F. H. SMITH.

Fertilizer.

No. 258. Patented July 5, 1837.

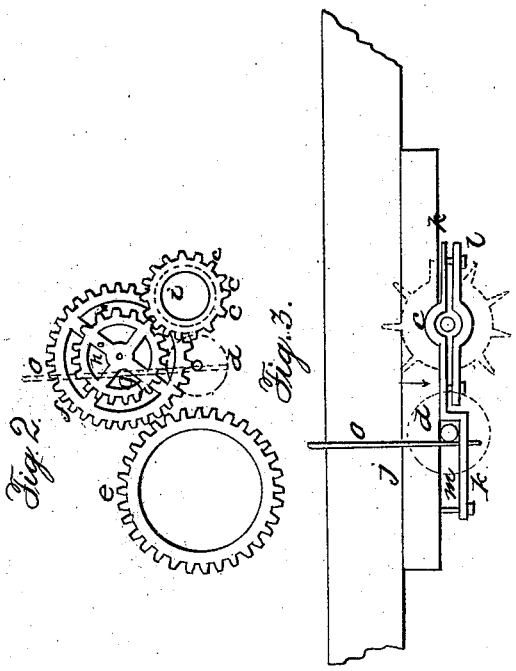

Fig. 2.

Fig. 3.

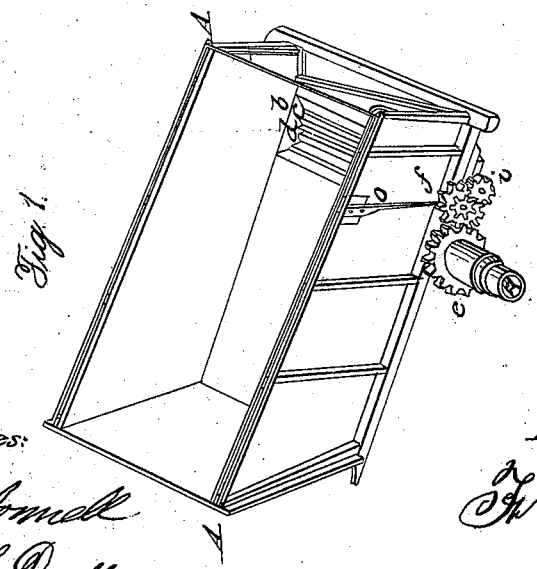

Fig. 1.

Witnesses:

John S. Donnell

James I. S. Donnell

Inventor:

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UNITED STATES PATENT OFFICE.

FRANCIS H. SMITH, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN THE MACHINE FOR SPREADING LIME, ASHES, MARL, PLASTER, OR OTHER FRIABLE MANURES.

Specification forming part of Letters Patent No. **258**, dated July 5, 1837.

To all whom it may concern:

Be it known that I, FRANCIS H. SMITH, of the city of Baltimore and State of Maryland, have invented a new and useful Machine for Spreading Lime, Ashes, Marl, Plaster, and other Friable Manure; and I do hereby declare that the following is a full and exact description.

A A in the accompanying drawings represent a common cart-body, with a hopper, as at *b*, in the bottom, about twelve inches behind the axle, the opening about ten inches wide and reaching across the entire width of the cart-bottom. Beneath this hopper is a revolving fluted metal cylinder, C, about five inches diameter, the tongues of which project about three-fourths of an inch. As this cylinder revolves the manure falls into the interstices or cavities between the tongues, and is carried down out against a smooth metal cylinder, *d*, about three and one-half inches diameter, which lies parallel and on the same level with the first. The machinery is put in operation by the motion or advancing of the cart.

The same letters in the several figures in the drawings represent the same parts.

Figure 2 is an end view of the machinery. *e* is a driving cog-wheel on one hub of the cart-wheel. It gears into the cog-wheel *f*. This cog-wheel turns on a pin-journal attached to the cart-body. On the same journal is the cog-wheel *g*, which may turn independently of *f* when no spreading is required, but it is made to revolve with *f* by being locked with *f* by *h* passing through the arms of both wheels. The wheel *g* gears into the cog-wheel *i*, which is on the end of the journal of the cylinder C. The dotted lines represent the cylinders, as C C C *d*, and the spring O, to be hereinafter described. If the small wheel *i* and the larger one, *g*, are made to exchange places, the speed of the cylinder is reduced, and consequently the quantity of manure distributed is diminished; and in like manner, by means of two or more pairs of wheels, each pair of different relative sizes, but all fitting on the same journals, any required quantity may be had.

Fig. 3 represents an end view of the method of placing or hanging the cylinders. *j* is the false bed bolted to the cart-sill, to which the metal seats and caps *k* and *l* are attached. *m* is an open or long rest for the journals of the cylinder *d*. When the manure is carried down in the direction of the arrow the cylinder *d* is free or allowed to recede from C; but it is pressed up by means of the springs O, one of which is on each side of the cart. These springs suffer the cylinder *d* to yield when a substance too hard to be broken is introduced, but they should be sufficiently stiff to cause the cylinders to crush or pulverize lime, calcined shells, or other friable substances.

When describing the cylinder C, for the sake of perspicuity, I simply termed it a "fluted metal cylinder;" but I can adopt any suitable material or any form in the distributing-surface of the cylinder. The tongues may be straight, spiral, and continuous, or broken into compartments of various forms and dimensions. I can in like manner vary the form of the follower or yielding cylinder *d*, the relative place of the machinery, or, instead of cog-gearing, the motion may be communicated from the hub of the cart-wheel by a chain or band and pulley on the cylinder C.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The fluted cylinder C, or a revolving cylinder having receptacles or cavities to receive the manure to be thrown out as it revolves, in combination with the cylinder *d*.

2. The cylinder *d* as applied in front of C to relieve and facilitate C in its revolution with the springs, allowing it to recede and still revolve.

3. The application of the cog-gearing, as described above, and the mode of regulating the quantity by different pairs of wheels working and fitting on the same centers.

FRS. H. SMITH.

Witnesses:
JOHN S. DONNELL,
JAMES I. S. DONNELL.