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

Reserved on: 3 April 2025
Pronounced on: 6 October 2025

\+ LPA 836/2023, CM APPL. 66718/2023, CM APPL. 66719/2023, CM APPL. 66720/2023, CM APPL. 66721/2023 & CM APPL. 66722/2023

TAPAS CHATTERJEE .....Appellant

Through: Mr. Pravin Anand, Ms. Prachi Agarwal, Ms. Arpita Kulshrestha and Ms. Elisha Sinha, Advs.

versus

ASSISTANT CONTROLLER OF PATENTS AND DESIGNS & ANR. .....Respondents

Through: Mr. Vijay Joshi, Mr. Kuldeep Singh and Mr. Shubham Chaturvedi, Advs. for R-1

Ms. Vindhya S. Mani, Mr. Ritvik Sharma, Ms. Naina Gupta, Mr. Bhuavan Malhotra, Ms. Surbhi Nautiyal, Ms. Harshita Agarwal, Mr. Devesh Aswal and Ms. Vedika Singhvi, Advs. for R-2

CORAM:
HON'BLE MR. JUSTICE C. HARI SHANKAR
HON'BLE MR. JUSTICE AJAY DIGPAUL

JUDGMENT

% 06.10.2025

C. HARI SHANKAR, J.

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1. An invention, in order to be patentable under the patent regime in this country, has to demonstrate an inventive step in its creation, vis-à-vis earlier inventions and the existing knowledge in the field – referred to, in patenting terminology, as "prior art". Any product or process which is not "inventive", or is "obvious", when compared to prior art, is *ipso facto* not patentable. This obviousness has to be examined from the mythical eye of a "person skilled in the art". There are, unfortunately, no guidelines to steer this process, in the Patents Act, 1970. The result is that the Examiners in the office of the Controller General of Patents, Designs and Trade Marks[1] routinely decide applications for registration of patents, as well as oppositions to such applications, in a rule of thumb manner, purely on the basis of their subjective opinions. This is, clearly, a thoroughly legally unsatisfactory position. The present case is a classic illustration of the inherent perniciousness in such a system.

The *lis*

2. The appellant Tapas Chatterjee filed Application No 201911036748[2] on 12 September 2019 for registration of a process

[1] "CGPDTM" hereinafter
[2] "the subject application" hereinafter

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patent for "Recovery of Potassium Sulphate and other valuable products from Spent Wash leading to ZLD[3] System"[4]. A pre-grant opposition, to the application, was filed by the Council of Scientific and Industrial Research[5], opposing the application as being barred by clauses (b), (e), (f) and (g) of Section 25(1)[6] of the Patents Act, 1970. The objection under Section 25(1)(f) was further predicated on the premise that the subject invention that the appellant sought to patent was not patentable in view of clauses (a) and (d) of Section 3[7] of the

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[3] Zero Liquid Discharge

[4] "the subject invention", hereinafter

[5] "CSIR" hereinafter

[6] **25. Opposition to the patent**. –

(1) Where an application for a patent has been published but a patent has not been granted, any person may, in writing, represent by way of opposition to the Controller against the grant of patent on the ground—

(a) that the applicant for the patent or the person under or through whom he claims, wrongfully obtained the invention or any part thereof from him or from a person under or through whom he claims;

(b) that the invention so far as claimed in any claim of the complete specification has been published before the priority date of the claim—

(i) in any specification filed in pursuance of an application for a patent made in India on or after the 1st day of January, 1912; or

(ii) in India or elsewhere, in any other document:

Provided that the ground specified in sub-clause (ii) shall not be available where such publication does not constitute an anticipation of the invention by virtue of sub-section (2) or sub-section (3) of Section 29;

*****

(e) that the invention so far as claimed in any claim of the complete specification is obvious and clearly does not involve any inventive step, having regard to the matter published as mentioned in clause (b) or having regard to what was used in India before the priority date of the applicant's claim;

(f) that the subject of any claim of the complete specification is not an invention within the meaning of this Act, or is not patentable under this Act;

(g) that the complete specification does not sufficiently and clearly describe the invention or the method by which it is to be performed;

[7] **3. What are not inventions**. – The following are not inventions within the meaning of this Act, —

(a) an invention which is frivolous or which claims anything obviously contrary to well-established natural laws;

*****

(d) the mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant.

Explanation.—For the purposes of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substance shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy;

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Patents Act. For the purposes of the objection under Section 25(1)(b) and (e), CSIR relied on the following prior art documents:

Document No.	Document Details	Publication Date
D1	US 20180257945A1	13 September 2018
D2	Indian Standard IS: 8032-1976 (reaffirmed 2003); "GUIDE FOR TREATMENT OF DISTILLERY EFFLUENTS", published by Bureau of Indian Standards[8] in August 1976	August 1976
D3	Management of Distillery Wastewater; Central Pollution Control Board, Ministry of Environment & Forests	September 2001
D4	Sustainable methodology for production of potassic fertiliser from agroresidues: Case study using empty cotton boll; Journal of Cleaner Production	2 January 2019

3. By Order dated 28 December 2021, the Assistant Controller of Patents & Designs[9] rejected the opposition of CSIR under (i) Section 25(1)(b), (ii) Section 25(1)(f) to the extent it asserted that the subject invention was not patentable in view of Section 3(a), and (iii) Section 25(1)(g), but upheld the opposition of CSIR under (i) Section 25(1)(f) to the extent it asserted that the subject invention was not patentable in view of Section 3(d), and (ii) Section 25(1)(e). Resultantly, the AC rejected the subject application.

4. The appellant appealed, against the rejection of its application by the AC, by way of CA (Comm IPD-PAT) 18/2022, under Section

[8] "BIS" hereinafter
[9] "the AC" hereinafter

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117A of the Patents Act. By judgment dated 10 March 2023, a learned Single Judge has dismissed the appeal.

5. The present appeal assails the said decision.

Facts

6. Details of the subject invention

6.1 Object of the invention

As we have already noted, the subject invention was for a process patent, titled "Recovery of Potassium Sulphate and other valuable products from Spent Wash leading to ZLD System". According to the details contained in the complete specifications relating to the subject invention, the aim of the invention was recovery of potassium sulphate, magnesium sulphate, activated carbon and other value-added products, which could be used either as fuel or as cattle feed from the effluent from the molasses-based alcohol distillery, in such a manner as to attain zero liquid discharge.

6.2 Background of the Invention

In the "Background of the Invention", as contained in the complete specifications of the subject application, it was stated that alcohol distilleries were among the most notorious of water polluting industries, and one of the main sources of such pollution was the

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effluent resulting from molasses-based alcohol distilleries, commonly known as "spent wash". Though there existed prior patents aimed at recovering potash-based fertilizer from spent wash, they had shortfalls, which the subject invention sought to address. Additionally, the subject invention also sought to recover other value added by products. The Complete Specifications referred, in this context, to US Pat 1400192, the "GUIDE FOR TREATMENT OF DISTILLERY EFFLUENTS", published by the BIS, European Patent 2751028 and PCT[10] Publication WO 2017/042832, and concluded thus:

> "It has been felt that all of the aforesaid prior arts do not lead to a simple and economical process for recovery of potassium sulphate and other value-added products from molasses-based alcohol distillery effluent. Thus, the need to provide a process for simple and economical recovery potassium sulphate and other value-added products from molasses-based alcohol distillery effluent."

6.3 Summary of the Invention

The "Summary of the Invention", as contained in the Complete Specifications of the subject invention, read thus :

> "Accordingly, the present invention relates to a process recovery potassium sulphate and other value added products from molasses based alcohol distillery effluent. The process comprises removing high molecular weight organic compounds from the spent wash to obtain a first liquid fraction. The process further comprises concentrating the first liquid fraction to obtain a first solid fraction. The process further comprises subjecting the first solid fraction to thermal decomposition to obtain a second solid fraction. The process further comprises dissolving the second solid fraction in a

[10] Patent Cooperation Treaty

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solvent to obtain a second liquid fraction. The process further comprises recovering potassium sulphate from the second liquid fraction."

6.4 Detailed Description of the Invention

6.4.1 The "Detailed Description of the Invention" was provided, in the Complete Specifications, with respect to the following 2 Figures, apropos which it was specified that Figure 1 demonstrated "the process for recovering potassium sulphate in accordance with an embodiment of the invention" and Figure 2 demonstrated "a more detailed process for recovering potassium sulphate, magnesium sulphate, activated carbon, high molecule weight organic compounds and water in accordance with an embodiment of the invention":

Figure 1

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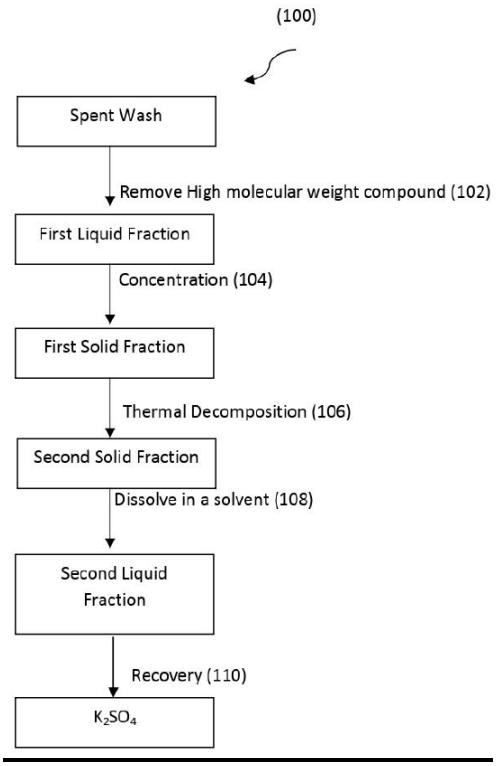

Figure 2

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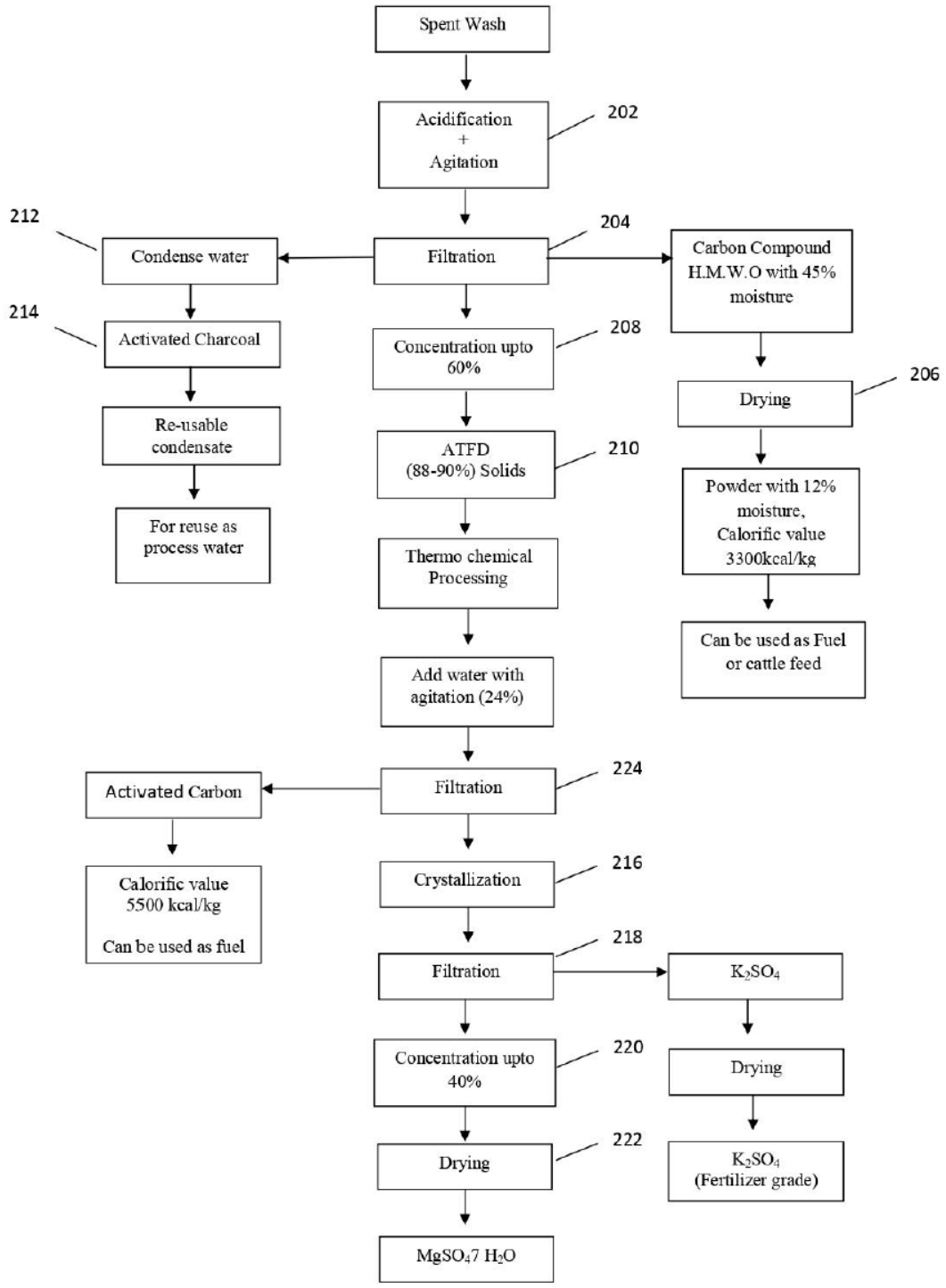

6.4.2 The various processes specified in the "Detailed Description of the Invention" may be enumerated thus:

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(i) Spent Wash was treated with acid, resulting in the third liquid fraction[11]. This third liquid fraction was filtered, resulting in the production of high molecular weight organic compounds and the first liquid fraction.

(ii) The high molecular weight organic compounds were dried. This produced a powder which had less than 12% moisture and calorific value 3300 kcal/kg. This powder was usable as cattle feed / fuel.

(iii) The first liquid fraction was evaporated, resulting in the production of slurry and vapour. The slurry was dried, thereby producing the first solid fraction.

(iv) The vapour which emerged from evaporation of the first liquid fraction could be condensed, thereby producing water which was re-usable either by itself or after purification. Thus, the process was one of Zero Liquid Discharge.

(v) The first solid fraction was subjected to thermal decomposition in anaerobic conditions at a temperature of 320-350°C, resulting in the second solid fraction. This second solid fraction was dissolved in 20 to 30% water, which produced a second liquid fraction.

[11] "Third liquid fraction" as the "first" and "second" liquid fractions already found reference in the "Summary of the Invention".

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(vi) The second liquid fraction could be subjected to one of the following two processes:

(a) The second liquid fraction could be crystallised, which resulted in the first Mother Liquor. This first Mother Liquor, if filtered, produced potassium sulphate and the first filtrate. The first filtrate, when concentrated and / or dried, resulted in the production of magnesium phosphate.

(b) Alternatively, the second liquid fraction could be filtered, which would result in the production of activated carbon of calorific value approximately 5500 kcal/kg, which could be used as fuel.

6.4.3 We may divide these processes into

(i) the process which resulted in the production of potassium sulphate, and

(ii) the process which resulted in the production of other value added products.

6.4.4 The production of potassium sulphate from Spent Wash involved the following steps. Spent Wash was treated with acid, resulting in the third liquid fraction. The third liquid fraction was filtered, resulting in production of high molecular weight organic compounds and the first liquid fraction. The first liquid fraction was evaporated, producing slurry and vapour. The slurry was dried,

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resulting in the first solid fraction. The first solid fraction was subjected to thermal decomposition in anaerobic conditions at a temperature of 320-350°C resulting in the second solid fraction. The second solid fraction was dissolved in 20-30% water resulting in the second liquid fraction. The second liquid fraction was crystallised, producing the first Mother Liquor. The first Mother Liquor, when filtered produced potassium sulphate.

6.4.5 The production of the value added by-products followed the following steps:

(i) The high molecular weight organic compounds, produced on filtration of the third liquid fraction, on being dried, resulted in the production of powder with less than 12% moisture and calorific value 3300 kcal/kg, which was usable as cattle feed / fuel.

(ii) The vapour resulting in the evaporation of the first liquid fraction, on condensation, resulted in the production of water which was re-usable either by itself or after purification.

(iii) The first filtrate, which emerged after filtration of the first Mother Liquor, on concentration and / or dry, produced magnesium sulphate.

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(iv) The second liquid fraction, on filtration, produced activated carbon with calorific value approximately 5500 kcal/kg, which was usable as fuel.

6.5 Claims in the subject application

The subject application contained the following claims:

> "1. A process (100) for recovering potassium sulphate and other value added product from distillery spent wash, said process comprising:
>
> a. removing (102) high molecular weight organic compounds from the spent wash to obtain a first liquid fraction;
> b. concentrating (104) the first liquid fraction to obtain a first solid fraction;
> c. subjecting the first solid fraction to thermal decomposition (106) to obtain a second solid fraction;
> d. dissolving (108) the second solid fraction in a solvent to obtain a second liquid fraction; and
> e. recovering (110) potassium sulphate from the second liquid fraction.
>
> 2. The process as claimed in claim 1, wherein the step of removing (102) high molecular weight organic compounds from the spent wash to obtain the first liquid fraction comprises:
>
> a. adding (202) acid to the spent wash to obtain a third liquid fraction; and
> b. filtering (204) the third liquid fraction to obtain high molecular weight organic compounds and the first liquid fraction.
>
> 3. The process as claimed in claim 2, wherein the high molecular weight organic compound thus obtained is dried (206) to obtain powdered high molecular weight organic compounds.
>
> 4. The process as claimed in claim 1, wherein the step of concentrating (104) the first liquid fraction to obtain the first solid fraction comprises:

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a. evaporating (208) the first liquid fraction to obtain a slurry and a vapour phase; and
b. drying (210) the slurry to obtain the first solid fraction.

5. The process as claimed in claim 4, wherein the vapour phase water is condensed (212) to obtain re-usable water.

6. The process as claimed in claim 1, wherein the thermal decomposition (106) is performed in anaerobic conditions.

7. The process as claimed in claim 1, wherein the step of dissolving (108) the second solid fraction in the solvent to obtain the second liquid fraction comprises dissolving (108) the second solid fraction in 20-30% water.

8. The process as claimed in claim 1, wherein the step of recovering (110) potassium sulphate from the second liquid fraction comprises:

a. subjecting the second liquid fraction to crystallization (216) to obtain a first mother liquor; and
b. filtering (218) the first mother liquor to obtain potassium sulphate and a first filtrate.

9. The process as claimed in claim 8, wherein magnesium sulphate is recovered by concentrating (220) and/or drying (222) the first filtrate.

10. The process as claimed in claim 1, wherein activated carbon is further recovered from distillery spent wash.

11. The process as claimed in claim 10, wherein the activated carbon is recovered from the second liquid fraction.

12. The process as claimed in claim 11, wherein the activated carbon is recovered from the second liquid fraction by filtering (224) the second liquid fraction."

7. Though, after the filing of the aforesaid application by the appellant before the Controller of Patents, a First Examination

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Report[12] was issued by the Controller on 25 February 2020, and a reply to the FER was submitted by the appellant on 27 March 2020, the order passed by the AC, which formed subject matter of challenge before the learned Single Judge, does not adjudicate the FER, but only adjudicates a subsequent pre-grant opposition filed by CSIR.

8. Pre-grant opposition of CSIR

8.1 CSIR, in its pre grant opposition, opposed the application of the appellant, by invoking clauses (b), (e), (f), (g) of Section 25(1) of the Patents Act. It contended that

(i) Section 25(1)(b) applied, as the subject invention was not novel,

(ii) Section 25(1)(e) applied, as the subject invention was obvious from existing prior art and did not involve any inventive step,

(iii) Section 25(1)(f) applied, as

(a) the subject invention was not patentable under Section 3(a) and

(b) the subject invention was not patentable under Section 3(d), and

(iv) Section 25(1)(g) applied, as the complete specifications did not sufficiently and clearly describe the invention or the method by which it was to be performed.

[12] "FER", hereinafter

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8.2 Of these objections, the AC has upheld only the objection relatable to Section 25(1)(e) and Section 25(1)(f) read with Section 3(d). All other objections have been rejected. This is thus noted in the order passed by the AC:

> "After going through both the submissions (by the Applicant & by the Opponent), the office reaches to the following conclusions:-
>
> (i) The Opponents view on Sec. 25 (1) (b) i.e. "the subject matter of the impugned Application is not novel", does not contains any merit, as neither D1 nor D2, discloses all the features of the impugned application.
>
> (ii) Opponents view on Sec. 25 (1) (f) i.e. "the subject matter of the impugned Application is not patentable under Section 3(a) of the Act", does not contains any merit.
>
> (iii) The office disagrees with the opponents view on Sec. 25 (1) (g) i.e. "the complete specification of the impugned Application does not sufficiently and clearly describe the invention or the method by which it is to be performed".
>
> (iv) The office is in the same opinion with the opponent view on Sec. 25 (1) (f) i.e. "the subject matter of the impugned Application is not patentable under Section 3(d) of the Act". The applicant argues that, as the claims of impugned application are Novel, does not fall within the ambit of section 3(d). But, as the process of the impugned application does not involve any new reactant nor results in a new product, and hence, the claims of impugned application are not allowable u/s 3(d) of The Patent Act 1970.
>
> (v) The Opponents view on Sec. 25 (1) (e) i.e. "the subject matter of the impugned Application is obvious and does not involve any inventive step", do holds merit."

8.3 The learned Single Judge, as also this Bench, is concerned only with the sustainability of the order passed by the AC, insofar as it upholds CSIR's opposition to the patentability of the subject invention

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under Section 25(1)(e) and under Section 25(1)(f) read with Section 3(d), of the Patents Act.

8.4 The oppositions raised by CSIR with reference to Section 25(1)(e) and with respect to Section 25(1)(f) read with Section 3(d) have been recorded by the AC thus, in his order:

> Objection of CSIR under Section 25(1)(e)
>
> "**Opponents view on Sec. 25 (1) (e) i.e. the subject matter of the impugned Application is obvious and does not involve any inventive step**:
>
> The Opponent made the submissions that the claims of the impugned Application lacks inventive step in view of the Document D1 or the Document D2 alone. This is because in view of the Document D1 or the Document D2 there is no technical advance or economic significance whatsoever identified in claim 1 of the impugned Application, as mandated under Section 2(1)(ja)[13] of the Act. Any person skilled in the art trying to address the problem of the impugned Application at the date of priority would surely start with the Document D1 or the Document D2 and will be able to arrive at the claimed invention of the patentee with no additional teaching needed from any other document. It is submitted that the Document D1 or the Document D2 has clear teaching that its disclosure can be directly applied to arrive at the claimed invention of the impugned Application. Thus, claim 1 lacks inventive step in view of the Document D1 or the Document D2 alone or in combination. [ref. Table-II, internal pages 15-21 of the as filed pregrant opposition.]
>
> The Opponent further relied upon the Documents D3 and D4 for the content of various ions in the spent wash and for recovering potassium sulphate, potassium chloride & NaCl/KCl mixed salt from a solution containing sodium, potassium, sulphate & chloride ions, by employing fractional crystallisation technique.

[13] **2. Definitions and interpretation**. –
(1) In this Act, unless the context otherwise requires,—
*****
(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;

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Documents D1 and D2 are analogous and relevant prior art document and is reasonably pertinent to the problem, albeit artificial, sought to be addressed by a person skilled in the art and therefore a person skilled in the art will peruse the Documents D1 and D2 in the context of obtaining process (100) for recovering potassium sulphate and other value added product from distillery spent wash.

The Opponent summarized that, in essence, claim 1 of the impugned Application is a mere compilation of methodologies revealed in the above mentioned cited prior art documents and does not show any technical advance or economic significance whatsoever in the light of the said prior art documents. Further, a person skilled in art can easily arrive at the process, as claimed in claim 1 of the impugned Application, following the disclosure in the above mentioned cited prior art documents.

The Opponent submitted that claim 1 of the impugned Application ought to be rejected for being obvious in the light of, and without prejudice to each other, disclosures made in D1 alone, D2 alone, D1-D2 in combination, D3 in combination with D1 or D2 or both, D4 in combination with D1 or D2 or both and D1-D4 combined. Without prejudice, the Opponent also submitted that, due to absence of experimentation in the impugned application, the technical leap or economical significance of the invention cannot be concluded. The Opponent also submitted that the Applicant failed to adduce any data in the complete specification of the impugned Application and therefore failed to establish any technical advance or economic significance in the claimed invention."

Objection of CSIR under Section 25(1)(f) read with Section 3(d)

"**Opponents view on Sec. 25 (1) (f) i.e. the subject matter of the impugned Application is not patentable under Section 3(d) of the Act**:

The Opponent argued that the invention as claimed in claims 1 to 11 of the impugned Application squarely falls within the scope of Section 3(d) of the Act as being a mere use of a known process or machine or apparatus without resulting in a new product or employing at least one new reactant. The process used in the claim is essentially removing, concentrating, subjecting, dissolving, recovering and using known solvents. Thus, there are no new reactants. Even if the alleged product is assumed to be allegedly

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obtained i.e. purified/fertiliser grade potassium sulphate, it is well known. Further, there is no proof for obtaining "so-called" fertilizer grade potassium sulphate. Therefore, it was asserted that the impugned Application ought to be set aside on this ground alone. The Opponent submitted that the disclosure in the cited prior art documents D1 to D4 clearly established that the claimed invention in the instant Application amounts to nothing more than mere use of a known process and is therefore not liable to proceed to grant."

9. Response of appellant to objections of CSIR

The submissions of the appellant, in response to the aforesaid objections raised by CSIR, are thus recorded in the order of the AC:

"The applicant submits the difference between impugned Application w.r.t the prior art disclosure as follows:

D1 indicates treatment with acid as the starting point for the treatment of BMSW. By the treatment of BMSW with acid, the document teaches removal of sludge. On the other hand, it can be seen that the FIRST PROCESS as described in D2 involved concentration and incineration of molasses spent wash. Thus, neither treatment with acid is performed nor sludge is removed. On the other hand, the spent wash after concentration is incinerated and hence, no sludge is even removable. Thus, the teachings of the FIRST PROCESS are contradicting the teachings of D1. Thus, the teachings of the FIRST PROCESS as contained in D2 cannot be even remotely combined with the teachings of the D1.

It can be seen that "dilution, acidification and heating is performed ON MOLASSES PRIOR TO FERMENTATION" as per the teachings of the THIRD PROCESS of D2. Thus, this process is also contradicting the teachings of D1 and hence, even the THIRD PROCESS of D2 cannot be combined with the teachings of D1.

Now coming to the FOURTH PROCESS as disclosed in D2, it can be seen that FOURTH PROCESS involves neutralization with lime. It can be furthermore observed that neutralization of the spent wash as per the teachings of FOURTH PROCESS of D2 does not result in formation and separation of sludge. Thus, the teachings of the FOURTH PROCESS are contradicting the teachings of D1.

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Thus, the teachings of the FOURTH PROCESS as contained in D2 cannot be even remotely combined with the teachings of the D1.

From the above, it can be seen that at the first stage itself, the processes as disclosed in D2 are contradicting the teachings of D1. Thus, there is no motivation to combine the teaching of the D1 and D2.

It can be furthermore seen that out of the four processes described in D2, two of the processes namely the SECOND and the THIRD PROCESSES are not even dealing with spent wash (rather they deal with MOLASSES). The remaining two processes described in D2, namely the FIRST and the FOURTH PROCESSES are involving incineration of the spent wash and recovery of potash from ash whereas document the basic intent of D1 is to "separate the organics from the Spent wash to the maximum possible extent and then obtain potash from the liquid left behind". D1 never follows the principle of burning of the spent wash as by doing so, the organics cannot be recovered. Thus, even conceptually, the teachings of D1 is contradicting the teachings of FIRST and the FOURTH PROCESSES as described in D2 and hence, POSITA while reading D1 and D2 (which contain contradicting teachings), is neither motivated nor prompted into combining the teachings of the two documents."

10. Findings of the AC

Following this, the findings of the AC are, to say the least, laconic, and read thus:

"The office is in the same opinion with the opponent, as BMSW is the aqueous effluent obtained upon anaerobic digestion of Spent Wash (SW) and the process as disclosed in either D1 and/or D2 is substantially similar. Moreover, the steps (b), (c), (d) & (e) of Claim 1 of the impugned application are standard chemical process plant operations, viz., concentration, thermal decomposition, dissolution & recovery; and is obvious for a person skilled in the art after going through the disclosures made in D1 alone, D2 alone, D1-D2 in combination, D3 in combination with D1 or D2 or both, D4 in combination with D1 or D2 or both and D1-D4 combined; and hence the present set of claims (claim 1-11) does not involve any inventive merits.

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As the later submitted data (along with the reply to Hearing u/s 25(1)) was not present at the time of filing the as filed specification, the same has not been taken on record.

Therefore, the office accepts the representation filed by the opponent under section 25(1) & rule 55(1) and refuses the patent Application No. 201911036748 for grant of patent under Rule 55(6)."

11. The Impugned Judgment

Aggrieved by the aforesaid order passed by the AC, the appellant appealed to the Intellectual Property Division of this Court by way of C.A.(COMM.IPD-PAT) 18/2022 which has been decided by the impugned judgment dated 10 March 2023, as under:

"**Objection under Section 3(d) of the Act**

*****

11. At the outset, it may be noted that the subject patent application is directed towards a set of processes and not towards a particular substance. …

12. Even though Section 3(d) of the Act makes a reference to "*known process"*, in my view, the term "*known process*" would also include multiple known processes, which is the case in the present appeal.

13. In terms of Section 3(d) of the Act, a patent can be granted in respect of a "*known process*" only when such a "*known process"* results in a new product or employs at least one new reactant. There is a material difference between the terminology "*discovery of a new form of a known substance"* and "*mere use of a known process"*. In the case of discovery of new form of a known substance, the patent can be granted only if the said new form results in enhancement of the known efficacy of the substance, whereas there is no such provision for enhancement of known efficacy in respect of known processes. Therefore, the scope for patentability of processes is narrower than substances.

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14. A perusal of the cited prior art documents, D1 and D2, would demonstrate that the processes used in the subject invention are nothing more than a mere use of a combination of known processes. All the processes that are a part of the claims of the subject patent application are disclosed in the cited prior art documents, D1 and D2. Further, the appellant is not using any new reactant in the said processes, nor is the final process resulting in the creation of a new product. The end product in all the prior art documents as well as the subject patent application is the same, **Potassium Sulphate**.

15. The only difference in the subject patent and the cited prior arts is that the appellant claims that the process adopted by them is a zero liquid discharge process, whereas the processes described in the prior arts result in the discharge of effluents. It is the claim of the appellant that because the subject patent is zero discharge process, it does not need any further treatment, and results in commercially usable potassium sulphate and water.

16. In my view, the useful product being produced by the subject patent is still the same, Potassium Sulphate and the individual processes claimed by the appellant are known in the art. Therefore, this argument of the appellant also does not overcome the objection raised by the Controller under Section 3(d) of the Act.

17. Counsel for the appellant has placed reliance on the judgement of the Coordinate Bench of this Court in ***D.S. Biopharma Limited***[14]. The aforesaid judgement was in the context that the Controller had not provided the details of a "*known substance"* on account of which objection under Section 3(d) of the Act was raised. Therefore, it was observed that appellant was not given adequate opportunity to deal with the objection under Section 3(d) of the Act. Accordingly, in the absence of proper identification of the "*known substance"* in the hearing notice and lack of opportunity being given therein, the impugned order was set aside. The relevant extract of the said judgement is set out below:

> "19. Therefore, holistically read, the Appellant has not had adequate opportunity to deal with the objection under Section 3(d) in as much as apart from merely specifying the said objection for the first time in the hearing notice, the

[14] **D.S. Biopharma Ltd v Controller, 2022 SCC OnLine Del 3211**

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> manner in which the said objection was attracted was completely absent. 20. In the absence of the proper identification of the known substance in the hearing notice and a lack of proper opportunity being afforded to respond to the objection under Section 3(d), the impugned order is not sustainable."

18. The invention in the subject application deals with a process patent and not a product patent. Further, the details of the known processes are provided in the prior art documents referred in the hearing notice. Therefore, the judgment in ***D.S. Biopharma*** would be of no assistance to the appellant.

19. The appellant also relies on an extract from Patent Law by P. Narayanan (4th Edition) to support their case that the subject invention constitutes patentable subject matter. The said extract is set out below:

> 2-27 **Process patents.** The definition of invention includes an art or process of manufacture Thus processes are good subject matter of patents. If the result of a new process is a new article, or a better article, or a cheaper article than that produced by old methods, the process is patentable, provided of course that it required an exercise of the inventive faculty to **alternative method of arriving at the same result, irrespective of whether that result is better or cheaper, may be patentable.** But a process to be patentable must be a process which leads to some result and the result arrived at must be useful, though it need not be an article at all; for example, a new process for chemically cleaning dirty linen would be good subject matter, but a process of treating material, of which no result at all could be predicated, would not be patentable.

20. The appellant also relies upon the Judgement in ***Catalysts & Chemicals India v Imperial Chemical***[15], where it has been held that even if the individual processes sought to be patented are not novel, the patentability of the combination of the steps/processes used should be considered. The relevant finding with respect to the said judgement as given in P. Narayanan (4th Edition) is set out below:

> "It has been observed by the Controller General that **generally a process is considered to be new if** (1) it

[15] **(1976) IPLR 84**

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> results in a new product or (2) it uses new starting materials or (3) **it employs a novel combination of steps even if such steps themselves may not be per se novel.**"

21. In my considered view, the above argument also does not overcome the objection raised under Section 3(d) of the Act, as the language of Section 3(d) is clear to the effect that for a process to constitute patentable subject matter, it needs to employ at least one new reactant or result in the production of a new product. In the present case, neither of the aforesaid two conditions have been met by the appellant.

22. The claimed process in the claims 1 to 11 of the subject patent application squarely falls within the scope of Section 3(d) of the Act, as being a mere use of known processes, which are already disclosed in the prior art documents, D-1 and D-2. Therefore, in view of the discussion above, the subject invention is not patentable under Section 3(d) of the Act. There is no infirmity in the impugned order of the Controller that the subject invention is not patentable as it squarely falls within the scope of the subject matter excluded from patentability under Section 3(d) of the Act.

23. Even though the non-patentability under Section 3 of the Act is in itself enough for refusal of the application for grant of a patent, nevertheless, for the sake of completeness, I am also examining the finding of lack of inventive step under Section 2(1)(ja) of the Act.

Objection of lack of inventive step

24. The relevant observations of the Controller are set out below:

> "The office is in the same opinion with the opponent, as BMSW is the aqueous effluent obtained upon anaerobic digestion of Spent Wash (SW) and the process as disclosed in either D1 and/or D2 is substantially similar. Moreover, the steps (b), (c), (d) & (e) of Claim 1 of the impugned application are standard chemical process plant operations, viz., concentration, thermal decomposition, dissolution & recovery; and is obvious for a person skilled in the art after going through the disclosures made in D1 alone, D2 alone, D1-D2 in combination, D3 in combination with D1 or D2 or both, D4 in combination with D1 or D2 or both and D1-D4 combined; and hence the present set of claims (claim 1-11) does not involve any inventive merits."

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25. The Division Bench of this Court in ***F. Hoffmann-La Roche Ltd. and Ors.*** **v** ***Cipla Ltd.***[16], has laid down the seminal test to be followed for determining inventive step and lack of obviousness. The steps involved in the said test are as follows:

> "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 skilled in the art and rule out a hindside approach**"

26. In line with the steps listed above, at the appellate stage, for determining inventive step, I shall start at Step 4 and identify the differences, if any between the prior arts identified by the Controller and the subject patent application.

27. In the present case, the following two prior arts have been identified for the purposes of determining inventive step under Section 2(1)(ja) of the Act:

> D1: US20180257945 with publication date of 13th September, 2018
>
> D2: Indian Standard IS: 8032-1976 (reaffirmed 2003); "Guide For Treatment Of Distillery Effluents", published by BIS in August 1976

28. For analysing the aspect of inventive step, I shall, in brief make a comparison of the subject patent application along with the aforesaid two prior art references.

[16] **2016 (65) PTC 1 (Del)**

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Comparison with Prior Art D-1

29. The table below highlights the comparison of the subject application and prior art D-1.

Independent Claims of the subject patent	**Disclosure in prior art Document D1**
A process (100) for **recovering potassium sulphate and other value added product** from distillery spent wash,	"[0010] Another object of the invention is to **recover potassium** from BMSW, **to produce** multi-nutrient potassic fertilizers viz., potassium nitrate, **potassium sulphate, mono potassium phosphate** etc." "[0012] Another object of the invention is to utilise solid waste for preparation **of value-added by-products**."
a. removing (102) high molecular weight organic compounds from the spent wash to obtain a first liquid fraction;	"[0016] (ii) clarification of slurry from step (i), through in-situ formation of aluminium hydroxide gel to **effect removal of fine particulates, preferably in multiple stages**;"
b. **concentrating** (104) the first liquid fraction to obtain a first solid fraction; (step b)	"[0004] Reference may be made to section 5.1.6.3 of Indian Standard IS: 8032-1976 (reaffirmed 2003) "GUIDE FOR TREATMENT OF DISTILLERY EFFLUENTS", which teaches about process for the recovery of potash from distillery spent wash. The process involves neutralization of spent wash followed by **concentration** and incineration to produce "spent wash coke" which on combustion produces ash. This ash is then leached with water."

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c. subjecting the first solid fraction to **thermal decomposition** (106) to obtain a second solid fraction; (step c)	"[0026] (xii) production of alumina rich activated carbon, by **pyrolysing** and activating the sludge from step (ii);"
d. dissolving (108) the second solid fraction in a solvent to obtain a second liquid fraction; and (step d)	--
e. **recovering** (110) potassium sulphate from the second liquid fraction. (step e)	"[0010] Another object of the invention is to **recover potassium** from BMSW, **to produce** multi-nutrient potassic fertilizers viz., potassium nitrate, **potassium sulphate, mono potassium phosphate** etc. [0023] (ix) removal of residual tartrate, by treating the potassium nitrate liquor [from step (viii)] with calcium oxide & nitric acid; [0024] (x) crystallisation of potassium nitrate (purity >99%), by cooling/evaporating the potassium nitrate liquor [from step (ix)];"

30. It is clear from the table above that only two differences emerge between the prior art D-1 and the subject patent application. One, that the subject patent application incorporated thermal decomposition and the prior art document D-1 utilizes pyrolyzing. As per the International Union for Pure and Applied Chemistry (IUPAC) Goldbook, "pyrolyzing" is the process of thermal decomposition of materials at elevated temperatures in an inert environment. Therefore, this difference in terminology is not a technical difference but only usage of different words for the similar processes.

31. The next difference is that Step d has not been covered by the prior art. However, the mere dissolution of a solid (referred to as second solid fraction in the patent application) in a solvent to

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obtain a solution is a very well-known practice. Therefore, this feature of claim 1 of the subject application can in no way be termed to be satisfying inventive step criteria.

Comparison with Prior Art D-2

32. The table below highlights the comparison of the subject application and prior art D-2.

Independent Claim of the subject patent	**Disclosure in Prior Art Document, D-2**
A process (100) for **recovering potassium sulphate** and other value added product from distillery spent wash, (step a)	"5.1.6.1 Recovery of potash by concentration and incineration of molasses spent wash was practised abroad during the First World Wars and up to late thirties. Jackson reported recovery of potash from beet molasses. In 1945, Reich described a process wherein by dilution, acidification and heating of molasses prior to fermentation, about 88 percent calcium salts could be precipitated as calcium sulphate. **Activated carbon and salts of potassium and sodium could be obtained by suitable treatment of spent wash. Activated carbon and salts of potassium and sodium could be obtained by suitable treatment of spent wash.** 5.1.6.3 Chakrabarty and Bhaskaran carried out a pilot plant study to **recover potassium salts from spent wash of a molasses distillery in India**.
b. **concentrating** (104) the first liquid fraction to obtain a first solid fraction;	5.1.6.1 **Recovery of potash by concentration and incineration of molasses**

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(step b) c. subjecting the **first solid fraction to thermal decomposition (106) to obtain a second solid fraction**; (step c)	**spent wash** was practised abroad during the First World Wars and up to late thirties... In this process, **raw spent wash was neutralized with lime and evaporated to about 75 percent solids in a forced circulation** evaporator under vacuum by duplicating a multiple-effect system (step b). **Thick liquor was burnt in an incinerator (step c) where the spent wash was converted to a substance called 'spent wash coke**, which burnt itself under the grates of the incinerator and turned into ash, thereby supplying necessary heat required for the incoming thick liquor. Para 5.1.6.1 on page 150 of the appellant's documents with the appeal.
d. **dissolving (108) the second solid fraction in a solvent** to obtain a second liquid fraction; and (step d)	*The ash was collected and leached with water by which all the soluble potassium and sodium salts dissolved in it, leaving behind iron, silica, calcium and other impurities in the residue.* **Para 5.1.6.3. line 10 page 151** of the appellant's documents filed with the Appeal.
e. ***recovering (110) potassium sulphate from the second liquid fraction (***step e***)***	*The solution was alkaline due to the presence of potassium carbonate, which was* ***filtered and neutralized with sulphuric acid and further concentrated in the evaporator****. Potassium salts in the form of chloride and* ***sulphate were crystallized from the concentrated solution in the crystallizer.***

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	Para 5.1.6.3. line 12 page 151 of the appellant's document filed with the Appeal.

33. The above table captures the similarities between the subject patent application and the prior art document D-2. It is pertinent to note that the prior art document D-2 is a standard document and not a patent document.

34. From the table above, it emerges that there is hardly any difference between the prior art D-2 and the subject patent application.

35. In light of the comparisons above, it is clear that by combining the teachings of the prior arts, D-1 and D-2, a person skilled in the art would be able to come to the subject matter claimed in the subject patent application.

36. The appellant has also claimed that the aforesaid prior arts teach different processes and the teachings of both the prior arts cannot be combined. With this claim, the appellant attempts to say that combining prior arts, D-1 and D-2, is a hindsight analysis. The relevant extract with regard to hindsight analysis in ***Avery Dennison***[17] is extracted as under:

> *"32. Some of the fundamental principles while analysing inventive step and whether an invention is obvious or not are:*
>
> *i. That simplicity does not defeat an invention - even simple inventions are patentable.*
>
> *ii. 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."*

37. In the present case, it cannot be said that the above analysis is a hindsight reconstruction by using prior arts as both the prior art documents, D-1 and D-2, have been referred to in the background of the complete specification of the subject patent application itself. Therefore, it cannot be said that there is no reason for a person skilled in the art to combine the teachings of the two prior art documents, given that the applicant is itself referring to both of

[17] **Avery Dennison Corporation v Controller of Patents & Designs, (2023) 93 PTC 26**

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them. In my considered view, no ground is made out to claim that the analysis of inventive step has been guided by hindsight reconstruction. Hence, the judgement in ***Avery Dennison*** (Supra) relied upon by the appellant has no applicability in the present case.

38. In terms of the discussion above, the subject patent application does not appear to be constituting a technical advancement, which would be non-obvious to a person skilled in the art. Therefore, the refusal of the subject patent application by the Controller on the ground of inventive step is justified.

39. In the overall facts and circumstances of this case, both the grounds cited by the Controller for refusing the subject patent application under Section 15 of the Act have been upheld. The subject patent application is hit by non-patentability under Section 3(d) of the Act and lacks inventive step in terms of Section 2(1)(ja) of the Act."

12. Aggrieved by the aforesaid judgment of the learned Single Judge, the appellant before the learned Single Judge has filed the present Letters Patent Appeal.

13. Prior Art Documents D1 and D2

13.1 Prior art document D1 – US Patent application 2018/0257945[18]

13.1.1 From the "field of the invention", "background of the invention" and "objects of the invention", one may extract, for the purposes of the dispute, the following paragraphs:

"FIELD OF THE INVENTION

[0001] The present invention provides process for potash recovery from bio - methanated spent wash (BMSW, also known as post

[18] "US'945" hereinafter

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methanated effluent), generated in molasses based alcohol distillery, with concomitant environmental remediation in terms of colour, total dissolved solids (TDS), total organic carbon (TOC), biological oxygen demand (BOD), chemical oxygen demand (COD) etc.). In a broader perspective this invention enables utilisation of indigenous potassic resource while addressing critical environmental concerns."

"BACKGROUND OF THE INVENTION

[0002] Molasses based alcohol distillery effluent is an extremely complex system and poses significant challenge in developing effective environmental remediation protocol. While use of this effluent in land application, to take advantage of nutrient value of constituent K, N and P have been reported in the literature and put in practice, effort have also been made to recover potassium from the effluent."

"OBJECTS OF THE INVENTION

[0008] The main object of the invention is to devise a process for potash recovery from alcohol distillery waste with concomitant improvement of process effluent quality.

[0009] Another object of the invention is to use BMSW (also known as post methanated effluent) as feedstock for production of potash fertiliser.

[0010] Another object of the invention is to recover potas-sium from BMSW, to produce multi - nutrient potassic fertilizers viz., potassium nitrate, potassium sulphate, mono potassium phosphate etc.

[0011] Another object of the invention is to improve process effluent quality vis-a-vis alcohol distillery waste in terms of various environmental parameters, viz., odour, colour, TDS, TOC, BOD, COD etc.

[0012] Another object of the invention is to utilise solid waste for preparation of value - added by - products."

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13.1.2 The "Summary of the Invention" and the "Detailed Description of the Invention", in US'945, as contained in the complete specifications of the said patent, read thus:

"SUMMARY OF THE INVENTION

[0014] The present invention provides a process for recovery of potassium from BMSW with concomitant improvement of process effluent quality. The process comprises following major steps:

[0015] (i) acid treatment of BMSW to generate carbon rich sludge;

[0016] (ii) clarification of slurry from step (i), through in - situ formation of aluminium hydroxide gel to effect removal of fine particulates, preferably in multiple stages;

[0017] (iii) precipitation of potassium bitartrate, by reacting the supernatant liquid from step (ii) with partially (ca.50%) protonated magnesium tartrate, following the general procedures as disclosed in prior art;

[0018] (iv) recovery of residual tartrate as calcium tartrate, by treating the supernatant liquid from step (iii) with calcium oxide & hydrochloric acid / sulphuric acid;

[0019] (v) co - precipitation of gypsum & magnesium hydroxide, by treating the supernatant liquid from step (iv) with calcium oxide;

[0020] (vi) discharge of the supernatant liquid from step (v) as process effluent for subsequent environmental remediation / water recovery;

[0021] (vii) decomposition of absorbed organics, by calcining the gypsum & magnesium hydroxide cake from step (v);

[0022] (viii) production of potassium nitrate liquor, by reacting the potassium bitartrate [from step (iii)] with nitric acid and magnesium hydroxide , following the general procedures as disclosed in prior art;

[0023] (ix) removal of residual tartrate, by treating the potassium nitrate liquor [from step (viii)] with calcium oxide & nitric acid;

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[0024] (x) crystallisation of potassium nitrate (purity > 99%), by cooling / evaporating the potassium nitrate liquor [from step (ix)];

[0025] (xi) regeneration of tartaric acid, by treating the calcium tartrate [from step (iv) & step (ix) with sulphuric acid, and subsequent reuse in step (iii) above, following the general procedures as disclosed in prior art;

[0026] (xii) production of alumina rich activated carbon, by pyrolysing and activating the sludge from step (ii);

[0027] (xiii) generating aluminium sulphate solution, by leaching the alumina rich activated carbon obtained in step (xii) with sulphuric acid, and recycling the same in step (ii), for in - situ formation of aluminium hydroxide gel

[0028] (xiv) production of activated carbon through washing and drying the solid carbon obtained in step (xiii).

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"DETAIL DESCRIPTION OF THE INVENTION

[0035] The present invention provides a process for recovery of potassium from BMSW with concomitant improvement of process effluent quality, such process comprising

[0036] (i) Addition of sulphuric acid into BMSW (containing ca.2 % K + w / v), under stirring, till pH is ca. 1.5;

[0037] (ii) addition of alluminium sulphate solution to the slurry from step (i) under stirring, to maintain A13 + concentration between 0.05 % -0.5 % (w / v), followed by addition of magnesium hydroxide to the reaction mixture to adjust pH between 5.5-7.5;

[0038] (iii) precipitation of potassium bitartrate, by reacting the supernatant liquid from step (ii) with partially (ca. 50%) protonated magnesium tartrate, following the general procedures as disclosed in prior art;

[0039] (iv) precipitation of residual tartrate as calcium tartrate, by treating the supernatant liquid from step (iii) with calcium oxide & sulphuric acid;

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[0040] (v) co-precipitation of gypsum & magnesium hydroxide, by treating the supernatant liquid from step (iv) with calcium oxide;

[0041] (vi) discharge of the supernatant liquid from step (V) as process effluent for subsequent environmental remediation / water recovery;

[0042] (vii) decomposition of absorbed organics, by calcining the gypsum & magnesium hydroxide cake from step (v);

[0043] (viii) production of potassium nitrate, by reacting the potassium bitartrate [solid obtained from step (iii)] with nitric acid and magnesiumhydroxide / magnesium carbonate, following the general procedures as disclosed in prior art;

[0044] (ix) regeneration of tartaric acid, by treating precipitated calcium tartrate with sulphuric acid, and subsequent reuse in step (iii) above, following the general procedures as disclosed in prior art;

[0045] (x) production of alumina rich activated carbon, by thermo-chemical processing of the sludge from step (ii);

[0046] (xi) production of aluminium sulphate solution by leaching and washing the alumina rich activated carbon from step (x) with sulphuric acid and recycling the same in step (ii), for in - situ formation of aluminium hydroxide gel;

[0047] (xii) production of activated carbon by washing and drying the solid residue from step (xi).

[0048] In another embodiment, acid treatment of BMSW resulted in over 50% reduction of TOC in aqueous phase.

[0049] In another embodiment, hydrochloric acid and nitric acid were used in lieu of sulphuric acid, for acid treatment of BMSW.

[0050] In another embodiment, in - situ precipitation of aluminium hydroxide gel resulted in reduction in TOC of acid treated BMSW.

[0051] In another embodiment, co - precipitation of gypsum and magnesium hydroxide from tartrate free BMSW resulted in reduction of pollutant loading (expressed in terms of TDS, TOC, BOD, COD etc.) in process effluent.

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[0052] In another embodiment, sludge obtained upon acid treatment and clarification of BMSW was thermo - chemically processed to prepare activated carbon."

13.2 Prior art document D2 – "Guide for Treatment of Distillery Effluents" issued by the BIS (IS:8032-1976)

13.2.1 From the aforesaid guide, the various paragraphs which were relied upon by CSIR to support its assertion that there was no inventive steps involved in the subject invention, vis-à-vis prior art, and which have also been relied upon by the learned Single Judge, are the following:

"5.1.6.1 Recovery of potash by concentration and incineration of molasses spent wash was practised abroad during the First World War and upto to late thirties, Jackson reported recovery of potash from beet molasses. In 1945, Reich described a process wherein by dilution, acidification and heating of molasses prior to fermentation, about 88 percent calcium salts could be precipitated as calcium sulphate. Activated carbon and salts of potassium and sodium could be obtained by suitable treatment of spent wash.

*****

5.1.6.3 Chakrabarty and Bhaskaran carried out a pilot plant study to recover potassium salts from spent wash of a molasses distillery in India. In this process, raw spent wash was neutralized with lime and evaporated to about 75 percent solids in a forced circulation evaporator under vacuum by duplicating a multiple-effect system. Thick liquor was burnt in an incinerator where the spent wash was converted to a substance called 'spent wash coke', which burnt itself under the grates of the incinerator and turned into ash, thereby supplying necessary heat required for the incoming thick liquor. The process was continuous and self-supporting. The ash was collected and leached with water, by which all the soluble potassium and sodium salts dissolved in it, leaving behind iron, silica, calcium and other impurities in the residue. The solution was alkaline due to the presence of potassium carbonate, which was filtered and neutralized with sulphuric acid and further

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concentrated in the evaporator. Potassium salts in the form of chloride and sulphate were crystallized from the concentrated solution in the crystallizer.

It has been reported by these workers that for full scale operation, prior neutralization of spent wash would not be necessary since the evaporator may be made of stainless steel or copper, or it may be copper lined. They have also recommended the use of a forced circulation type quadruple-effect evaporator instead of a neutral circulation the evaporator, to minimize foaming and scale formation due to the presence of calcium sulphate in the spent wash, and economize on steam. The concentration of the spent wash should also be limited to 60 percent in the evaporator. The final product obtained from the pilot plant had the composition shown in Table 2. A flow sheet for recover of potassium salts from distillery waste is shown in fig. I. It has been claimed that a distillery in India producing on an average about 320 kl of spent wash per day could recovery about 3.85 tonnes of potash (K_2O), or about 5-7 tonnes of potassium sulphate and 1.27 tonnes of potassium chloride per day."

Rival Contentions

14. We have heard Mr. Pravin Anand, learned Counsel for the appellant, Mr. Vijay Joshi, learned Counsel for the Assistant Controller of Patents and Designs and Ms. Vindhya S. Mani, learned Counsel for CSIR.

15. In a departure from common practice, we are not reproducing, here, *in extenso*, the rival contentions of learned Counsel, for the reason that, to our mind, neither the order of the AC, nor the impugned judgement, contain sufficient reasons to make out a case for rejecting the subject application either under Section 3(d) or under Section 25(1)(e) read with Section 2(1)(ja) of the Patents Act. We are of the opinion, therefore, that the entire issue would have to be re-examined

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by the office of the CGPDTM, and a proper and reasoned order passed. We set out the reasons, for our decision, as under.

Analysis

16. The learned Single Judge has upheld the order passed by the AC with respect to the objection based on Section 25(1)(f) read with Section 3(d) as well as the objection based on Section 25(1)(e) of the Patents Act. In other words, the learned Single Judge has held the subject invention to be non-patentable on account of Section 3(d), as well as lacking in inventive step within the meaning of Section 2(1)(ja) of the Patents Act.

17. Finding of AC re. novelty vis-à-vis finding re. inventive step

17.1 Significantly, the AC *rejected* the objection of CSIR, based on Section 25(1)(b) of the Patents Act. CSIR had sought to contend that the subject invention was not novel and that, therefore, it was non-patentable in view of Section 25(1)(b). This objection was predicated on prior art documents D1 and D2. The AC has rejected the objection that the subject invention was not novel *on the ground that all features of the subject invention, as reflected in the complete specifications, were not disclosed in either D1 or D2*.

17.2 Despite this, the AC has gone on to hold that the subject invention was not patentable as it did not involve any inventive step

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over existing prior art, as required by Section 2(1)(ja) of the Patents Act.

17.3 There is, per se, no inherent contradiction between a finding that an invention is novel, and yet that, in its creation, no inventive step, within the meaning of Section 2(1)(ja) is involved. The first aspect pertains to the realm of anticipation, whereas the second pertains to the realm of obviousness.

17.4 Novelty resides in an invention if it cannot be said to be disclosed in any earlier prior art and cannot, therefore, be said to be anticipated from the prior art.

17.5 Even if an intention is novel, for the reason that it is not disclosed in any existing prior art, it may still not be inventive, vis-à-vis prior art, if, in transitioning from the prior art to the invention, no inventive step is involved. If the teachings in the prior art, along with existing common general knowledge, are sufficient to enable a person skilled in the art to create the later invention, the later invention would be rendered non-patentable on the ground of obviousness vis-à-vis prior art, for want of any inventive step in its creation.

17.6 In the present case, the AC has held that, though the subject invention may be novel, in that it is not disclosed in existing prior art, it is nonetheless not inventive, as the transition from the existing prior art to the subject invention does not involve any inventive step. In other words, the AC has effectively held that it is possible for a person

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skilled in the art, possessed a general common knowledge to, from the teachings in the existing prior art, arrive at the subject invention.

17.7 A contradiction arises because the AC has held the subject invention to be novel vis-à-vis prior art D1 and D2 *on the ground that all features of the subject invention, as reflected in the complete specifications, were not disclosed in either D1 or D2*.

17.8 *If, therefore, there were features in the subject invention which were not disclosed either in D1 or D2, and the AC nonetheless felt that in proceeding from D1 and/or D2 to the subject invention, no inventive step was involved, the AC would be required to identify the features of the subject invention which were not present in D1 and D2 and demonstrate how those features would not require a person skilled in the art to employ any inventive step. The AC has not, however, done so, and, as a result, the findings of the AC on the aspect of novelty of the subject invention vis-à-vis the prior arts D1 and D2, and his finding that there was no inventive step involved, become inherently contradictory.*

18. We now proceed to the two prior art documents D1 and D2, on which the learned AC, as well as the learned Single Judge, have rejected the subject application. We are required, therefore, to examine whether, vis-à-vis the said prior art documents,

(i) the subject invention is hit by Section 3(d) of the Patents Act, and

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(ii) the subject invention can be said to be lacking in any "inventive step" in its creation from D1 and/or D2, within the meaning of Section 2(1)(ja) of the Patents Act, in the light of the disclosures contained in the prior art documents D1 and D2.

19. Both these questions stand answered in the affirmative by the AC and the decision of the AC stands affirmed by the learned Single Judge.

20. Laconic findings by the AC

20.1 We may, at the very outset, note that the decision of the AC is thoroughly unsatisfactorily. Apropos Section 3(d) of the Patents Act, the AC, even while accepting that the subject invention is novel, holds that it is not patentable under Section 3(d) "as the process of the impugned application does not involve any new reactant nor resulted in a new product". Similarly, with respect to the opposition predicated on Section 2(1)(ja) read with Section 25(1)(e), the findings of the AC are restricted to the passages reproduced in para 10 *supra*. The AC has merely observed that:

(i) BMSW is the aqueous effluent obtained upon anaerobic digestion of spent wash,

(ii) the process disclosed in either D1 and/or D2 is substantially similar, and, most disquietingly,

(iii) steps (b), (c), (d) and (e) in Claim 1 of the subject invention are standard chemical process plant operations, i.e. thermal decomposition, dissolution and recovery, which would

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be obvious for a person skilled in the art after going through the disclosures made in *D1 alone, D2 alone, D1-D2 in combination, D3 in combination with D1 or D2, or both, D4 in combination with D1 or D2 or both and D1-D4 combined*.

20.2 To our mind, the manner in which the AC has dealt with the matter, especially regarding CSIR's objection based on the alleged lack of inventive step, has reduced the proceedings to a mere mockery. There is no discussion whatsoever, worth the name in the order of the AC. There is nothing in the order of the AC to support any of the above findings. At a bare glance, as would become apparent from the discussion hereinafter as well, the processes involved in the complete specification of the subject invention are distinct and different from the processes envisaged either in D1 or in D2. There is nothing in the order of the AC, on the basis of which the finding that the process is "substantially similar" can be supported.

20.3 The order of the AC gives rise to a legitimate grievance of the adoption of a mere mechanical approach, uninformed by any serious application of mind. We are unable to comprehend the finding that the processes involved in steps (b), (c), (d) and (e) of claim 1 are obvious to a person skilled in the art, *after going through the disclosures made in D1 alone, D2 alone, D1 and D2 in combination, D3 in combination with D1 or D2, or both, D4 in combination with D1 or D2 or both and D1-D4 combined*. The AC appears to have merely referred to all the prior arts cited before him and returned a finding that each of the prior arts, seen individually or in combination with one or more of the

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others, would enable a person skilled in the art to arrive at the process which the appellant sought to patent.

20.4 How, is anybody's guess.

20.5 There is not a whisper of explanation in the order of the AC as to how a person skilled in art would, by going through the prior art documents D1 to D4, individually or in combination, be in a position to arrive at the subject invention.

20.6 The manner in which the AC decided the matter throws up an issue of considerable concern. The aspect of whether an invention which is sought to be patented, involves, or does not involve, any inventive step, is crucial to the patentability of the invention. If, vis-a-vis prior art, there is no inventive step involved in arriving at the subject invention, as would be obvious to a person skilled in the art who is possessed of prior general knowledge, the invention is not patentable in view of Section 25(1)(e) read with Section 2(1)(j)(a) of the Patents Act.

20.7 There is, however, no guidance whatsoever in the Patents Act as to how one is to assess whether a person skilled in the art, possessed of the teachings in the prior art and general knowledge, would or would not be able to arrive at the invention that is sought to be patented.

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20.8 The manner in which the order has been passed by the AC in the present case underscores the danger of this situation. In the absence of any guidance or existing indicia on the basis of which the aspect of obviousness of the subject invention vis-a-vis prior art is to be gleaned, from the perspective of the person skilled in the art, orders such as the one passed by the AC in the present case can come to be passed, in which no explanation whatsoever is adduced for the finding that a person skilled in the art would be able to arrive at the subject invention from the teachings in the prior art.

20.9 There may be occasions in which the aspect of obviousness of the subject invention vis-à-vis prior art is plain at a bare glance at the complete specifications of the prior art and of the subject invention. Equally, however, there may be cases in which it is not apparent, by a mere reading of the complete specifications of the prior art and the subject invention, that the latter is obvious to a person skilled in the art from the former. In such a case, in our view, it is incumbent on the Adjudicating Officer in the office of the CGPDTM, adjudicating on the application for grant of patent, to set out, clearly and explicitly, his reasons for holding that the teachings in the prior art document would by themselves suffice to enable a person skilled in the art to arrive at the claims in the subject invention. It cannot, as in the present case, be left to a mere finding, unsupported by any reasons whatsoever, that the claims in the complete specification relating to the subject invention are obvious from the prior art.

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20.10 In the present case, moreover, the fact that these findings have been arrived at with complete non-application of mind, as is clear from the reference, in the order of the AC, to D1 alone, D2 alone, D1-D2 in combination, D3 in combination with D1 or D2, or both, D4 in combination with D1 or D2 or both and D1-D4 combined. There is clearly no independent application of mind to any of the individual prior arts or the effect that would arise if they were combined.

20.11 The order of the AC, in our view, was liable to be set aside even for the manner in which it came to be passed.

21. Findings in the impugned judgment re. Section 25(1)(e)

21.1 Apropos prior art document D1

21.1.1 The learned Single Judge has, in para 29 of the impugned judgment, tabulated the claims of the subject application with the disclosures contained in D1 to arrive at a conclusion that the claims in the subject patent were obvious from the disclosures in D1. In doing so, the learned Single Judge has, quite commendably, undertaken on himself the task which the AC was required to undertake, obviously with a view to avoid a remand.

21.1.2 Having gone through the reasoning of the learned Single Judge with respect to the comparison of the claims in the subject application vis-a-vis the disclosures in D1, we, however, find ourselves unable to subscribe to the view expressed by the learned Single Judge. The

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reason is apparent, in our view, from a table drawn up by the learned Single Judge himself in para 29 of the impugned judgment, which at the cost of repetition, we deem it appropriate to reproduce:

Independent Claims of the subject Patent	Disclosure in prior art Document D1
A process (100) for **recovering potassium sulphate and other value added product** from distillery spent wash,	"[0010] Another object of the invention is to **recover potassium** from BMSW, **to produce** multi-nutrient potassic fertilizers viz., potassium nitrate, **potassium sulphate, mono potassium phosphate etc.** "[0012] Another object of the invention is to utilize sold waste for preparation **of value-added by-products."**
a. **Removing** (102) high molecular weight organic compounds from the spent wash to obtain a first liquid fraction.	[0016] (ii) clarification of slurry from step (i), through in-situ formation of aluminium hydroxide gel **to effect removal of fine particulates, preferably in multiple stages**.
b. **concentrating** (104) the first liquid fraction to obtain a first solid fraction; (step b)	"[0004] Reference may be made to section 5.1.6.3 of Indian Standard IS: 8032-1976 (reaffirmed 2003) "GUIDE FOR TREATMENT OF DISTILLERY EFFLUENTS". Which teaches about process for the recovery of potash from distillery spent wash. The process involves neutralization of spent wash followed by concentration and incineration to produce "spent wash coke" which on combustion produces ash. This ash is then leached with water.
c. subjecting the first solid fraction to **thermal decomposition** (106) to obtain a second solid fraction; (step c)	"[0026] (xii) production of alumina rich activated carbon, by **pyrolysing** and activating the sludge from step (ii);"
d. dissolving (108) the second solid fraction in a solvent to obtain a second liquid fraction; and (step d)	--
e. **recovering** (110) potassium sulphate from the second liquid	"[0010] Another object of the invention is **to recover potassium**

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fraction (step e)	from BMSW, **to produce** multi-nutrient potassic fertilizers viz., potassium nitrate, **potassium sulphate, mono potassium phosphate** etc. [0023] (ix) removal of residual tartrate, by treating the potassium nitrate liquor [from step (viii)] with calcium oxide & nitric acid; [0024] (x) crystallisation of potassium nitrate (purity>99%), by cooling/evaporating the potassium nitrate liquor [from step (ix)]; "

21.1.3 If one goes through the above table, the following position emerges:

(i) The first row in the table merely sets out the objectives of the subject invention and D1. The mere fact that both inventions aim at producing amongst others, potassium sulphate and value added products from distillery spent wash, cannot in our view, be determinative or even relevant to assess whether the subject invention is obvious from the teachings in D1.

(ii) It is apparent that the learned Single Judge has restricted his comparative analysis of the claims in the subject application to Claim 1. Even though Claims 2 to 12 are dependent claims, dependent on Claim 1, we are of the opinion that the learned Single Judge could not have arrived at a finding that the claims in the subject application were lacking

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in inventive step vis-a-vis D1, merely on a comparison of the disclosures in D1 with Claim 1 in the said application.

(iii) Even when one compares Claim 1 in the subject application with the disclosure in D1, as has been done by the learned Single Judge, we are unable to subscribe to the view, expressed in para 30 of the impugned judgment, that the only two differences between the claims in the subject application and the disclosures in D1, are that the subject application refers to "thermal decomposition" whereas D1 refers to pyrolyzing, and that step (d) in the claims in the subject application is not disclosed in D1. In so holding, we are of the considered opinion that the learned Single Judge has failed to take into notice several other clear distinctions between Claim 1 in the subject application and the disclosures in D1. The claims in the subject application do not make any reference to *in situ* formation of aluminium hydroxide gel, or to removal of fine particulates in multiple stages, or to production of ash or leaching of the ash with water, or to production of alumina rich activated carbon by activation of sludge. Similarly, the disclosures in D1 do not make any reference to a first, second or third liquid fractions, or a first and second solid fraction. The disclosures in D1 do not refer to removal of high molecular weight organic compounds from the spent wash. Even if the argument of pyrolyzing and thermal decomposition being analogous is accepted, the disclosures in D1 refer to pyrolyzing and activation of the sludge, whereas the subject

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application refers to thermal decomposition of the first solid fraction.

(iv) In fact, if one were to holistically compare the salient features of the process claimed in the subject application with the process claimed in D1, there are various features of distinction which may be enumerated as under:

(a) There is no reference in D1 of

(i) production of a liquid fraction on treatment of the spent wash with acid,

(ii) filtration of the said liquid fraction, resulting in high molecular weight organic compounds and another liquid fraction,

(iii) drying of the high molecular weight organic compounds, resulting in powder, which is useable as cattle feed/ fuel,

(iv) evaporation of the liquid fraction, resulting from the filtration of the liquid fraction produced by addition of acid to the spent wash, resulting in slurry and vapour,

(v) condensation of the vapour to result in reusable water,

(vi) drying of the slurry to result in the first sold fraction,

(vii) thermal decomposition of the said solid fraction, resulting in a second solid fraction,

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(viii) crystallization of the second solid fraction, resulting in a mother liquor,

(ix) filtration of the mother liquor, resulting in potassium sulphate and filtrate,

(x) concentration and drying of the filtrate resulting in magnesium sulphate, or

(xi) filtration of the second liquid fraction resulting in the production of activated carbon, usable as fuel.

(b) Similarly, there is no reference in the subject application to

(i) generation of carbon rich sludge,

(ii) *in situ* formation of aluminium hydroxide gel during clarification of the slurry to effect removal of fine particulates,

(iii) removal of the particulates in multiple stages,

(iv) reaction of the resultant liquid with partially protonated magnesium tartrate resulting in precipitation of potassium bitartrate,

(v) recovery of the residual tartrate as calcium tartrate by treating the resulted liquid from the earlier step with calcium oxide and hydrochloric acid/sulphuric acid,

(vi) co-precipitation of gypsum and magnesium hydroxide,

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(vii) decomposition of absorbed organics by calcining gypsum and magnesium hydroxide,

(viii) reacting the potassium bitartrate with nitric acid and magnesium hydroxide, resulting in production of potassium nitrate liquor,

(ix) treatment of the potassium nitrate liquor with calcium oxide and nitric acid, thereby removing the residual tartrate,

(x) crystallization of the potassium nitrate,

(xi) regeneration of the tartaric acid by treatment of calcium tartrate with sulphuric acid,

(xii) generation of aluminium sulphate solution and formation of aluminium hydroxide gel *in situ* and

(xiii) production of activated carbon by washing and drying the sold carbon obtained in the earlier steps.

21.1.4 It has to be remembered that the subject application was for a process patent, not a product patent. The steps in the process and the various products and by-products which emerged from the said steps are, therefore, of crucial significance. The appellant was candid in his application in acknowledging the fact that production of potassium sulphate and potash fertilizer from spent wash was subject matter of pre-existing patents. Inventiveness was claimed by the appellant in the process claimed in the subject application. According to the appellant, this process was, environmentally and economically more

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advantageous with the existing processes for recovery of potash fertilizer from spent wash, involved fewer steps and fewer reagents, and was "Zero Liquid Discharge". These were cited as the USPs, so to speak, of the subject invention.

21.1.5 There is no denial, either in the order of the AC, or in the impugned judgment of the learned Single, of the assertion, by the appellant, regarding the advantages of the processes claimed in the subject application, vis-a-vis the processes which form the subject matter of pre-existing patents. It has to be presumed, therefore, that the claim of the said advantages of the processes invented by him, by the appellant, have gone untraversed.

21.1.6 Inventiveness may exist even in the *manner* in which a particular objective, or end, is achieved. It may be that, starting from the same reagent, the same final product may be achieved by two sets of processes, each inventive in its own way, if the processes are different, and one cannot be said to be "taught" by the other.

21.1.7 One of the submissions of Mr. Pravin Anand, we may note, is that the process that the appellant seeks to patent is simple, whereas the process envisaged in D1 is complicated, involving 12 steps and several reagents. That this is correct is apparent when one compares the process that the appellant seeks to patent, as set out in para 6.4.2 *supra*, with the process that D1 claims, as reproduced in para 13.1.2 *supra*.

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21.1.8 Inventiveness resides, at times, in simplicity.

21.1.9 In any event, it is clear, from a comparison of the two sequences of processes, that they are not even remotely similar, though certain intermediate stages may *superficially* appear to be so. The reagents that are used are different, the products that arise at each step are differently referred to, the by products that result are different, and even the final product, in the case of D1, is potassium nitrate, as is clear *inter alia* from the various examples provided in D1, whereas the final product in the case of the appellant's process is potassium sulphate.

21.1.10 In that view of the matter, what has to be examined is, whether the processes in the subject application at which, starting from spent wash, one arrives at potassium sulphate, as well as other by-products such as magnesium sulphate, water, and activated carbon, stood disclosed in the prior art so as to enable a person skilled in the art to *obtain the same products and by products, using the same process*.

21.1.11 The issue is complex. We do not wish to venture a final view thereon. Suffice it, however, to say that, in our opinion, a far more detailed explanation would be necessary before it can be said that the process that the appellant seeks to patent is obvious from the process forming subject matter of the prior art document D1.

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21.1.12 We are of the considered opinion that the issue of the presence, or otherwise, of an inventive step, in the conceptualization of the process forming subject matter of the subject application, vis-à-vis D1, or D2, or both, requires to be re-examined by the office of the CGPDTM.

21.1.13 On a superficial surface comparison, however, we are constrained to observe that it cannot be said by any stretch of imagination that the processes set out in the claims in the subject application are obvious, even to a person skilled in the art from the teachings contained in the prior art document D1.

21.2 Apropos prior art document D2

21.2.1 In so far as the prior art document D2 is concerned, the material, on the basis of which it has been concurrently held, by the AC as well as by the learned Single Judge, that the process that the appellant seeks to patent is obvious, is even more scanty.

21.2.2 D2 is an Indian Standard, formulated by the BIS for treatment of distillery effluents. The disclosures in D2 which, according to the AC and the learned Single Judge, render the subject invention obvious to a person skilled in the art, are contained in the table in para 32 of the impugned judgment, reproduced in para 11 *supra*. They are, that

(i) activated carbon and salts of sodium and potassium could be obtained by suitable treatment of spent wash,

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(ii) a pilot plant study, carried out by 2 scientists, to recover potassium salts from spent wash of a molasses distillery in India,

(iii) neutralisation of raw spent wash with lime and evaporation to about 75% solids in a forced circulation evaporator under vacuum,

(iv) burning of the liquor in an incinerator, thereby converting the spent wash to "spent wash coke", which self-combusted and turned into ash, which provided the necessary heat for the liquor,

(v) collection of the ash and leaching with water, thereby dissolving all soluble potassium and sodium salts, leaving behind silica, calcium and other impurities in the residue,

(vi) filtration and neutralisation of the resultant potassium carbonate with sulphuric acid and concentration in the evaporator, and

(vii) subsequent crystallisation of potassium chloride and potassium sulphate from the concentrated solution in the crystallizer.

21.2.3 Given the fact that we are dealing with an application for patent in respect of a process, we are not convinced that the features of the process forming subject matter of D2, which have been emphasised by the learned Single Judge in the table contained in para 32 of the impugned judgment, render the subject invention obvious from the teachings contained in D2. There is, in fact, no real reference, in D2,

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to any of the steps which stands so clearly delineated in the claimed process in the subject application.

21.2.4 We, therefore, cannot subscribe to the view that the process claimed in the subject application, which the appellant desires to patent, is obvious from the teachings contained in D2, or that a person skilled in the art would, without having to carry out any inventive step, be able to arrive at the process forming subject matter of the appellant's claim, from the teachings contained in D2.

21.3 We are not applying ourselves to the issue of whether, by combining the teachings in D1 and D2, the process that the appellant desires to patent would become obvious to a person skilled in the art. To our mind, this is an involved exercise step that has to be addressed, satisfactorily, in the first instance, by the CDPDTM.

21.4 The test in ***F. Hoffmann La*** Roche – erroneous application in the impugned judgment

21.4.1 The learned Single Judge has, in para 25 of the impugned judgment, relied on the pronouncement of the Division Bench of this Court in ***F. Hoffmann La Roche Ltd v Cipla Ltd***, and we are in agreement with him that the said decision lays down principles which, for the present, may be regarded as the gold standard to determine whether a later invention is obvious from the teachings contained in an earlier patent. The Division Bench has identified the following steps, in this regard:

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> "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 skilled in the art and rule out a hindside approach."

Having thus reproduced the steps that ***Hoffman*** envisages as being required to be followed, sequentially, while examining the aspect of obviousness and the existence of inventive step, the learned Single Judge, in para 26 of the impugned judgment, proceeds to observe that he would "start at Step 4 and identify the differences, if any between the prior art as identified by the Controller and the subject patent application".

21.4.2 There are obvious errors in the manner in which the learned Single Judge has applied the procedure outlined in ***Hoffmann***.

21.4.3 We are of the opinion that the learned Single Judge could not have commenced applying the principles in ***Hoffmann*** from Step 4. The error in starting from Step 4 is self-evident. *It bypasses the person skilled in the art who, statutory and legally, is the person, from whose*

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point of view the aspect of inventive step and obviousness has to be determined. Identification of the person skilled in the art is, therefore, the fundamental first step while examining a plea of obviousness and lack of inventive step.

21.4.4 Steps 2 and 3 are no less significant. To ascertain whether a later invention, that is sought to be patented, on which already stands patented, is obvious vis-à-vis prior art, the inventive concept of the prior art has to be understood and identified. It is only once the inventive concept of the prior art – as well as, we may add, the inventive concept of the later invention – are identified, that it would be possible to gauge the distance that would be required to be scaled, to leap from one to the other.

21.4.5 We agree with Mr. Pravin Anand that the manner in which the learned Single Judge has applied the principles laid down in ***Hoffmann*** are contrary to the judgment itself.

21.5 The finding, of the learned Single Judge, as also of the AC, that the process that the appellant desires to patent is obvious from the prior art documents D1 and D2 is not, therefore, in our view, supported by sufficient material to sustain it. It has, therefore, to be set aside.

21.6 The sequitur

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The sequitur would not, however, be that the subject process, that the appellant desires to patent, would ipso facto be entitled to be treated as inventive, or not obvious, vis-à-vis the prior art documents D1 and D2. It is only an invention which is inventive, and is not obvious to a person skilled in the art possessed with common general knowledge and the teachings contained in the prior art documents, that can be patented. Whether the subject process satisfies this requirement would have to be determined by strictly following the tests laid down by the Division Bench in ***Hoffmann***, and the principles outlined earlier in this judgment. While all the Steps identified in Hoffmann are important, we would lay particular emphasis on Steps 1, 2 and 5.

22. Findings in the impugned judgment re. Section 3(d)

22.1 The AC has held, in his order, that the subject process was not patentable under Section 3(d), as "the process of the impugned application does not involve any new reactant nor results in a new product".

22.2 The AC has, clearly, contented himself by merely mechanically reproducing the words of Section 3(d), not deeming it necessary to provide even a scintilla of an explanation, thereafter, for his decision that the subject invention is hit by Section 3(d).

22.3 The learned Single Judge has, however, in para 14 of the impugned judgment, held, in this regard, that

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(i) the processes used in the subject invention are nothing more than a mere use of a combination of known processes,

(ii) all processes forming subject matter of the claims in the subject application are disclosed in D1 and D2,

(iii) *the appellant is not using any new reactant in the said processes*, and

(iv) no new product results from the processes employed by the appellant, the end product being, in each case, potassium sulphate.

22.4 We, unfortunately, find ourselves unable to agree with the learned Single Judge. The learned Single Judge, as well as the AC, in our view, have failed to notice that the process that the appellant desires to patent was not merely for recovering potassium sulphate, but also for recovering *other valuable products* from spent wash. Among the other valuable products recovered by the process that the appellant desires to patent are high molecular weight organic compounds which can be used as cattle feed and fuel, and magnesium sulphate. There is, in D1 as well as D2, no reference to either of these products. The mere fact that potassium sulphate may be one of the products that finally emerges from the process that the appellant seeks to patent, as well as from D1, cannot result in the two processes being the same.

22.5 It must be remembered that the first condition, for Section 3(d) to apply, is that the process forming subject matter of the later patent *must be a known process*. *The earlier process and the later process*

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must, therefore, be the same. At the very least, there must be substantial similarity between the two processes. The person skilled in the art, we may note, is a stranger to Section 3(d). He is *persona non grata*, so far as applicability of Section 3(d) is concerned. In order for a later process to be rejected as non-patentable on the ground of Section 3(d), it must be shown, positively, that the later process is a *mere use of the earlier process*.

22.6 Even then, Section 3(d) would not apply if the later process results in a new product or employees at least one new reactant.

22.7 In the present case, we are of the opinion that the invocation of Section 3(d), by the AC and by the learned Single Judge, is unjustified on at least two counts, viz.

(i) there is no material on the basis of which it could be said that the process forming subject matter of the Claims in the subject application are "known", or a "mere use" of the processes envisaged in D1 or D2, and

(ii) at the very least, magnesium sulphate and activated carbon are among the products which result from the process that the appellant desires to patent, and which find no mention in D1 or D2.

In this context, it is important to note that Section 3(d) separates the expressions "results in a new product" and "employees at least one new reactant", with the conjunction "or". In other words, even if it

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were to be assumed that a later process, which is sought to be patented, is a mere use of an earlier known process, it would nonetheless be patentable *if it either results in a new product or employees at least one new reactant*. Satisfaction of one, or the other, requirement. Either would suffice.

22.8 In the present case, we are of the considered opinion that the subject process, that the appellant desires to patent, is not rendered non-patentable by virtue of Section 3(d); firstly, because there are marked differences in the process claimed in the subject application and the processes forming subject matter of D1 and D2 and, secondly, because the process that the appellant desires to patent results in products which are not claimed outcomes of the processes envisaged in D1 and D2.

Conclusion

23. We, therefore, allow the present appeal in the following terms and to the following extent:

(i) The impugned judgment dated 10 March 2023, passed by the learned Single Judge, as well as the order dated 28 December 2021, passed by the AC, are quashed and set aside.

(ii) Application No. 201911036748, submitted by the appellant, as well as the pre-grant opposition filed by CSIR, are remanded to the CGPDTM for consideration and determination

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afresh. The consideration shall, however, be restricted to the objection of CSIR predicated on Section 25(1)(e) read with Section 2(1)(ja) of the Patents Act, based on the prior art documents cited by CSIR. No new material would be permitted to be placed on record.

(iii) We reject the objection of CSIR that the subject process is not patentable because of Section 3(d) of the Patents Act.

(iv) The *de novo* consideration would be carried out strictly in terms of the principles enunciated in ***Hoffmann*** as well as in the present judgment. There shall be implicit adherence to the said principles.

(v) The appellant, as well as CSIR, would be at liberty to place, on record before the CGPDTM, notes of the submissions that they seek to advance, to support the application and the opposition, respectively.

(vi) The adjudicating authority designated by the CGPDTM would afford, to both sides, an opportunity of hearing on a date and time convenient to the adjudicating authority, which would be intimated to both sides at least a week in advance of the hearing. Neither side would be permitted to seek an adjournment.

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(vii) The designated adjudicating authority would pass a reasoned and speaking order, following the conclusion of proceedings.

(viii) The *de novo* proceedings would be on the basis of the material already on record. No new evidence would be permitted to be introduced. However, should either side desire to rely on any authoritative textual or documentary material, the adjudicating authority may, at his discretion, permit such reliance. The discretion, needless to say, is expected to be judiciously exercised.

(ix) We direct the adjudicating authority to pass a fresh order on the appellant's application and CSIR's objection as expeditiously as possible and, at any rate, within a period of 6 months from the date of hearing.

(x) Should either side remain aggrieved by the *de novo* decision of the adjudicating authority, all legal rights and remedies in that regard would remain reserved.

24. We clarify that we have not expressed any binding opinion or view on the issue of whether the process that the appellant desires to patent is, or is not, inventive, or obvious, from the prior art documents cited by CSIR. No observation contained in this judgment is to be understood as expressing any view in that regard, as would bind the adjudicating authority designated by the CGPDTM.

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25. There shall be no orders as to costs.

C. HARI SHANKAR, J.

AJAY DIGPAUL, J.

OCTOBER 6, 2025/*aky/yg*

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