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Gotoda

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(54) **IMAGE FORMING APPARATUS WITH STRUCTURAL CONNECTION FUNCTION**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

4,975,746	A *	12/1990	Miyauchi et al.	399/111
2002/0028088	A1 *	3/2002	Okabe et al.	399/113
2004/0096240	A1 *	5/2004	Kim	399/222
2005/0053394	A1 *	3/2005	Ishii et al.	399/111
2006/0056876	A1 *	3/2006	Okabe et al.	399/113
2007/0264045	A1 *	11/2007	Okabe et al.	399/113
2011/0002709	A1 *	1/2011	Sato	399/119
2013/0051851	A1 *	2/2013	Fukamachi	399/113

* cited by examiner

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(57) **ABSTRACT**

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The present disclosure illustrates an image forming apparatus with structural connection function. The image forming apparatus can be applied to a business machine, to solve the problem of bad quality of image caused by shaking of a developing module. The image forming apparatus is characterized in that the groove with the inclined angle is equal to the pressure angle of the gear to constrain the operation direction of the developing module, so as to prevent the developing module from shaking. The present disclosure just modifies the design of the guiding channel to constrain the developing module, so the cost of components can be reduced efficiently.

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(58) **Field of Classification Search**
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See application file for complete search history.

6 Claims, 3 Drawing Sheets

