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(12) **United States Patent**  
**Knowles**

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(54) **POSITIONING APPARATUS FOR SLUDGE DISTRIBUTING HOSE**

FOREIGN PATENT DOCUMENTS

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(75) Inventor: **James T. Knowles**, Washington, IA (US)

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(73) Assignee: **Bazooka Farmstar, Inc.**, Washington, IA (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 315 days.

\* cited by examiner

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(57) **ABSTRACT**

(65) **Prior Publication Data**

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Apparatus for positioning and maneuvering a sludge, or manure, distributing hose used in fertilizing a field includes a first frame adapted for coupling to a three-point tractor hitch and a second frame pivotally coupled to an aft portion of the first frame. Attached to and disposed aft of the second frame is a horizontally oriented, rotatable wheel assembly adapted to engage, lift and position the hose and to provide for changes in the direction of the hose as it is pulled through a field during fertilizing. The wheel assembly is horizontally and vertically pivotable about the first frame for respectively facilitating maneuvering of the hose in a field and for raising the wheel assembly for transport. A locking mechanism is provided for engaging and preventing rotation of the wheel assembly when desired. Hydraulic cylinders connected to the tractor's hydraulic system allow for changing the configuration of the apparatus.

(51) **Int. Cl.**

**B05B 3/00** (2006.01)

**B05B 3/18** (2006.01)

**B65H 75/00** (2006.01)

(52) **U.S. Cl.** ..... **239/195; 239/745**

(58) **Field of Classification Search** ..... 239/195, 239/745; 56/188, 212

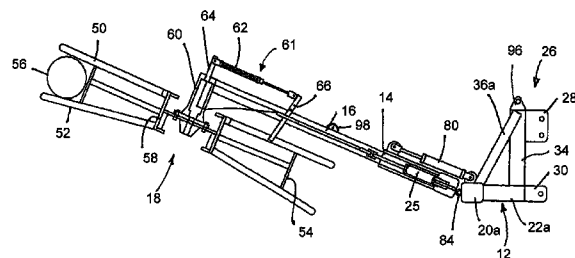
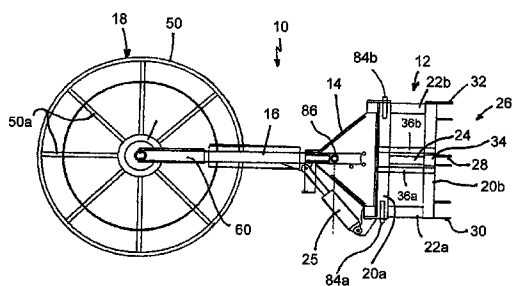
See application file for complete search history.

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**17 Claims, 11 Drawing Sheets**



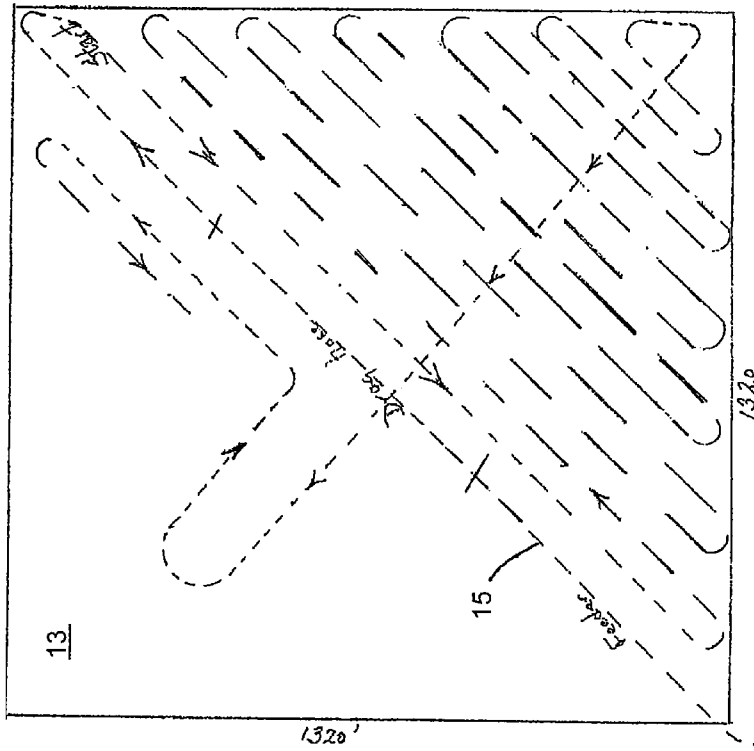
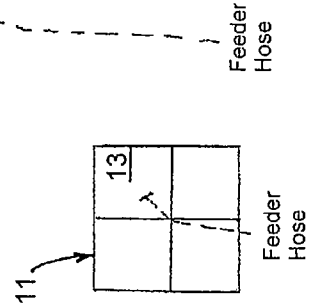


FIG. 1



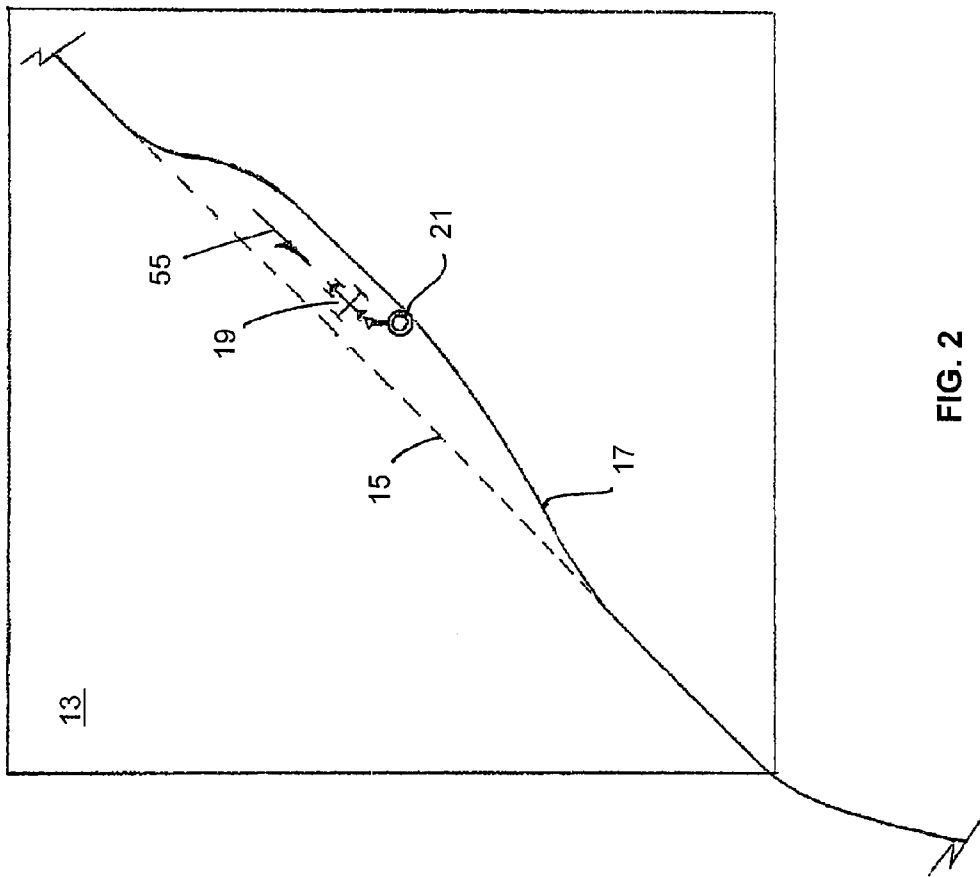


FIG. 2

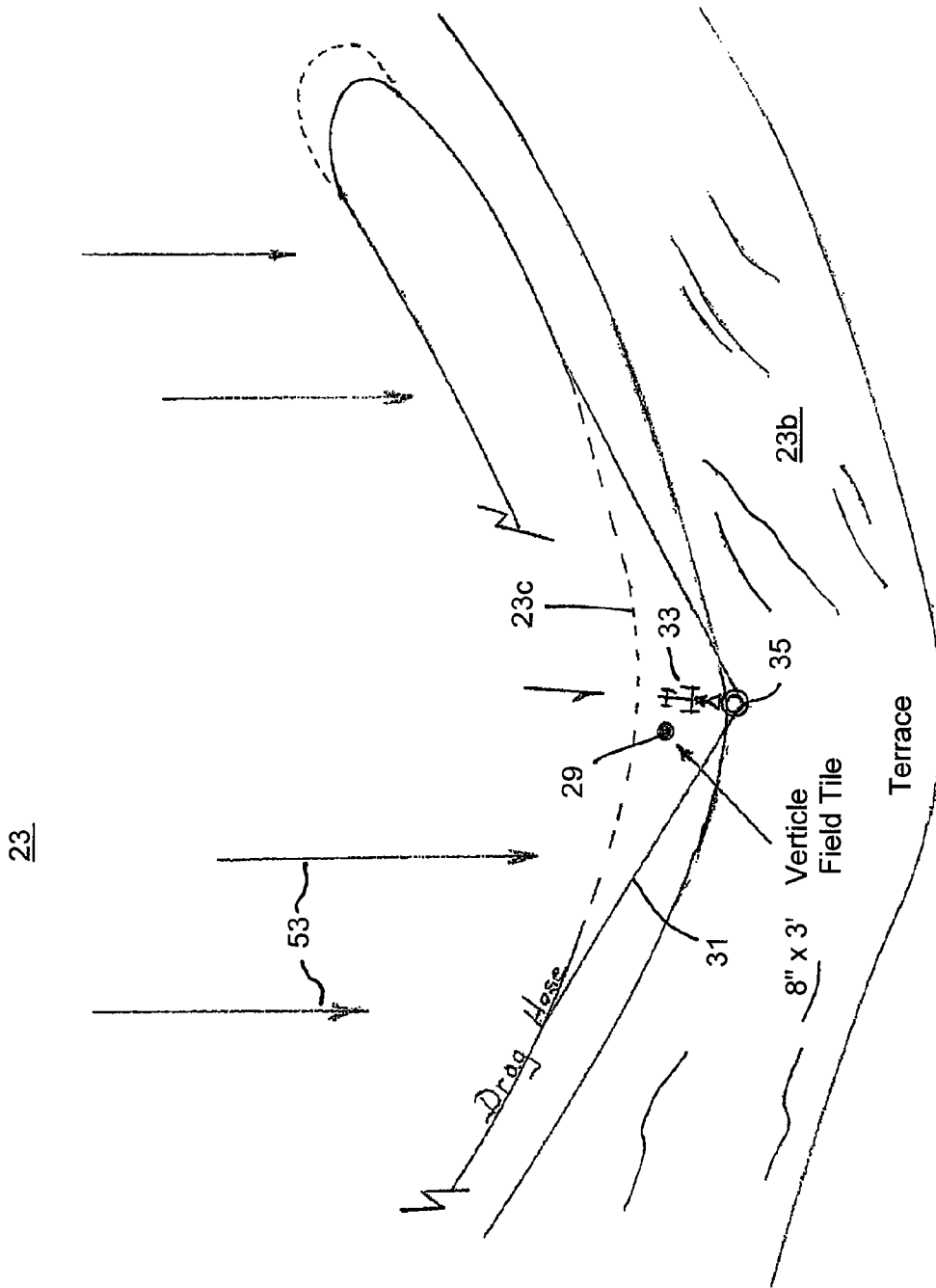


FIG. 3

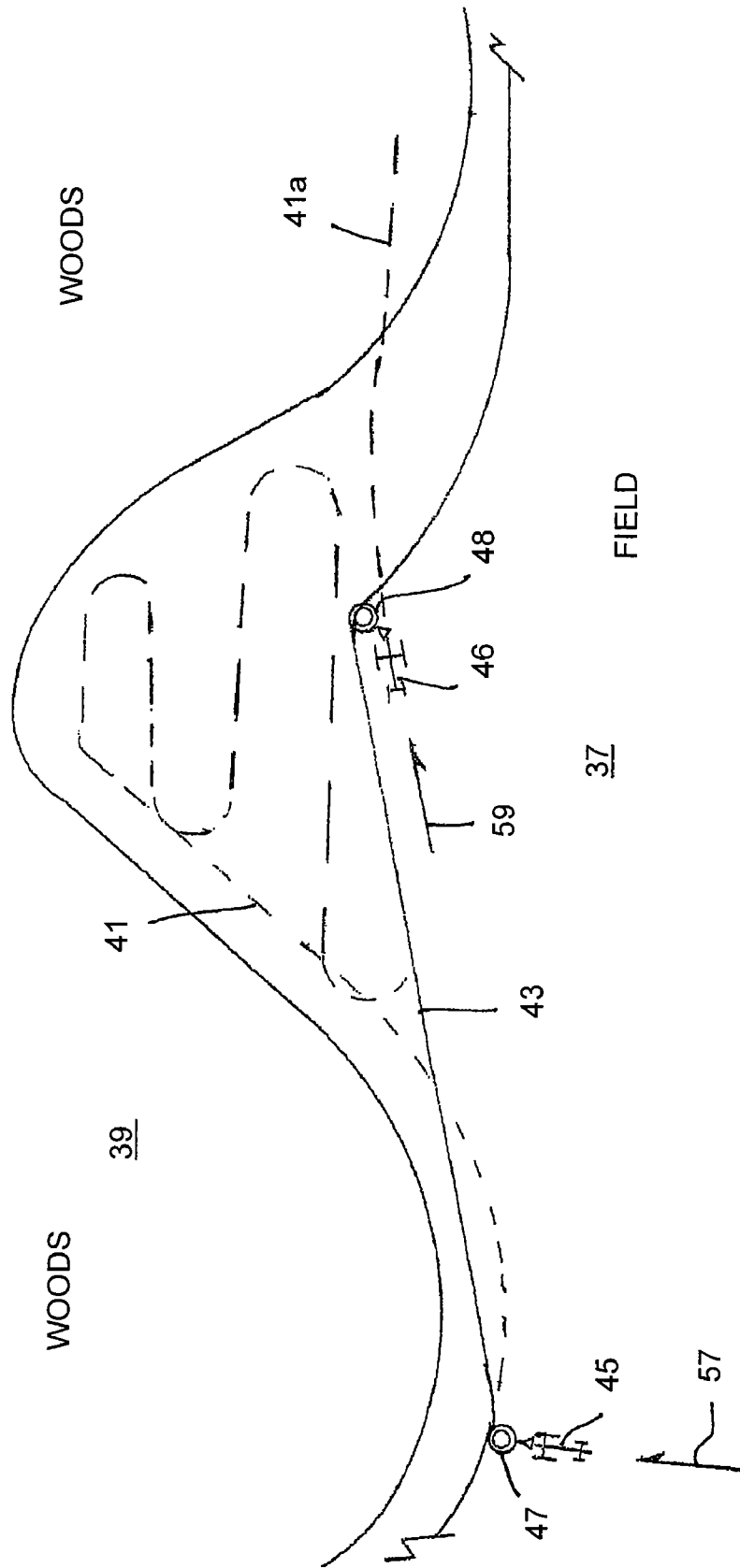


FIG. 4

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