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Paper No. 7
Entered: April 20, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIFFANY AND COMPANY,
Petitioner,

v.

LAZARE KAPLAN INTERNATIONAL, INC.,
Patent Owner.

Case IPR2015-00024
Patent 6,476,351 B1

Before MICHAEL P. TIERNEY, MICHELLE R. OSINSKI, and
JEFFREY W. ABRAHAM, *Administrative Patent Judges*.

ABRAHAM, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner, Tiffany and Company, filed a Petition seeking *inter partes* review of claims 1 and 7 of U.S. Patent No. 6,476,351 B1 (Ex. 1001, “the ‘351 patent”). Paper 2 (“Pet.”). Patent Owner, Lazare Kaplan International, Inc., filed a Patent Owner Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

We determine that the information presented in the Petition shows that there is a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim. Accordingly, we institute an *inter partes* review of claims 1 and 7 of the ‘351 patent.

A. Related Proceedings

Patent Owner asserted the ‘351 patent in *Lazare Kaplan Int’l Inc. v. Photoscribe Techs., Inc.*, Case No. 1:06 CV 4005 (SDNY). Pet. 1; Paper 5. Petitioner is not a party to that proceeding.

B. The ‘351 Patent

The ‘351 patent discloses a method and system for microinscribing the surface of a gemstone using a laser. Ex. 1001, 1:14–17. The ‘351 patent shows one microinscribing apparatus in Figure 9, reproduced below.

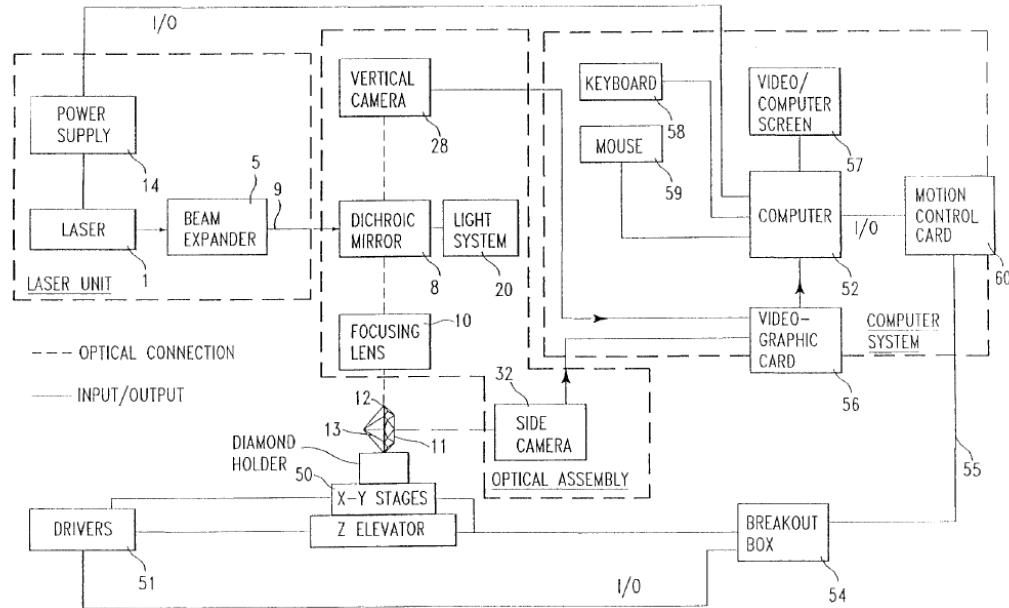


FIG. 9

Figure 9 shows various components of a microenscribing apparatus, including laser 1, mirror 8 and focusing lens 10 for focusing laser energy from the laser onto gemstone/workpiece 11, displaceable stage 50, computer 52, and cameras 28 and 32. *Id.* at 15:33–44, 16:13, 16:44–54.

The '351 patent discloses that the gemstone is held in a mounting system that is mounted on a translatable stage. *See id.* at Figs. 7A–7E, Fig. 10 element 144. The laser does not move, and therefore, to generate the inscription, the translatable three-axis (XYZ) stage moves the workpiece in relation to the laser beam. *Id.* at 16:44–48. The translatable stage is “controlled by a computer to produce a complex marking pattern.” *Id.* at 2:47–48. The inscription data can be manually entered or generated by the computer. *Id.* at 20:15–23. The apparatus can include an assortment of fonts as well as custom or editable characters, such as logos and graphics. *Id.* at 20:3–14, 22:66–67.

Video cameras allow an operator to view the workpiece from a plurality of vantage points, provide for “optical feedback” of the inscription process, and can be used to ensure the correct positioning of the workpiece. *Id.* at 2:61–3:13, 16:51–17:8. “The optical feedback system also allows the operator to design an inscription, locate the inscription on the workpiece, verify the marking process and archive or store an image of the workpiece and formed markings.” *Id.* at 3:14–17, 18:13–17, 20:52–55.

According to one embodiment of the ’351 patent, an operator inserts a gemstone into the apparatus and aligns it so that top and side views are displayed on video monitors. *Id.* at 18:31–33. The operator enters the inscription into the computer, and verifies the inscription positioning on the images of the gemstone displayed on the monitors. *Id.* at 18:33–39. Once the inscription positioning is verified, the computer sends commands to the inscription controller, which adjusts the position of the XYZ translatable stage accordingly to form the inscription pattern on the gemstone. *Id.* at 18:39–43.

Independent claims 1 and 7 are the only challenged claims, and are reproduced below:

1. A method of microinscribing a gemstone with laser energy from a pulse laser energy source, focused by an optical system on the workpiece, comprising the steps of:
 - mounting a gemstone in a mounting system;
 - directing the focused laser energy onto a desired portion of the gemstone;
 - imaging the gemstone from at least one vantage point;
 - receiving marking instructions as at least one input; and
 - controlling the directing of the focused laser energy based on the marking instructions and the imaging, to

selectively generate a marking on the gemstone based on the instructions.

7. A laser energy microinscribing system, for gemstones, said system comprising:
 - a laser energy source;
 - a gemstone mounting system, allowing optical access to a mounted workpiece;
 - an optical system for focusing laser energy from the laser energy source, onto the gemstone to create an ablation pattern thereon;
 - means for directing said focused laser energy onto a desired portion of the gemstone, having a control input;
 - an imaging system for viewing the gemstone from at least one vantage point and obtaining image information from the gemstone;
 - an input for receiving marking instructions; and
 - a processor for controlling said directing means based on said marking instructions and said imaging system, to selectively generate a marking based on said instructions and a predetermined program.

Ex. 1001, 26:53–65, 27:17–34.

C. References

Petitioner relies on the following references:

1. C. Paul Christensen, *Fine Diamonds With Laser Machining*, PHOTONICS SPECTRA 105–110 (Nov. 1993) (“Fine Diamonds,” Ex. 1007).
2. C. Paul Christensen, National Science Foundation Final Project Report, *Ultraviolet Laser Fabrication of Diamond*

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