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(19) **United States**(12) **Patent Application Publication**
IGARASHI et al.(10) **Pub. No.: US 2023/0230798 A1**(43) **Pub. Date: Jul. 20, 2023**(54) **CHARGED PARTICLE BEAM APPARATUS
AND FOCUS ADJUSTING METHOD
THEREFOR**(52) **U.S. Cl.**
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(2013.01); *H01J 37/22* (2013.01)(71) Applicant: **Hitachi High-Tech Corporation,**
Minato-ku, Tokyo (JP)(57) **ABSTRACT**(72) Inventors: **Keisuke IGARASHI**, Tokyo (JP); **Wei
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A technique that enables automatic focus adjustment even for a sample having regions with different heights is proposed. A charged particle beam device according to the disclosure includes: a sample holder configured to hold a sample; a sample stage configured to move the sample; a charged particle gun and a charged particle beam column configured to irradiate the sample with a charged particle beam; an objective lens configured to perform focus adjustment by changing an intensity of a focusing effect on the charged particle beam; a detector configured to detect electrons from the sample and output a signal forming an electron image; an optical imaging device configured to capture an optical image of the sample; and a control device configured to calculate height information of the sample based on the optical image obtained by imaging the sample by the optical imaging device, and automatically set a focus adjustment value of an observation site based on the height information (see FIG. 5).

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