THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte E. EARLE THOMPSON and THOMAS W. DEMOND

Appeal No. 97-1585
Application No. 08/397,514[1]

ON BRIEF

Before THOMAS, HAIRSTON, and LALL, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 15 through 17, 19 through 21, 23 and 24. In a first Amendment

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[1] Application for patent filed March 1, 1995. According to appellants, the application is a division of Application No. 07/925,284, filed August 4, 1992, now U.S. Patent No. 5,446,479, issued August 29, 1995.

After Final (paper number 7), claims 15 and 17 were amended, and claims 16, 18 through 20, 23 and 24 were canceled. In a second Amendment After Final (paper number 12), claim 21 was canceled. Accordingly, claims 15 and 17 remain before us on appeal.

The disclosed invention relates to a method and apparatus for producing an image onto a moving light-sensitive medium. The image is produced on the light-sensitive medium by a plurality of individually controlled switchable elements of a spatial light modulator (SLM) that is positioned between the light-sensitive medium and a light source. Each individual pixel of the image is formed by activating a plurality of the switchable elements, and the intensity of each pixel is controlled by the amount of time the switchable elements are in an on state.

Claim 15 is illustrative of the claimed invention, and it reads as follows:

15. A method for producing an image onto a moving light-sensitive medium comprising the steps of:

positioning a spatial light modulator having a plurality of individually controlled switchable elements between the medium and the light source; and

forming each individual pixel by activating said switchable elements such that each individual pixel is formed by a plurality of said switchable elements and the intensity of each said pixel is controlled by the amount of time said switchable elements are in an ON state.

No references were relied on by the examiner.

Claims 15 and 17 stand rejected under the first paragraph of 35 U.S.C. § 112 for lack of written description. According to the examiner (Answer, pages 3 and 4):

> Claims 15 and 17 claim that each pixel is formed [by] a plurality of individual elements. This claim is not supported by the specification because at page 20 last paragraph a pixel is described as being represented by a 4 by 4 matrix of individual elements **which are driven at the same time** depending upon the result of the interpolation processing, however, this portion of the specification **does not** describe controlling the number of "ON" elements in the 4 by 4 matrix where the number is based upon a desired gray scale level for that particular pixel. The specification describing figures 5a to 5c (pages 23-25) describe gray scale control of pixels, but, this description is silent as to controlling individual elements of a pixel to control the gray scale of that pixel. Various other embodiments are present in this applicantion [sic, application], but, none of them support claims 15 and 17.

Appellants argue (Brief, pages 3 and 4) that:

> As claimed in claims 15 and 17, the method and apparatus merely combine using more than one element of the array per pixel and control the amount of time each element in the pixel is ON to achieve gray scale for that pixel. The method of pulse width modulation on page 23 is clearly stated as being

> applicable to all other embodiments of the invention. Therefore, the other embodiments of using more than one element per pixel would be included as a possible combination use with the method of pulse width modulation on page 23.

Reference is made to the brief (paper number 13) and the answer for further detailed positions of the appellants and the examiner.

OPINION

The written description portion of the first paragraph of 35 U.S.C. § 112 would be satisfied if appellants can prove with a reasonable degree of clarity that, as of the filing date, they had possession of the now-claimed subject matter. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991).

Turning to appellants' specification for an understanding of the disclosed and claimed invention, we find written description support for "controlling individual elements of a pixel to control the gray scale of that pixel" (Answer, page 4).

Appellants disclose (specification, page 16) that the computer 59 controls each mirror element 58 (Fig. 2a), and that "[t]hese mirror elements are switched between the 'on'

and the 'off' positions to form the image on display screen 51." During normal operation, each mirror element in the array of 1,280 by 800 mirror elements corresponds to one pixel on the light-sensitive display screen (specification, page 20). When the disclosed invention is used under NTSC broadcast standards (i.e., with an image resolution of approximately 320 by 200 pixels), appellants control a sub-array of 16 mirror elements (i.e., a 4 by 4 sub-array matrix) for each pixel (specification, page 20). Appellants state (specification, page 23) that "luminosity can be varied for each pixel displayed by the system of the present invention by rapidly modulating a constant source of light" (emphasis added). According to appellants (specification, page 23):

> The SLM of the present invention is capable of being modulated at a very high rate. For example the mirror cells have a switching time between off and on of about 10 microseconds. Likewise the array is able to accept control data at a very high rate . . . . In the presently preferred embodiment of the invention, the entire mirror cell array of the SLM is able to be loaded and each cell switched during a time period of 20 microseconds. (Emphasis added).
>
> As a consequence of this high switching ability, the SLM of the present invention can modulate each pixel . . . . (Emphasis added).

A review of appellants' disclosure does not reveal an express statement concerning "controlling individual elements of a pixel to control the gray scale of that pixel." When appellants' disclosure is considered as a whole, however, we are of the opinion that the skilled artisan would understand that the intensity or luminosity of each pixel is inherently determined by the amount of time that each of the switchable elements is switched on and off (specification, pages 16 and 23). In other words, a long on switching time for the mirror elements translates into an intense pixel display, whereas a short on switching time for the mirror elements translates into a less intense pixel display.

Based upon the foregoing, the rejection of claims 15 and 17 is reversed because appellants' claimed invention need not be described in ipsis verbis in order to satisfy the written description requirement of the first paragraph of 35 U.S.C. § 112. In re Lukach, 442 F.2d 967, 969, 169 USPQ 795, 796 (CCPA 1971).

DECISION

The decision of the examiner rejecting claims 15 and 17 under the first paragraph of 35 U.S.C. § 112 is reversed.

REVERSED

JAMES D. THOMAS Administrative Patent Judge	)	
KENNETH W. HAIRSTON Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
PARSHOTAM S. LALL Administrative Patent Judge	)	

lp

Appeal No. 97-1585
Application No. 08/397,514

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Appeal No. 97-1585
Application No. 08/397,514

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APJ THOMAS

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DECISION: REVERSED
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s): _____

Prepared: May 22, 2000

Draft Final

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PALM / ACTS 2 / BOOK
DISK (FOIA) / REPORT