

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

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(54) **EXCAVATION CONTROL SYSTEM FOR HYDRAULIC EXCAVATOR**

USPC 701/50
See application file for complete search history.

(71) Applicant: **KOMATSU LTD.**, Tokyo (JP)

(56) **References Cited**

(72) Inventors: **Toru Matsuyama**, Kanagawa (JP);
Yoshiki Kami, Hadano (JP); **Shin Kashiwabara**, Hiratsuka (JP); **Masashi Ichihara**, Hiratsuka (JP)

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(73) Assignee: **KOMATSU LTD.**, Tokyo (JP)

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Primary Examiner — Redhwan k Mawari

(74) *Attorney, Agent, or Firm* — Global IP Counselors, LLP

(30) **Foreign Application Priority Data**

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(57) **ABSTRACT**

An excavation control system includes a working unit having a bucket, a designed landform data storage part storing designed landform data, a bucket position data generation part that generates bucket position data, a designed surface data generation part, and an excavation limit control part. The designed surface data generation part generates superior and subordinate designed surface data based on the designed landform and bucket position data. The superior designed surface data indicates a superior designed surface corresponding to a position of the bucket. The subordinate designed surface data indicates a first subordinate designed surface linked to the superior designed surface. The designed surface data generation part generates shape data indicating shapes of the superior designed surface and the first subordinate designed surface. The excavation limit control part automatically adjusts a position of the bucket.

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7 Claims, 9 Drawing Sheets

