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**The Director of the United States
Patent and Trademark Office**

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Leea Staret Lee

Acting Director of the United States Patent and Trademark Office



US008668430B2

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

(10) **Patent No.:** **US 8,668,430 B2**
(45) **Date of Patent:** **Mar. 11, 2014**

(54) **PROPPANT DISCHARGE SYSTEM AND A CONTAINER FOR USE IN SUCH A PROPPANT DISCHARGE SYSTEM**

USPC 414/502-505, 518, 528, 407, 411, 809,
414/414, 810; 166/79.1, 75.15; 222/163,
222/181.1; 221/174

See application file for complete search history.

(71) Applicants: **John Oren, Houston, TX (US); Joshua Oren, Houston, TX (US)**

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(72) Inventors: **John Oren, Houston, TX (US); Joshua Oren, Houston, TX (US)**

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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 38 days.

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(21) Appl. No.: **13/660,870**

Primary Examiner — Jonathan Snelling

(22) Filed: **Oct. 25, 2012**

(74) *Attorney, Agent, or Firm* — Egbert Law Offices, PLLC

(65) **Prior Publication Data**

US 2014/0020892 A1 Jan. 23, 2014

Related U.S. Application Data

(57) **ABSTRACT**

(63) Continuation of application No. 13/628,702, filed on Sep. 27, 2012, which is a continuation-in-part of application No. 13/555,653, filed on Jul. 23, 2012, now Pat. No. 8,607,289.

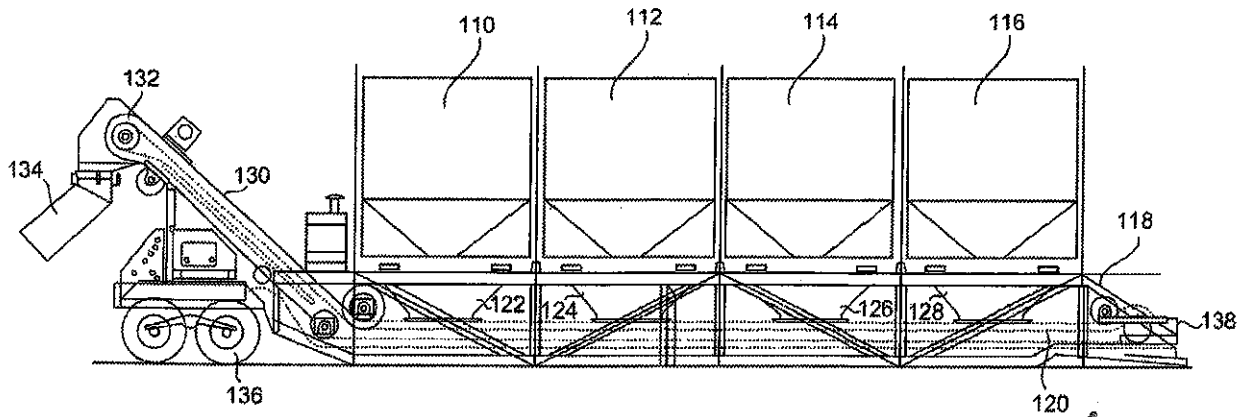
A proppant discharge system has a container with an outlet formed at a bottom thereof and a gate slidably affixed at the outlet so as to be movable between a first position covering the outlet to second position opening the outlet, and a support structure having an actuator thereon. The container is removably positioned on the top surface of the support structure. The actuator is engageable with gate so as to move the gate from the first position to the second position. A conveyor underlies the container so as to receive proppant as discharged from the container through the outlet. The container is a ten foot ISO container.

(51) **Int. Cl.**
B65G 65/42 (2006.01)

(52) **U.S. Cl.**
USPC **414/810; 414/414**

(58) **Field of Classification Search**
CPC .. B65G 63/004; B65G 63/025; B65G 63/045;
B65G 63/065; B65G 65/42

3 Claims, 5 Drawing Sheets



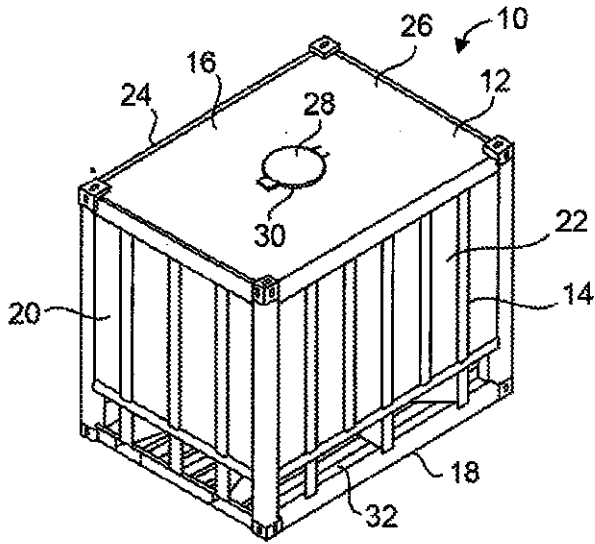


FIG. 1

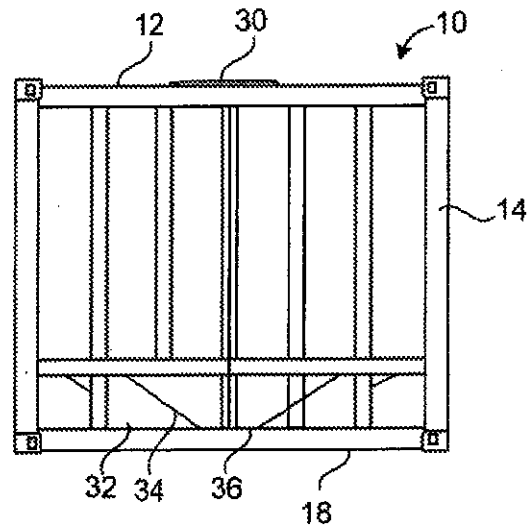


FIG. 2

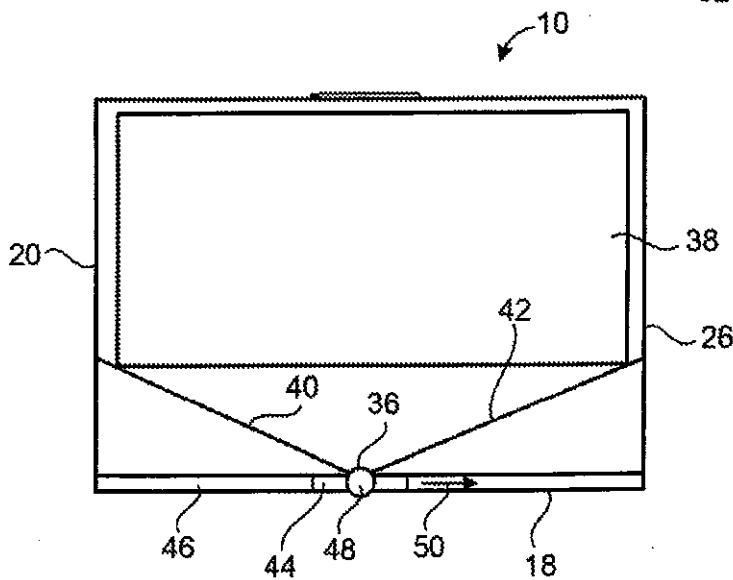


FIG. 3

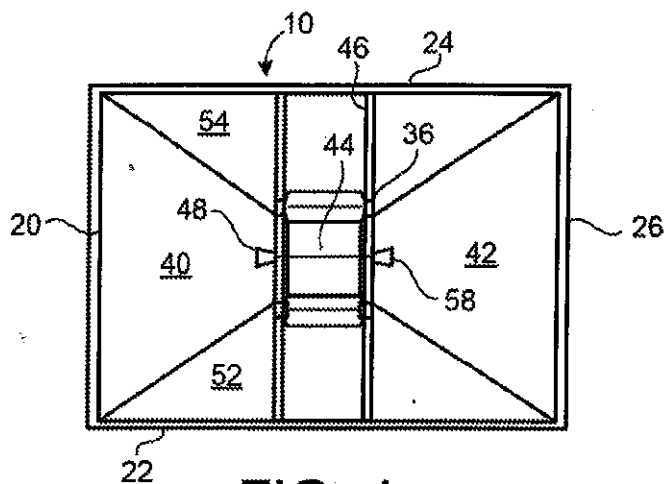


FIG. 4

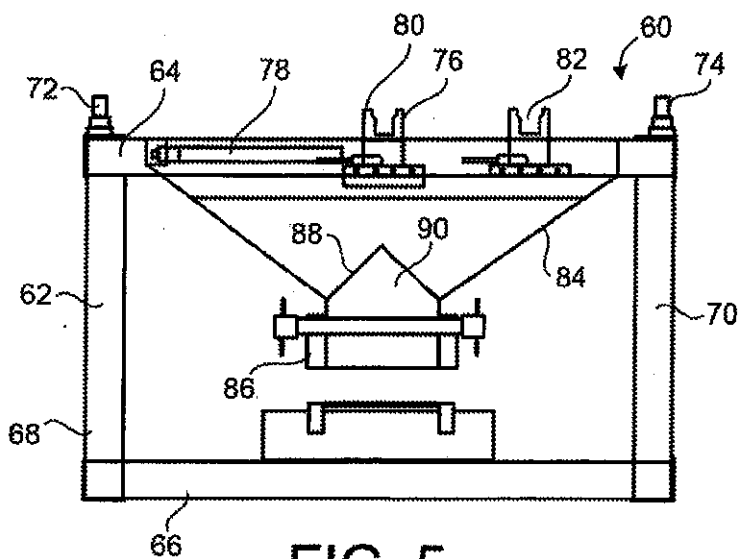


FIG. 5

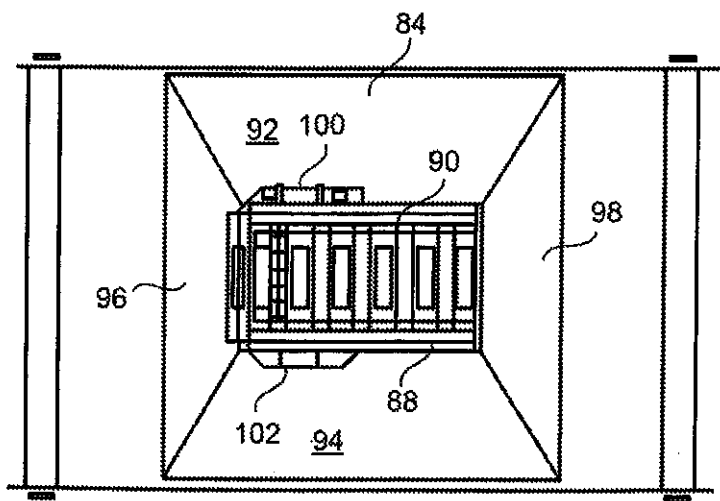


FIG. 6

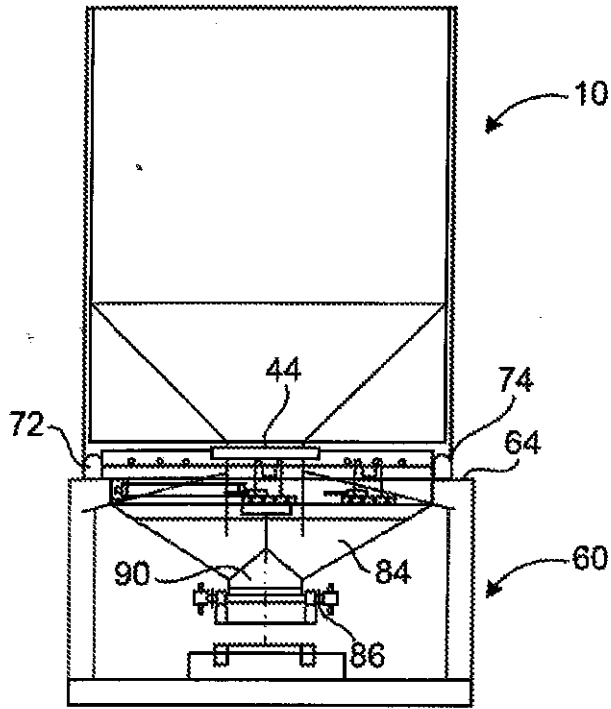


FIG. 7

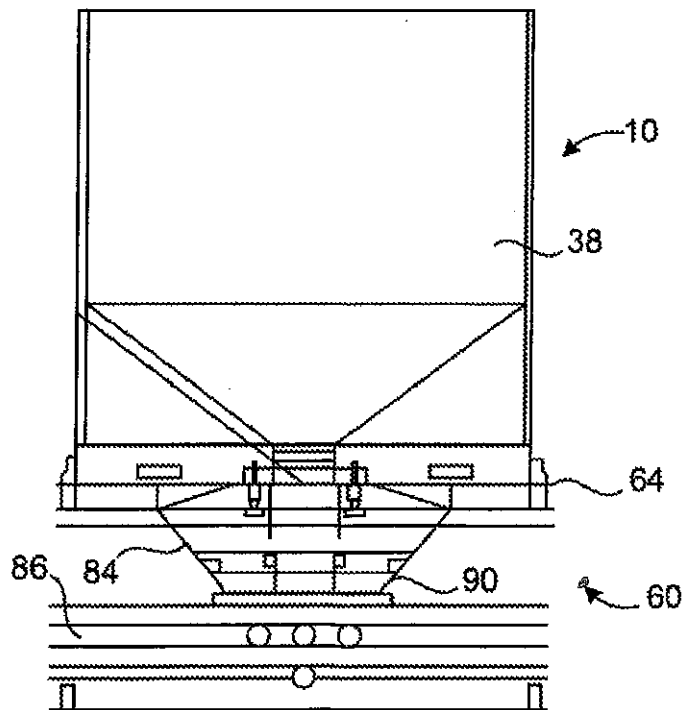


FIG. 8

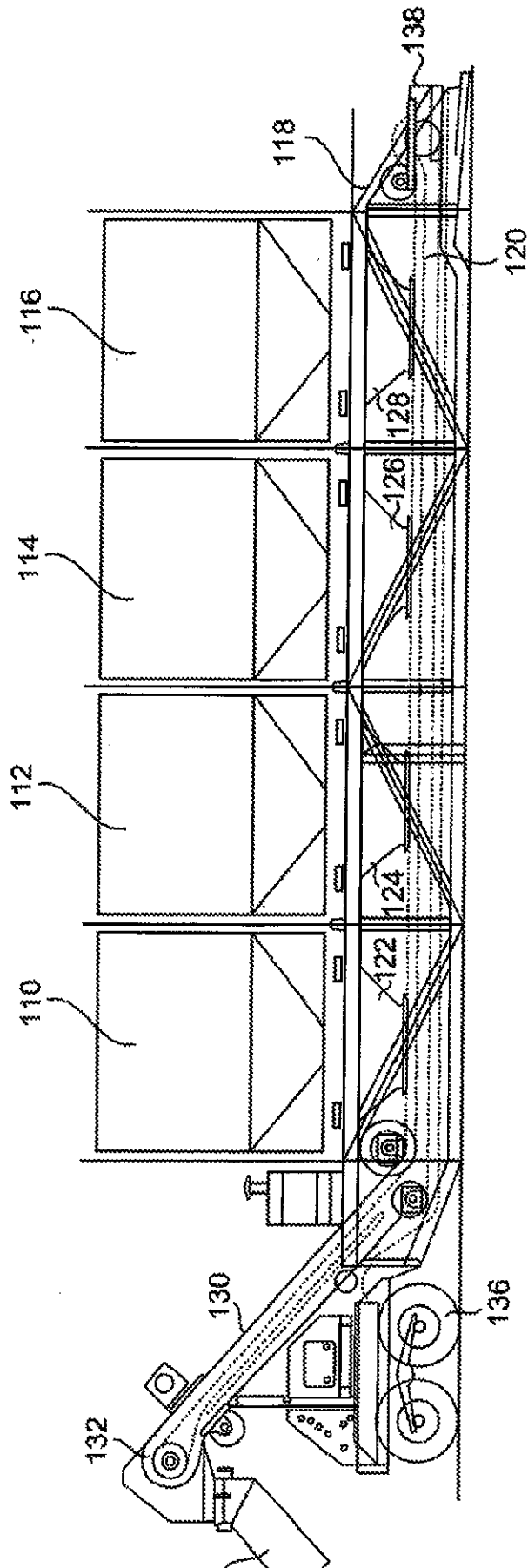


FIG. 9

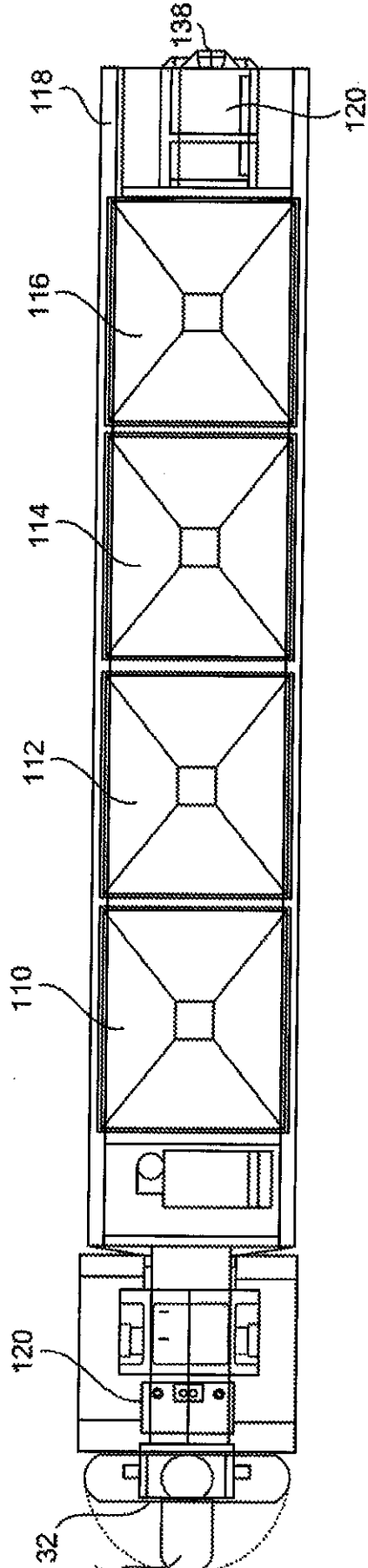


FIG. 10