claimed invention while undertaking obviousness analysis.

(iv) *F. Hoffmann-La Roche Ltd. and Anr. v. Cipla Ltd., 2015:DHC:9674-DB,* particularly paragraph 150, with regard to the five step analysis which is required to be conducted to determine obviousness.

(v) *Biomoneta Research Pvt Ltd v. Controller General of Patents & Designs and Anr., 2023/DHC/001816,* particularly paragraph 68, for the principle that a person skilled in the art should be able to jump from the prior art to the subject invention if such subject invention is obvious.

(vi) *Council of Scientific and Industrial Research v. Hindustan Lever Limited & Anr., OA/37/2013/PT/DEL,* judgment dated 03.07.2015, for the principle that the conclusion of obviousness should be based on evidence and not speculation.

10. In response, Mr.Rajesh Vivekanandan, learned Deputy Solicitor General, submitted that the current claims of the appellant were rejected because both heat treatment and drying

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are disclosed in D1. He further submitted that the ranges specified in amended claim 1 with regard to the moisture content, stretching, and heat treatment would be well within the knowledge of a person skilled in the art. In support of these contentions, Mr.Rajesh Vivekanandan referred to internal pages 11, 12 and 20 to 22 of the complete specification of the claimed invention and submitted that when these paragraphs are compared with prior art document D1, it becomes evident that a person acquainted with prior art document D1 would be led to the claimed invention.

11. By way of rejoinder, learned counsel for the appellants submitted that prior art document D1 expressly discloses that the invention is a water absorbing laminate for use as a sheet for cover culture and, therefore, clearly teaches away from the claimed invention.

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Discussion, analysis and conclusions

12. The summary of the invention, which is contained at internal pages 3 to 6 of the complete specification, identifies the problem to be solved by the invention as the need for improved nutrient permeability and suppression of root penetration in plant cultivation. The claimed invention recites that the identified problem is resolved by a method involving the use of a PVA film of particular specifications. The method of producing the PVA film by saponification of a polyvinyl ester obtained by polymerization is disclosed at internal pages 8-11 of the complete specification. This method, in general, is not novel and no claim is made in such regard. After disclosing the requisite degree of polymerization and saponification of the PVA for production of suitable PVA film, the properties of the PVA film, i.e. thickness-wise-directional average value of birefringence and swelling degree within the ranges specified at internal pages 7-8 of the complete specification,

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are disclosed. Thereafter, at internal pages 29-34 of the complete specification, the methods for measuring the thickness-wise-directional average value of birefringence, swelling degree and penetration resistance of PVA film are set out. The requisite moisture content, stretching and heat treatment and the method associated therewith are also disclosed.

13. The current claims of the appellants with regard to the claimed invention are as under:

> *"**I/We claim***
>
> *1. A method for producing a polyvinyl alcohol film for plant cultivation, which comprises a step in which a polyvinyl alcohol film having a moisture content of from 5 to 20% by mass is stretched in the ratio of from 1.3 to 1.7 times and a step in which the stretched film is heat-treated at a temperature in the range of from 130 to 170°C.*
>
> *2. The method according to claim 1, which further comprises, after the said step of stretching and before*

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the said step of heat treatment, a step in which the film is dried so that the moisture content of the film becomes from 1 to 15% by mass."

14. Against this backdrop, the claimed invention should be compared with prior art document D1, which was the sole prior art cited in the impugned order, to determine whether the conclusion as to obviousness is correct. Before proceeding further, it is pertinent to note that the publication date of D2 is 28.10.2010, which is subsequent to the priority date of the claimed invention. Therefore, D2 does not qualify as prior art and is liable to be disregarded. Prior art document D1 relates to an invention entitled as "water absorbing laminate and production process thereof", which was granted U.S. Patent 4,603,077. The relevant portion of the extract of the said invention is set out below:

"An object of the present invention is to provide a laminate capable of avoiding the formation of excessive moisture and of preventing water drops from dropping while keeping the heat-retaining properties

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when used as a sheet for a cover culture, thereby preventing the occurrence of disease in the plants under culture and any reduction in the yield and quality of the plants."

15. Under the heading "Description of the Preferred Embodiments", it is stated in D1 as under:

"A preferable process for producing the water-absorbing laminate according to the present invention comprises superimposing the nonwoven fabric and the water-absorbing film each other and bonding the superimposed layers under pressure in such a manner that the nonwoven fabric layer and the water-absorbing film layer are entangled with each other to form an integral layer."

The above extracts from prior art document D1 clearly disclose that the said invention relates to a laminate which is targeted at preventing excessive moisture formation while retaining heat. This is achieved by using a PVA film in combination with a non-woven fabric.

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16. As held in *Agriboard International* by the Delhi High Court, *inter alia,* three elements should be borne in mind while conducting obviousness analysis: the invention disclosed in the prior art; the invention disclosed in the application; and the manner in which the subject invention would be obvious to a person skilled in the art. As discussed above, the invention disclosed in prior art document D1 is intended to resolve a different problem and the said prior art teaches the use of a laminate for such purpose. Consequently, a person skilled in such prior art would not be motivated to consider the use of a PVA film on a standalone basis for resolving the problem that the claimed invention is targeted to resolve.

17. In the impugned order, the respondent has recorded, in relevant part, as under:

> *"In reply to hearing notice objections 1 - 3, pending claims 1-2, 5 are deleted. Written submissions*

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are carefully analysed and are found NOT persuasive. Pending claims 1-2 relate to methods of producing a Polyvinyl alcohol film for plant cultivation. It is observed that except for the steps of stretching, heat-treatment and drying, pending claims 1-2 fail to clearly identify the key critical steps/parameters actually involved in the method which really contribute to the actual technical effect of the instant application. The steps recited in pending claims 1-2 appear to be known steps in the general state of art for intended use only, for instance the steps of heat treatment and drying are well disclosed in D1. Optimization of workable ranges to arrive at products with intended use is well within the purview of a person skilled in the art; hence Inventive step cannot be acknowledged for pending claims 1-2.

Subject-matter of revised claims [1-2] e-filed dated 14/08/2019 therefore, do not meet the requirements of the provision of Section 2(1)(j)(a) of the PA, 1970. Instant application number 2394/chenp/2013 is hence refused under Section 15 of the Patents Act, 1970."

18. The operative portion extracted above indicates that the

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respondent arrived at the following conclusions:

(i) Except for the steps of stretching, heat-treatment, and drying, pending claims 1-2 fail to clearly identify the critical steps/parameters actually involved in the method which really contribute to the actual technical effect of the instant application.

(ii) The steps recited in current claims 1-2 appear to be known steps in the general state of art.

(iii) Heat treatment and drying are disclosed in D1.

(iv) Optimisation of workable ranges to arrive at the products with the intended use is well within the purview of a person skilled in the art.

19. Both conclusions (ii) and (iv) above are purportedly on the basis of the general state of art. While drawing these conclusions, the respondent has failed to identify the source or basis for reaching such conclusions. Conclusion (i) above, with regard to non-disclosure, is untenable when viewed in light of the complete specification and, in particular, the disclosures made

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under the heading 'mode for carrying out the invention', the methods disclosed for measuring birefringence, swelling degree and penetration resistance and the root penetration test.

20. In fact, the appellants have set out examples in the form of Table 1 at internal page 47 of the complete specification which also capture the results of the evaluation of the claimed invention against the parameters of penetration, nutrient permeability and root penetration test. As regards conclusion (iii), with reference to prior art document D1, for reasons set out earlier, prior art document D1 does not teach, motivate, or suggest the claimed invention and, in fact, teaches away to the extent that it proposes the use of a laminate for the purposes specified in D1.

21. Therefore, the impugned order is unsustainable and is hereby set aside. It is, however, pertinent to notice that original claims 1-2 set out the requisite properties of the PVA film, i.e. with

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regard to birefringence and swelling degree. These claims were originally drafted as substance/product claims and were probably given up because of the objection under Section 3(d) of the Patents Act. In the written submissions of the appellants, the "thicknesswise-directional average value of birefringence in a machine direction of the film" and the "swelling degree of the film" were described as "critical for exhibiting such unexpected excellent effects of the PVA film." In order to lend greater specificity and control the width of the claims, the claims shall be modified, by adding the words in bold font in claim 1, as under:

> "***I/We claim***
>
> *1. A method for producing a polyvinyl alcohol film for plant cultivation,* ***wherein the thicknesswise-directional average value of birefringence in a machine direction of the film is from 4.0 X 10^{-3} to 12.0 X 10^{-3} and a swelling degree of the film is from 150 to 180%, and*** *which comprises a step in which a polyvinyl alcohol film having a moisture content of from 5 to 20% by mass is stretched in the ratio of from 1.3 to 1.7 times and a step in which the*

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stretched film is heat-treated at a temperature in the range of from 130 to 170°C.

2. The method according to claim 1, which further comprises, after the said step of stretching and before the said step of heat treatment, a step in which the film is dried so that the moisture content of the film becomes from 1 to 15% by mass."

22. Since the only surviving objection to current claims 1-2 was with regard to lack of inventive step, which conclusion is untenable for reasons set out above, the impugned order is set aside and Application No.2394/CHENP/2013 shall proceed to grant on the basis of claims 1-2, as amended in the manner specified in the preceding paragraph. (T)CMA(PT) No.47 of 2023 is allowed on the above terms without any order as to costs.

24.11.2023

Index : Yes/No
Internet : Yes/No
Neutral Citation : Yes/No
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To

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