

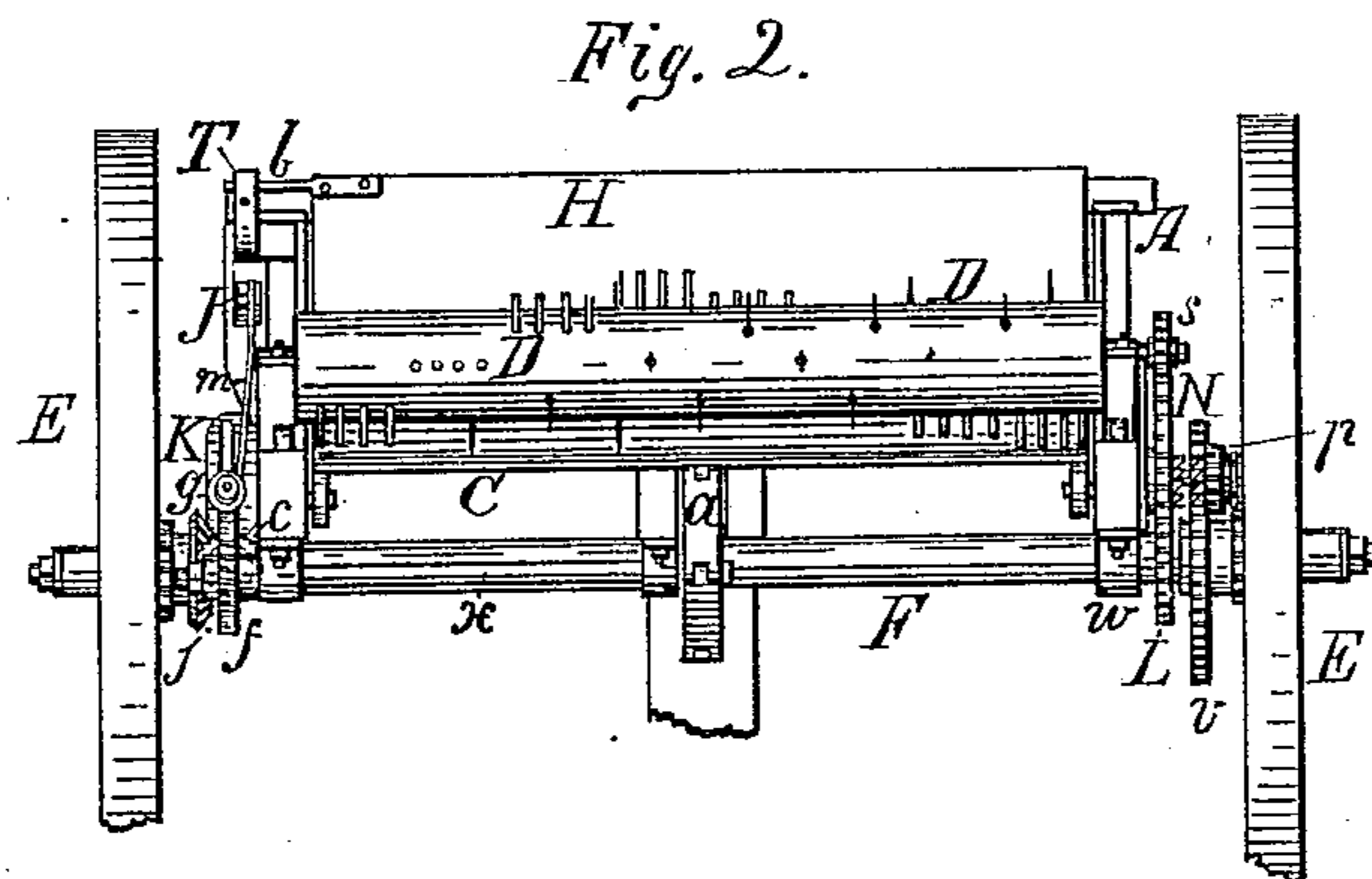
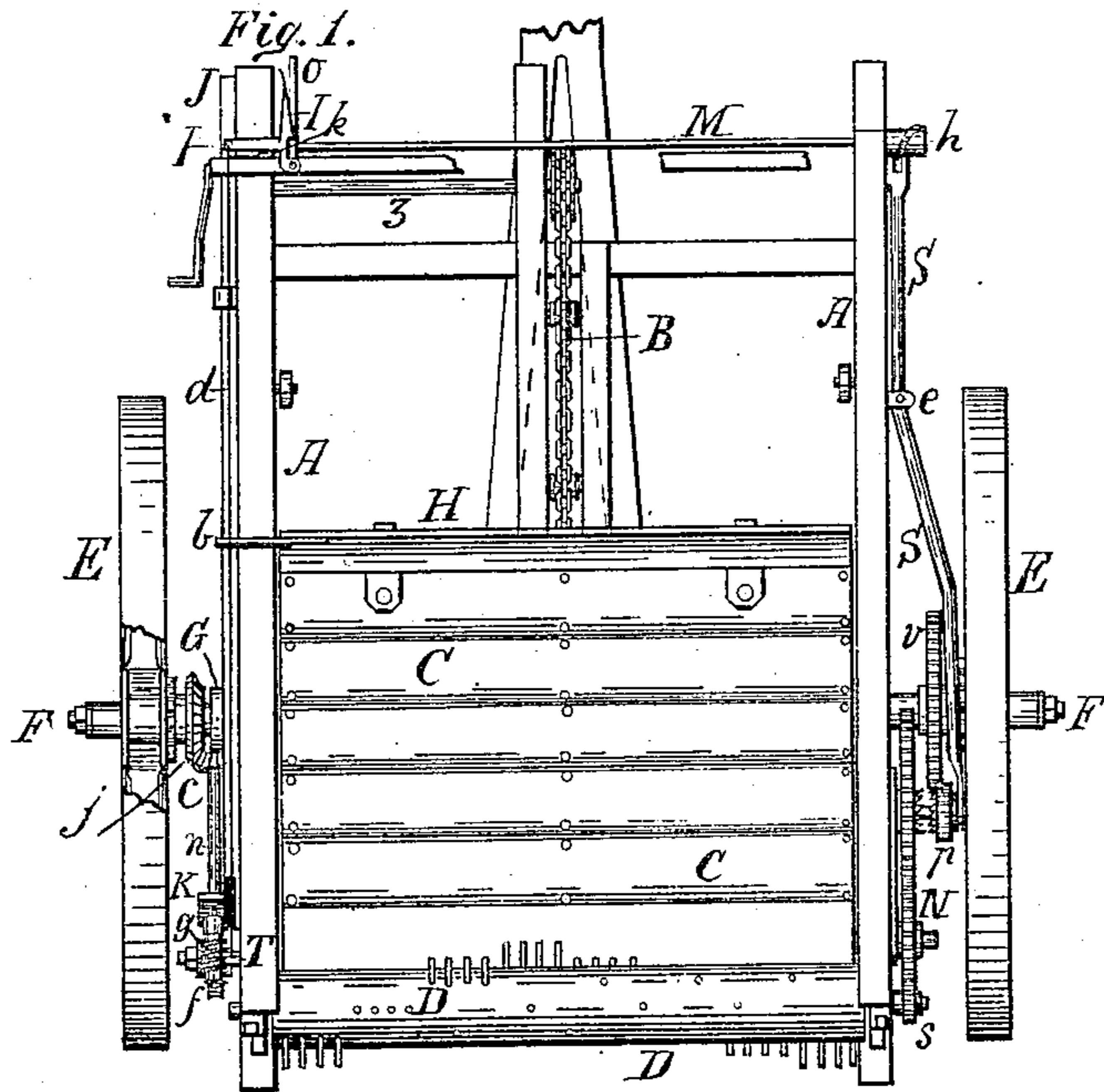
(Model.)

2 Sheets—Sheet 1.

J. S. KEMP.
Manure Spreader.

No. 241,023.

Patented May 3, 1881.



Witnesses:

H. A. Gay
N. G. Little.

Inventor:

Joseph Sargent Kemp.
per Wiswell & Gilman,
Attorneys.

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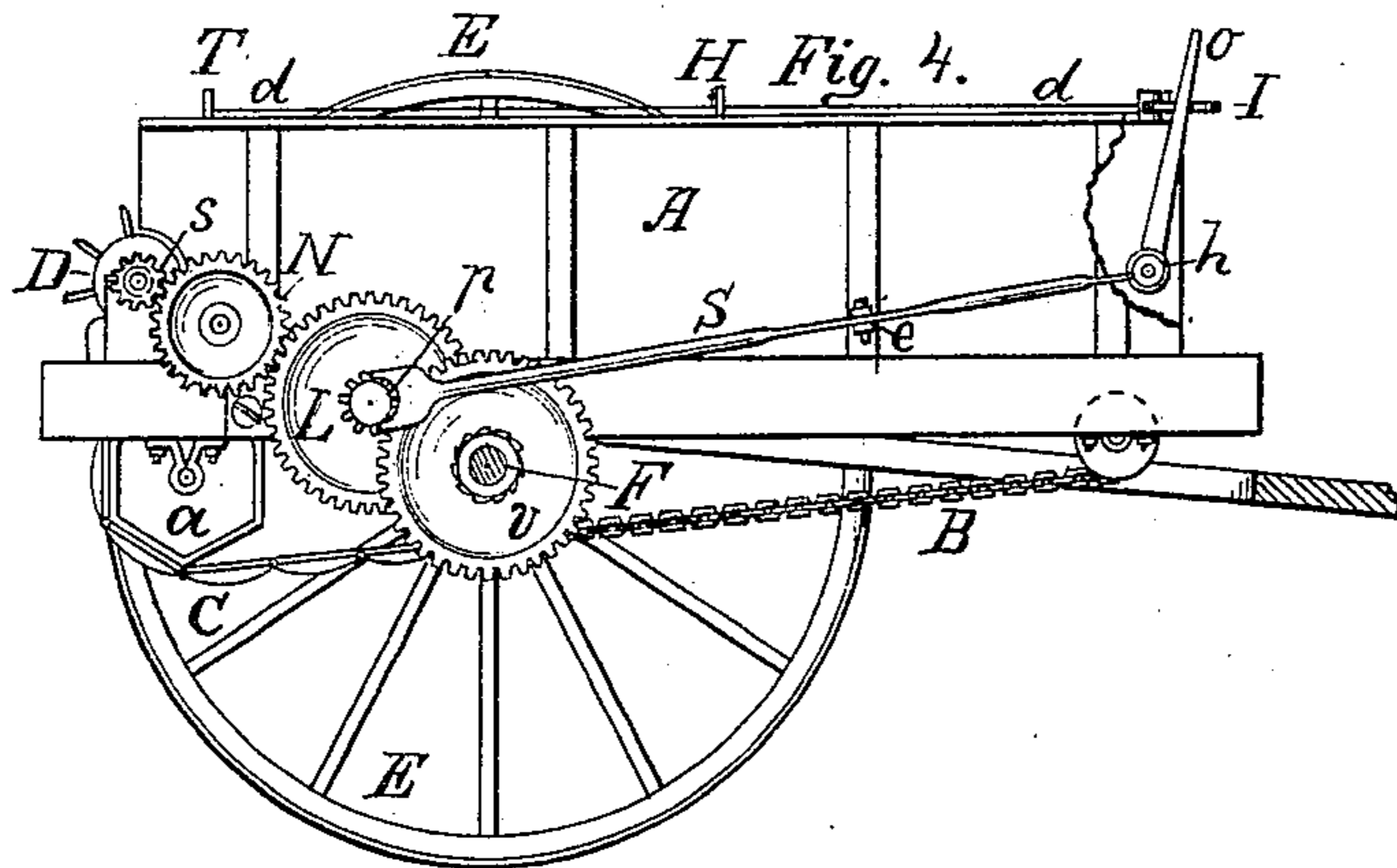
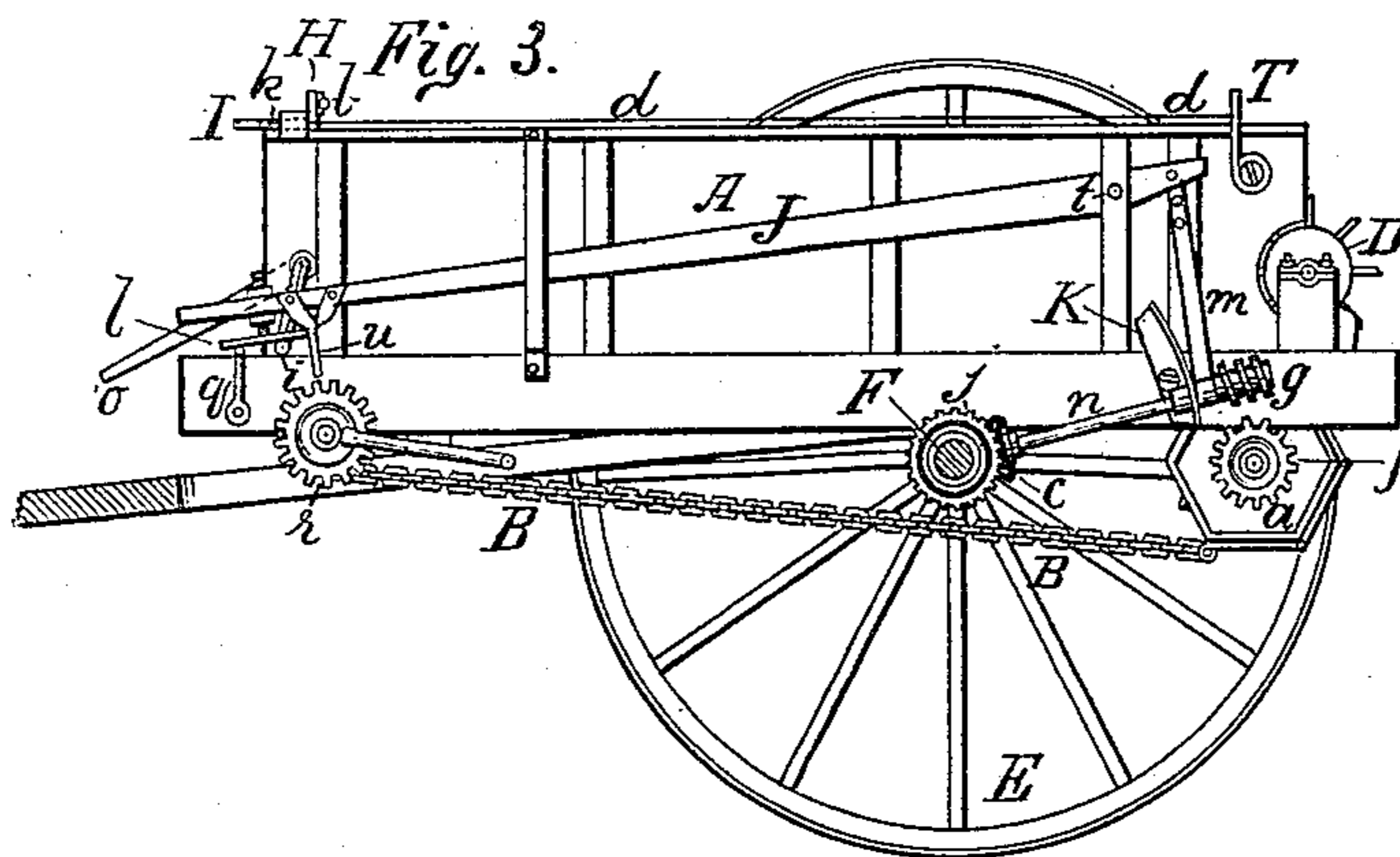
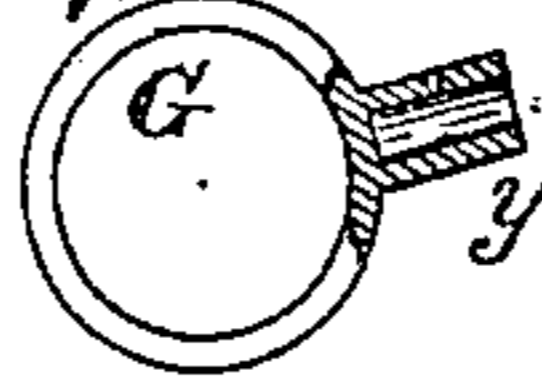


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH S. KEMP, OF MAGOG, QUEBEC, CANADA.

MANURE-SPREADER.

SPECIFICATION forming part of Letters Patent No. 241,023, dated May 3, 1881.

Application filed February 26, 1881. (Model.)

To all whom it may concern:

Be it known that I, JOSEPH SARGENT KEMP, of Magog, in the county of Stanstead and Province of Quebec, Canada, have invented certain new and useful Improvements in Manure-Spreaders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement on my patent for an improvement in manure-spreaders, No. 190,220, dated May 1, 1877, Reissue No. 8,254, dated May 28, 1878, the object being to provide a cheaper and more efficient means for spreading manure automatically than heretofore.

The invention consists of the construction and combination of parts as hereinafter more fully described, and pointed out in the claims.

Figure 1 represents a plan view of a machine embodying my invention, showing the floor or bottom partly run out. Fig. 2 is a rear-end view of the same. Fig. 3 is an elevation of the same, showing the left-hand side. Fig. 4 is an elevation, showing the right-hand side of the same; and Fig. 5 is a detail of the adjustable step or bearing.

A is the box or body; B, the chain; and C the floor or bottom, the slats of which have their contiguous edges beveled or rounded, the object being to prevent the accumulation of manure or other substance in the joints when passing over the polygonal wheel *a*, and at the same time enable the teeth of the toothed drum D to feed close to the said bottom. Heretofore the slats have been set apart from each other, or the edges of such slats have had square corners, which, on passing over the wheel *a*, would cause the joints to open and admit a small quantity of the load resting on them, and, on returning, prevent them from closing properly, and thus do damage.

To enable the machine to spread a variable amount to the acre I use a supplementary worm-gear having a screw of less pitch than the one, *g*, on the machine, Figs. 1 and 3. I also use one or more supplementary feed-gear wheels,

f, of different diameters, one pair having teeth to fit the supplementary worm-gear, the other pair to fit the worm-gear *g*. By using the worm-gear of least pitch with its largest complementary feed-gear wheel, the least amount per acre will be spread, while the worm-gear of coarsest pitch with its complementary feed-gear wheel of least diameter will spread the largest quantity per acre, and so on.

The axle F revolves in bearings *w* on the under part of the frame of the machine. Near one end of said axle, close to said bearing *w*, is mounted the driving-gear *j*, and near the other end the driving-gear *v*, which gears are securely keyed thereto. The pawl-and-ratchet mechanism, for imparting motion from the wheels E when the machine is in forward motion, is also secured to said axle close to the hubs of said wheels.

The lever J is pivoted at *t* to a standard on the side of the box A. Near its forward end, on the under side, is suspended a stop or dog, *u*, in such a position that it can be made to engage with the teeth of the crank-wheel *r*, which, being keyed to the shaft *z*, securely holds the machinery connected with it and the floor C in the position desired. When operating the latter by hand the prop *q* is brought to a vertical position above the point where it is pivoted, when the adjustable shoe *l* on the lever J, Fig. 3, will rest thereon, preventing contact between the dog *u* and wheel *r*.

The spur-gear wheel *v* is secured to and revolves with the axle F. The teeth of said wheel *v* mesh with those of the pinion *p*, the inner face of the hub of which is furnished with teeth that can be made to interlock with similar teeth on the contiguous face of the hub of the wheel L by means of the shipper S, Figs. 1 and 4, pivoted at *e*, as shown. This engages at its forward end with the thread of a screw, *h*, of very coarse pitch, mounted on the shaft M, Fig. 1, which extends across the forward part of the machine. The crank *i*, Fig. 3, and hand-lever *o*, Figs. 1 and 4, are secured to this shaft, the hand-lever serving to operate it. By bringing said hand-lever to a vertical position above the shaft M it engages with a latch, I, Figs. 1, 3, and 4. Said latch is made to yield, being held in the position proper for retaining said hand-lever by means of a spring, *k*. Partially re-

volving the shaft M moves crank *i* to that extent which, by contact with the shoe *l*, elevates the lever J. Being pivoted at *t*, the rearward extremity is depressed, carrying with it the
 5 perforated connecting-bar *m*, and this being journaled at its lower end to the shaft *n*, causes engagement of the worm-gear *g* with the feed-gear wheel *f*. The same motion of shaft M gives, by means of the screw *h*, an outward movement
 10 to the contiguous end of shipper S, causing the pinion *p* and gear-wheel L to clutch, thus conveying motion from axle F to the toothed drum D through the train of gears *v*, *p*, L, N, and *s*. When the load is discharged the projection *b* on the end board, H, will press on the
 15 trip T, which yielding draws the latch I by means of the wire *d* away from contact with the hand-lever *o*, liberating it, when it falls, throwing the machinery of both sides of the
 20 machine out of gear with the axle F by means of the connections before described.

In order that the strain on the toothed drum D and its connections shall be continuous, I set the teeth on the said drum in longitudinal
 25 sections, the sections being arranged spirally, so as to completely encircle the drum once in its length. Each section acts as a shovel-blade to scrape up and throw directly to the rear the finer particles of the manure or fertilizer;
 30 whereas, were the teeth spirally or irregularly arranged, this manure would be carried to one side, in the direction of the pitch of the spiral, and there left to drop off in heaps as each slat of the floor C is changed from a horizontal to
 35 a vertical position, instead of being equally distributed over the track of the machine.

To maintain the beveled gears *j* and *c* at right angles with each other when the shaft *n* is raised or lowered by the connecting-bar *m*, the jour-
 40 naled slip or bearing G, Figs. 1 and 5, is provided. This bearing is made in the form of a sleeve, which encircles the projecting axle-bearing *w* and freely turns thereon. At a point on the periphery of said sleeve or bearing G is
 45 a lug or projection, *y*, bored to fit and inclose the forward end of the shaft *n*. To keep this

shaft in place and prevent lateral motion of the same, the slotted arc K is provided, Figs. 2 and 3. Radial lines from the circle of this
 50 arc will cross at the center of axle F, thus keeping the shaft *n*, beveled gear *c*, and bevel-gear *j* in the same relative position whether raised or lowered. If desired, the shaft *n*, with its connections, may be placed forward of the axle
 55 F, and actuate the shaft *z* instead of the shaft *x*; but I prefer to arrange it as shown.

The adjustable shoe *l* serves to regulate the pressure required to hold the worm-gear *g* in contact with the feed-gear wheel *f*.

Having thus fully described my invention, 60 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the latch I, wire *d*, trip T, lever *o*, crank *i*, and lever J, substantially as shown and described. 65

2. The shaft M, having screw *h*, lever *o*, and crank *i*, in combination with the lever J, bar *m*, and shipper S, substantially as and for the purpose set forth.

3. The drum D, having rows of teeth or cut- 70 ters arranged spirally thereon, and spirally-arranged rows in sections parallel to each other, substantially as shown and described.

4. The combination, with a polygonal wheel, of the bottom or floor C, composed of contiguous 75 slats rounded to approximate the segment of a circle when laid on the surface of the polygonal wheel, substantially as shown and described.

5. The combination, with a polygonal wheel 80 and toothed spreader, of the bottom or floor C, composed of contiguous slats rounded to approximate the segment of a circle when laid on the surface of the polygonal wheel, substantially as shown and described. 85

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOSEPH SARGENT KEMP.

Witnesses:

WM. M. BURPEE,
 A. G. LITTLE.