

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

GOOGLE LLC,
Appellant

v.

PERSONAL AUDIO, LLC,
Cross-Appellant

2017-1162, 2017-1166, 2017-2110, 2017-2111

Appeals from the United States Patent and Trade-
mark Office, Patent Trial and Appeal Board in Nos.
IPR2015-00845, IPR2015-00846.

Decided: August 1, 2018

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MINGHUI YANG.

Before PROST, *Chief Judge*, BRYSON and O'MALLEY,
Circuit Judges.

BRYSON, *Circuit Judge*.

Google LLC appeals from two decisions of the Patent Trial and Appeal Board in inter partes review proceedings, each involving a patent owned by cross-appellant Personal Audio, LLC. In the first case, the Board held claims 1 and 4 of Personal Audio's U.S. Patent No. 6,199,076 ("the '076 patent") to be unpatentable for obviousness, but held claims 2, 3, 14, and 15 of the '076 patent to be patentable. In the second case, the Board held claims 1–4, 9, and 13 of U.S. Patent No. 7,509,178 ("the '178 patent") to be unpatentable for obviousness, but held claims 5–8, 14–17, 28, and 29 of the '178 patent to be patentable. Google appeals from the Board's non-obviousness decisions; Personal Audio cross-appeals from the Board's obviousness rulings. We affirm.

I

Both the '076 patent and the '178 patent are directed to an audio program and message distribution system in which a host system organizes and transmits program segments to a client. The claimed audio program player receives a sequence of programs to be played based on the listener's preferences. The program player also provides navigation tools that enable the user to navigate to other program segments or to the beginning of the currently playing segment.

Certain claims of the two patents recite a "skip backward" program selection command that, depending on the circumstances, either restarts the current program segment or begins playback of the previous segment. As recited by the claims and construed by the Board, the "skip backward" limitations of both patents disclose a

computer algorithm that responds to one or more “back” commands in different ways depending on how long the current program has been playing. If the current program has played for at least a predetermined period of time, the “back” command will cause the system to reset to the beginning of the currently playing program. If the current program has not played for a predetermined amount of time, the “back” command will cause the system to begin playback of the immediately preceding segment in the playlist. For example, if the predetermined time is set at three seconds, and track 5 has been playing for three seconds or less, a “back” command would begin playback of track 4; if track 5 has been playing for more than three seconds, a “back” command would restart track 5.

Certain claims also recite “skip” and “go” commands. The “skip” command plays the audio segment that follows the currently playing segment. The “go” command permits the user to play a “listener-selected” audio program segment. Some claims also include the limitation that the player reproduces “selected audio program segments,” which the Board construed as “audio program segments that have been chosen by or for a user.” Similarly, some of the claims require that the sequence file be “personalized to the preferences” of the listener.

Google asserted four prior art references before the Board, of which three are relevant to this appeal. The first is U.S. Patent App. Pub. No. 2002/0177914 A1 (“Chase”), a published patent application that discloses a system for distributing nationally syndicated radio programs or national advertising campaigns to local radio stations. Chase describes an “affiliate terminal” in which the local radio station’s disc jockey can pause and play audio selections from the playlist provided by the national broadcaster, can go to the next or previous segment, and

can use up and down arrows to select and play a desired program from within the list.

The second prior art reference is an article written by Shoshana Loeb (“Loeb”). The Loeb reference describes a personalized music system called “LyricTime,” which can select audio files for playing based on a listener profile. The audio files in the LyricTime system can be transmitted to the listener’s computer, television, or other terminal with input capabilities. The system also provides the listener with the ability to play and pause the audio, and to navigate forward and backward through the selected audio files.

The third relevant prior art reference is U.S. Patent No. 4,811,315, entitled “Disc Player with Program Selection Control” (“Inazawa”). Inazawa, which describes a navigation system on a CD player, was introduced to show the “skip backward” limitations. Inazawa discloses a system that has two program selection keys, one to move forward and the other to move in reverse. On a single press of the “back” button, the device moves the optical head of the CD player to the beginning of the currently playing track. Inazawa, col. 6, ll. 17–29. If that button is pressed a second time within a period designated as t_3 , the optical head instead moves to the beginning of the previous track. *Id.*, col. 6, line 61, to col. 7, line 20. Otherwise, if that button is pressed a second time after the expiration of the t_3 time period, the optical head again moves to the beginning of the currently playing track. *Id.*, col. 7, ll. 21–31.

Importantly, after the first button press, there is a short reset period, identified as t_2 , which is the time that it takes for the optical head to move into the proper position at the beginning of the current track. *Id.*, col. 6, ll. 41–54. The reset time varies, depending on factors such as the distance between the current location of the

optical head and its destination. As a result, the period designated as t_3 does not represent audio playback time, but rather begins running from the first press of the program selection key, and includes some amount of reset time during which no audio playback is occurring.

The Board held that the prior art rendered all of the limitations obvious except for the “skip backward” limitations. Google appeals from the Board’s conclusion that Inazawa does not render the “skip backward” limitations obvious. Personal Audio cross-appeals from the Board’s conclusions that Chase and Loeb render the claims containing the “skip” and “go” limitations obvious, that Chase and Loeb disclose “selected audio program segments,” and that there was a motivation to combine Chase and Loeb in a manner that would disclose that the audio is “personalized to the preferences” of the listener.

II

In its appeal, Google argues that Inazawa renders the claims containing the “skip backward” limitations obvious. Because substantial evidence supports the Board’s conclusion that Inazawa describes a fundamentally different algorithm that does not render the claimed algorithm obvious, we affirm.

First, Google argues that the time period t_3 disclosed in Inazawa constitutes a “predetermined amount of time” under the Board’s claim construction and therefore renders obvious the “skip backward” limitations in claims 5, 6, and 14 of the ’178 patent. The stipulated claim constructions, which were adopted by the Board, provide that the “skip backward” claim limitations either reset to the beginning of the current segment or the beginning of the previous segment depending on whether “the currently playing audio program file has played for a predetermined amount of time.”

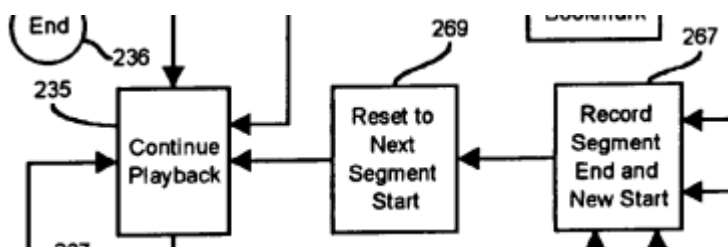
The Board distinguished Inazawa from the '178 patent on the ground that Inazawa's algorithm is based not on a predetermined amount of audio playback, but rather on a predetermined amount of time after the "back" button is first pressed. Google argues on appeal that the '178 patent's "predetermined amount" of playback can include the time consumed by the reset function. For that reason, Google argues, Inazawa's t_3 , which includes both the reset period and the period of playback, can satisfy the "predetermined amount of time" limitation in the "skip backward" claims of the '178 patent.

Google's argument is unsupported by the claims and specification of the '178 patent, both of which support Personal Audio's argument that the "predetermined amount of time" limitation excludes the reset period. For example, claim 5 of the '178 patent recites "wherein said processor responds to a skip backward program selection command . . . at a time when said *currently playing audio program has played* for at least a predetermined amount of time." '178 patent, col. 46, ll. 42–49 (emphasis added). The claim recites a predetermined amount of play time for the audio program, which does not contemplate reset time. Similarly, the specification of the '178 patent states that "after any given segment has played for a predetermined amount of time, the BACK command should reset the playback to [the] beginning of the current segment . . . unless the *playback point* is already near the beginning, in which case the transition is made to the prior segment." *Id.*, col. 15, ll. 53–59 (emphasis added).

In an effort to overcome this unambiguous language, Google relies on figure 3 of the '178 patent. That figure, according to Google, shows that the "predetermined amount" of playback includes reset time.

Figure 3 is a flow chart that illustrates the "principle [sic] steps performed during a playback session in the

illustrative embodiment.” ’178 patent, col. 4, ll. 13–15. Google points to three boxes in that flow chart. The first, box 267, contains the instruction “Record Segment End and New Start.” An arrow points from box 267 to box 269. Box 269 contains the instruction “Reset to Next Segment Start.” An arrow points from box 269 to box 235. Box 235 contains the instruction “Continue Playback.” Google argues that box 267, the “Record Segment” box, designates when the “predetermined amount” of playback time begins. For that reason, Google argues, the reset time represented by box 269 must be part of the “predetermined amount of” time for the playback function, which resumes at box 235. The relevant portion of figure 3 is set forth below.



Google’s argument is predicated on the theory that box 267 designates when the timer starts for the “predetermined amount” of playback. However, the specification does not draw any connection between the “Record Segment End and New Start” function and the playback timer function. The specification explains that “the system records the start of the new segment on the log file . . . at 267 and switches the current playback position in the program sequence file 214 to the new setting at 269, and the playback continues at 235.” ’178 patent, col. 14, ll. 35–39; *see also id.*, at col. 15, ll. 59–62 (“The system responds to BACK commands by resetting the playback point to the desired point in the sequence and recording the start time, volume setting and new program segment ID in the log file as indicated at 267.”). The “Record Segment End and New Start” function thus refers to

entries made in a log file that records the start time and various other settings; the specification contains nothing to suggest that the period of playback time is based on the time of those entries in the log file, rather than when the playback actually resumes at box 235, “Continue Playback.” Because the claims and the specification make clear that what is measured is “playback” time, Google’s argument about when the log file is written does not establish that reset time is included in “playback” time. We therefore see no error in the Board’s conclusion that Inazawa’s t_3 is a different algorithm than the one claimed in the ’178 patent.

Google next argues that, even if the claimed “predetermined amount of time” excludes reset time, Inazawa discloses a time period defined by what Google refers to as “ t_3 minus t_2 ,” where t_2 is defined as the reset time. That period, according to Google, constitutes a predetermined period of playback time and therefore renders claims 5, 6, and 14 of the ’178 patent obvious. Google contends that t_3 is a predetermined amount of time and that the reset time t_2 is also a “predetermined amount of time” because while it is variable, it is “formulaic and time-bound.” Accordingly, Google argues that the time after t_2 elapses but before t_3 elapses is a “predetermined amount of” playback time. Inazawa does not describe the variable period required for reset following a “back” command as part of the playback time; rather, the concept of a period consisting of t_3 minus t_2 is a construct devised by Google.

Regardless of whether the “ t_3 minus t_2 ” argument is timely,¹ it is unpersuasive for the simple reason that t_3

¹ The Board found that the “ t_3 minus t_2 ” argument was not timely presented because it was not raised in Google’s inter partes review petition or in its reply, but

minus t_2 is not a predetermined amount of playback time. The reset time t_2 in Inazawa is variable and is based on when the user presses the “back” program selecting key and various factors about the length of the currently playing track, the playback point, and the location of the optical head; it is not and cannot be known in advance, unlike the predetermined amount of playback time disclosed in the '178 patent. As the Board held, Inazawa does not use or calculate t_3 minus t_2 ; instead, it measures time from the first button press, and not from the beginning of actual playback. The court sees no error in the Board’s conclusion that the t_3 minus t_2 argument is unpersuasive even if it was properly preserved.

Google also challenges the Board’s conclusion that Inazawa discloses the skip-back functionality recited in

was raised only during the oral argument before the Board. Google contends its t_3 minus t_2 argument was in made in response to Personal Audio’s argument that the “predetermined amount of time” had to run from the beginning of the currently playing file. That argument, Google contends, was not made until the oral argument before the Board. Personal Audio, however, argued in its patent owner’s response that “[n]one of the prior art of record teach the function provided by the controls of skipping back based on a predetermined time an audio segment has played. . . . Inazawa, however, does not disclose controls based [on] the amount of time that the audio file has played, but rather based upon whether ‘selection key’ is pressed a second time with a ‘duration t_3 ’ after the first key is pressed.” Given that Personal Audio made that argument in its written response, there is substantial force to the Board’s conclusion that Google’s failure to raise its t_3 minus t_2 argument in its reply resulted in a waiver of the argument.

claims 2, 3, 14, and 15 of the '076 patent. Although the language of those claims differs from that of the “skip backward” claims in the '178 patent, the parties stipulated to, and the Board adopted, a construction that required the skip-back limitations of the '076 patent to be based on a calculation of whether “the currently playing program segment has played for a predetermined amount of time.” Google raises the same arguments regarding Inazawa with regard to the '076 patent that it did for the '178 patent. For the reasons described above, we affirm the Board’s conclusion that Inazawa does not disclose the claimed skip-back functionality of the '076 patent.

Finally, Google argues that the inclusion of reset time in the “predetermined amount of” playback time would have been obvious because “any differences between the prior art’s skip-back functionality and what the claims require were mere matters of design choice.” According to Google, the Board did not conduct a complete analysis of that argument, and this court should therefore remand for the Board to give further consideration to that contention.

Google did not argue in its papers to the Board that choosing between calculating the “predetermined amount of time” based on playback time and calculating that period based on a button press is simply an obvious design choice. Rather, Google’s only argument to the Board about obvious design choice was that Inazawa discloses a “predetermined amount of” playback, and that the difference between Inazawa’s hardware implementation and the claimed invention’s software implementation would have been an obvious design choice. *See* J.A. 246–47 (Google’s petition for inter partes review of the '076 patent, arguing that “[t]he software versus hardware approaches in Chase and Inazawa are a mere design choice, and a POSITA would know how to implement the operation of Inazawa in the context of the software in

Chase.”); J.A. 16129 (Google’s petition for inter partes review of the ’178 patent, making the same argument verbatim); J.A. 256 (’076 petition, arguing “[i]n essence, choosing a hardware implementation or a software implementation is merely a design choice, and a POSITA would know how to implement the operation of Inazawa in the context of the software of Chase.”); J.A. 16132 (’178 petition, making the same argument verbatim).

Because Google did not present the Board with its “design choice” argument to bridge the gap between Inazawa’s algorithm and the one recited in the ’178 and ’076 patents, we do not consider this new argument on appeal. *In re Baxter Int’l, Inc.*, 678 F.3d 1357, 1362 (Fed. Cir. 2012) (“[W]e generally do not consider arguments that the applicant failed to present to the Board.”).

III

In its cross-appeal, Personal Audio raises three issues. Because substantial evidence supports the Board’s conclusions that the claims the Board held unpatentable would have been obvious, we affirm.

First, Personal Audio argues that the Board erred in relying on the same disclosure in the Chase and Loeb references to satisfy both the “skip” and “go” commands of claims 1 and 4 of the ’178 patent. As recited in the patents, the “skip” command directs the player to move to the next audio segment in the playlist, and the “go” command directs the player to move to a “listener-selected” audio segment. Personal Audio argues that neither Chase nor Loeb teaches an algorithm that enables the player to skip to a listener-selected song, as required by the “go” command. Personal Audio further contends that “skip” and “go” are recited as separate commands, and that the Board improperly treated them as one and the same.

We find no error in the Board’s legal analysis. The Board agreed with Google’s argument that the “skip” and “go” commands can be rendered obvious by the same portions of prior art. The Board’s holding is consistent with the principle that in infringement or obviousness analysis, a single element, feature, or mechanism can ordinarily satisfy multiple claim limitations, including by performing multiple claimed functions. *See Powell v. Home Depot U.S.A., Inc.*, 663 F.3d 1221, 1231–32 (Fed. Cir. 2011); *Linear Tech. Corp. v. ITC*, 566 F.3d 1049, 1055 (Fed. Cir. 2009); *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1305 (Fed. Cir. 1999) (“[A] particular means may perform more than one function.”); *In re Kelley*, 305 F. 2d 909, 915-16 (CCPA 1962) (same).

As to the Board’s factual analysis, we conclude that substantial evidence supports the Board’s finding that the claimed “skip” and “go” functions would have been obvious in light of Chase and Loeb. The “skip” function recited in claim 4 is expressly disclosed in both Chase and Loeb. Personal Audio therefore focuses on the “go” function recited in claims 1 and 4 and argues that the Board improperly found that Chase and Loeb rendered that function obvious. We disagree.

The Board noted that Chase, in referring to a radio station disc jockey, provides that the “DJ may use up/down arrows on the remote control terminal to scroll through a play list displayed to the DJ and select, out of turn, a segment from the play list.” Google argued, and the Board agreed, that although Chase and Loeb do not disclose the precise algorithmic structure identified in the claim construction, those references render the claimed algorithmic structure obvious.

In the portions of Google’s petition addressed to the “go” function, which the Board adopted, Google pointed out that Chase discloses “that the affiliate terminal’s

remote control terminal allows a user to override the normal sequence of the audio segments by selecting audio programs out of sequence,” and that control keys on the remote control terminal “enable the user to select a desired program from within the play list.” Google also cited expert testimony, which the Board credited, that Loeb discloses a user interface “for allowing a listener to control playback of songs including skipping through a list of selected songs.” And in its reply before the Board, Google cited the portions of Chase disclosing that the user may use the control keys “to scroll through a play list” and to “select, out of turn, a segment from the playlist.” In support of those arguments, Google’s expert testified that Chase’s algorithm for navigating to a new program and beginning the playback of that program “can be predictably applied for implementing the functionality to allow a user to select and start playing a program from the list (such as taught by Loeb).” The Board’s conclusion that the “skip” and “go” commands would have been obvious is therefore supported by substantial evidence.

Second, Personal Audio argues that Chase and Loeb do not render obvious the phrase “reproducing selected audio program segments,” which appears in the preamble of claim 1 of the ’076 patent. As construed by the Board, the term “selected audio program segments” means “audio program segments that have been chosen by or for a user.” The Board found that term, which appears only in the preamble, not to be limiting. In any event, however, the Board found that Chase discloses that function, as construed.

We assume, without deciding, that the preamble language is limiting; we conclude, however, that the Board’s finding that Chase discloses reproducing “audio program segments that have been chosen by or for a user” is supported by substantial evidence. As the Board found, Chase teaches that a national broadcaster can create a

playlist of audio files to be distributed to an individual affiliate terminal—that is, audio segments chosen by the national broadcaster for an individual disc jockey, who is the user of Chase’s system. Although Personal Audio urged the Board to adopt a narrower claim construction of “selected audio program segments,” requiring a selection based on the individual preferences of that user, the Board rejected that argument as being unsupported by the language of the claims or the specification, and Personal Audio does not appeal the Board’s claim construction. Instead, Personal Audio argues that the Board’s claim construction should be interpreted to refer only to selections made by or for individual listeners. Personal Audio characterizes the Chase reference as teaching the selection of programs “for producers, DJs, and other non-users,” and therefore contends that the Board’s obviousness analysis, which relied on Chase, is flawed.

We see no reason to disturb the Board’s ruling on that issue. The Board’s reference to program segments “that have been chosen by or for a user” does not on its face require that the selections be based on the individual preferences of particular users. Moreover, the specification of the ’076 patent makes clear that program selections can be based on group characteristics of users, indicating that the referenced selections are not limited to those made by individual users or based on individual user preferences. Thus, as the Board concluded, the language of the claim construction does not exclude “systems in which a broadcaster selects audio program segments for play by a DJ.”²

² We also reject Personal Audio’s argument that a disc jockey cannot be a “user” within the meaning of the claim construction, as there is no support in the patent for imposing such a restriction on the meaning of “user.”

Finally, Personal Audio makes the related argument that the Board failed to articulate a motivation to combine Chase and Loeb with respect to the claims that require playback that is “personalized to the preferences of [the] listener.” Google’s petition and the Board’s decision relied on Loeb as disclosing this limitation, and it does not appear that Personal Audio has challenged that finding on appeal. Rather, Personal Audio argues that “the Board provide[d] no explanation for why one would modify Chase to provide personalization based [on] preferences of the DJ when Chase is explicitly intended to provide personalization to a general broadcast radio audience who unquestionably do not use the Chase system.”

The Board addressed that argument directly. It found that both Chase and Loeb are “directed to audio program players and network-based audio systems,” and that both Chase and Loeb suggest “distributing audio to selected end users,” which include Chase’s disc jockeys as the users of the Chase system. The Board correctly noted that obviousness does not require the physical combination of elements from various references, but instead requires an assessment of what the combined teachings of those references would have suggested to a person of skill in the art. Because the Board’s finding of a motivation to combine the references is supported by substantial evidence, and because Loeb discloses playback of audio “personalized to the preferences of [the] listener,” we affirm the Board’s ruling as to the claims that were found to be unpatentable.

Each party shall bear its own costs for this appeal.

AFFIRMED