



US005853252A

United States Patent [19] Wright, IV et al.

[11] **Patent Number:** **5,853,252**
[45] **Date of Patent:** ***Dec. 29, 1998**

[54] **METHOD AND APPARATUS FOR U.P.C./EAN SYMBOLOGY AMBIGUOUS CHARACTER COMPENSATION BY LOCALIZED THERMAL ENERGY DOT ADJUSTMENT**

5,023,437 6/1991 Speicher 235/432
5,056,429 10/1991 Hirotsaki 101/93.01
5,676,473 10/1997 Wright 400/103

[75] Inventors: **George Wright, IV**, New Canaan, Conn.; **H. Sprague Ackley**, Seattle, Wash.

FOREIGN PATENT DOCUMENTS

60-73852 4/1985 Japan 400/103
61-22960 1/1986 Japan 400/103

[73] Assignee: **Intermec Corporation**, Everett, Wash.

OTHER PUBLICATIONS

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,676,473.

Bassetti, L. W. and S. Kantor, "Print Enhancement for Laser Printers," *IBM Technical Disclosure Bulletin* 27:5, Oct., 1984, pp. 3071-3072.
"Table of Contents," *IBM Technical Disclosure Bulletin* 27:5, Oct., 1984, pp. i-xvi.

[21] Appl. No.: **859,004**

Primary Examiner—Edgar Burr
Assistant Examiner—Steven S. Kelley
Attorney, Agent, or Firm—Seed and Berry LLP

[22] Filed: **May 20, 1997**

Related U.S. Application Data

[57] ABSTRACT

[63] Continuation of Ser. No. 640,577, Apr. 24, 1996, Pat. No. 5,676,473.

A method and apparatus is disclosed that can be used to print the U.P.C./EAN symbology in a way that does not suffer poor print quality over a range of ink spread conditions by applying appropriately more or less thermal energy to at least one row of dots on the internal edges of the ambiguous characters. The resultant characters have identical edge-to-edge measurements to those without the compensation; but, the sum of the widths of the bars are beneficially adjusted. The resulting print quality grades and scanning performance are enhanced on thermal printer platforms of moderate to high resolution.

[51] **Int. Cl.⁶** **B41J 5/00**
[52] **U.S. Cl.** **400/103; 400/104**
[58] **Field of Search** **400/68, 103, 104; 347/107**

[56] References Cited

U.S. PATENT DOCUMENTS

4,795,281 1/1989 Ulinski 400/103
5,007,748 4/1991 Lee et al. 400/103

34 Claims, 6 Drawing Sheets

