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(54) **Title:** ADDITIVE FEED SYSTEMS, INGOT PULLER APPARATUS AND METHODS FOR FORMING A SINGLE CRYSTAL SILICON INGOT WITH USE OF SUCH ADDITIVE FEED SYSTEMS

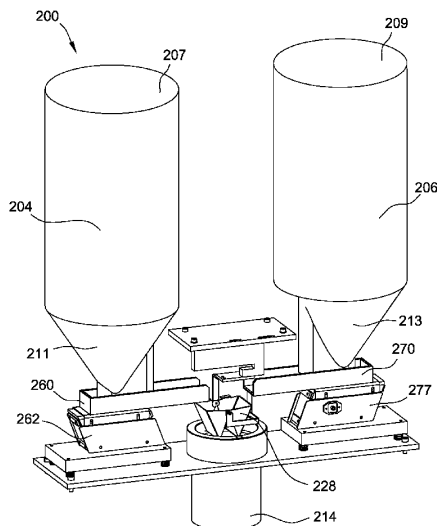


FIG. 3

(57) **Abstract:** Additive feed systems for feeding at least two different additives to silicon disposed within a crucible of an ingot puller apparatus are disclosed. The additive feed system may include first and second feed trays which are caused to vibrate to move first or second additive from a canister in which the additive is stored to another vessel in which the amount of first or second additive added to the vessel is sensed. The additive is discharged from the vessel into an additive feed tube through which the additive enters the crucible.

[Continued on next page]

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