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Paper 29
Date: August 5, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

US ENDODONTICS, LLC,
Petitioner,

v.

GOLD STANDARD INSTRUMENTS, LLC,
Patent Owner.

Case IPR2015-00632
Patent 8,727,773 B2

Before JOSIAH C. COCKS, HYUN J. JUNG, and TIMOTHY J. GOODSON, *Administrative Patent Judges.*

COCKS, *Administrative Patent Judge.*

DECISION
Institution of *Inter Partes* Review
37 CFR § 42.108

I. INTRODUCTION

Petitioner, US Endodontics, LLC ("US Endo" or "Petitioner"), filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–17 of U.S. Patent 8,727,773 B2 ("the '773 patent"). Patent Owner, Gold Standard Instruments, LLC ("GSI" or "Patent Owner"), filed a Preliminary Response (Paper 9, "Prelim. Resp.") requesting that *inter partes* review of the above-noted claims not be instituted. We have jurisdiction under 35 U.S.C. § 314.

To institute an *inter partes* review, we must determine that the information presented in the Petition shows "a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons set forth below, we conclude that the information presented in the Petition establishes a reasonable likelihood that Petitioner will prevail in showing that claims 1–17 of the '773 patent are unpatentable. Pursuant to 35 U.S.C. § 314, we hereby authorize an *inter partes* review to be instituted as to claims 1–17.

Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far (prior to Patent Owner's Response). This is not a final decision as to patentability of claims for which *inter partes* review is instituted. Our final decision will be based on the record, as fully developed during trial.

A. Related Matters

The '773 patent is stated to be the subject of a litigation styled *Dentsply International, Inc. and Tulsa Dental Products LLC d/b/a Tulsa*

Dental Specialties v. US Endodontics, LLC, Case No. 2:14-cv-00196-JRG-DHI (E.D. Tenn.). Paper 5, 2[1]; *see* Paper 8, 1.

B. The '773 Patent (Ex. 1001)

The '773 patent is titled "Dental and Medical Instruments Comprising Titanium." Ex. 1001, Title. The invention is described as serving to "overcome[] the problems encountered when cleaning and enlarging a curved root canal." *Id*. at 2:56–57. In that respect, the '773 patent explains that flexibility is a desirable attribute for endodontic devices such as "files," but that, in the prior art, for files of larger sizes the "shank" portions of the files become "relatively inflexible," which impedes the therapy of a root canal. *Id*. at 2:1–24.

The '773 patent also describes that it is known in the art that endodontic files may be formed of "superelastic alloys such as nickel-titanium that can withstand several times more strain than conventional materials without becoming plastically deformed." *Id*. at 2:39–43. The '773 patent further explains that such "property is termed shape memory, which allows the superelastic alloy to revert back to a straight configuration even after clinical use, testing or fracture (separation)." *Id*. at 2:43–46. Nevertheless, the'773 patent represents that there is a need for endodontic instruments that "have high flexibility, have high resistance to torsion breakage, maintain shape upon fracture, can withstand increased strain, and can hold sharp cutting edges." *Id*. at 2:47–52.

Figures 1a and 1b, which are reproduced below, illustrate "a side elevational view of an endodontic instrument" (Fig. 1a), and "a partial

[1] GSI also identifies four patents, 8,562,341; 8,083,873; 8,062,033, and 8,876,991 as "related matters" to this proceeding. *Id*. at 2–3.

detailed view of the shank of the endodontic instrument shown in FIG. 1a" (Fig. 1b). *Id*. at 3:21–24.

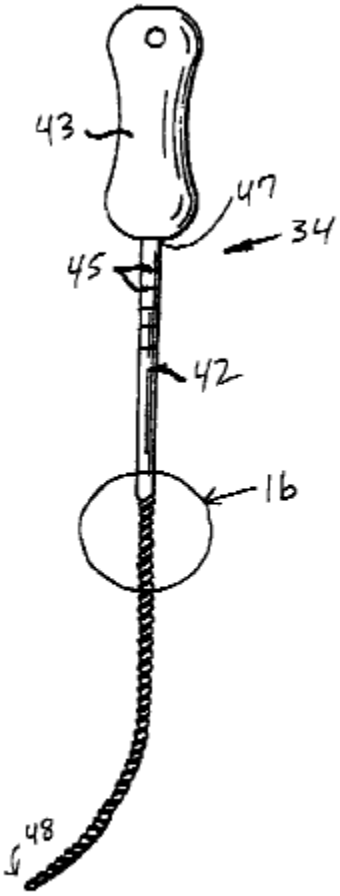

Fig. 1a

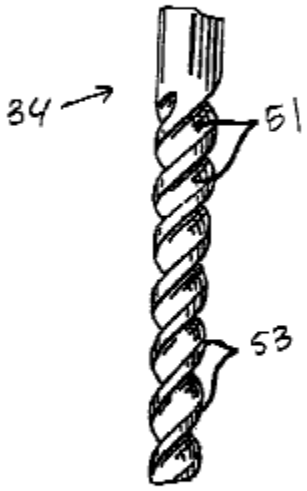

Fig. 1b

The figures above depict an endodontic instrument according to the invention. With respect to those figures, the '773 patent conveys the following:

> This embodiment of the invention is an endodontic instrument as shown in FIG. 1*a* that includes an elongate shank 42 mounted at its proximate end 47 to a handle 43. The shank 42 may be about 30 millimeters long. The proximate end 47 may have a diameter of about 0.5 to about 1.6 millimeters. The shank 42 may include calibrated depth markings 45 and further includes a distal end 48. The shank 42 includes two continuous

> helical flutes 51 as shown in FIG. 1*b* that extend along its lower portion. The flutes 51 define a cutting edge. A helical land 53 is positioned between axially adjacent flutes as shown in FIG. 1*b*.

Id. at 4:1–11.

The '773 patent also explains that fabricating a medical instrument in accordance with the invention involves selecting a superelastic titanium alloy for the shank and subjecting the instrument to "heat-treatment" so as to "relieve stress in the instrument to allow it to withstand more torque, rotate through a larger angle of deflection, change the handling properties, or visually exhibit a near failure of the instrument." *Id*. at 5:64–6:1.

By way of background, the Petition, through recourse to the declaration testimony of Dr. A. Jon Goldberg (Ex. 1002), and prior art of record (Exs. 1004 and 1005) provides the following explanation of the effect of heat-treatment on structures made of a superelastic material, such as Nickel-Titanium ("Ni-Ti"):

> The superelastic and shape memory properties result from the microscopic structure of Ni-Ti crystals, which can take on at least two relevant solid phases: austenite and martensite. In the austenite phase, the individual atoms in the crystal are arranged rigidly, whereas in the martensite phase, the atoms can shift within the lattice, making the material more flexible. The transformation between austenite and martensite depends principally on temperature, with martensite occurring at lower temperatures. Ex. 1002 at ¶ 28-29; *see* Ex. 1004 at 5-6; Ex. 1005 at 25.
>
> When Ni-Ti is in the martensite phase at ambient temperatures, it exhibits shape memory; when subjected to a bending force it will stay deformed, returning to its original shape when heated above a transformation temperature to form austenite. When ambient temperatures are higher than the transformation temperature, Ni-Ti is stable as austenite rather than martensite. However, a sufficient applied stress may

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