

(12) **United States Patent**
Tahara et al.

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(54) **MANUAL PAPER FEEDER THAT ENSURES STABLE PAPER FEEDING OPERATION AND IMAGE FORMING APPARATUS INCLUDING THE SAME**

2405/111643 (2013.01); B65H 2405/111646 (2013.01); B65H 2405/324 (2013.01); B65H 2407/21 (2013.01)

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

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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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(57) **ABSTRACT**

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A manual paper feeder includes is for installation at a side surface of a main body of an image forming apparatus. When the first auxiliary tray is located at an extension position in a state where the second auxiliary tray is housed downwards, an abutment between an upstream side end edge of the side surface cover and an inferior surface of the second auxiliary tray supports the first auxiliary tray at a first angle. When the second auxiliary tray is extracted from the first auxiliary tray at the extension position, an abutment between the upstream side end edge of the side surface cover and the inferior surface of the first auxiliary tray supports the first auxiliary tray at a second angle. The second angle is smaller than the first angle.

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

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3 Claims, 10 Drawing Sheets

