J. F. Fisher.

Fertilizer.

No. 90,653. Patented June 1, 1869.

Fig: 1.

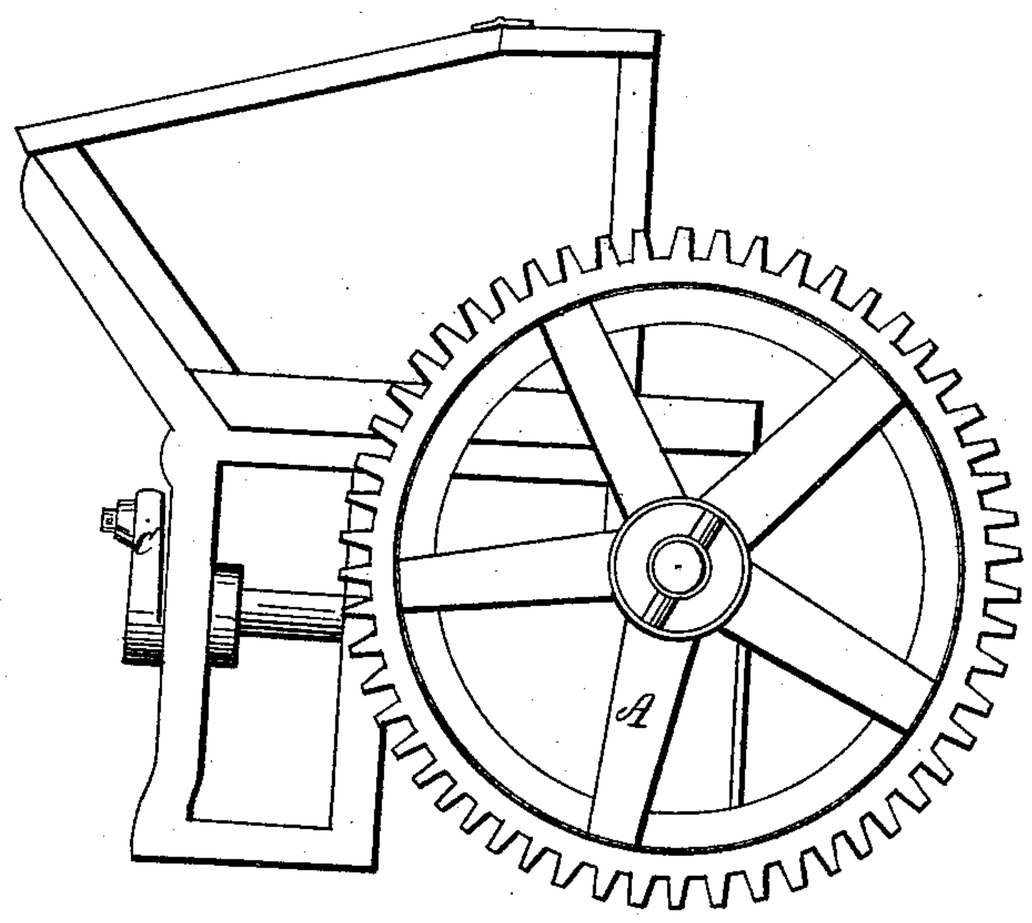


Fig: 2.

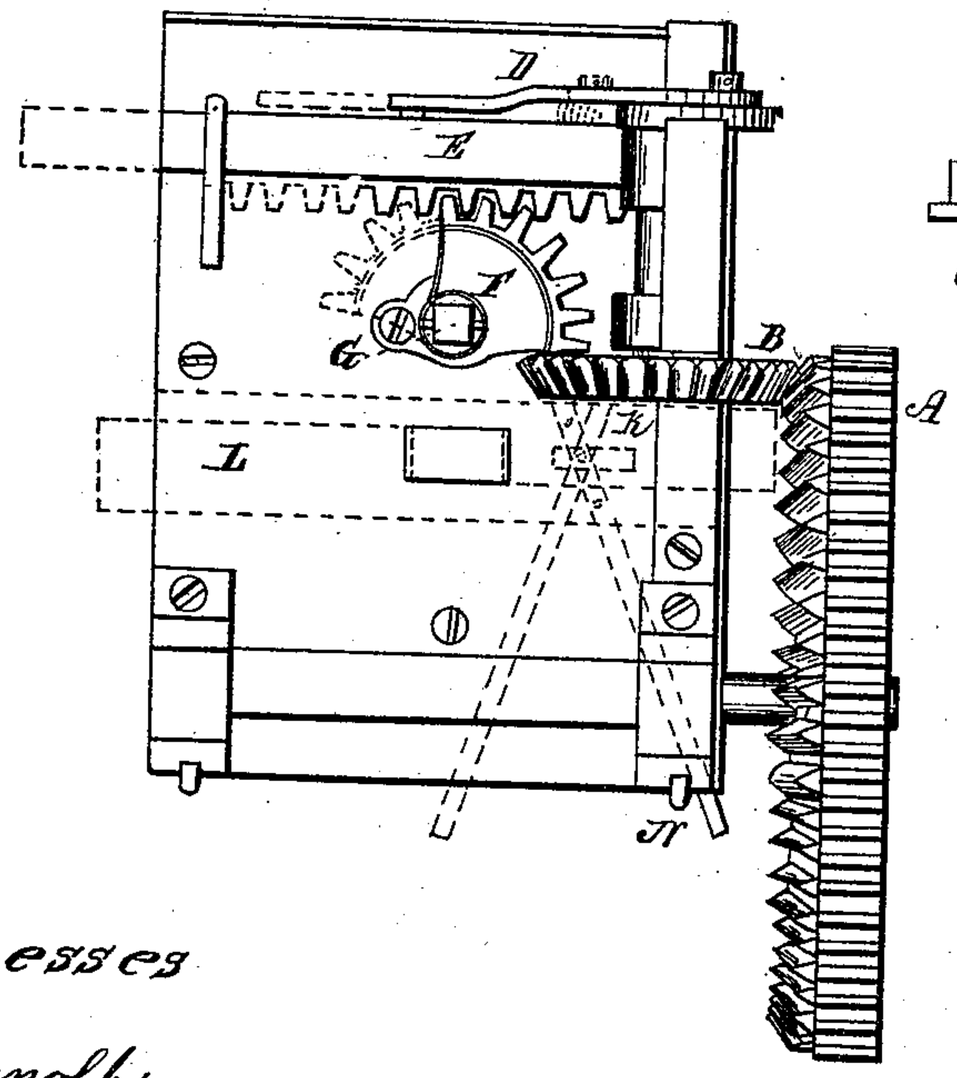
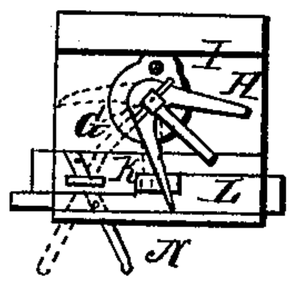


Fig: 3.



Witnesses

Thos A. Connolly

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Atty.

United States Patent Office.

JOHN F. FISHER, OF GREENCASTLE, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND DANIEL BREED, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 90,653, *dated June* 1, 1869.

IMPROVEMENT IN GUANO-ATTACHMENT FOR SEED-DRILLS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN F. FISHER, of Greencastle, in the county of Franklin, and State of Pennsylvania, have invented a new and useful Improvement in Guano-Attachments to Wheat-Drills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of an arrangement of cog-gearing, and other devices for stirring guano and other fertilizers, the cog-gearing under the hopper being connected with and operating fingers, or stirrers in the hopper.

In the accompanying drawings—

Figure 1 is an end view of the hopper of a guano-attachment to wheat-drills, with my improvements.

Figure 2 is a bottom view of the same.

Figure 3 is a view of the inside of the hopper.

By means of the gear-wheel A, motion is communicated to the pinion B and the crank C, and by means of a connecting-rod, D, the rack-bar E receives a reciprocating motion.

This rack-bar gears into a quarter-pinion, F, upon a shaft, G, which extends up into the hopper, and carries fingers, or stirrers H and I, and thus motion is communicated from the rack-bar to the fingers, which stir the guano.

The feed-hole in the bottom of the hopper is opened and closed by means of two slides K L, and a lever, N, (as shown mostly in dotted lines, fig. 2.)

The two slides, being pivoted to the lever N, the feed-hole may be opened more or less, so as to feed fast or slow, or stop the feed, at pleasure. The two slides move in opposite directions, and thus the feed is always at the same point or centre, whether the feed is fast or slow.

In place of the quarter-pinion F, a crank, or swinging arm may be used, the same being pivoted or connected with the reciprocating bar E, but I prefer the cog-gear above described.

Having thus described my invention,

I claim—

1. The quarter-pinion F and reciprocating rack-bar E, or their equivalents, placed under the hopper, in combination with the swinging fingers, or stirrers, inside of the hopper, substantially as set forth.

2. In combination with the stirrers and quarter-pinion, the reciprocating bar E, the rod D, crank C, pinion B, and gear-wheel A, substantially as set forth.

JOHN F. FISHER.

Witnesses:

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