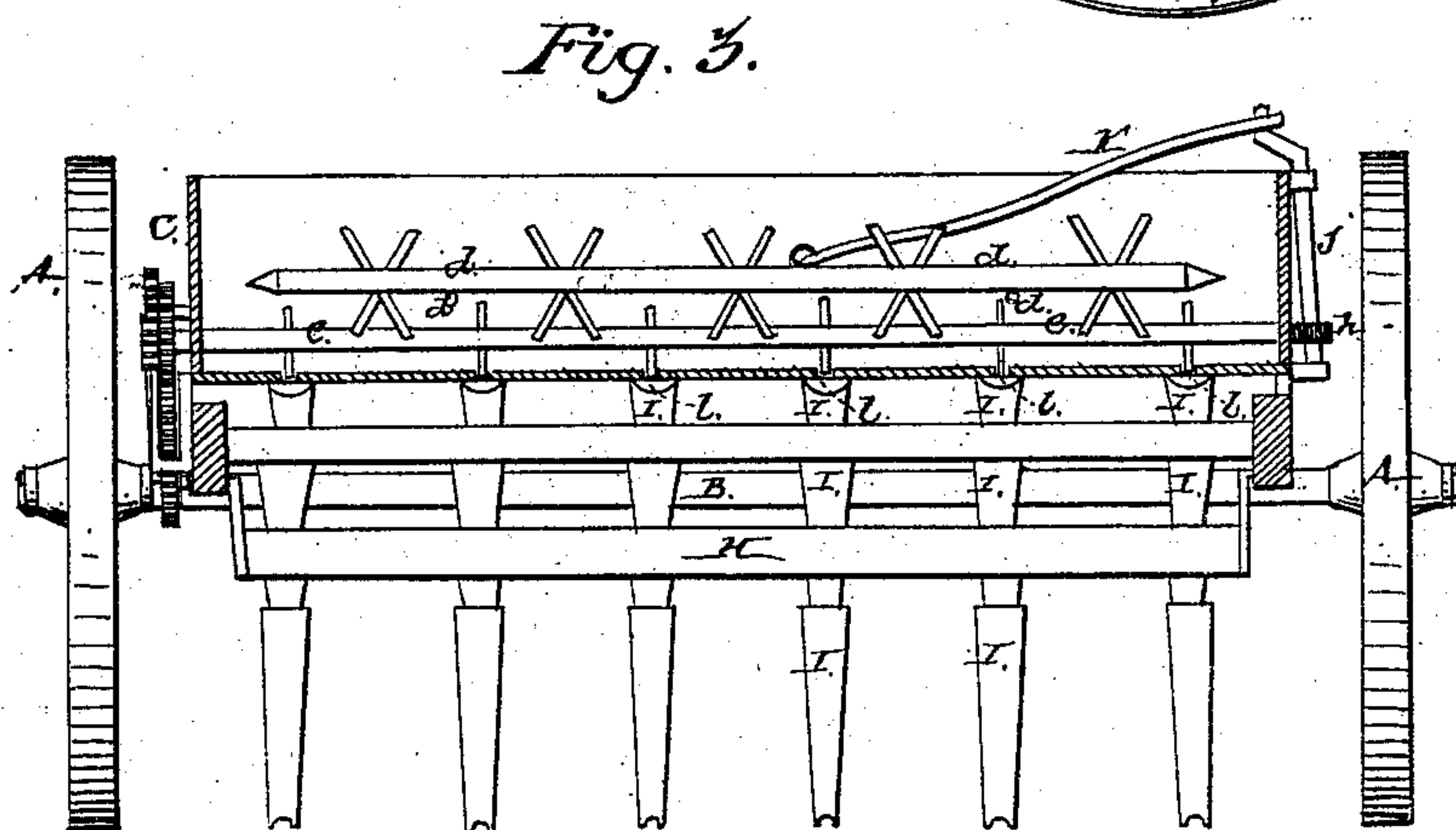
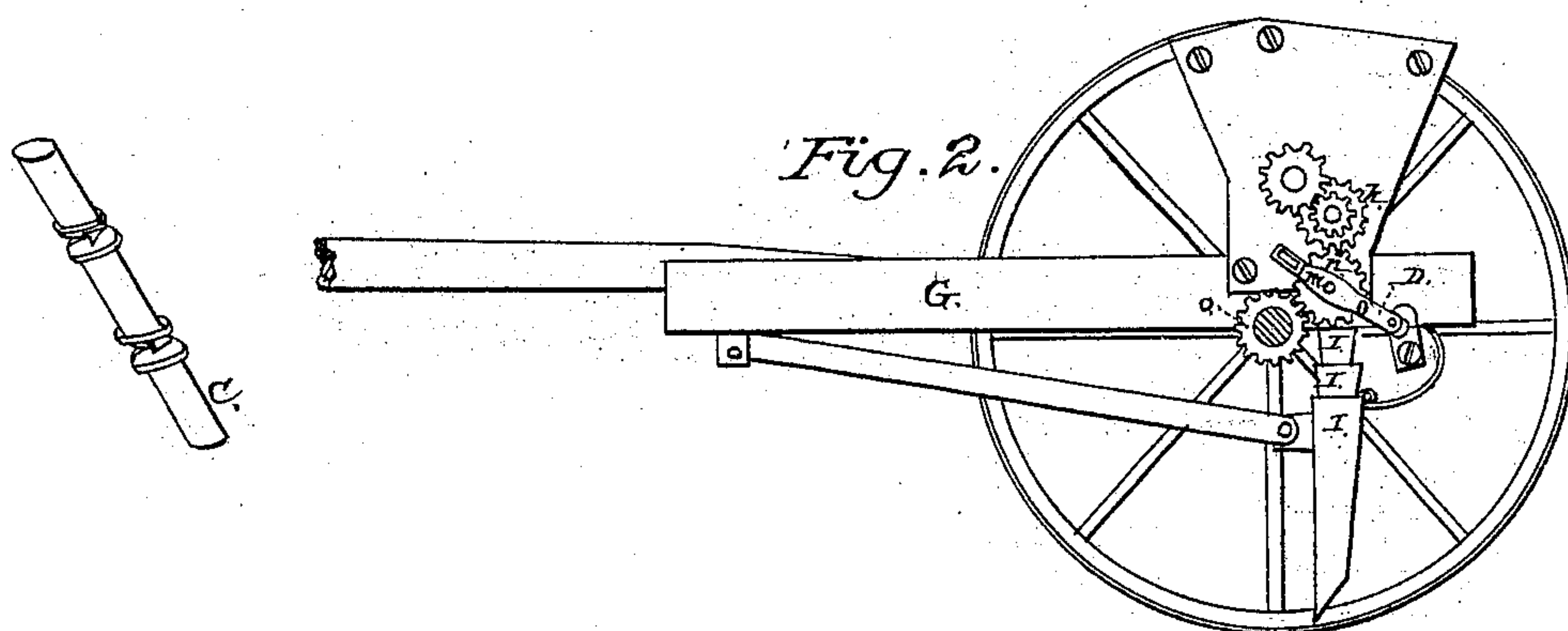
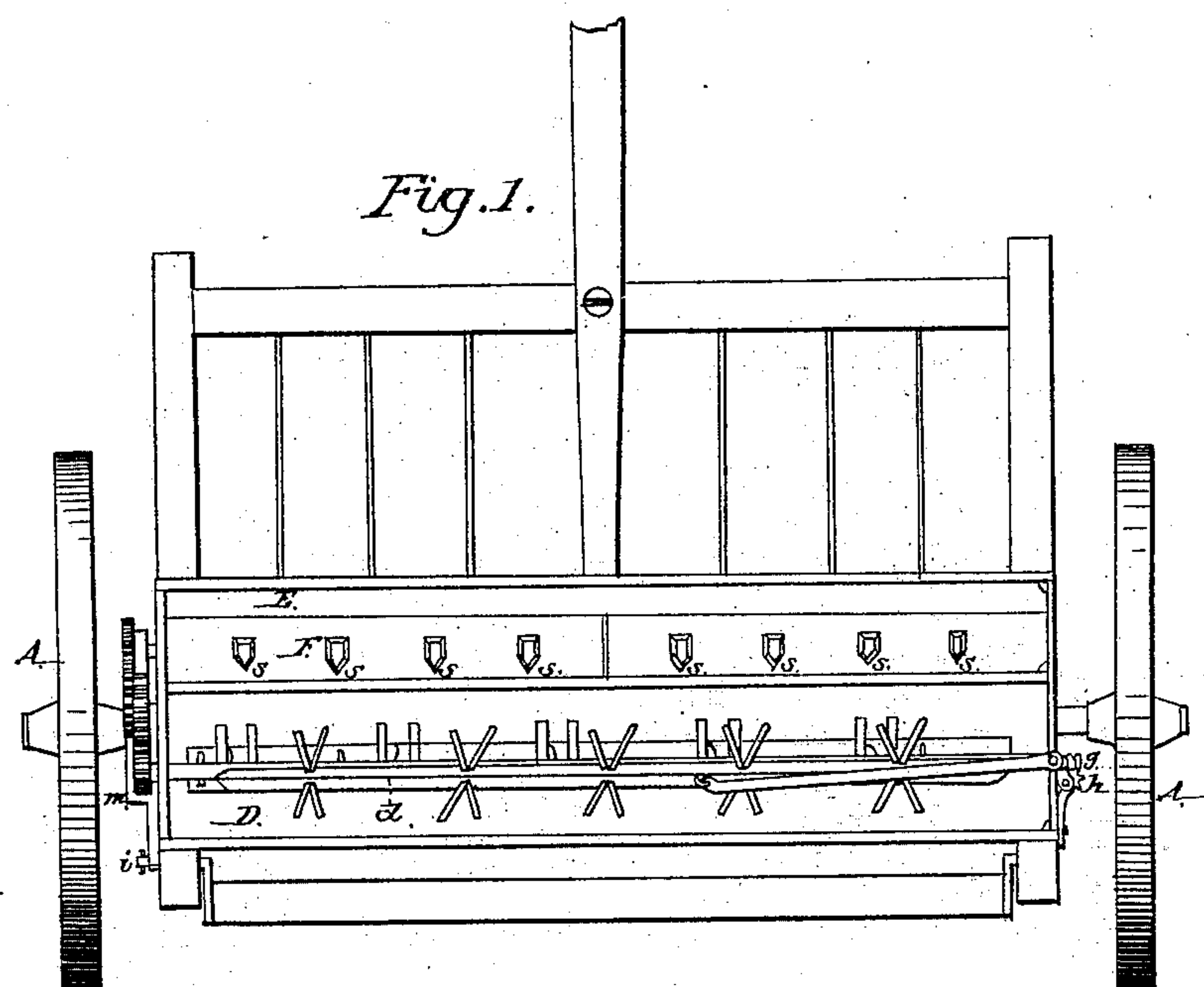


E. WAGENER.

Fertilizer.

No. 22,212.

Patented Nov. 30, 1858.



# UNITED STATES PATENT OFFICE.

ELIJAH WAGENER, OF WESTMINSTER, MARYLAND.

IMPROVEMENT IN MACHINES FOR DISTRIBUTING GUANO AND OTHER FERTILIZERS.

Specification forming part of Letters Patent No. 22,212, dated November 30, 1858.

*To all whom it may concern:*

Be it known that I, ELIJAH WAGENER, of Westminster, in the county of Carroll and State of Maryland, have invented certain new and useful Improvements in Machines for Distributing Seed and Guano; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the arrangement of the several parts of the machine, which will be hereinafter particularly described.

In order that those skilled in the arts may make and use my invention, I will proceed to describe its construction and operation.

In the annexed figures, Figure 1 is a plan view. Fig. 2 is a side elevation. Fig. 3 is a back view.

In the several figures, A A represent the two wheels upon which the seeding and distributing apparatus is mounted. B is the axle connecting these wheels, and G represents the frame of the carriage, which is supported by the axle and wheels.

C represents a hopper, which is mounted upon the carriage. This hopper has two divisions, D and E. D is intended to contain the guano or fertilizer, and E is the seed chamber or hopper. At the bottom of the seed-chamber is a cylinder, *c*. This cylinder is provided with seed-apertures, which are oblong or V-shaped. These apertures run into each other, the smaller end of one connecting with the large end of the next in order, as is clearly seen in the detached section of the cylinder. Immediately over this cylinder is placed a piece or separator, which is provided also with V-shaped apertures. The apertures of the cylinder are directly under those of the piece above; but the angles of the two apertures are inverted and are opposite each other. The apertures *s s s* are not only made V-shaped, but are so inclined on their upper side that they form a cut-off, cutting off the grain and shoving it back into the next aperture. Thus as each aperture of the cylinder is brought around the grain is leveled and cut off without the use of any soft material or brush or anything of the kind. The box D has a bottom, which is provided with apertures *l l l*, through which the guano is fed by means of the feeder *e*.

This feeder consists of a shaft, which passes longitudinally through the box, and which is provided with arms, which, as the shaft turns around, work in the apertures *l l l* with their points and feed the guano through into the discharge-spouts I.

Above the feeder *e* is an agitator or stirrer, *d*, which is also provided with arms, as shown. This stirrer rests upon the pins *x x*, and is operated longitudinally of the box by means of the rod *k*. On the end of the shaft *e* is a screw, which is seen in Fig. 1. This screw operates a pinion, *h*, which is secured to the shaft *j*. This shaft *j* has a crank at its upper extremity, which connects with the rod *k*. The object of driving the pinion *h* and the several parts which connect with it by means of a screw is that a very slow motion may be communicated to the stirrer to prevent the packing of the guano, which would be the case if it had a fast motion. The stirrer and the feeder move in different directions, the one vertically and the other horizontally, and one moves faster than the other. Thus by means of uneven and of different motions the guano is constantly kept open and is easily discharged.

*o* is a cog-wheel which is secured to the shaft connecting the carriage-wheels. *p* is a cog-wheel which is secured to the shaft or feed *e*, and motion is conveyed from *o* to *p* by means of a cog-wheel, *n*, which is in the hanger *m*. One end of this hanger is provided with a slot, into which passes a pin and secures that end to the frame, allowing the hanger to move backward and forward. The other end of the hanger is secured to the eccentric arm *i*. This arm *i* is attached to a wheel which connects with and is operated by means of the cross-bar H. By throwing the bar H down the wheel *n* is forced up into gear with wheels *o* and *p*, and the distributing apparatus is thus set in motion; but by raising this bar the said wheel *n* is drawn back, and the machine is thus thrown out of gear.

In operating this machine the seed is placed in box E and the guano in box D. The seed is conveyed out from the box by means of the V-shaped apertures in the cylinder, which pass under the V-shaped cut-off, thence down into the discharge-spouts. The guano is worked or fed through the apertures in the bottom of the hopper or box D by means of the arms on shaft *e*, and is kept constantly in motion and



unpacked by means of the combined influence of the feeder and stirrer. The guano and seed both pass into the discharge-spouts together, and thence to the ground. By these means seed may be fed out without being cut or mashed, and in regular quantities, while the guano cannot be packed or remain in the box, whether it be wet or dry, for the different motions and directions of the feeder and stirrer keep it always in proper condition to be discharged.

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

1. The combination of the stirrer *d* and the feeder *c*, operated in different directions and at different speed, the two being arranged in the manner and for the purpose specified.

ELIJAH WAGENER.

Witnesses:

JOHN S. HOLLINGSHEAD,  
AMON DUVALL.