US005729632A

United States Patent [19]

Tai

[11] Patent Number: 5,729,632

[45] Date of Patent: Mar. 17, 1998

[54] **REPRODUCTION APPARATUS AND METHOD FOR ADJUSTING RENDERING WITH TONERS OF DIFFERENT PARTICLE SIZES**

[75] Inventor: **Hwai-Tzuu Tai**, Rochester, N.Y.

[73] Assignee: **Eastman Kodak Company**, Rochester, N.Y.

[21] Appl. No.: **353,649**

[22] Filed: **Dec. 8, 1994**

[51] **Int. Cl.**[6] **G06K 9/36**; G06K 9/46; H04N 1/40

[52] **U.S. Cl.** **382/237**; 358/456; 358/459; 395/109

[58] **Field of Search** 358/298, 455, 358/456, 457, 458, 459, 461, 465, 466, 467, 534, 535, 536; 382/270, 237; 395/109

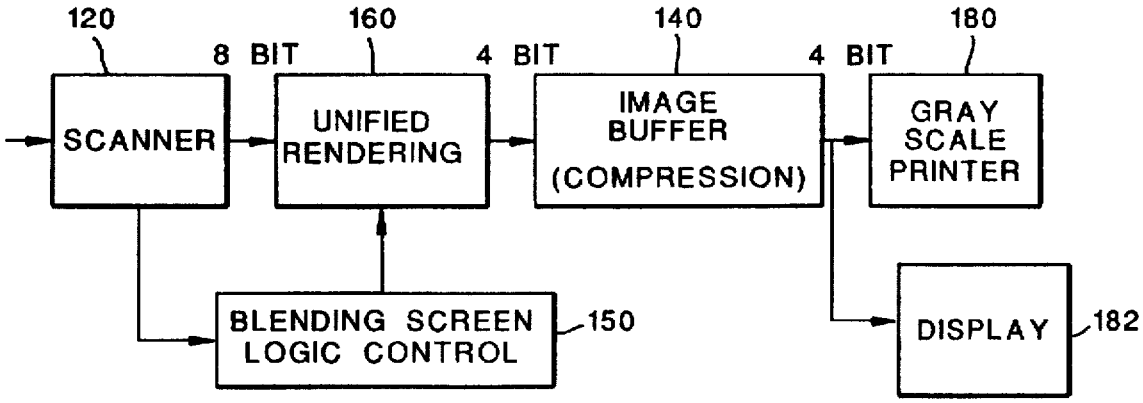
[56] **References Cited**

U.S. PATENT DOCUMENTS

4,554,593	11/1985	Fox et al.	358/455
5,175,635	12/1992	Yamada et al.	358/467
5,177,623	1/1993	Hirota	358/457
5,200,831	4/1993	Tai	358/455
5,204,753	4/1993	Tai	358/298
5,258,850	11/1993	Tai	358/457
5,300,960	4/1994	Pham et al.	346/154
5,303,334	4/1994	Snyder et al.	395/109
5,323,247	6/1994	Parker et al.	358/456
5,386,301	1/1995	Yuasa et al.	358/445
5,424,854	6/1995	Hashimoto	358/456
5,491,962	2/1996	Sakou et al.	382/50

Primary Examiner—Edward L. Coles, Sr.
Assistant Examiner—Kimberly A. Williams
Attorney, Agent, or Firm—Norman Rushefsky

[57] **ABSTRACT**

A method and apparatus for reproducing an original image includes a scanner or other image source for generating digitized raw image data for each pixel of an image. For each pixel, the raw image data is transformed into a rendering gray level value by comparing the raw image data value with threshold values from a threshold mask set. There are various threshold mask sets that may be used in accordance with signals related to a toner particle size.

18 Claims, 22 Drawing Sheets