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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ERIK WIEDERHOLTZ

Appeal 2019-001749
Application 15/074,801
Technology Center 2600

Before BRYAN F. MOORE, MATTHEW J. McNEILL, and
JASON M. REPKO, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Pursuant to 35 U.S.C. § 134(a), Appellant appeals from the Examiner’s decision to reject claims 21–29, 34 and 36–40.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Throughout this Decision we have considered the Specification filed March 18, 2016 (“Spec.”); the Final Rejection mailed February 22, 2018 (“Final Act.”); the Appeal Brief filed June 25, 2018 (“Appeal Br.”); the Examiner’s Answer mailed October 18, 2018 (“Ans.”); and the Reply Brief filed December 18, 2018 (“Reply Br.”).

² We use the word “Appellant” to refer to “Applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies Knowles Electronics, LLC as the real party in interest. Appeal Br. 2.

BACKGROUND

Appellant's disclosed embodiments and claimed invention relate to an acoustic devices and, more specifically, to acoustic devices including drivers having filters for controlling the performance of the drivers. Spec. ¶ 1. Claim 1, reproduced below, is illustrative of the subject matter on appeal (*emphasis* added to contested prior-art limitation):

1. An acoustic device comprising:
 - a first housing for a first acoustic receiver;
 - a first diaphragm movably disposed within the first housing, the first diaphragm separating an interior of the first housing into a first front volume and a first back volume,
 - a cap connected to the first housing;*
 - a low-pass filter chamber having a fixed volume formed in part by the cap and in part by a portion of the first housing, the low-pass filter chamber coupled to the first front volume; and*
 - a first sound outlet port disposed between the first front volume or the low-pass filter chamber and an exterior of the first housing, wherein movement of the first diaphragm causes sound to emanate from the first front volume and through the first sound outlet port,
 - wherein the fixed volume of the low-pass filter chamber affects a frequency response of the acoustic device.

Appeal Br. 16 (Claims App.).

REJECTIONS

Claim 34 stands rejected under 35 U.S.C. § 112(b) as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor regards as the invention. Ans. 6–7.

Claims 21–29, 34 and 36–40 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Eaton, (US 7,123,736 B2, iss. Oct. 17, 2006).
Final Act. 3.

ANALYSIS

We review the appealed rejections for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential). To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

We have considered all of Appellant’s arguments and any evidence presented. We highlight and address specific findings and arguments for emphasis in our analysis below.

Rejection of Claim 34 under 35 U.S.C. § 112(b)

The Examiner finds that claim 34 is indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor regards as the invention. Ans. 7–8.

Claim 34 recites, inter alia, a “housing,” a “diaphragm,” “front housing,” and “the front volume not acoustically coupled to an interior volume of another acoustic receiver.” The Examiner asserts that language “is considered [a] negative limitation, and furthermore, how many acoustic receiver have been claimed?” Final Act. 2. Examiner also complains that this is a negative limitation, however, negative limitation may be properly used in claiming. “Negative limitations are adequately supported when the [S]pecification describes a reason to exclude the relevant limitation.” *See*

Santarus, Inc. v. Par Pharmaceutical, Inc., 694 F.3d 1344, 1351 (Fed. Cir. 2012); *see also* MPEP, section 2173.05(i), (Stating that there is “nothing inherently ambiguous or uncertain about a negative limitation” so long as the negative limitation has “basis in the original disclosure.”). Paragraph 18 of the Specification discloses “[u]nlike some prior approaches, the front volume 52 of the LF driver 14 is not shared with the HF driver 16.” The Examiner has not explained why this use of a negative limitation is improper given that disclosure.

Nonetheless, Examiner also states that there no antecedent basis for the first “acoustic receiver,” so the claim cannot refer to “another” acoustic receiver. Ans. 7. We agree. Appellant argues that “[t]he ‘housing’ and ‘diaphragm’ limitations of Claim 34 inherently define an acoustic receiver as described in Appellants’ [S]pecification.” Appeal Br. 3 (citing Spec. ¶¶ 2, 5, and 6). We find that the paragraphs relied on do not state that a housing and a diaphragm are a defined as a “receiver,” rather they suggest that a housing and diaphragm may be included in a receiver. Thus, we are not persuaded by Appellant arguments. Accordingly, we sustain the Examiner’s rejection of claim 34 as indefinite.

Rejection of Claim 21–29, 34, 36–40 under 35 U.S.C. § 103(a) over Eaton

Claim 1 recites “a cap connected to the first housing.” Figure 2, reproduced below, shows cap 55 and housing 50.

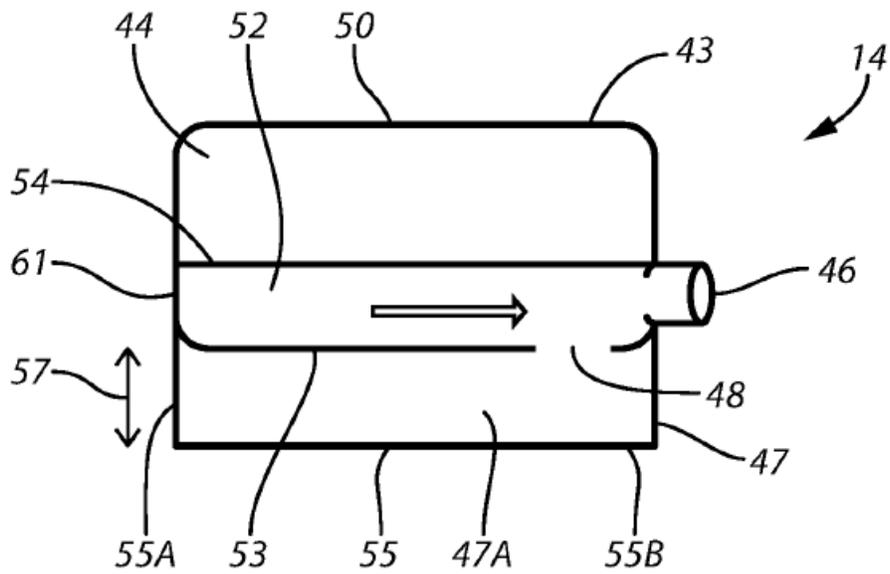


FIG. 2

Figure 2 of the Specification shows schematic view of a portion of the claimed hearing aid device. The Examiner relies on Figure 2 of Eaton, reproduced below, which shows elements 152 and 150 that the Examiner finds show the cap and housing, respectively. Final Act. 7.

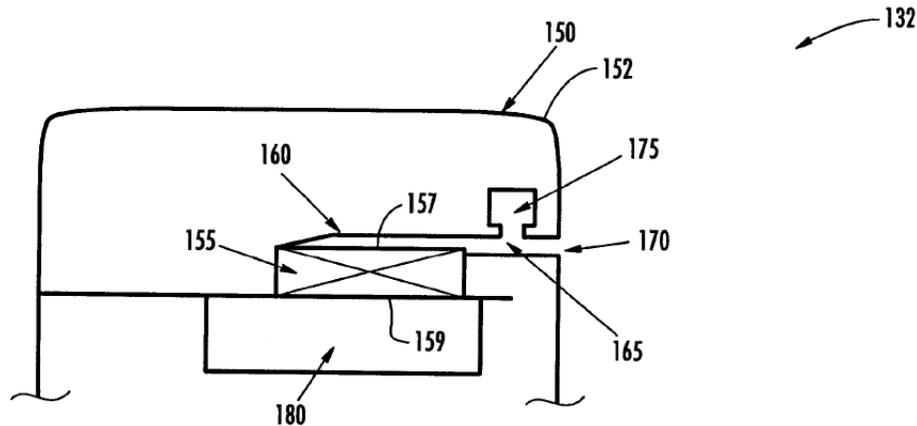


Figure.2.

Eaton's Figure 2 is reproduced above. Appellant argues "Eaton discloses that element 150 is a housing (see col. 4, lines, 13-23) and that element 152 is a wall defining the housing (see col. 6, line 20). Since Eaton discloses that element 152 defines the housing, element 152 of Eaton cannot also read on the claimed 'cap' limitation." Appeal Br. 11. According to Appellant, in Eaton "the housing and the wall are one and the same." Reply Br. 4. Appellant also argues that Eaton does not explicitly mention a cap. Appeal Br. 11.

Appellant argues that the claimed cap and housing are clearly separate elements as described in the Specification at paragraph 20, which recites

the housing 50 includes a body 61 and a cover member, such as cap 55, connected to the housing 50. The body 61 and cap 55 together define at least a portion of the low-pass filter chamber 47. . . . The cap 55 has one or more sidewalls 55A depending from the body 61 and a cover wall 55B extending transversely to the sidewalls 55A.

Id. (citing Spec. ¶ 20). Thus, according to Appellant, the cap and housing must be limited to “separate parts forming an assembly.” Reply Br. 4.

The Examiner asserts the claimed “first housing can be a first part of PDA housing means, such as the bottom part of the housing means; and the [claimed] cap can be a second part of PDA housing means, especially the top part of the housing means as claimed.” Ans. 8.

First and foremost, claim 1 does not recite nor require that the housing and cap member be separate elements. During prosecution, claim terms are given their “broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant’s specification.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). However, “limitations are not to be read into the claims from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

Appellant does not direct us to objective evidence or an explicit definition in its Specification that supports the argument that Appellant’s claims require that the “housing” and “cap” be separate elements. Appellant’s citation to the Specification does not contain a description that supports Appellant’s argument in that regard. The broadest reasonable meaning of a “cap connected to a housing” does not preclude two claim elements from being met by one prior art element.

The Examiner’s finding that Eaton describes a housing connected to a cap is reasonable, consistent with Appellant’s Specification, and consistent with the ordinary meaning of the terms as they would be understood by one with ordinary skill in the art. For all these reasons Appellant has not shown

the Examiner erred in finding claims 21–29, 34, 36–40 would have been obvious over Eaton.

We, therefore, are not persuaded by Appellant’s arguments that the Examiner’s rejection is in error with respect to the housing connected to a cap limitation.

Claim 1 also recites “a low-pass filter chamber.” The Examiner asserts

Eaton may not clearly teach that the filter chamber is a low-pass filter chamber as claimed. Since Eaton does clearly teach, especially in Figs. 4-6, for tuning a larger frequency range (low to high) for the speaker by with different tuning volume configurations, and in figure 7, suggest how to configure the tuning volume for different application, it therefore would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to be motivated to provide desirable configuration, such as low-pass filter chamber for the acoustic device aid taught by Eaton, in order to provide desirable acoustic device for different application.

Final Act. 7. The Examiner points specifically to “low-pass filter chamber (at curve 600 as suggested in col. 6, lines 58–59) for the acoustic device taught by Eaton.” Ans. 9.

Appellant argues

Eaton is concerned with extending frequencies above the voice frequency range and not with low pass filtering. A lowpass filter passes low frequencies and attenuates high frequencies. . . . By contrast, Eaton uses a forward tuning volume 175 to create a double-resonator that extends the frequency response of the speaker assembly above the voice frequency range (*see* col. 4, lines 24-46; col. 5, lines 40-46; col. 7, lines 24-49). Thus, there is no suggestion in Eaton for a “low-pass filter chamber” as claimed.

Appeal Br. 12. Specifically Appellant argues “[s]uch an extension teaches away from low-pass filtering and is more consistent with high-pass filtering.” Reply Br. 5. Additionally, Appellant disagrees with the Examiner’s citation to curve 60. *Id.* Specifically, Appellant states that “[a]t col. 6, lines 57–62, Eaton describes how a low-pass filter in a coder/decoder of a mobile terminal affects the frequency response of the micro-speaker housing 150, shown in FIG. 6. Thus, there is no disclosure or suggestion in Eaton to provide a ‘low-pass filter chamber’ as claimed.” Reply Br. 5.

We are not persuaded by these arguments. Appellant’s “teaching away” argument is not persuasive because Appellant has not identified where Eaton actually criticizes, discredits, or otherwise discourages “low-pass filter chamber.” *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (“A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the invention claimed.”) (citing *Fulton*). Appellant has not persuaded us that the cited paragraphs of Eaton criticize, discredit, or otherwise discourage the disputed limitation.

The Examiner cites to description in Eaton describing the effect, including a low pass filter effects, of increasing and decreasing the volume of a chamber to one to one of skill in the art. Final Act. 7 (citing Eaton, Fig. 4–6). Thus, the Examiner has shown that using a chamber to create a low pass filter effect would have been obvious to one of ordinary skill in the art in a device similar to the claims device.

For all these reasons Appellant has not shown the Examiner erred in finding claims 21–29, 34, and 36–40 would have been obvious over Eaton.

Rejection of Claims 22 and 24 under 35 U.S.C. § 103

The Examiner finds that claims 22 and 24 would have been obvious over Eaton. Final Act. 4. Claim 22 recites “wherein the first front volume is coupled to the low-pass filter chamber by a first port other than the first sound outlet port.” To show the first port, Examiner relies on Eaton’s element 165 which is an opening between element 160 and element 175. Appellant argues that “element 165 is merely a path and the only port in Eaton is the opening 170.” Reply Br. Appellant has not explained the relevance of identifying element 160 as a “path” as opposed to a “port.” Additionally, Appellant has not shown in the Specification, or by the plain meaning of “port,” that a port requires an opening to the outside of the device.

We, therefore, are not persuaded by Appellant’s arguments that the Examiner’s rejection of claim 22 is in error.

Claim 24 recites “a first housing wall of the first housing separates the first front volume and the low-pass filter chamber, and wherein the first port is disposed through the first housing wall.” The Examiner states that the recited “first housing wall . . . of the first housing” to be “anywhere between 157 and 175.” Ans. 10. Appellant argues that

Eaton describes element 157 as being “a first face 157 [of the micro-speaker 155]” where a “first forward tuning volume 160 is located adjacent the first face 157” (see col. 4, lines 18-21). A “second forward tuning volume 175 is positioned at a location between the first forward tuning volume 160 and the opening 170” (see col. 4, lines 25-27). Thus, “anywhere between 157 and 175” represents the first forward tuning

volume 160 itself, which is not “a first housing wall of the first housing [that] separates the first front volume and the low-pass filter chamber,”

Reply Br. 6. We disagree. Although, “anywhere between 157 and 175” must include “first forward tuning volume 160,” it also must include a wall that surrounds and defines the “first forward tuning volume 160.” *See* Eaton, Fig. 2. That wall is a part of what the Examiner is pointing to as “the first housing wall . . . of the first housing [that] separates the first front volume and the low-pass filter chamber.” Ans. 10. This wall is sufficient to meet the claim limitation.

We, therefore, are not persuaded by Appellant’s arguments that the Examiner’s rejection of claim 24 is in error.

Accordingly, we sustain the Examiner’s rejection of claims 21, 22, and 24 as obvious over Eaton. We also sustain the rejection of claims 23, 25–29, 34, and 36–40, which are not argued separately (*see* Appeal Br. 9–14), as obvious over Eaton.

CONCLUSION

We affirm the Examiner’s rejection of claims 21–29, 34, and 36–40 under 35 U.S.C. § 103(a).

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	References/Basis	Affirmed	Reversed
34	112(b)	Indefiniteness	34	
21–29, 34, 36–40	103(a)	Eaton	21–29, 34, 36–40	
Overall Outcome			21–29, 34, 36–40	

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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED