

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(2) is not binding precedent of the Board.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. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LOUIS R. GABELLO,
LEON R. ZOELLER and JAMES P. GUY

Appeal No. 96-2440
Application 08/099, 289¹

ON BRIEF

Before HAIRSTON, KRASS and LEE, Administrative Patent Judges.
LEE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-4, 6-8, 10, 12-14, 16-18, 20, 22-25, 27-29, 31-34, 36-38 and 40-41. Claims 5, 9, 11, 15, 19, 21, 26, 30, 35, 39 and 42 have been canceled. No claim has been allowed.

¹ Application for patent filed September 24, 1993. According to the appellants, it is a continuation-in-part of application 08/067,434, filed May 24, 1993. However, the examiner has indicated on the file wrapper of the application that the alleged continuation data is incorrect.

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References relied on by the Examiner

Hunt et al. (Hunt) Pat No. 4,922,337 May 1, 1990
Benton, "Fiber Optics and Video: A Background," SMPTE Journal,
July 1988, pp. 546-555.

The Rejection on Appeal

In the final Office action (Paper No. 8), claims 1-4, 6-14, 16-25, 27-34, and 36-42 were finally rejected under 35 U.S.C. § 103 as being unpatentable over Hunt, Benton, and Dittman et al., U.S. Patent 5,239,376. However, in the examiner's answer (Paper No. 18), the examiner withdrew his reliance on Dittman et al., canceled the outstanding rejection and entered a new ground of rejection based solely on Hunt and Benton.

Subsequent to the final rejection, claims 1, 12, 22 and 32 were amended and claims 9, 11, 19, 21, 30, 39 and 42 were canceled. Thus, the rejection on appeal is that of claims 1-4, 6-8, 10, 12-14, 16-18, 20, 22-25, 27-29, 31-34, 36-38 and 40-41 under 35 U.S.C. § 103 as being unpatentable over Hunt and Benton.

The Invention

The invention is directed to a method and apparatus for inspecting a product, which employs scanning of the product surface to produce video signals. Claims 1, 12, 22 and 32 are the independent claims, of which claim 1 is representative and is reproduced below:

1. A method for inspecting a product, comprising:

scanning a surface of said product with a scanning device and creating scan lines each with video data signals corresponding to said surface, wherein each said scan line includes non-useful or dead (i.e., dark) video data signals;

generating information signals related to said product, wherein said information signals are created external to said scanning device;

transmitting both said video data signals and said information signals along at least one optical fiber to a computer processing unit, wherein said information signals are multiplexed into said non-useful or dead (i.e., dark) video data signals to create a sequential stream of data for transmission to said computer processing unit; and

processing said video data signals and said information signals to evaluate the condition of said product.

Opinion

We do not sustain the rejection of claims 1-4, 6-8, 10, 12-14, 16-18, 20, 22-25, 27-29, 31-34, 36-38 and 40-41.

Each of the independent claims 1, 12, 22 and 32 requires scanning of a surface of the product being inspected to create plural scan lines each with video data signals corresponding to the surface. Moreover, each independent claim specifically recites that each scan line includes "non-useful or dead (i.e., dark) video data signals." Additionally, each independent claim further requires the multiplexing of externally created information signals "into said non-useful or dead (i.e., dark)

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video data signals to create a sequential stream of data for transmission."

The issues on appeal center about the meaning to be accorded the claim term "non-useful or dead (i.e., dark) video data signals." The examiner has interpreted the term so broadly as to read on the vertical blanking intervals which occur before and after the valid video data of each scanned line (answer at 4-5). We disagree. The examiner's interpretation is unreasonable and without adequate basis in the record.

In the specification from the bottom of page nine to the top of page 10, it is stated:

Moreover, a common feature of linear CCD [charge coupled device] arrays is that there are normally latent periods (or dead spaces) which occur before and after valid video within one scan line. The present invention utilizes these latent periods to transmit the non-video information. In this way, the time required to transmit the combined information is minimized.

The examiner recognized the vertical blanking intervals between scanned lines as latent periods themselves. Based on the above-quoted text, the examiner concluded that vertical blanking intervals between scanned lines can constitute the claimed "non-useful or dead (i.e., dark) video signals." See bottom of page 4 to top of page 5 in the examiner's answer (Paper No. 18).

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Even assuming that the term "latent periods" can refer to non-useful or dead spaces before and after valid video within one scanned line as is described in the specification, and also to vertical blanking intervals between scanned lines as urged by the examiner, that does not render the claim term "non-useful or dead (i.e., dark) video data signals" so broad as to read on both types of latent periods. Only the first type of latent period is described and referred to by the appellants in connection with the claimed "non-useful or dead (i.e., dark) video data signals." The term "latent periods" appears nowhere in the claims. It is the interpretation of the claim term "non-useful or dead (i.e., dark) video data signals" that is at issue, not the interpretation of the term "latent periods" which simply appears as a descriptive term in the specification.

It is unreasonable to read the above-quoted text from the specification as describing the vertical blanking interval between scanned lines. The examiner is wrong in finding (answer on the top of page 5) that Hunt's vertical blanking interval is the same as the dead spaces in the appellants' specification. The appellants' specification does not describe the vertical blanking interval between scanned lines as the non-useful or dead (i.e., dark) video data signals. See also original claim 11 of

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the appellants' specification, which reads: "A method as recited in Claim 2, wherein said method utilizes non-useful or dead (i.e., dark) video pixels to transmit said information signals."

Additionally, there are other errors in the examiner's analysis. The vertical blanking interval, as a latent period, refers to a period of time and is not a video data signal. The claim term at issue refers to non-useful or dead (i.e., dark) "video data signals" and not simply a period of time. All of the independent claims require the multiplexing of externally generated information signals into the non-useful or dead (i.e., dark) video data signals to create a sequential stream of data for transmission. To the extent that the examiner has regarded this claim feature as being satisfied simply by Hunt's transferring of the video data signals of each scanned line to a central storage unit during its vertical blanking interval (examiner's answer on page 4), that is erroneous.

Also, even in applying the misplaced view which treats the vertical blanking interval of Hunt as the claimed non-useful or dead (i.e., dark) video data signals, the examiner made additional errors. According to the examiner (answer on page 4) Hunt's sync means multiplexes synchronization signals into the video data signals for subsequent image analysis. However, the

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appellants correctly point out that the synchronization signals of Hunt are not added to the video data signals during Hunt's vertical blanking intervals. In the reply brief on page 4, the appellants state:

Col. 6, lines 30-36 in Hunt et al. only discloses adding synchronization signals to the image signal, but these synchronization signals are not added and in fact could not be added during the vertical blanking period. The vertical blanking period is the time at which charge which has just been stored in optically sensitive portions of an array is shifted out of the array to generate data representative of the image. Only when the charge has been shifted out of the array to form the image signal could information signals be added to the image signal and this would be after the vertical blanking period. Hunt et al. does not teach or suggest anyway to add information signals into the optically sensitive portions of the array to be transferred during the vertical blanking period.

We agree with the appellants that in connection with Hunt, the examiner has recognized the vertical blanking interval as that time period during which the charges on the photosensitive image section 22 are shifted to a storage section 24. See examiner's answer at page 4, lines 12-16, and page 7, lines 9-14. The examiner nowhere explained how the synchronization signals of Hunt can be deemed as being added to the video data signals during the vertical blanking interval. Thus, the appellants are correct that even under the examiner's unreasonable interpretation of the claim term "non-useful or dead (i.e., dark)

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video signals," Hunt has not been shown to satisfy the claim feature of multiplexing information signals into the non-useful or dead (i.e., dark) video data signals.

In the supplemental answer from the bottom of page 1 to the top of page 2, the examiner stated:

Concerning the "dark" video data, the examiner maintains that these data are not a direct result of the invention, but a phenomenon that occurs due to uneven illumination inherent in most illumination systems, especially stroboscopic illumination system. (Emphasis in original.)

What exactly does "a direct result of the invention" mean is unclear. But whether or not a feature is a direct result of the invention, it still has to be met if it is a part of the claimed invention and cannot be ignored. It appears that the examiner is saying that every scanned line of a product surface will include "dark" video pixels or data signals. But the claimed invention requires more than that. The claimed invention calls for a specific manner of using those "dark" pixels or video data signals, i.e., the multiplexing of information signals into the place of the "dark" video signals to create a sequential data stream for transmission. It is this more particular feature which is not disclosed or reasonably suggested by the prior art as applied by the examiner.

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The examiner relied on Benton to show the use of optical fiber for transmission of video data signals (answer on page 5). But Benton, as applied by the examiner, does not make up for any of the deficiencies of Hunt as discussed above.

For the foregoing reasons, we do not sustain the rejection of claims 1-4, 6-8, 10, 12-14, 16-18, 20, 22-25, 27-29, 31-34, 36-38 and 40-41 as being unpatentable over Hunt and Benton.

Conclusion

The rejection of claims 1-4, 6-8, 10, 12-14, 16-18, 20, 22-25, 27-29, 31-34, 36-38 and 40-41 under 35 U.S.C. § 103 as being unpatentable over Hunt and Benton is reversed.

REVERSED

KENNETH W. HAIRSTON)
Administrative Patent Judge)
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) BOARD OF PATENT
ERROL A. KRASS)
Administrative Patent Judge) APPEALS AND
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