

B. KUHNS.
Fertilizer-Distributor.

No. 207,043.

Patented Aug. 13, 1878.

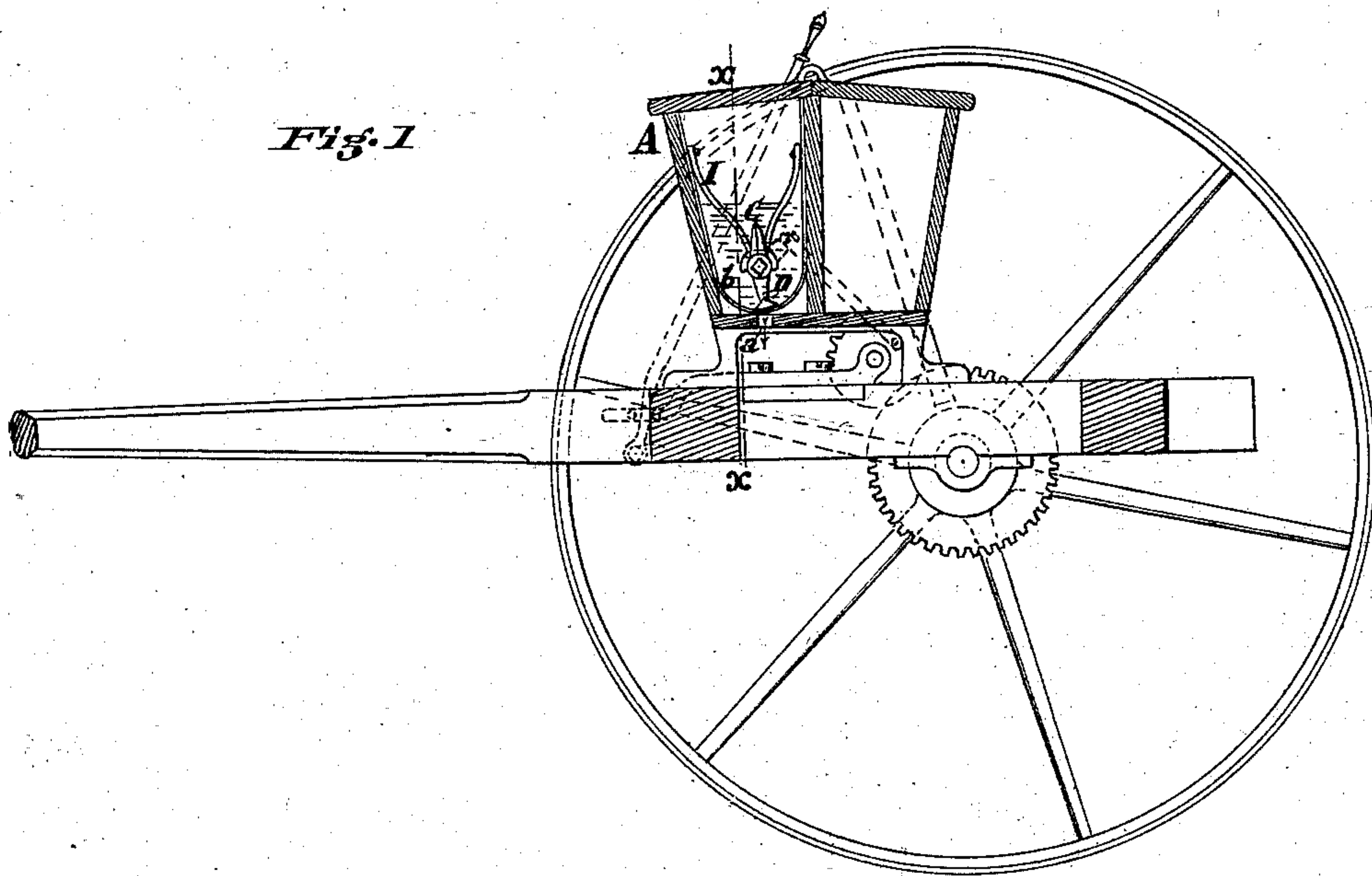


Fig. 2

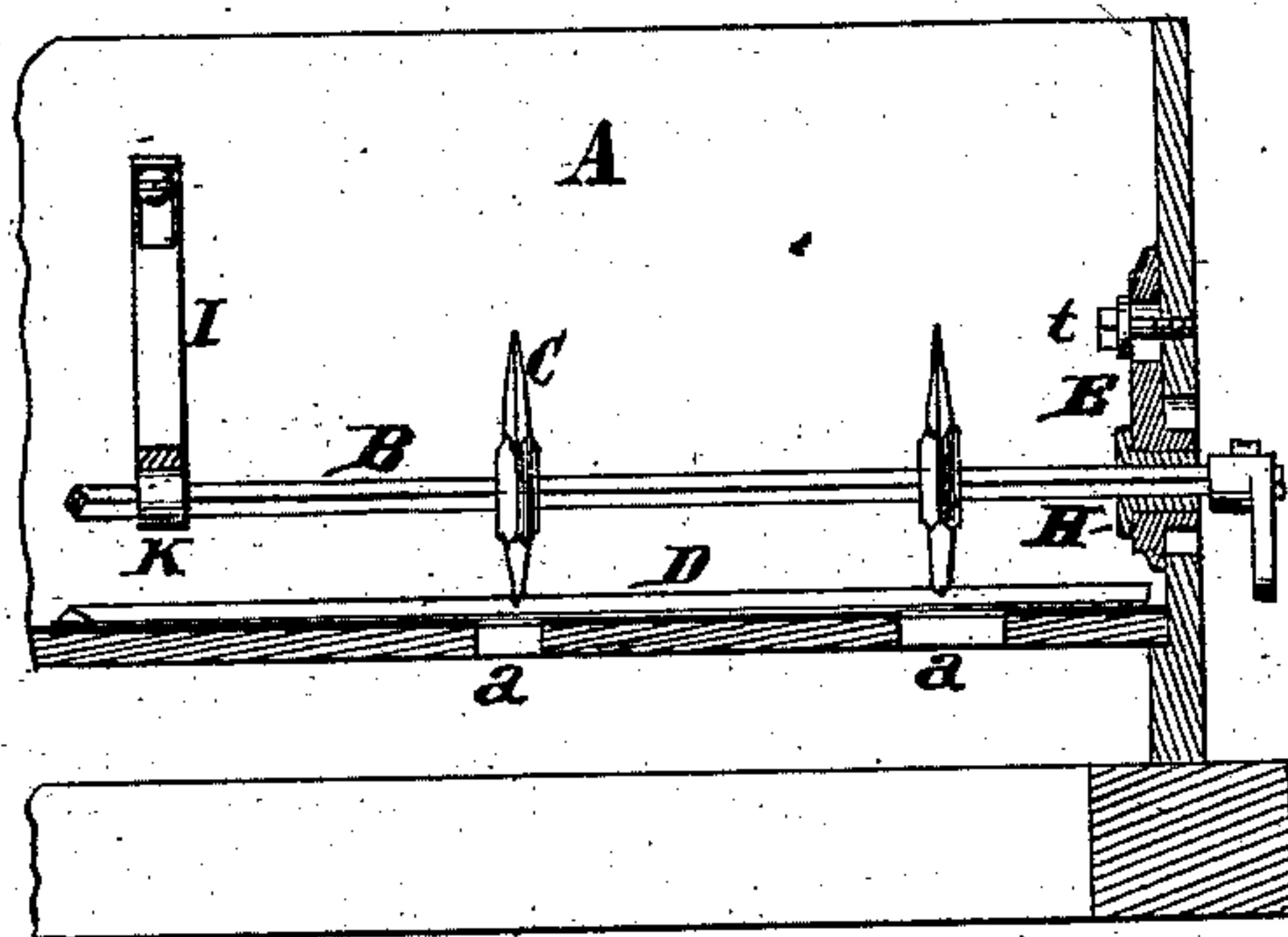
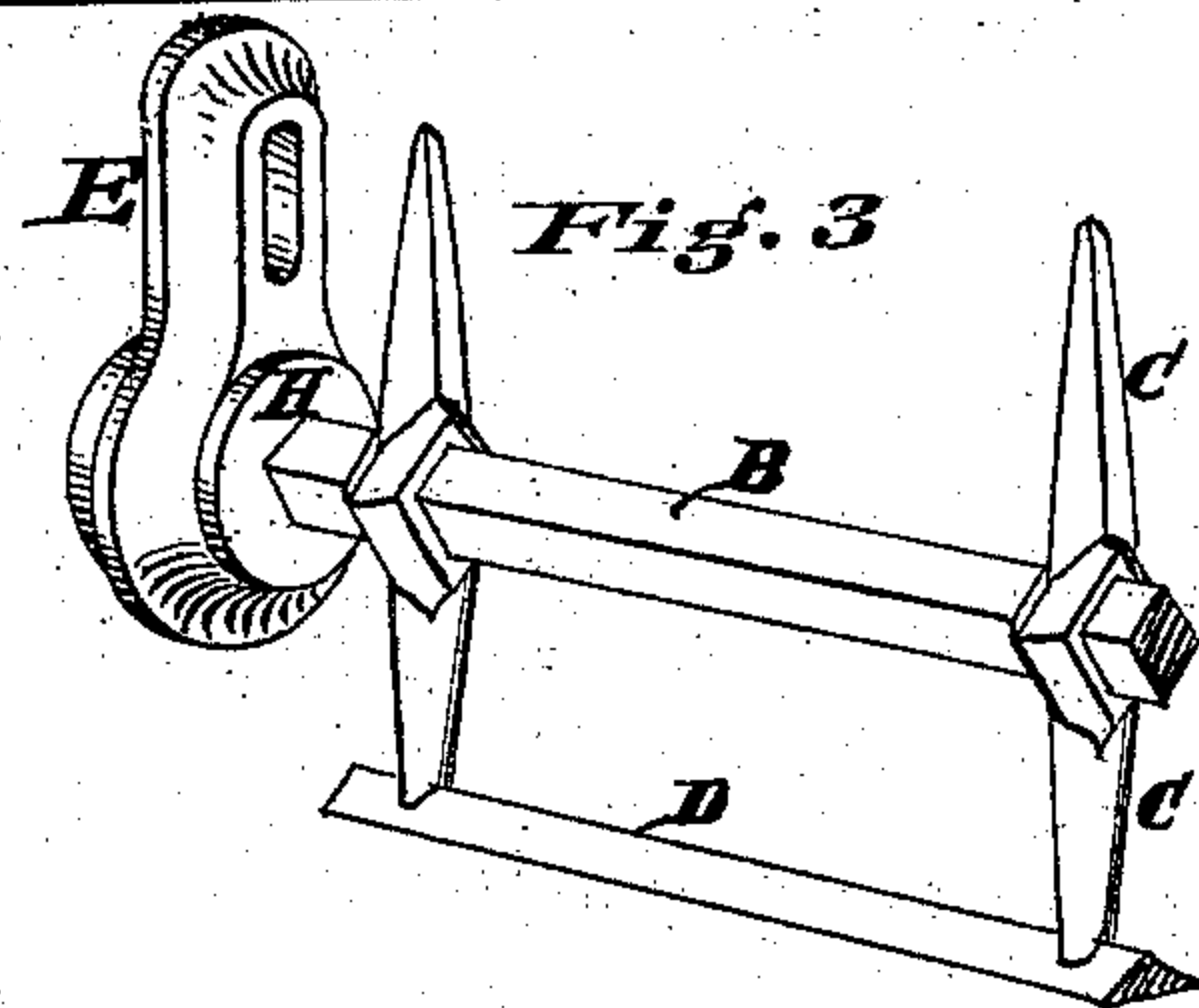
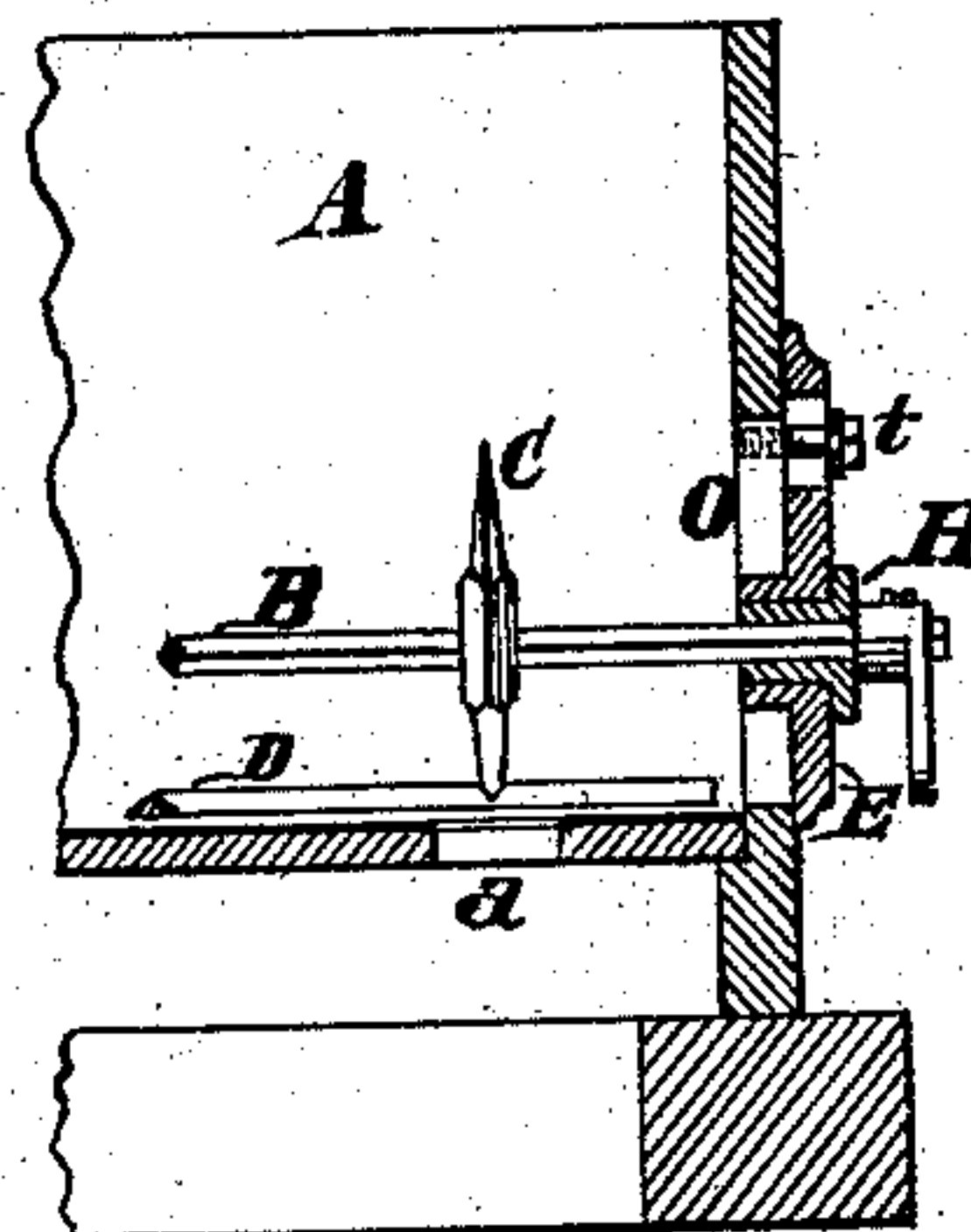


Fig. 4



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BENJAMIN KUHNS, OF DAYTON, OHIO.

IMPROVEMENT IN FERTILIZER-DISTRIBUTERS.

Specification forming part of Letters Patent No. 207,043, dated August 13, 1878; application filed January 24, 1878.

To all whom it may concern:

Be it known that I, BENJAMIN KUHNS, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Fertilizers, of which the following is a specification:

Figure 1 is a central section of my improvement; Fig. 2, a longitudinal section on line *x*, Fig. 1. Fig. 3 is a perspective of the stirrer and adjustable bracket. Fig. 4 is a longitudinal section, showing the means for removing the stirrers.

This invention relates to that class of fertilizer-distributing machines in which are employed a hopper and a longitudinal cylindrical shaft having a series of radial stirring-fingers fixed in the shaft and a series of wipers constructed of a U-shaped piece of metal, the arms of which are fixed in the shaft.

My invention is an improvement on this class of machines; and consists of a novel construction and arrangement of parts, which will be fully hereinafter described.

A represents a fertilizer-hopper, which is usually employed in combination with a seeding-hopper. *a* represents the discharge-outlets for the fertilizer. *b* represents a curved bottom for the hopper. B represents the stirrer, which is made with fingers C C C, to the bottom of which is attached a triangular or sharp-edged bar, D, which is set close to the curved bottom *b*. As this scraper swings back and forth each edge alternately scrapes the material down over the discharge-apertures *a*.

The fingers or stirrers C are cast with square holes, fitting on the shaft B, and the bar or scraper D is preferably cast with the fingers. The fingers C are made thin both above and below the shaft, so as to cut through the material with as little agitation as possible.

E represents a bracket or hanger made to support the bearings of shaft B. It is attached to the hopper by one or more screws, *t*, passing through slots made in the hangers *e*, to allow them to be raised and lowered to adjust the scraper D, so that its edges cannot be made to come nearly in contact with the curved bottom *b*.

I represents a forked brace, with a bearing resting on a collar, K, placed at the center of shaft B, to prevent the shaft from springing, owing to the strain imparted to the shaft during its work. This allows a small shaft to be employed, which occupies the smallest amount of room, allowing the material to easily pass

around it. Bracket I is slotted and attached by screws, so as to allow the vertical adjustment of shaft B.

H is a collar with a square aperture, fitting shaft B, but having a cylindrical exterior, forming a shaft-journal, revolving in its bearings in bracket E. This mode of making the parts allows the stirrers C and scraper D to be cast in one piece and slipped on shaft B without any fitting, and is an important feature, as it effects a large saving in the cost; and as the stirrers require occasional renewal the repairs can be easily made by the user. To facilitate this renewal, and to allow the stirrers to be easily cleaned of the sticky paste material which accumulates in the hopper, I have provided a peculiar mode of attaching the shaft and its bearings, as shown in Fig. 4. One end of the hopper has a slot, O, of sufficient depth to allow the insertion or removal of the stirrers D C and shaft B, which slot or opening O is effectually closed by the bracket E, which supports the shaft B and its bearing in position for operation. This bracket is shown slotted, so as to allow the adjustment of the shaft B; but this adjustment is not a feature claimed.

It is necessary, to remove the stirrers D C, to have the bracket upon the outer end of hopper A, as shown in Fig. 4, so that the shaft and its journal may be removed.

When only vertical adjustment is desired, the bearings may be arranged as shown in Fig. 2.

I claim—

1. The combination, with the hopper of a fertilizer-distributing machine, of a shaft, B, radial fingers C C, and longitudinal scraper-bar D, connecting the ends of one series of the radial fingers, substantially as set forth.

2. In combination with the hopper, shaft, and fingers and scraper, the bracket E, adjustably attached over an opening in the hopper, and having the collar H constructed to revolve in the bracket and serve as a hub for the shaft, substantially as described.

3. The combination, with the stirring-finger, of a scraper-bar, triangular in cross-section, and attached to the finger, substantially as set forth.

In testimony whereof I have hereunto set my hand this 18th day of January, 1878.

BENJAMIN KUHNS.

Witnesses.

E. G. WOOD,
C. M. GALAGHER.