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**Naruse et al.**

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(54) **IMAGE FORMING APPARATUS FORMING REGISTRATION PATCHES FOR DETECTION OF DISPLACEMENT OF TONER IMAGES**

(56) **References Cited**

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(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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English translation of Office Action dated Aug. 10, 2015 issued from the corresponding Chinese Patent Application No. 201310389013.8. Notification of Reasons for Refusal dated Jun. 23, 2016; Patent Application No. 2013-141172; English translation of Notification of Reasons for Refusal; Total of 10 pages.

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(57) **ABSTRACT**

(51) **Int. Cl.**

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The rotation speed of an intermediary transfer belt 41 when it is brand-new is stored as a reference rotation speed. Registration patches Rk to Ry are formed to calculate displacement amounts, and based on the rotation speed difference between the rotation speed of the intermediary transfer belt 41 and the reference rotation speed, the calculated displacement amounts are corrected into displacement amounts expected when the secondary transfer roller 42 is contacted with the intermediary transfer belt 41. Next, based on the corrected displacement amounts, the positions at which exposing devices 60K to 60Y form electrostatic latent images are corrected. Thus, registration correction can be performed accurately without requiring too much time or toner, with consideration given to the difference in the rotation speed of the intermediary transfer belt 41 depending on whether the secondary transfer roller 42 is contacted with or released from the intermediary transfer belt 41.

(52) **U.S. Cl.**

CPC ..... **G03G 15/0131** (2013.01); **G03G 15/0189** (2013.01); **G03G 15/5058** (2013.01); **G03G 2215/0158** (2013.01)

(58) **Field of Classification Search**

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See application file for complete search history.

**20 Claims, 4 Drawing Sheets**

