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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte UDAY N. KUMAR, ZACHARY J. MALCHANO,
MAARTEN DINGER, TIMOTHY BAHNEY, and FRANK GARCIA

Appeal 2019-002333
Application 15/120,655
Technology Center 3700

Before ANTON W. FETTING, KENNETH G. SCHOPFER, and
BRADLEY B. BAYAT, *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 3, 4, 7–18, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, and 143–148. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “ELEMENT SCIENCE, INC.” Appeal Br. 2.

BACKGROUND

The Specification “relates to automatic external defibrillators that can be continuously and comfortably worn by a patient for an extended period of time.” Spec. ¶ 4.

CLAIMS

Claims 1, 113, and 144 are the independent claims on appeal. Claim 1 is illustrative of the appealed claims and recites:

1. A wearable external defibrillator comprising:
 - one or more sensing electrodes configured to engage with a patient’s skin to detect a cardiac signal;
 - a defibrillator electrode pad configured to engage with the patient’s skin and to deliver an electrical therapy to the patient, the defibrillator electrode pad configured to be in continuous electrical communication with the patient’s skin;
 - a patient engagement substrate comprising an adhesive, the one or more sensing electrodes, the defibrillator electrode pad, and a fluid transport element configured to transport fluid away from the skin to allow the wearable external defibrillator to be worn continuously during movement and showering activities;
 - an energy source comprising a battery and one or more capacitors supported by the patient engagement substrate;
 - a controller configured to detect the cardiac signal with the sensing electrodes, to charge the one or more capacitors with the battery and to discharge the one or more capacitors to deliver a therapeutic shock through the defibrillator pad to the patient while the patient engagement substrate is engaged with the patient; and
 - two or more separate waterproof housings supported by the patient engagement substrate and each enclosing at least one of the battery, the one or more capacitors and the controller.

Appeal Br. 12.

REJECTIONS

1. The Examiner rejects claims 1, 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, and 143–148 under 35 U.S.C. § 103 as unpatentable over Kumar 495² in view of Owen.³
2. The Examiner rejects claims 12–18 under 35 U.S.C. § 103 as unpatentable over Kumar 495 in view of Owen and Kumar 963.⁴
3. The Examiner rejects claims 1, 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, and 143–148 under 35 U.S.C. § 103 as unpatentable over Kumar 495 in view of Owen and Weintraub.⁵
4. The Examiner rejects claims 12–18 under 35 U.S.C. § 103 as unpatentable over Kumar 495 in view of Owen, Weintraub, and Kumar 963.

DISCUSSION

Rejection 1

With respect to the rejection over Kumar 495 in view of Owen, Appellant groups all claims together. *See* Appeal Br. 5. We select claim 1 as representative of this group of claims, and claims 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, and 143–148 will stand or fall with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2018).

With respect to claim 1, the Examiner finds that Kumar 495 teaches a defibrillator as claimed except that the Examiner indicates that Kumar 495 does not teach the claimed fluid transport element on the substrate or the use

² Kumar, US 2008/0033495 A1, pub. Feb. 7, 2008.

³ Owen et al., US 2003/0004547 A1, pub. Jan. 2, 2003.

⁴ Kumar et al., US 2011/0279963 A1, pub. Nov. 17, 2011.

⁵ Weintraub et al., US 2009/0005827 A1, pub. Jan. 1, 2009.

of two or more separate waterproof housings. Non-Final Act. 2; Final Act. 2–3. The Examiner finds that Owens teaches the use of an adhesive with a high moisture vapor transmission rate (“MVTR”) and determines that it would have been obvious to use such an adhesive in Kumar’s device because “it would yield the predictable results of providing a more comfortable experience for the patient when wearing the defibrillator over long periods of time.” Non-Final Act. 2. Further, the Examiner determines that it would have been a matter of design choice to provide two or more waterproof housings as claimed; and that the combination “would not yield any unpredictable results” and “[b]y separating the defibrillator components into two or more housings that are at different locations on the substrate, the weight of the wearable defibrillator would be more balanced, and therefore the defibrillator more secure, than if most of the weight were located at one location.” Final Act. 3.

As discussed below, we are not persuaded of any reversible error in the Examiner’s findings or conclusion regarding this rejection of claim 1.

Appellant first argues that Owen does not expressly or inherently teach “a patient engagement substrate” as claimed. Appeal Br. 6. More particularly, Appellant argues a person of ordinary skill in the art “would not expect that the Owen adhesive substrate would be able to support the heavy battery and capacitors of the Kumar [495] defibrillator and that Owen does not teach how one would modify the Kumar [495] adhesive substrate to provide the claimed fluid transport element.” *Id.* at 6–7. We are not persuaded.

“The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary

reference.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Rather, a conclusion of obviousness is based on “what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000). Further, “in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. . . . A person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 420–21 (2007).

Thus, the Examiner need not find either an explicit teaching in Owen as to how one would modify Kumar to arrive at the claimed invention or an explicit teaching in Owen that the disclosed adhesive can support the weight Kumar 495’s device. To wit, the Examiner makes clear in the Answer that the proposed combination does not rely on bodily incorporating the specific substrate used by Owen into Kumar 495. *See* Ans. 3–4. Rather, the Examiner determines that “[i]t is considered to be obvious that the ordinarily skilled artisan [would] adapt the adhesive of Kumar [495] to produce an adhesive with a high MVTR, as shown in Owen, in order to make the adhesive more breathable, and cause less harm to the patient’s skin.” *Id.* Based on this reasoning, we disagree with Appellant the rejection relies on any inherent properties of Owen’s adhesive.

Next, Appellant argues that “[n]othing in either Owen or Kumar [495] would have suggested to a skilled artisan that the Owen adhesive substrate could be substituted for the Kumar [495] adhesive substrate and still support the defibrillator components.” Appeal Br. 8. We are not persuaded. As discussed, the Examiner is not relying on a bodily incorporation of Owen’s

substrate into Kumar 495. Rather, the Examiner makes clear that the rejection merely relies on Owen’s teaching that using an adhesive with a high MVTR provides a particular benefit. And we agree with the Examiner’s finding in this regard. In particular, Owen discloses using an adhesive with defibrillator electrodes that is “adapted for long-term wear” because it has a high MVTR and that, “[b]y virtue of this feature . . . , the adhesive is made breathable” and “increases the amount of time an electrode may be worn without causing substantial harm to the patient’s skin.” Owen ¶ 76. Thus, we find that the Examiner has provided an adequate rationale with rational underpinnings to support the conclusion of obviousness with respect to the combination of Owen and Kumar 495. *See KSR*, 550 U.S. at 418.

Finally, Appellant argues that the Examiner erred in concluding that providing separate waterproof housings would have been an obvious design choice. Appeal Br. 8. Appellant also argues that “the Examiner’s list of the benefits of these features comes from Appellant’s specification, not from any prior art reference” and that “[t]he Examiner has not provided any rationale at all for the obviousness of adding these limitations to the combined disclosure of the prior art.” *Id.* at 9. We are not persuaded of error.

As noted above, the Examiner concludes that providing separate waterproof housings for separate components would have been a matter of design choice and that one of ordinary skill in the art would have been motivated to make this choice because “separating the defibrillator components into two or more housings that are at different locations on the substrate, the weight of the wearable defibrillator would be more balanced,

and therefore the defibrillator more secure, than if most of the weight were located at one location.” Final Act. 3. Thus, contrary to Appellant’s argument, this provides a rationale for the conclusion that using multiple waterproof housings would have been obvious. And to the extent Appellant indicates that this reasoning may be based on hindsight, Appellant does not adequately explain the statement that the Examiner’s list of benefits “comes from Appellant’s specification.” Thus, without further explanation, Appellant has not identified any error in the Examiner’s reasoning that it would have been obvious to provide separate waterproof housings as a matter of design choice.

Based on the foregoing, we are not persuaded of error in the rejection of claim 1 over Kumar 495 in view of Owen. Accordingly, we sustain the rejection of claim 1, here. We also sustain the rejection of claims 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, and 143–148, which fall with claim 1.

Rejection 2

With respect to the rejection of claims 12–18 over Kumar 495, Owen, and Kumar 963, Appellant argues only that Kumar 963 does not cure the deficiencies in the rejection of claim 1. Appeal Br. 9. As discussed, we are not persuaded of any deficiency in the rejection of claim 1 over Kumar 495 and Owen. Accordingly, we also sustain the rejection of claims 12–18.

Rejections 3 and 4

Because our determination to sustain Rejections 1 and 2 is dispositive for all claims on appeal, we do not reach the alternative rejections including Weintraub.

CONCLUSION

We AFFIRM the rejection of claims 1, 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, and 143–148 over Kumar 495 in view of Owen. We AFFIRM the rejection of claims 12–18 over Kumar 495 in view of Owen and Kumar 963.

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, 143–148	103	Kumar 495, Owen	1, 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, 143–148	
1, 3, 4, 7–11, 20, 21, 23–28, 31, 33–40, 43, 44, 46, 48–50, 52–55, 113, 143–148	103	Kumar 495, Owen, Weintraub ⁶		
12–18	103	Kumar 495, Owen, Kumar 963	12–18	
12–18	103	Kumar 495, Owen, Weintraub, Kumar 963 ⁷		
Overall Outcome			1, 3, 4, 7–18, 20, 21, 23–28, 31, 33–40, 43,	

⁶ As explained above, we do not reach this rejection.

⁷ As explained above, we do not reach this rejection.

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Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
			44, 46, 48–50, 52–55, 113, 143–148	

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)(iv).

AFFIRMED