J. H. STEVENS.

Fertilizer.

No. 45,767. Patented Jan. 3, 1865.

Fig. 1

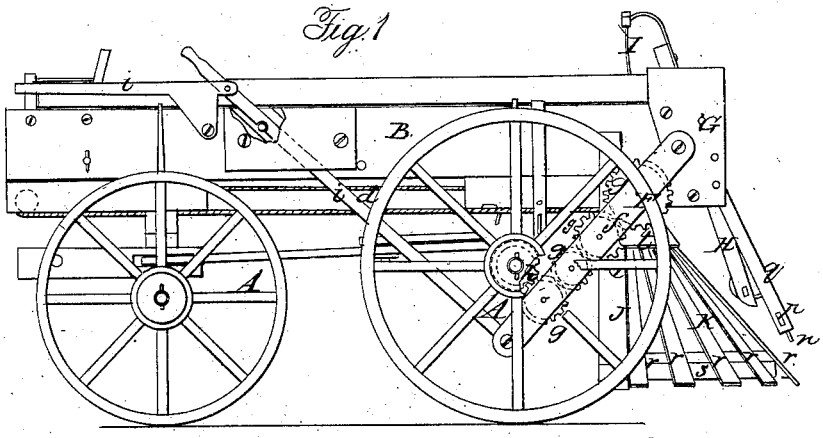


Fig. 2.

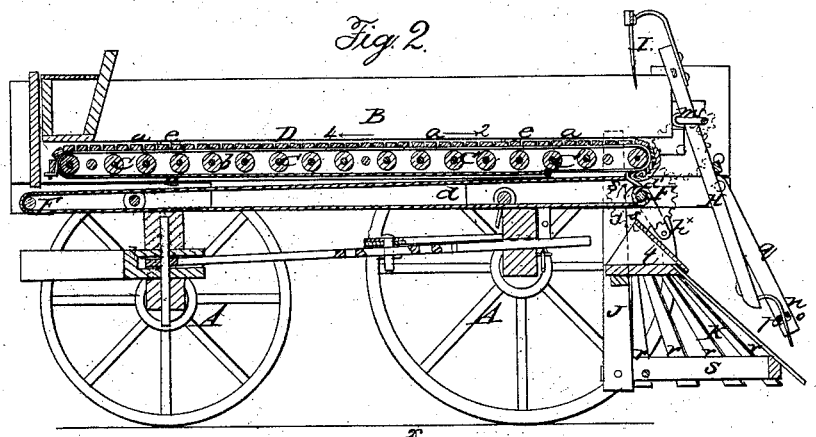
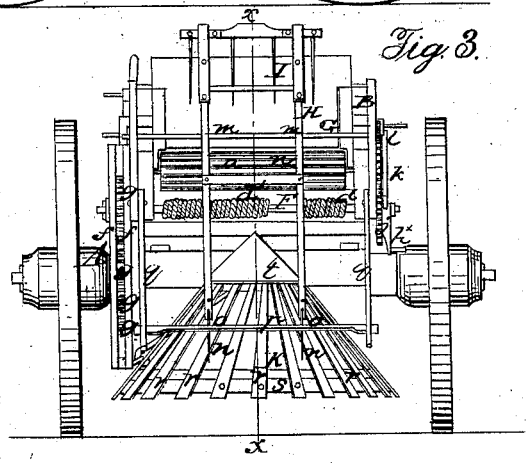


Fig. 3.



Witnesses.

Inventor.

# UNITED STATES PATENT OFFICE.

JAMES H. STEVENS, OF EAST DURHAM, NEW YORK.

## DEVICE FOR SPREADING MANURE.

Specification forming part of Letters Patent No. **45,767**, dated January 3, 1865.

*To all whom it may concern:*

Be it known that I, JAMES H. STEVENS, of East Durham, in the county of Greene and State of New York, have invented a new and Improved Manure-Spreading Device, the same being applied to wagons; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable any one skilled in the art to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a side sectional view of the same, taken in the line *x x*, Fig. 3; Fig. 3, a back view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in applying to a wagon a movable bottom composed of an apron which works on friction-rollers, and arranged to operate as hereinafter set forth, and using, in connection with a movable bottom, a fork arranged and operated in such a manner as to discharge the manure evenly or uniformly from the wagon as the former is presented or fed to the fork by the movable bottom.

The invention further consists in the employment or use of a semi-conical screen attached to the rear of the wagon for the purpose of receiving the manure as it is discharged by the fork and insuring a uniform distribution of the same upon the field.

A represents the running-gear of a wagon, and B the body thereof. These parts may be constructed in the usual way, with the exception of the bottom of the body, which is composed of a series of rollers, C, the journals of which are fitted in the sides of the body, and have an apron, D, placed upon them. This apron may be constructed of a series of slats, *a*, attached to the belts or bands *b*, which extend the whole length of the body of the wagon, and are connected at their ends by cords or chains *c*, which render the belts or bands *b* what may be termed "endless." (See Fig. 2.)

To the back end of the apron D there is attached a rope or chain, *d*, which extends forward and passes around a roller, E, underneath the front part of the body B, and thence back to a shaft, F, at the back part of the body B, at its lower edge. A rope or chain, *d'*, is also attached to the back end of the apron D, near where the rope or chain *d* is attached, and *d'* is wound upon the shaft F in a direction reverse to that of *d*.

In the sides of the body B of the wagon there are placed a series of friction-rollers, *e*, against which the ends of the slats *a* bear. These rollers *e* prevent considerable friction, which would otherwise occur when the device is passing over inclined ground.

From the above description it will be seen that when the shaft F is turned in the direction of arrow 1 the apron D will be moved in the direction indicated by arrow 2, the rope or chain *d* being wound upon the shaft F while the rope or chain *d'* is being unwound from it. When the shaft F is rotated in a reverse direction, as indicated by arrow 3, the apron D will be moved back, as indicated by the arrow 4, the rope or chain *d'* being wound upon the shaft F, and the rope or chain *d* unwound from it.

On one end of the shaft F there are suspended loosely two bars or arms, *f f*, between which a series of toothed wheels, *g*, are placed, said wheels gearing with each other, and the upper one being placed on the shaft F. The lower wheel *g*, when the arms *f f* are drawn upward, gears into a wheel, *h*, on the hub of one of the wheels of the wagon. (See Fig. 1.) The arms *f f* may be moved or adjusted to throw the lower wheel *g* in and out of gear with the wheel *h* by means of levers *i i* or any other suitable means. This gearing when the wagon is drawn forward rotates the shaft F in the direction indicated by arrow 1, and causes the apron D to move in the direction indicated by arrow 2.

On the end of the shaft F, opposite to the end on which the upper wheel *g* is placed, there is fitted a toothed wheel, *j*, into which a wheel, *k*, gears, the latter gearing into a pinion, *l*, on a shaft, G, provided with two cranks, *m m*, to which a frame, H, is attached, the latter having two rods, *n n*, at its lower end, which pass through slots *o* in a bar, *p*, said bar being at the lower end of inclined arms *g g*, at the rear of the body B. The rods *n n*, working in the slots *o*, serve as guides for the frames H.

To the upper end of the frame H a fork, I, is attached, provided with a suitable number of tines, the fork being nearly equal in width to the apron D. The cranks *m m* of the shaft

G give, as said shaft is rotated, an up-and-down and a forward-and-backward movement to the fork I, and cause the latter to discharge the manure from the wagon as the former is fed to the fork on the apron D.

To the back part of the body B of the wagon there is attached a pendent frame, J, to which a semi-conical screen, K, is secured, the screen being one-half of a cone bisected vertically. The screen is composed of slats *r*, the lower ends of which are secured to a semicircular bar, *s*, and the upper ends secured to a semi-conical block, *t*. This screen admits of the fine portion of the manure passing through it, while the long manure passes off from it, and is scattered or distributed evenly around the wagon.

When the load is discharged, the apron D is moved back by turning the lower wheel *g* out of gear with the wheel *h*, and turning the shaft F in a reverse direction by means of a crank, $h^{\times}$, attached to the wheel *j*.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The two ropes *d d'*, with the shaft F, for operating the apron D and admitting of the same being moved back when the load is discharged.

2. The semi-conical screen K, at the rear of the wagon, when used in connection with a manure-discharging device, for the purpose set forth.

3. The discharging-fork I, arranged to operate, substantially as herein described, in connection with the apron D, or its equivalent, for the purpose set forth.

JAMES H. STEVENS.

Witnesses:
A. C. GRISWOLD,
CHAS. CORNWALL.