

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PATRICIA C. GAGNE and CAROL M. PUTERKO

Appeal No. 1997-2708
Application No. 08/337,204

ON BRIEF

Before THOMAS, KRASS, and GROSS, Administrative Patent Judges.
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 28 through 31, 33 through 38, 70, 72 through 75, 78 through 80, 83, 84, 88 through 92, 117, 118, 141 through 150, and 157, which are all of the claims pending in this application.

Appellants' invention relates to a method and system for the automatic identification of a fingerprint image. In the

Appeal No. 1997-2708
Application No. 08/337,204

method and system, a fingerprint is scanned by a video scanner and digitized, different parts of the fingerprint are analyzed on a non-minutiae basis, and a digitized numerical identifier is computed and compared with a digitized numerical identifier stored in memory from a portable personal identification card. Claim 72 is illustrative of the claimed invention, and it reads as follows:

72. A method for the automatic non-minutiae identification of a fingerprint image comprising in combination:

a) video scanning an image of a fingerprint of a person to be identified;

b) electronically storing, in digital form, in an addressable memory, fingerprint image data produced from video scanning said image of a fingerprint;

c) selectively analyzing, electronically, on a non-minutiae basis, a plurality of different fingerprint image parts of the stored fingerprint image data and computing a count for each of said plurality of fingerprint image parts; and

d) compiling a data matrix comprised of a plurality of counts computed for the said plurality of different fingerprint image parts to provide a non-minutiae digitized numerical identifier indicative of said image of a fingerprint of a person to be identified.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Appeal No. 1997-2708
Application No. 08/337,204

Sparrow 1988	4,747,147	May 24,
Kimizu 1989	4,874,932	Oct. 17,

Claims 28 through 30, 33 through 36, 70, 72 through 74, 78 through 80, 83, 84, 88 through 90, 92, 117, 141 through 146, 148 through 150, and 157 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Sparrow.

Claims 31, 37, 38, 75, 91, 118, and 147 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sparrow, with the addition of Kimizu for claims 31, 37, and 38.

Reference is made to the Examiner's Answer (Paper No. 19, mailed February 4, 1997) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 17, filed November 22, 1996) and Supplemental Brief (Paper No. 18, filed December 10, 1996) for appellants' arguments thereagainst.

OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will reverse both the anticipation rejection of claims 28 through 30, 33 through 36, 70, 72 through 74, 78

Appeal No. 1997-2708
Application No. 08/337,204

through 80, 83, 84, 88 through 90, 92, 117, 141 through 146, 148 through 150, and 157 and also the obviousness rejections of claims 31, 37, 38, 75, 91, 118, and 147.

Independent method claim 28 recites "digitizing, electronically, on a non-minutiae basis, the said fingerprint image data to produce a non-minutiae digitized numerical identifier." Each of independent method claims 72 and 88 includes similar limitations of "selectively analyzing, electronically, on a non-minutiae basis, a plurality of different fingerprint image parts," and "compiling a data matrix ... to provide a non-minutiae digitized numerical identifier." Independent apparatus claim 141 parallels claims 72 and 88 by reciting a processor means "for selectively analyzing, electronically, on a non-minutiae basis, a plurality of different fingerprint image parts ... to provide a non-minutiae digitized numerical identifier." Thus, all of the independent claims require that the numerical identifier not be based on "minutiae." Appellants define "minutiae" in the specification (page 10) as either "(1) a bifurcation, which is the location where a given line forks into different lines; or (2) a ridge ending."

Appeal No. 1997-2708
Application No. 08/337,204

Appellants contend (Brief, page 10) that "the teachings of the Sparrow reference solely apply to 'minutiae' coding and identification of fingerprints, and thus, the claims on appeal are not anticipated by ... the Sparrow reference." We agree.

Sparrow states (column 1, lines 47-62) that according to his invention,

each fingerprint is scanned by a scanning system which typically includes a scanning 'line' which sweeps in a predetermined manner, such as horizontally, vertically or radially, from a prescribed origin for the scanning system utilized. When the scanning line moves over an irregularity (such as a ridge ending, bifurcation, etc.), the irregularity is recorded by the use of at least three coordinates: a type code (T) to particularly identify the irregularity, a measure (M) of the scanning line position when it hits the

irregularity, and a ridge count (R) which is the number of ridges intersecting the scanning line, at that position, between the irregularity and a prescribed point on, or origin for, the scanning line. A collection of coordinates sets (T, M, R) uniquely specifies the topology of a fingerprint or any part thereof.

Sparrow further explains (column 2, lines 8-9) that the irregularities are also called "minutiae." In the detailed description of the invention, Sparrow indicates that after the fingerprint is scanned, a binary enhanced image of the fingerprint is supplied to a topological coordinate extractor

Appeal No. 1997-2708
Application No. 08/337,204

and a vector extractor. The coordinate extractor outputs a set of coordinates (T, M, R, D) for each irregularity or minutiae, and the vector extractor outputs a vector of 62-82 digits, likewise based on irregularities or minutiae (see column 7, line 61-column 8, line 49, especially column 8, lines 5-16). Thus, Sparrow characterizes or identifies a fingerprint by its minutiae.

The examiner argues (Answer, pages 10-11) that appellants' definition of "non-minutiae" is not specifically set forth in the claims and that he is entitled to give the broadest reasonable interpretation to the language of the claims. The examiner further contends (Answer, pages 10-11) that since Sparrow's numerical identifier is based in part on ridge counts as is appellants', Sparrow's numerical identifier meets the claimed non-minutiae numerical identifier.

Although the examiner is entitled to give the broadest reasonable interpretation to the language of the claims, we do not find his interpretation of the claims on appeal to be reasonable. As indicated above, each claim clearly recites that the fingerprint is to be analyzed and/or digitized on a non-minutiae basis and the numerical identifier is to be non-

Appeal No. 1997-2708
Application No. 08/337,204

minutiae, or not based on minutiae. Therefore, any prior art fingerprint identifier that is at least partially based on minutiae fails to meet the claimed invention. Turning to Sparrow, we find that every aspect of Sparrow's invention revolves around irregularities or minutiae. Even the ridge count referred to by the examiner is based on minutiae as it is "the number of ridges intersecting the scanning line, at that position, between the irregularity and a prescribed point on, or origin for, the scanning line." Therefore, Sparrow clearly cannot anticipate the claimed invention.

Consequently, we must reverse the rejection of claims 28 through 30, 33 through 36, 70, 72 through 74, 78 through 80, 83, 84, 88 through 90, 92, 117, 141 through 146, 148 through 150, and 157 under 35 U.S.C. § 102.

As to the obviousness rejection of claims 75, 91, 118, and 147 over Sparrow, the examiner has failed to suggest any line of reasoning for eliminating the reliance on minutiae in forming a numerical identifier for a fingerprint. Therefore, the examiner has failed to set forth a prima facie case of obviousness. Further, we find no motivation in the art of record for modifying Sparrow as indicated. Consequently, we

Appeal No. 1997-2708
Application No. 08/337,204

cannot sustain the obviousness rejection of claims 75, 91, 118, and 147.

Regarding the obviousness rejection of claims 31, 37, and 38 over Sparrow and Kimizu, Kimizu does not cure the deficiencies of Sparrow. Therefore, we cannot sustain the obviousness rejection of claims 31, 37, and 38.

CONCLUSION

The decision of the examiner rejecting claims 28 through 30, 33 through 36, 70, 72 through 74, 78 through 80, 83, 84, 88 through 90, 92, 117, 141 through 146, 148 through 150, and 157 under 35 U.S.C. § 102 is reversed. The decision of the examiner rejecting claims 31, 37, 38, 75, 91, 118, and 147 under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS)
Administrative Patent Judge)
)
)
)
)
) BOARD OF PATENT
ERROL A. KRASS) APPEALS
Administrative Patent Judge) AND
) INTERFERENCES
)

Appeal No. 1997-2708
Application No. 08/337,204

ANITA PELLMAN GROSS)
Administrative Patent Judge)

Appeal No. 1997-2708
Application No. 08/337,204

PAUL V. DELGIUDICE
2001 JEFFERSON DAVIS HIGHWAY
SUITE 200
ARLINGTON, VA 22202

apg/vsh