UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ASHLEY I. BUTTERWORTH, GIRAULT W. JONES JR., and
MATTHEW X. MORA

Appeal 2019-004386
Application 14/458,139
Technology Center 2400

Before JOHN A. JEFFERY, JOHN A. EVANS, and
SCOTT E. BAIN, *Administrative Patent Judges*.

BAIN, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's
decision to reject claims 2–14 and 16–29. Claims 1 and 15 have been
cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37
C.F.R. § 1.42(a). Appellant identifies the real party in interest as Apple Inc.
Appeal Br. 2.

BACKGROUND

The Claimed Invention

The invention relates to "computerized devices, networks and buses," and more particularly, to "efficiently servicing isochronous streams [of content] associated with a network." Spec. 1. According to the Specification, "isochronous transport" refers to processes in which data must be delivered within particular time constraints, so as to provide "smooth, uninterrupted content [e.g., a video stream] to the user or consumer." *Id.* at 2. The Specification explains that certain standard networks have "loose time synchronization which can create problems with" correctly transmitting "packets at designated launch times" and problems with "[o]ut-of-order packets [being] dropped or delivered too late." *Id.* Accordingly, the invention is intended to "improve . . . delivery of isochronous data content within existing network infrastructures." *Id.*

Claims 28 and 29 are independent. Claim 28 is illustrative of the invention and the subject matter in dispute, and is reproduced below:

> 28. A method of managing a plurality of isochronous processes, the method comprising:
>
> receiving, at a network element, a first isochronous data stream representing a first set of media content, the first data stream comprising a plurality of data packets and data representing presentation times, according to a first time base, of portions of the first set of media content;
>
> receiving, at the network element, a second isochronous data stream representing a second set of media content, the second data stream comprising a plurality of data packets and data representing presentation times, according to a second time base differing from the first time base, of portions of the second set of media content;

> *multiplexing* the packets of the first and second data streams to produce a composite data stream, including *sorting the respective data packets of the first and second data streams based on their respective presentation times and a difference between the first and second time bases*;
>
> calculating launch times for the packets of the composite data stream based on the sorting the respective data packets of the first and second data streams; and
>
> transmitting from the network element the data packets of the composite data stream according to their respective launch times.

Appeal Br. 16−17 (Claims App.) (emphases added).

References

The references relied upon by the Examiner are:

Name	Reference	Date
Horvitz et al. ("Horvitz")	6,021,403	Feb. 1, 2000
Zhang et al. ("Zhang")	US 6,611,624 B1	Aug. 26, 2003
Chen et al. ("Chen")	US 7,725,202 B1	May 25, 2010
Liu et al. ("Liu")	US 2006/0007960 A1	Jan. 12, 2006
Chen et al. ("Chen '967")	US 2011/0149967 A1	June 23, 2011

The Rejections on Appeal

Claims 6−8, 12−14, 16, 17, 19−23, 28, and 29 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Zhang and Chen. Final Act. 3−7.

Claims 2−4, 10, 25, and 26 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Zhang, Chen, and Chen '967. Final Act. 7−11.

Claims 5 and 27 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Zhang, Chen, and Horvitz. Final Act. 11−12.

Claim 9 stands rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Zhang, Chen, and Liu. Final Act. 13−14.

DISCUSSION

We have reviewed the Examiner's rejections in light of Appellant's arguments presented in this appeal. On the record before us, we cannot sustain the Examiner's rejections.

Appellant argues that the Examiner erred in finding the prior art teaches or suggests "multiplexing the *packets* of the first and second data streams to produce a composite data stream, including *sorting the respective data packets* of the first and second data streams *based on their respective presentation times* and a difference between the first and second time bases," as recited in independent claim 28. Appeal Br. 7−9 (emphases added); Reply Br. 2−3. Specifically, Appellant argues the Examiner relies on Zhang as teaching the disputed limitation, but (according to Appellant) Zhang merely teaches "splicing" a chunk of a video stream into another stream, not "sorting" individual data packets to produce a composite stream. Reply Br. 2. Further, Appellant argues Zhang does not teach "sorting" based on "presentation times." We are persuaded by Appellant's arguments.

As Appellant contends, the Examiner relies on Zhang as teaching or suggesting the disputed "multiplexing" and "sorting" limitation. Ans. 3−6;

4

see also Final Act. 3−4.[2] The Examiner finds Zhang discloses "first [and] second spliced bit streams," and "time stamps" which "suggests a display order is based on [the] time stamps." Ans. 3−4 (citing Zhang Figs. 4, 11, 15, 18:49−50, 6:32−46). Figure 4 of Zhang is reproduced below.
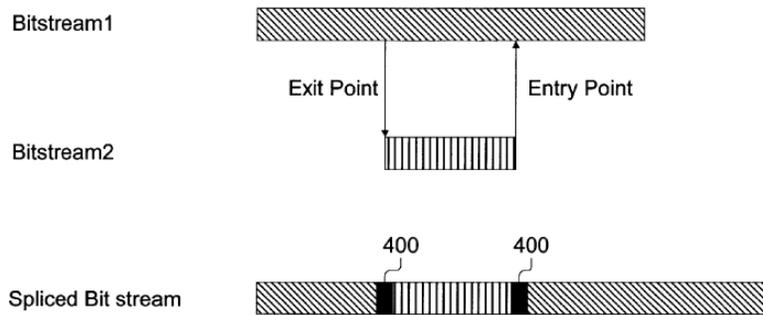

Figure 4

Figure 4 depicts a first and a second bitstream, and a "spliced bit stream constructed according to the invention" in Zhang. Zhang 5:20−22. The "exit point" and "entry point" in Figure 4 show:

> [t]he use of reordering and/or re-coding by the present invention for a few frames or pictures near the splice points, the exit point and the entry point. In particular, blocks 400 show the re-encoded areas of the resulting spliced bitstream. In accordance with the present invention, the frames in the re-encoded areas are selectively re-encoded depending on which frames in the first and second bitstreams are affected by the splice point.

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[2] The Examiner cites the combination of Chen with Zhang as teaching the "calculating launch time" and "transmitting" limitations of claim 28, which are not argued by Appellant. Final Act. 4.

Id. 4:19−23; *see also id.* Figs. 5A, 11, 15.

The Examiner does not explain, and we cannot discern on this record, how the foregoing illustration and disclosure in Zhang teaches or suggests "*sorting . . . respective data packets*," as recited in claim 28. As Appellant argues, Zhang's Figure 4 (as well as Figure 7, which depicts a "recoding unit") indicates that one stream is simply spliced into the other, based on "decoding" and then "recoding" the video. Zhang 9:61−10:8. Figure 4, in contrast to Appellant's claim 28, illustrates that "a splice point" is determined, and a stream is inserted.

The Examiner further finds that Zhang discloses a "header within the bitstream," and from this disclosure, the Examiner reasons "since there is a header and data is being transmitted, then it is a data packet." Ans. 4 (citing Zhang 14:45−47). Even if this disclosure indicates a data packet, however, the Examiner has not identified any teaching in Zhang of the claimed "sorting" of the data packets to produce a composite data stream, as recited in claim 28.

Accordingly, we are persuaded the Examiner erred in rejecting claim 28. For the same reasons, we are persuaded of error regarding the same rejection of independent claim 29, which includes the same disputed limitation. The remaining claims all depend (directly or indirectly) from claims 28 and 29, and the additional references cited do not address the deficiencies regarding claims 28 and 29. We, therefore, do not sustain the obviousness rejections of claims 2–4 and 16–29.

CONCLUSION

We reverse the Examiner's decision rejecting claims 2–4 and 16–29.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
6−8, 12−14, 16, 17, 19−23, 28, 29	103(a)	Zhang, Chen		6−8, 12−14, 16, 17, 19−23, 28, 29
2−4, 10, 25, 26	103(a)	Zhang, Chen, Chen '967		2−4, 10, 25, 26
5, 27	103(a)	Zhang, Chen, Horvitz		5, 27
9	103(a)	Zhang, Chen, Liu		9
Overall Outcome				2–4, 16−29

REVERSED