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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte
NORMAN HO KWONG KWAN¹

Appeal 2019-001200
Application 15/344,812
Technology Center 3700

Before EDWARD A. BROWN, MICHAEL L. HOELTER, and
MICHAEL J. FITZPATRICK, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is an Appeal under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1 and 3–19. Br. 3. Claim 2 has been canceled. Br. 26 (Claims Appendix). We have jurisdiction under 35 U.S.C. § 6(b). For the reasons explained below, we affirm the Examiner’s rejections of claims 1 and 3–19 as being obvious under 35 U.S.C. § 103.

¹ “The Real Party in Interest is the inventor, Norman Ho Kwong Kwan.” Br. 3.

CLAIMED SUBJECT MATTER

The disclosed subject matter relates to dental implants. *See Spec.* ¶ 2. Claims 1 and 12 are independent. Claim 1 is illustrative of the claims on appeal and is reproduced below.

1. A method for simultaneously installing multiple dental implants, the method comprising sequential steps of:
forming a plurality of holes in a jawbone of a patient;
attaching multiple dental assemblies to the jawbone, each dental assembly comprising:

an abutment adaptor that is removably connected to an implant fixture by an abutment screw, the abutment adaptor further comprising a hexagonal portion exposed above the implant fixture and an indexed protrusion disposed below the hexagonal portion, the implant fixture being inserted into a hole in the plurality of holes, the implant fixture providing an indexed recessed wall that engages the indexed protrusion of the abutment adaptor such that spatial orientation of the implant fixture and the indexed recessed wall is translated to the hexagonal portion of the abutment adaptor;

wherein the step of attaching installs the implant fixture into the jawbone to a depth such that the hexagonal portion is exposed above soft tissue about the jawbone;

permitting the soft tissue around the plurality of holes to heal wherein the hexagonal portion remains exposed above the soft tissue due to the hexagonal portion being exposed above the implant fixture;

determining relative spatial orientations of each of the implant fixtures and each of the indexed recessed walls; the step of determining relative spatial orientations comprises:

securing an extension into an internal bore of the abutment screw of each implant fixture, the extension providing an elongated guide pin with a length of at least 5 mm, the elongated guide pin extending parallel to a longitudinal axis of the implant fixture;

intraorally scanning all of the elongated guide pins and all of the hexagonal portions of each abutment adaptor;

removing the extension from the internal bore;

digitally producing a three-dimensional map of the implant fixtures based on the step of intraorally scanning;
fabricating a monolithic connector comprising one protrusion for each implant fixture, each protrusion fabricated to provide a common path of insertion into all indexed recessed walls of the implant fixtures;
removing the abutment adaptor from each of the implant fixtures to reveal the indexed recessed wall;
attaching the monolithic connector to the indexed recessed wall of each of the implant fixtures;
selecting a number of preformed crowns from a predetermined inventory of available crowns;
affixing the number of preformed crowns to a corresponding plurality of posts on the monolithic connector.

REFERENCES

Hurson et al. '554	US 6,527,554 B2	Mar. 4, 2003
Kwan	US 2006/0078847 A1	Apr. 13, 2006
Hurson '176	US 2008/0261176 A1	Oct. 23, 2008
Marlin	US 2014/0205969 A1	July 24, 2014

THE REJECTIONS ON APPEAL²

Claims 1, 3, 7–10, 12, and 14–19 are rejected under 35 U.S.C. § 103 as unpatentable over Hurson '176 and Marlin.

Claims 4–6 and 11 are rejected under 35 U.S.C. § 103 as unpatentable over Hurson '176, Marlin, and Kwan.

Claim 13 is rejected under 35 U.S.C. § 103 as unpatentable over Hurson '176, Marlin, and Hurson et al. '554.

² “The rejection to claims 1–19 base[d] on the [§] 112 second paragraph rejection . . . is withdrawn.” Ans. 2. Note that claim 2 was previously canceled in a Response to Non-Final Office Action dated July 28, 2017.

ANALYSIS

*The rejection of claims 1, 3, 7–10, 12, and 14–19
as unpatentable over Hurson '176 and Marlin*

Appellant argues all these claims (i.e., claims 1, 3, 7–10, 12, and 14–19) together. *See* Br. 8–23. We select claim 1 for review, with the remaining claims (i.e., claims 3, 7–10, 12, and 14–19) standing or falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv).

As an overview, in rejecting claim 1, the Examiner identifies different features of the various embodiments of Hurson '176 noting that they “are interchangeable.” Ans. 2 (referencing Hurson '176 ¶ 122); *see also* Ans. 4, Final Act. 3–4. Indeed, Paragraph 122 of Hurson '176 states, “[v]arious combinations or subcombinations of the specific features and aspects of the embodiments can be made and still fall within the scope of the invention.” Hence, as understood, the teachings of Hurson '176 are not limited solely to the specific embodiments as illustrated. This is, for all intents and purposes, the position of Appellant, i.e., the teachings of Hurson '176 should be limited to the illustrated embodiments. *See* Appellant’s Brief *generally*. Suffice it to say, we do not limit the disclosure of Hurson '176 as urged by Appellant because doing so would be contrary to the express teachings of Hurson '176, including Paragraph 122 thereof.

Regardless of any ‘mixing-and-matching’ taught in Paragraph 122 of Hurson '176 noted above, the Examiner also specifically references an “abutment adaptor” depicted in Figures 13A and 13B of Hurson '176. *See* Final Act. 3, 4. Appellant addresses this embodiment arguing, “[the claims

require the abutment adaptor be removed.³ Br. 18. As shown in Figure 13 of Hurson '176, this depicted “abutment adaptor” is configured with “threaded portion **502**” which “can mate with the threaded chamber **70** of the implant **20**.” Hurson '176 ¶ 110; *see also* Hurson '176 Figs. 1B, 1C, and 7B. Appellant does not explain how such a threaded connection prevents the abutment adapter from being “removably connected” to the implant as recited. Hence, Appellant’s contention that the Figure 13 embodiment is not “removably connected to an implant fixture” (*see* App. Br. 18–20) is not persuasive. *See also* Ans. 4 (addressing a “scan-able precursor structure that is removed and replaced with a final milled bridge”); 5.

Claim 1 further recites that this abutment adaptor comprises “an indexed portion” for translation of an orientation.⁴ Appellant argues that “[d]ue to the presence of the threaded (i.e. non-indexed) portion [502] there is no translation of indexing.” Br. 11. In effect, Appellant’s argument is that, because this Figure 13 embodiment in Hurson '176 discloses a threaded extension 502, such extension is not a teaching of an “indexed protrusion of the abutment adaptor” that can translate the “spatial orientation of the implant fixture” as recited.

Regarding the recited translation of a spatial orientation, Appellant’s Specification states, “the longitudinal axis of each implant can be

³ To be clear, claim 1 recites that the “abutment adaptor” be “removably connected to an implant fixture.”

⁴ The Examiner notes, “[t]he claims recite only that the implant fixtures have ‘an indexed recess’ without any further limitation as to describe the ‘indexed recess’ to any particular shape or orientation or structure.” Ans. 2; *see also* Ans. 3 (“the term ‘indexed portion’ does not require any particular shape, and is a broad term not further defined in the claims”).

determined by extension of the abutment screw with the extension 500 to exaggerate the orientation of the implant assembly 150.” Spec. ¶ 86; *see also* Spec. ¶¶ 63, 70. Appellant discloses mating hexagonal shapes as translating this longitudinal orientation of the implant (*see e.g.*, Spec. Figure 5C) but Appellant’s Specification also indicates that other shapes may suffice as well (*see* Spec. ¶ 66). Appellant’s Specification does not mention a cylindrical threaded protrusion. Regardless, Appellant does not explain how externally threaded portion 502 of Hurson ’176 would fail to translate the longitudinal orientation of its mating internally threaded implant. We thus are not persuaded by Appellant’s contention that a threaded mating between components does not translate an indexing (i.e., a longitudinal orientation) between such components. *See* Br. 11; *see also* Ans. 2 (“The spatial orientation of the implant fixture to abutment adaptor is indexed in a longitudinal manner.”); 3 (“element 500 is indexed at least longitudinally to the recess in the implant fixture”).

Appellant further contends, “[c]laims **require translating the spatial orientation of the indexed recess wall.**”⁵ Br. 14. As indicated above, Hurson ’176 states, “threaded portion 502 can mate with the threaded chamber 70 of the implant 20.” Hurson ’176 ¶ 110. Appellant does not explain why internally threaded chamber 70 of implant 20 would fail to teach the recited “indexed recess wall” of the recited “implant fixture.” Accordingly, in view of the above (including Appellant’s discussion of conveying a longitudinal orientation (*see* Spec. ¶ 86)), Appellant’s

⁵ To be clear, the recited “indexed recess wall” is the internal female component of the implant that receives the recited “indexed protrusion” of the abutment adaptor. *See e.g.*, Spec. Figure 5C.

contentions in this regard (*see* Br. 14–16) are not persuasive of Examiner error.

Appellant further contends, “[t]**he claimed abutment has both a hexagonal portion and an indexed protrusion.**”⁶ Br. 12; *see also* Br. 15–16. The Figure 13 embodiment of Hurson ’176 discloses these features. More specifically, Hurson ’176 teaches that abutment 500 has “a top surface **510** that includes a hexagonal protrusion **511.**” Hurson ’176 ¶ 111. Threaded portion 502 (discussed above) is located opposite that “top surface **510**” or, as recited, “below the hexagonal portion” 511.

Appellant addresses this specific Figure 13 embodiment, acknowledging upper element 511 as being hexagonal but contending that “‘threaded portion 502’ below [] lacks the ‘indexed protrusion’ required in the claims.” Br. 13. In view of the above discussion regarding the recited “indexed protrusion,” we are not persuaded the Figure 13 embodiment of Hurson ’176 lacks the above recited arrangement. *See also* Hurson ’176 ¶ 122 (teaching mixing-and-matching “various combinations or subcombinations”). Accordingly, Appellant’s contentions on this point (*see* Br. 12–16) are not persuasive of Examiner error.

Appellant also contends, “the claims specify the hexagonal portion [i.e., the upper part of the abutment adapter] remains exposed above the soft tissue due to the hexagonal portion being exposed above the implant fixture.” Br. 16. Figure 13B of Hurson ’176 illustrates abutment adapter 500 inserted within implant 20, and Figure 14A illustrates implant 20

⁶ To be clear, the recited abutment adaptor comprises “a hexagonal portion” and further, the recited indexed protrusion is “disposed below the hexagonal portion.”

imbedded within jawbone 614 (with a series of crowns 612 supported above the bone). Additionally, Paragraphs 74 and 75 of Hurson '176 discuss top surface 21 of implant 20 as being configured to provide support for other components, including that of abutment adapter 500 (*see* Hurson '176 Fig. 13B) or other “dental restorations” (*see* Hurson '176 ¶ 75, Fig. 14A). In view of the embodiments of Figures 13 and 14 of Hurson '176, we are not persuaded that one skilled in the art would fail to understand that hexagonal portion 511 of abutment adapter 500 (inserted within implant 20) is exposed above the implant fixture. *See also* Ans. 4 (Appellant’s argument “is not persuasive as abutment portions of Hurson ['176] in the drawings are above the soft tissue level” (referencing Hurson '176 Fig. 13B)).

Appellant further addresses the limitation directed to “determining relative spatial orientations of each of the implant fixtures and each of the indexed recessed walls” by “intraorally scanning . . . the hexagonal portions of each abutment adaptor.” Appellant contends that this scanning for orientation purposes is not taught in Hurson '176 because “[t]here is no teaching [that] determines the spatial orientations of the indexed recessed walls.”⁷ Br. 17.

On this point, Appellant acknowledges that the Examiner referenced Paragraph 119 of Hurson '176 as teaching this limitation. *See* Br. 16; Final Act. 4. This cited paragraph specifically addresses oral scanning so that “the position and orientation of the copings can be recreated.” Paragraph 101 of Hurson '176 describes “an embodiment of a temporary coping **500** that can

⁷ The Examiner clarifies that this limitation “requires only the scanning of the abutments while they are connected to the implant fixtures, not the scanning of the indexed recess of the implant fixtures.” Ans. 3.

be fitted onto the abutment.” Consequently, the teachings of Hurson ’176 are directed to the scanning of copings inserted into an abutment adapter which is, itself, affixed to the implant via the implant’s “indexed recessed walls” (as discussed above). *See also* Hurson ’176 ¶¶ 59, 60, 76, 98. Thus, Appellant is not persuasive that the above limitation is not obvious in view of these teachings.

Appellant also contends, “the figures of Hurson [’176] are unrealistically parallel. In practice, multiple implants always have a significant degree of non-parallel installation.” Br. 10. Although this statement has no apparent bearing on whether Hurson ’176 assists in rendering claim 1 obvious, we note that Appellant’s own figures (*see, e.g.*, Figs. 5B–5F, 7 and 8A–8D) seem to illustrate the various hexagonal portions all having the exact same orientation about their respective longitudinal axis, likewise an equally unrealistic installation. *See also* Ans. 3 (“every procedure depends on the patient and the execution of the installation [of the implant] cannot be asserted without evidence that [the] parallelism shown [in Hurson ’176] does not occur”). Appellant’s contention is not persuasive of Examiner error.

Appellant additionally states, “Hurson [’176] only utilizes abutment 100 for single-implant situations. In contrast, the claims are specifically drawn to multi-implant situations and the complexities associated therewith.” Br. 10. Indeed, Paragraph 76 of Hurson ’176 addresses one abutment per implanted tooth. However, a further reading indicates that the teachings of Hurson ’176 “can be used to support a single dental restoration (*e.g.*, a crown) and/or can be used to support a plurality of dental restorations (*e.g.*, an implant supported bridge or denture).” Hurson ’176 ¶ 59. In view

of this teaching of multi-implant situations, Appellant's contention that Hurson '176 is limited to restoring only a single tooth (thereby avoiding "the complexities associated" with "multi-implant situations") is not persuasive of Examiner error. Br. 10; *see also* Ans. 3 ("element 500/504 is also used for the creation of a superstructure to connect multiple implants").

Appellant also argues that "Hurson ['176] describes a similar problem in paragraph [0113] but Hurson ['176]'s solution is very different." Br. 18. According to Appellant, "Hurson ['176] is unconcerned with the spatial orientations of the underlying indexed walls and relies on the widened/tapered shape of implant 20 to 'accommodate any misalignments.'" Br. 18. Regardless of whether or not there is support for this contention in Paragraph 113 of Hurson '176, the Examiner also references Paragraph 119 of Hurson '176 (*see* Final Act. 4) which, as noted above, addresses scanning for "position and orientation" purposes. Appellant does not explain how the latter disclosure regarding ascertaining an orientation fails to teach the limitation "determining relative spatial orientations of each of the implant fixtures and each of the indexed recessed walls" addressed by Appellant. Br. 18.

Further, Appellant contends, "**[t]he claims require selecting preformed crowns from an inventory.**" Br. 20. As noted by Appellant, the Examiner relied on Paragraph 113 of Hurson '176 for disclosing this limitation. *See* Br. 20; Final Act. 4. Appellant replicates this paragraph (*see* Br. 20) and contends that this paragraph "does not appear to teach the step of 'selecting a number of preformed crowns from a predetermined inventory of available crowns.'" Br. 21. There is merit to Appellant's contention regarding the Examiner's specific reference to Hurson '176's "paragraph

[0113] lines 9–12.” Final Act. 4. However, the Examiner acknowledges a “typographical error” occurred such that Paragraph 112 (same lines) should have been identified instead. *See* Ans. 5. Paragraph 112 (and specifically lines 9–12 thereof) describe a bridge having “crowns **601**” that can be employed to “complement the existing geometry of a patient’s dental structures and to provide a natural appearance.” This same paragraph also states that the bridge in question “can be used to support one or more crowns **601**.” Hurson ’176 ¶ 112. Appellant does not address the teachings in Paragraph 112 of Hurson ’176 regarding the use of matching crowns, but instead focuses solely on the inapplicability of Paragraph 113 of Hurson ’176. *See* Br. 20–21. We understand the Examiner may have made an inadvertent error, but we are not persuaded by Appellant’s contention that the teachings of Hurson ’176 fail to provide support regarding the making of a selection among various crowns for matching purposes. Accordingly, we are not persuaded of Examiner error, or that Hurson ’176 fails to teach the limitation, “selecting a number of preformed crowns from a predetermined inventory of available crowns.”

Regarding the Examiner’s reliance on Marlin, Appellant contends, “[t]he number of components used by Marlin introduces significant risk. For multiple implants, the danger in dealing with so many components inside the oral cavity at the same time is even greater.” Br. 22. Marlin was relied on for teaching elongate pins that are received in a threaded recess of an abutment screw and wherein such pins have a length of at least 5 mm. *See* Final Act. 5. We note that Appellant also teaches the use of an additional extension secured into an abutment screw (*see, e.g.*, Spec. Fig. 2), which belies Appellant’s argument that the skilled artisan would be

discouraged from incorporating additional components. Further, avoiding the “danger” regarding the use of multiple components within an oral cavity is not a claimed feature. Accordingly, we are not persuaded the Examiner erred in rendering claim 1 obvious in view of Hurson ’176 and Marlin.

In summation, and based on the record presented, we are not persuaded by Appellant that the Examiner’s rejection of claims 1, 3, 7–10, 12, and 14–19 as being unpatentable over Hurson ’176 and Marlin is unreasonable, mistaken, or improper. We sustain the rejection of these claims.

The rejections of: (a) claims 4–6 and 11 as unpatentable over Hurson ’176, Marlin, and Kwan; and, (b) claim 13 as unpatentable over Hurson ’176, Marlin, and Hurson et al. ’554

With respect to these additional rejections, Appellant contends that each dependent claim is “allowable for at least the same reasons” provided above. Br. 23. We are not persuaded by this contention. We sustain the Examiner’s rejections of claims 4–6, 11, and 13 as being obvious over the recited art.

DECISION

The Examiner’s rejections of claims 1 and 3–19 as being obvious under 35 U.S.C. § 103 are affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED