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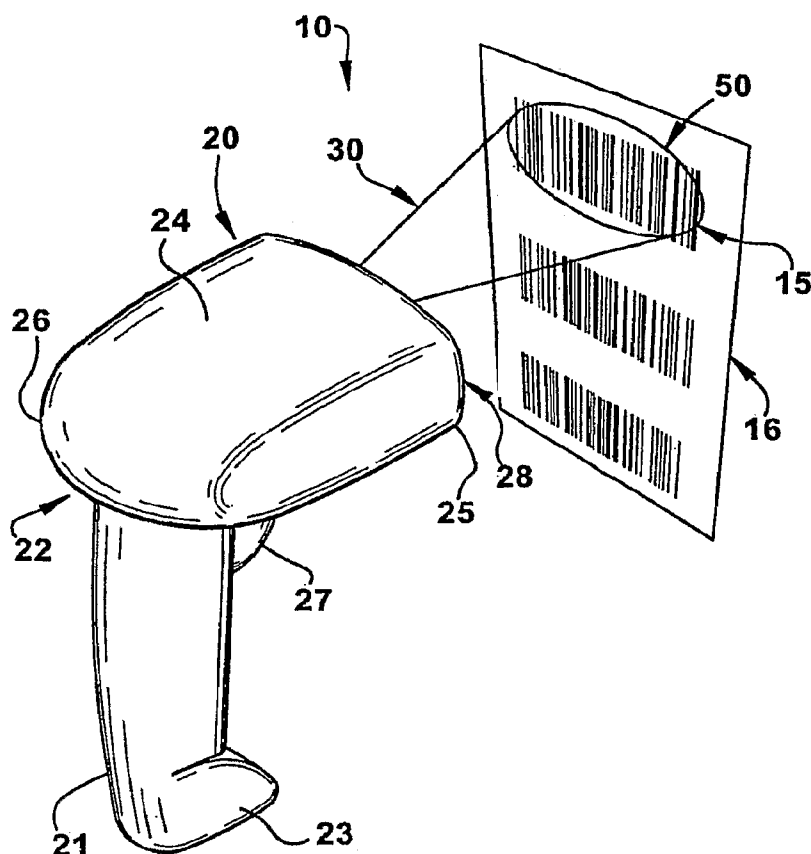
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[Continued on next page]

(54) Title: EXTENDED WORKING RANGE ILLUMINATION SYSTEM FOR AN IMAGING-BASED BAR CODE READER



(57) Abstract: A method and apparatus, for reading a target object having areas of differing light reflectivity on the target such as a handheld bar code reader having a first illumination pattern, a detector for measuring a distance from the reader to a target object, a system threshold, and a comparator for evaluating the measured distance against the threshold. Should the reader's internal circuitry and/or software determine that the measured distance is greater than the threshold, a second illumination pattern is activated that has power effective illumination for increasing the operable reading distance between the reader and the target object. The second illumination pattern can be generated from a secondary illumination source or through a lens internal to the reader.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/00509

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06K 07/10 (2007.01)

USPC - 235/462.24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - G06K 07/10 (2007.01)

USPC - 235/462.24

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC(8) - G06K 07/10 (2007.01) -see keyword below-

USPC - 235/462.04, 462.1, 462.23, 462.24, 462.25 -see keyword below-

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(USPT,PGPB,EPAB,JPAB); Google patent; Google Scholar

Search terms: Pixel, array, threshold, imaging, light emitting diode, illumination, range, distance, sensing, imager, scanner, bar code, focus, lens, concentrator, CCD, charge coupled device.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 5,468,951 A (KNOWLES et al) 21 Nov 1995 (21.11.1995) Abstract; col. 3, ln. 42-46; col. 10, ln. 65-67; col. 12, ln. 13-16; col. 12, ln. 28-32; col. 12, ln. 39-43; col. 12, ln. 48-52; col. 12, ln. 56-61; col. 13, ln. 5-11; col. 14, ln. 41-45; col. 14, ln. 56-61; col. 15, ln. 8-12; col. 15, ln. 61-65	1-14, 16 and 19-23 ----- 15, 17, 18, 26, 29, 31 and 33-35
X ----- Y	US 6,138,915 A (DANIELSON et al) 31 Oct 2000 (31.10.2000) Abstract; col. 4, ln. 7-12; col. 4, ln. 18-25; col. 4, ln. 43-50; col. 12, ln. 20-28; col. 12, ln. 56-60; col. 13, ln. 1-8; col. 13, ln. 24-27; col. 13, ln. 27-31; col. 13, ln. 35-39; col. 14, ln. 51-57; col. 23, ln. 17-23, col. 37, ln. 20-25	24, 25, 27, 30, 32, 37, 38, 40 and 41 ----- 26, 28, 29, 31, 33-36 and 39
Y	US 4,818,886 A (DRUCKER) 4 Apr 1989 (04.04.1989) col. 12, ln. 57-60	15 and 36
Y	US 5,324,924 A (CAI et al) 28 Jun 1994 (28.06.1994) Abstract	17, 18, 28, 34 and 39



Further documents are listed in the continuation of Box C.



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"A" document defining the general state of the art which is not considered to be of particular relevance

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"&amp;" document member of the same patent family

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