

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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

Appeal No. 96-1200
Application 08/011,453¹

ON BRIEF

Before BARRETT, FLEMING, and CARMICHAEL, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed January 29, 1993, entitled "Large-Scale, Touch-Sensitive Video Display."

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This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-27.

We reverse.

BACKGROUND

The disclosed invention is directed to a video display having multiple display screens, such as a video wall, each display having its own processor and touch-sensitive panel. As shown in figure 9, the processors 3A-3D with corresponding display screens 2A-2D and touch-sensitive panels 14A-14D, are connected to a processor 1D acting as a controlling processor via a network 15. Each processor can be operated independently of the other processors or in conjunction with the other processors.

Claim 1 is reproduced below.

1. A touch-sensitive display, comprising:

a) a plurality of basic display units each comprising separately controllable processor means having an output connected to at least one display screen, said at least one display screen of respective ones of said basic display units being arranged so as to form a tessellation;

b) a network for facilitating communication between said respective ones of said basic display units;

c) at least one touch-sensitive panel overlying said tessellation and means associated therewith for

receiving a user touch input over physical pixel locations associated with said basic display units and in response generating input command signals for identifying said physical pixel locations, each processor means further including a first input connected to the network for receiving network communication and a second input connected to at least one touch sensitive screen for receiving input command signals corresponding to the user touch input; and

d) further processor means functioning as a controlling processor, including:

i) means for receiving said input command signals identifying said physical pixel locations and in response converting said input command signals to modified input command signals associated with logical pixel locations in said tessellation;

ii) means for receiving said modified input command signals and in response generating graphical command signals for operating on said logical pixel locations in said tessellation;

iii) means for receiving said graphical command signals for operating on said logical pixel locations in said tessellation and in response converting said graphical command signals to modified graphical command signals for operating on said physical pixel locations associated with said basic display units; and

iv) means for transmitting said modified graphical command signals to said basic display units via said network, in response to which said plurality of basic display units generate a graphical image across said tessellation.

The examiner relies on the following references:

Auer et al. (Auer) 4,725,694 February 16, 1988

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Norwood	5,063,600	November 5, 1991
Brody	5,079,636	January 7, 1992 (filed February 23, 1990)
Row et al. (Row)	5,163,131	November 10, 1992 (filed September 8, 1989)
Caine	5,361,078	November 1, 1994 (filed November 9, 1990)

Claims 1-3, 5-8, 11, 14-16, 18-21, 24, and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Brody, Caine, and Norwood. The examiner finds that Brody discloses a display device comprising a plurality of basic display units, but recognizes (Examiner's Answer, page 4) that Brody does not disclose a "separately controllable processor means" for each "basic display unit" as recited in claim 1. The examiner finds that "Caine discloses each display has [its] own processor or driver for receiving data from different source channels 22A-22D and for driving each display unit in parallel" (Examiner's Answer, page 8) and, thus, considers the video driver for each display equivalent to the claimed "separately controllable processor means." The examiner concludes that "[i]t would have been obvious to one of ordinary skill in the art to have modified Brody with the features of [an] independent driver for each screen as taught by Caine so as to provide an independent control for each

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display unit" (Examiner's Answer, page 4). The examiner finds that Norwood teaches a transparent digitizing tablet mounted on a flat panel display screen and concludes that "[i]n view of the fact that a transparent touch panel can be mounted atop a flat display screen used as an input device, it would have been obvious to one of ordinary skill in the art to have modified Brody and Caine with the features of the touch panel as taught by Norwood, since they are directed to use [of] a plat [sic, flat] panel display device" (Examiner's Answer, page 5).

Claims 4, 12-13, 17, and 25-26 stand rejected under 35 U.S.C. § 103 as being unpatentable over Brody, Caine, and Norwood, further in view of Auer.

Claims 9-10 and 22-23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Brody, Caine, and Norwood, further in view of Row.

We refer to the Examiner's Answer (Paper No. 13) (pages referred to as "EA__") for a statement of the examiner's position and to the Brief (Paper No. 12) (pages referred to as "Br__") for a statement of the appellants' position.

OPINION

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The claims stand or fall together (Br4). Claim 1 is analyzed as representative.

Appellants' two main arguments are that: (1) the video drivers in Caine are not equivalent to the claimed "separately controllable processor means" (Br8-10); and (2) the touch-sensitive device in Norwood does not suggest multiple display units, each display unit having an associated touch-sensitive screen and processor means (Br10-12). Although not all of the arguments made in support of these arguments are supported by specific claim limitations, we nevertheless conclude that the examiner has failed to establish a prima facie case of obviousness. We review the rejection by analyzing the limitations of claim 1.

The first paragraph of claim 1 recites "a plurality of basic display units each comprising separately controllable processor means having an output connected to at least one display." No function is recited for the "processor means"; thus, the term is not in means-plus-function format under 35 U.S.C. § 112, sixth paragraph despite the use of the term "means." A "processor" broadly encompasses a device for reading out video information from a memory and a video driver

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can broadly be considered a "processor means" at this point in the claim. In particular, there is no recitation that the processor "computes" anything. The term "separately controllable" is not defined and is broadly met by the fact that the video drivers operate independently.

Appellants argue that "the function of the video drivers 24A-24D [in Caine] is simply to read data from memories 22A-22D which all receive data from the same source (Host Computer 10) and pass the sampled data to a display screen" (Br9). This is true, but appellants do not state what language of the claim requires the "processor means" to do more.

Claim 1 further recites "each processor means further including a first input connected to the network for receiving network communication and a second input connected to at least one touch sensitive screen for receiving input command signals corresponding to the user touch input." Again, no function is recited for the "processor means" that would define over the video driver of Caine. Two inputs are recited. The input to the video drivers from buses 44 in Caine are inputs "for receiving network communication." However, we disagree with

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the examiner's implicit conclusion that it would have been obvious to provide an input to the individual video drivers to receive input from touch-sensitive screens over the displays as shown in Norwood. The video drivers in Caine only read video information out of the memory and do not have the capability to perform computations on data to process touch-screen commands. It is not merely a matter of adding instructions to the drivers to allow processing of touch-sensitive information. Thus, there is no motivation to provide an input to the drivers in Caine since the drivers are incapable of processing the information. The video control in Caine is the host computer 10 and we agree with appellants that "a combination of Norwood with Caine and Brody would at best result in a multiple screen display unit having a single touch-sensitive screen over the entire multiple screen display unit and a single processor responsive to the input from the touch-sensitive screen and for computing the entire image to be displayed on the multiple screens" (Br11). That is, the touch-sensitive signals would be sent to host computer 10 and not to individual drivers. For this reason alone, the obviousness rejection must be reversed.

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Claim 1 recites "further processor means functioning as a controlling processor" which receives input command signals and generates modified graphical command signals. The examiner's rejection does not account for any of these limitations. The examiner does not explain why, even if each display screen was controlled by its own processor, it would have been obvious to then send the command signals from the touch-sensitive screens to a controlling processor and back again to the individual processors. The systems in Brody and Caine are one-directional signal systems, from the processor or computer to the displays. In our opinion, one of ordinary skill in the art would interpret the combination of Norwood and Caine as suggesting the touch commands be directed to the host computer 10 in Caine and not to the drivers and then to the host computer. For this additional reason, the obviousness rejection must be reversed.

The last subparagraph of claim 1 recites, as part of the "further processor means," a "means for transmitting said modified graphical command signals to said basic display units via said network, in response to which said plurality of basic display units generate a graphical image across said

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tessellation." This limitation does not define what is meant by "graphical command signals," which leaves the interpretation open. Appellants argue that "according to the present invention, graphical commands are sent to the separately controllable processor means of each basic display unit" (Br8) and "[e]ach processor means in turn computes the image to be displayed on the display screen associated therewith in accordance with the received graphical commands and conveys the computed image to the display screen" (Br8). We see nothing in claim 1 that requires that "each processor computes the image to be displayed," as argued. The command signals are sent to the basic display units, not necessarily the processor means portion of the basic display unit. The basic display units generate a graphical image, but they do not necessarily compute the graphical image. The specification describes that a command, such as "putpixel(r,c)," can be executed by a display driver (specification, page 8, lines 32+) and so does not necessarily require computation by the processor. Nevertheless, none of references suggests the operation of the controlling processor

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to produce. For this further reason the rejection must be reversed.

For the reasons enumerated above, the rejection of claims 1-27 is reversed.

REVERSED

LEE E. BARRETT)	
Administrative Patent Judge)	
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MICHAEL R. FLEMING)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS
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