EXHIBIT 1022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

URT Umwelt und Recyclingtechnik GmbH,
Petitioner

v.

Duesenfeld GmbH,
Patent Owner

Case No. IPR2024-00887
U.S. Patent 11,050,097

DECLARATION OF VOLKER SPIES, IN SUPPORT OF PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE

I. INTRODUCTION

I, Volker Spies, declare as follows:

1. I am over the age of twenty-one (21) years, of sound mind, and capable of making the statements set forth in this Declaration. I am competent to testify about the matters set forth herein. All facts and statements contained herein within my personal knowledge are true and correct, and I believe those items stated herein on information and belief to be true and correct.

2. I have been retained on behalf of URT Umwelt und Recyclingtechnik GmbH ("Petitioner") for the above-captioned *inter partes* review proceeding to provide my expert opinions and expert knowledge. I understand that this proceeding involves U.S. Patent No. 11,050,097 ("the '097 patent," EX1001), which is titled "Method For The Treatment Of Used Batteries, In Particular Rechargeable Batteries, And Battery Processing Installation" and is currently assigned to Duesenfeld GmbH.

3. The '097 patent discloses a system and method "for the treatment of used batteries, in particular lithium batteries, containing the steps: comminuting the batteries such that comminuted material is obtained, inactivating the comminuted material such that inactivated comminuted material is obtained, and filling a transport container with the inactivated comminuted material. The inactivation is performed by drying the comminuted material, and the comminuted material is

dried until an electrolyte content is so low that an electrochemical reaction is not possible." EX1001, Abstract.

4. I am familiar with the subject matter disclosed in the '097 patent as of its April 28, 2016 filing date and as of April 28, 2015, which I understand is the '097 patent's earliest possible priority date. I have not formed an opinion as to whether the '097 patent is entitled to the April 28, 2015 priority date, but I reserve the right to do so in the future, if necessary. That said, for the purposes of my opinions in this Declaration, I have been asked to treat April 28, 2015, as the time of invention of the '097 patent.

5. I have been asked to provide my independent technical review, analysis, insights, and opinions regarding the '097 patent and the references that form the basis for the grounds of unpatentability for claims 1-3, 7-9, 12, 13, and 15-19 of the '097 patent.

6. I have reviewed and am familiar with the '097 patent and its file history. I have also reviewed and am familiar with the documents I cite in this Declaration. I understand that these documents have been provided as exhibits to the Petition that Petitioner is concurrently submitting. My analysis and opinions will focus on all of the challenged claims, claims 1-3, 7-9, 12, 13, and 15-19 of the '097 patent.

7. I confirm that to the best of my knowledge the accompanying exhibits are true and accurate copies of what they purport to be and that an expert in the field would reasonably rely on them to formulate opinions such as those set forth in this declaration.

8. I am being compensated at my customary rate of $500 USD per hour for my work on this case. My compensation is not dependent upon my opinions, my testimony, or the outcome of this case.

II. ENABLEMENT

9. I am not an attorney. However, I have been told and I understand the following principles: I understand that enablement is a question of law based on underlying facts. I understand that a prior art reference is enabling if the teaching in the prior art reference does not require undue experimentation to achieve the claimed invention. For example, enablement of prior art requires that the reference teach a skilled artisan to make or carry out what it discloses in relation to the claimed invention. I also understand that the mere use of forward-looking language (such as terms like "should") does not show one way or another whether a person of ordinary skill in the art would have to engage in undue experimentation to perform the claimed invention, and that the invention in a prior art publication need not have actually been made or performed to satisfy enablement. My understanding is that even if a reference discloses an inoperative device, it is prior

art for all that it teaches; and a prior art reference need not enable its full disclosure; it only needs to enable the portions of its disclosure alleged to anticipate the claimed invention.

10. It is possible for a vibrating fluidized dryer to operate under vacuum conditions.

11. One of ordinary skill in the art reading LithoRec would understand that LithoRec does not require performing the drying action at atmospheric pressure or greater. It is always possible to create a closed system and evacuate this system below atmospheric pressure. The movement of the particles of the goods to be dried can be achieved by setting the whole apparatus under vibrations. This is called a mechanically induced fluidized bed. The system is heated indirectly above the boiling point of the liquids to be dried. Consequently, the liquid is converted into vapor and may leave the system for later recovery.

12. Although LithoRec discloses that a blower is described as being part of the drying system (see EX: 1016 at 235), the LithoRec reference does not disclose that the blower produces a positive pressure in the dryer.

13. There are several portions of the Lithorec reference that explicitly discuss advantages or benefits of drying at a negative pressure. For example, LithoRec teaches, “As some of the liquids to be vaporized are highly flammable solvents, the drying temperature should probably be severely restricted. This in

turn speaks in favor of drying under vacuum, as the drying temperature can be kept low." See EX: 1016 at 226. Also:

> Drying must take place in a protective gas atmosphere (nitrogen)…While the nitrogen is used in its initial state in the pre-shredder with its auxiliary units, it must be heated to the specified maximum permissible dry gas temperature for the dryer through a gas heater. Both the nitrogen from the pre-comminution and that from the dryer are loaded with solid particles and solvent vapors. The nitrogen to be circulated is freed from the solids through a jet filter and then passed through a condenser in which the solvents contained are separated. The condenser can be cooled using either nitrogen or cold water (1 - 5°C). As oxygen ingress occurs in the system components due to leaks that cannot be ruled out, a continuous oxygen content measurement is performed before the gas flow is fed back into the gas circuit, which is used to regulate the feed of fresh nitrogen into the system. In order to ensure the negative pressure in the gas circuit at all times, a partial quantity of gas must be discharged from the system into the environment. See EX: 1016 at 227

14. LithoRec addresses the problem of oxygen infiltration into the nitrogen circuit due to leaks, which supports the teaching that the nitrogen circuit is kept at a negative pressure. Otherwise the nitrogen would leak to atmosphere instead of oxygen infiltrating the circuit through such leaks.

15. One of ordinary skill in the art reading LithoRec would understand that the dryer of LithoRec operates under vacuum conditions regardless of the type of dryer selected (even a vibratory fluidizing bed dryer) because 1) vibratory fluidizing bed dryers can operate under negative pressure, 2) LithoRec stresses the importance of drying under vacuum to lower the drying temperature because the solvents are highly flammable, and 3) LithoRec teaches circulating the protective

gas atmosphere in a closed circuit loop at negative pressure. See EX: 1016 at 226 and 227.

16. One of ordinary skill in the art would understand that the teaching of the LithoRec reference is not limited to vibratory fluidizing bed dryers. In particular, the LithoRec reference provides the options of using batch drying or continuous drying. One of ordinary skill would not have been discouraged from using the other options for drying such a batch drying or other types of dryers compatible with vacuum drying. In my opinion, one of ordinary skill in the art reading the portions of LithoRec cited above, and indeed LithoRec as a whole, would understand that it is not limited to a particular kind of dryer. In my opinion, one of ordinary skill in the art reading the above-cited portions of LithoRec, and indeed LithoRec as a whole, would understand that LithoRec prefers drying in a vacuum.

17. In my view, one of ordinary skill in the art would understand that the "invention" of the '097 Patent is merely a combination of a comminution unit, a drying device, a filling device, and a vacuum device. These are all relatively simple mechanical devices, different combinations of which were well known in the art before April 18, 2015, and could have been easily combined by one of ordinary skill in the art without undue experimentation. In my view, one of ordinary skill in the art at the time of the invention reading LithoRec would have

and could have adapted one of its disclosed dryers to work in a vacuum in connection with comminuting material. Even if one of ordinary skill in the art encountered difficulties doing so, one of ordinary skill in the art at the time of the invention in my opinion would have sought out one of the many, many other types of known dryers to operate at a vacuum for the precise reasons set forth in LithoRec itself. Doing so would have been well within the level of ordinary skill in the art, and LithoRec explains why a vacuum would have been preferable to non-vacuum.

18. LithoRec explicitly describes the structures of various comminuting devices, dryers, vacuum devices, and filling devices, while also providing diagrams for how such components would be fit together in a system. Although LithoRec discusses a so-called pilot line, implementing it would have been straightforward for one of ordinary skill in the art. One of ordinary skill in the art would have had no difficulty, for example, in using a dryer operating in vacuum to evaporate solvents, exactly as LithoRec teaches. The depth of disclosure in the LithoRec reference is similar to the depth of disclosure of the '097 Patent.

CONCLUSION

11. In signing this declaration, I recognize that this declaration will be filed as evidence in an *inter partes* review before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I

may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required, I will appear for cross-examination within the United States during the time allotted.

12. I hereby declare that all statements made herein are made of my own knowledge and are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed on this 19th day of September, 2024.

V. Spies

VOLKER SPIES