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(54) Title: HIGH-THROUGHPUT AND HIGH-PRECISION PHARMACEUTICAL ADDITIVE MANUFACTURING SYSTEM

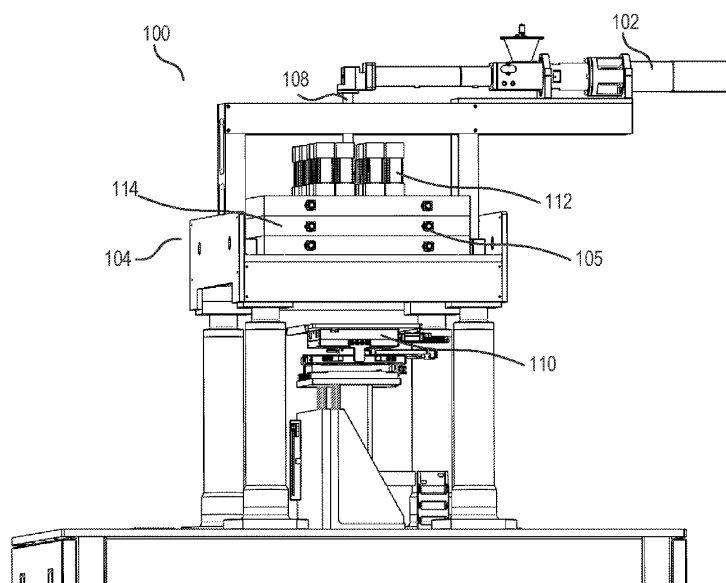


FIG. 1A

(57) Abstract: Provided are pharmaceutical products manufactured using additive manufacturing technology. An exemplary printing system comprises: a material supply module for receiving a set of printing materials; a flow distribution module comprising a flow distribution plate, wherein the material supply module is configured to transport a single flow corresponding to the set of printing materials to the flow distribution plate; wherein the flow distribution plate comprises a plurality of channels for dividing the single flow into a plurality of flows; a plurality of nozzles, wherein the plurality of nozzles comprises a plurality of needle-valve mechanisms; one or more controllers for controlling the plurality of needle-valve mechanisms to dispense the plurality of flows based on a plurality of nozzle-specific parameters; and a printing platform configured to receive the dispensed plurality of flows, wherein the printing platform is configured to move to form a batch of the pharmaceutical product.

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WO 2021/031824 A1

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