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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MANOJ KUMAR SINGHAL, SUNOJ KOSHY, and  
ARUN G. RAO

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Appeal 2010-007768  
Application 10/803,420  
Technology Center 2600

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Before DAVID M. KOHUT, JASON V. MORGAN, and  
JOHNNY A. KUMAR, *Administrative Patent Judges*.

MORGAN, *Administrative Patent Judge*.

DECISION ON APPEAL

## STATEMENT OF THE CASE

### *Introduction*

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 1 – 18. We have jurisdiction under 35 U.S.C. § 6(b)(1).

We affirm.

### *Invention*

The invention is directed to a system and method for speeding up an audio signal while maintaining the same pitch as the original audio signal. The method involves skipping frames of the decoded signal at a rate corresponding to the desired fast playback speed and windowing the remaining frames to smooth out any artifacts that may result from skipping frames. *See Abstract.*

### *Exemplary Claims (Emphases Added)*

1. A method for speeding up an encoded original audio signal, said original audio signal having an original frequency and original playback speed, said method comprising:
  - receiving the encoded original audio signal;
  - retrieving frames of the original audio signal;
  - skipping frames at a rate according to a desired playback speed;
  - wherein said desired playback speed is greater than the original playback speed;
  - applying a window function to the remaining frames;*
  - converting the signal with the windowed frames from digital to analog format; and
  - using the original frequency to playback the analog format signal.

4. The method according to claim 1 *wherein the desired playback speed is a predefined default value.*

5. The method according to claim 1 *wherein the desired playback speed is a programmable value.*

16. The method of claim 1, wherein skipping frames at a rate according to a desired playback speed further comprises skipping frames at a rate according to a desired playback speed, *wherein the frames correspond to time intervals.*

### *Rejections*

The Examiner rejects claims 1, 4 – 6, 9 – 11, and 14 – 18 under 35 U.S.C. § 103(a) as being unpatentable over Oh (US 5,781,696; Jul. 14, 1998) and Chen (US 6,915,263 B1; Jul. 5, 2005; filed Oct. 20, 1999). Ans. 4 – 8.

The Examiner rejects claims 2, 3, 7, 8, 12, and 13 under 35 U.S.C. § 103(a) as being unpatentable over Oh, Chen, and Kizuki (US 5,684,829; Nov. 4, 1997). Ans. 9 – 11.

### ISSUES

1. Did the Examiner err in finding that the combination of Oh and Chen teaches or suggests “applying a window function to the remaining frames,” as recited in claim 1?

2. Did the Examiner err in finding that the combination of Oh and Chen teaches or suggests “wherein the desired playback speed is a predefined default value” and “wherein the desired playback speed is a programmable value,” as recited in claims 4 and 5 respectively?

3. Did the Examiner err in finding that the combination of Oh and Chen teaches or suggests “wherein the frames correspond to time intervals,” as recited in claim 16?

*Claims 1 – 3, 6 – 8, and 11 – 13*

Claim 1 recites “skipping frames at a rate according to a desired playback speed” and “applying a window function *to the remaining frames*” (emphasis added). The Examiner relies on Oh to teach or suggest skipping frames according to a desired playback speed. Ans. 4 (citing Oh col. 5, ll. 60 – 65). The Examiner also relies on Oh to teach or suggest applying a window function. *Id.* (citing Oh col. 5, l. 65 – col. 6, l. 2). However, the Examiner relies on Chen to teach or suggest that it would have been obvious to an artisan of ordinary skill to apply a window function after skipping frames (i.e., applying a window function *to the remaining frames*). *See* Ans. 4 – 6 (citing, e.g., Chen figs. 4, 5A, and 6 and col. 9, ll. 9 – 38). That is, the Examiner finds that “Oh teaches the well[-]known use of [a] window function, but Chen applies it AFTER the frames are skipped.” Ans. 14.

Appellants argue that Chen fails to disclose skipping frames and thus “also fails to disclose ‘apply[ing] a window function **to the remaining frames**.’” App. Br. 10 (emphasis in original). Chen’s muting of erroneous frames and frames near erroneous frames is a form of skipping that does not affect desired playback speed. *See* Chen col. 2, ll. 55 – 57 (nearby muted frames merged to extend a silence period between error frames). However, the Examiner properly relies on Oh, not Chen, to teach or suggest skipping frames according to a desired playback speed. *See* Ans. 12.

Appellants argue that Chen fails to “teach applying a window function **after** frames are muted. Rather, Chen teaches applying a window function to a frame to mute the frame.” App. Br. 13 (emphasis in original). Appellants also argue that “Chen only mutes error frames or frames that are near error frames in order to provide a longer mute duration . . . . Chen does not teach

muting all played back frames.” Reply Br. 5. However, Chen applies a windowing function to merge “nearby muted (‘error’) frames to extend a silence period between the error frames when the error rate is high.” Chen col. 2, ll. 55 – 57. As the Examiner correctly finds, “[t]he amount of mute merging is adaptive and is based on the error rate.” Ans. 5.

Specifically, Chen relies on error entries of error array 370, which indicate which frames have errors (i.e., have already been skipped). *See* Ans. 4 – 5; *see also* Chen figs. 4 and 5A and col. 7, ll. 24 – 35. These entries are used to compute an accumulated error rate at each remaining frame. *See* Ans. 5; *see also* Chen fig. 4. If the error rate exceeds a tolerance threshold for any given remaining frame, then the frame is muted, otherwise the frame is decoded normally. *Id.* This determination is made for the all frames that do not have errors, resulting in each frame either being decoded normally or muted. That is, Chen applies a window function (a determination resulting in either a normally decoded frame or a muted frame) to the remaining frames (to the non-error frames).

Appellants further argue that “one of ordinary skill in the art would not combine the teachings of Oh and Chen because Oh is related to speed-variable audio playback . . . while Chen provides an audio decoder unit that mutes error frames and merges nearby muted frames to extend a silence period.” App. Br. 13. However, the Examiner correctly finds that smoothing functions and muting using window functions are well known techniques. Ans. 6 (citing Chen col. 9, ll. 9 – 38). As discussed above, the Examiner also correctly finds that Chen teaches or suggests applying a window function to remaining (i.e., non-error) frames. Thus, the modification of Oh to apply a window function after skipping frames, as taught or suggested by Chen,

merely represents the combination of familiar elements to yield predictable results. *See KSR Int'l, Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007).

Therefore, we agree with the Examiner that the combination of Oh and Chen teaches or suggests “applying a window function to the remaining frames,” as recited in claim 1.

Accordingly, we do not find Appellants’ arguments persuasive of error in the Examiner’s rejection of claim 1, and claims 2, 3, 6 – 8, and 11 – 13, which are not argued separately with sufficient specificity. *See App. Br.* 9 – 18 and 21 – 22.

*Claims 4, 5, 9, 10, 14, and 15*

Claim 4 recites “wherein the desired playback speed is a predefined default value” while claim 5 recites “wherein the desired playback speed is a programmable value.” The Examiner relies on Oh to teach or suggest both possible types of values. *Ans. 6* (citing Oh col. 6, ll. 34 – 38). Appellants argue that “nowhere in the cited section of Oh is there any mention of the playback speed being **a predefined default value**. Nor does the cited section of Oh teach that the desired playback speed is **a programmable value**.” *App. Br.* 19 (emphases in original). However, Oh teaches “a variable for determining the play-back speed.” Oh col. 6, l. 34. We agree with the Examiner that an artisan of ordinary skill would recognize that such a variable could have a predefined default value or be a programmable value. *See Ans. 6.*

Accordingly, we do not find Appellants’ arguments persuasive of error in the Examiner’s rejection of claims 4 and 5, and claims 9, 10, 14, and

15, which are not argued separately with sufficient specificity. *See* App. Br. 19 – 20.

*Claims 16 – 18*

Claim 16 recites “wherein the frames correspond to time intervals.” The Examiner finds that Chen teaches or suggests frames corresponding to time intervals. *See* Ans. 7 – 8 (citing, e.g., Chen fig. 6). Appellants contend that “nowhere in the cited section of Chen is there any mention of ‘. . . wherein the frames **correspond to time intervals.**” App. Br. 21; *see also* Reply Br. 15 (emphasis in original).

In our view, Appellants’ general statements regarding Chen’s disclosure is not responsive to the Examiner’s specific findings made in the Answer. Further, Appellants are reminded that merely reciting what the claims recite, and making a general allegation of patentability does not constitute a persuasive argument. *See Ex parte Belinne*, No. 2009-004693, slip op. at 7 – 8 (BPAI Aug. 10, 2009) (informative). Therefore, we find that such arguments do not squarely address the Examiner’s findings and are not persuasive of error. Moreover, Chen illustrates an audio signal in accordance with a muted audio frame and a smoothing window function applied thereto, wherein the frame corresponds to a time interval, as depicted with the axis labeled “t” (i.e., time). *See* Chen fig. 6 and col. 4, ll. 50 – 52.

Accordingly, we do not find Appellants’ arguments persuasive of error in the Examiner’s rejection of claim 16, and claims 17 and 18, which are not argued separately with sufficient specificity. *See* App. Br. 9 – 18 and 20 – 21.

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DECISION

We affirm the Examiner's decision to reject claims 1 – 18.

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

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