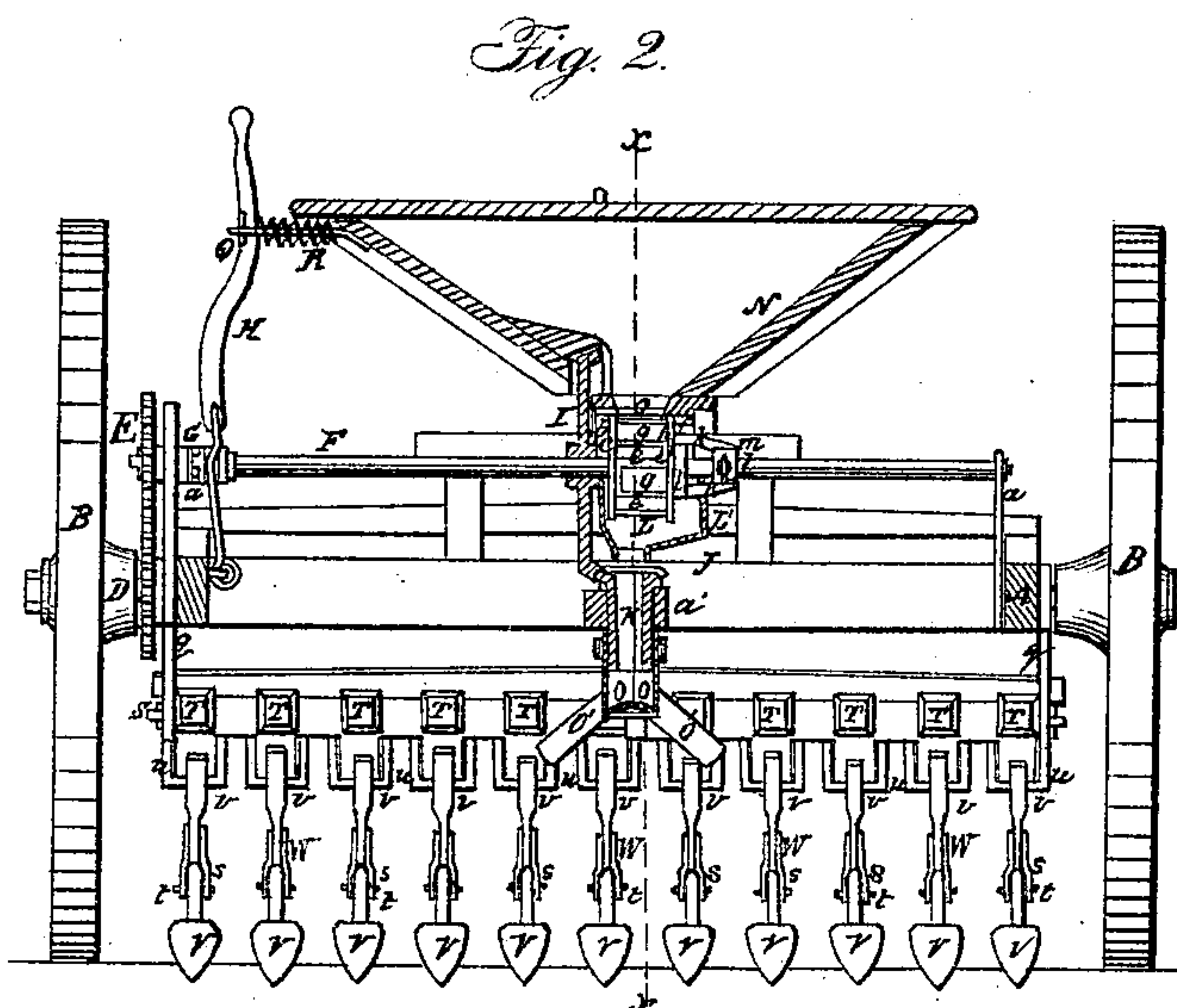
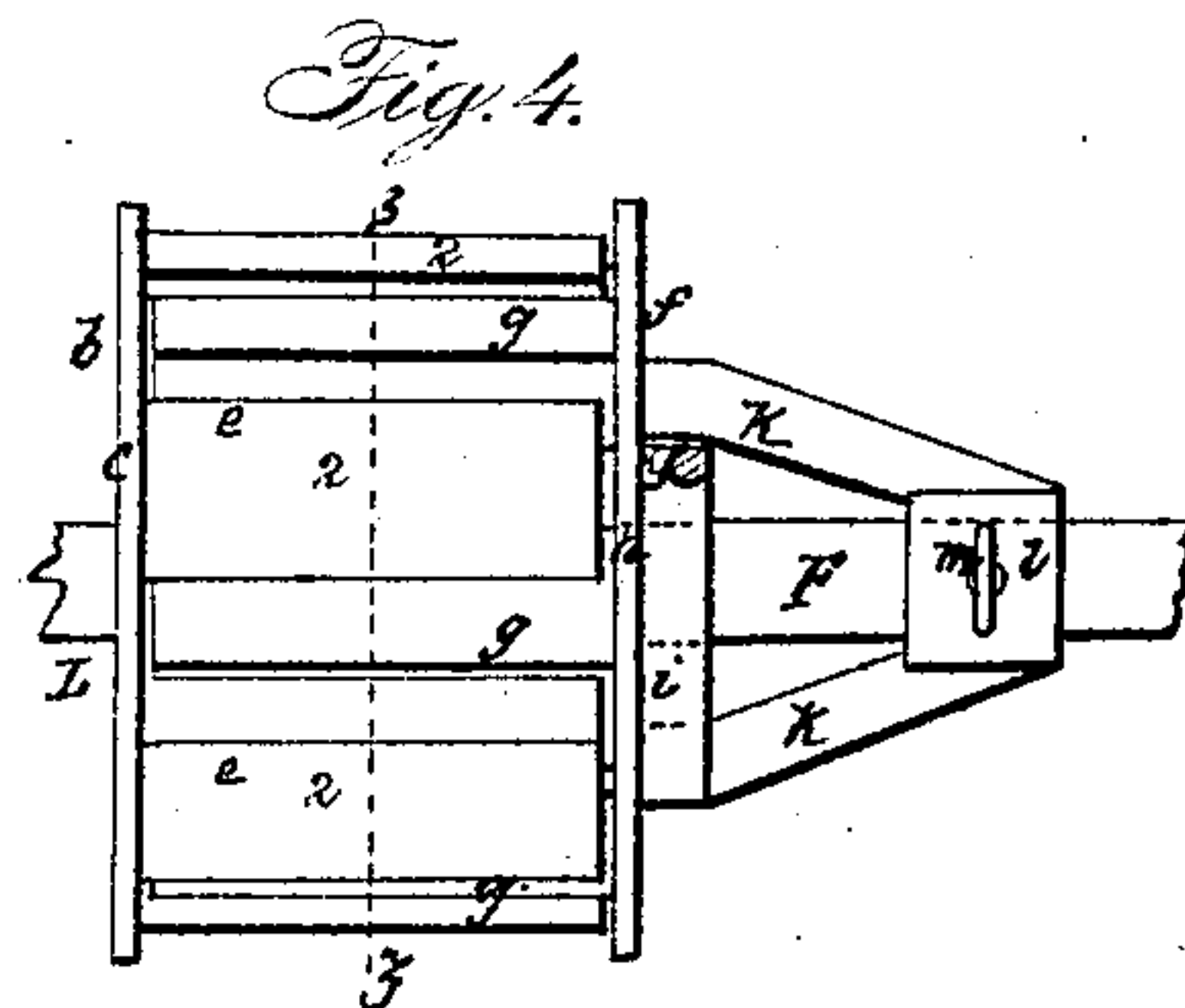
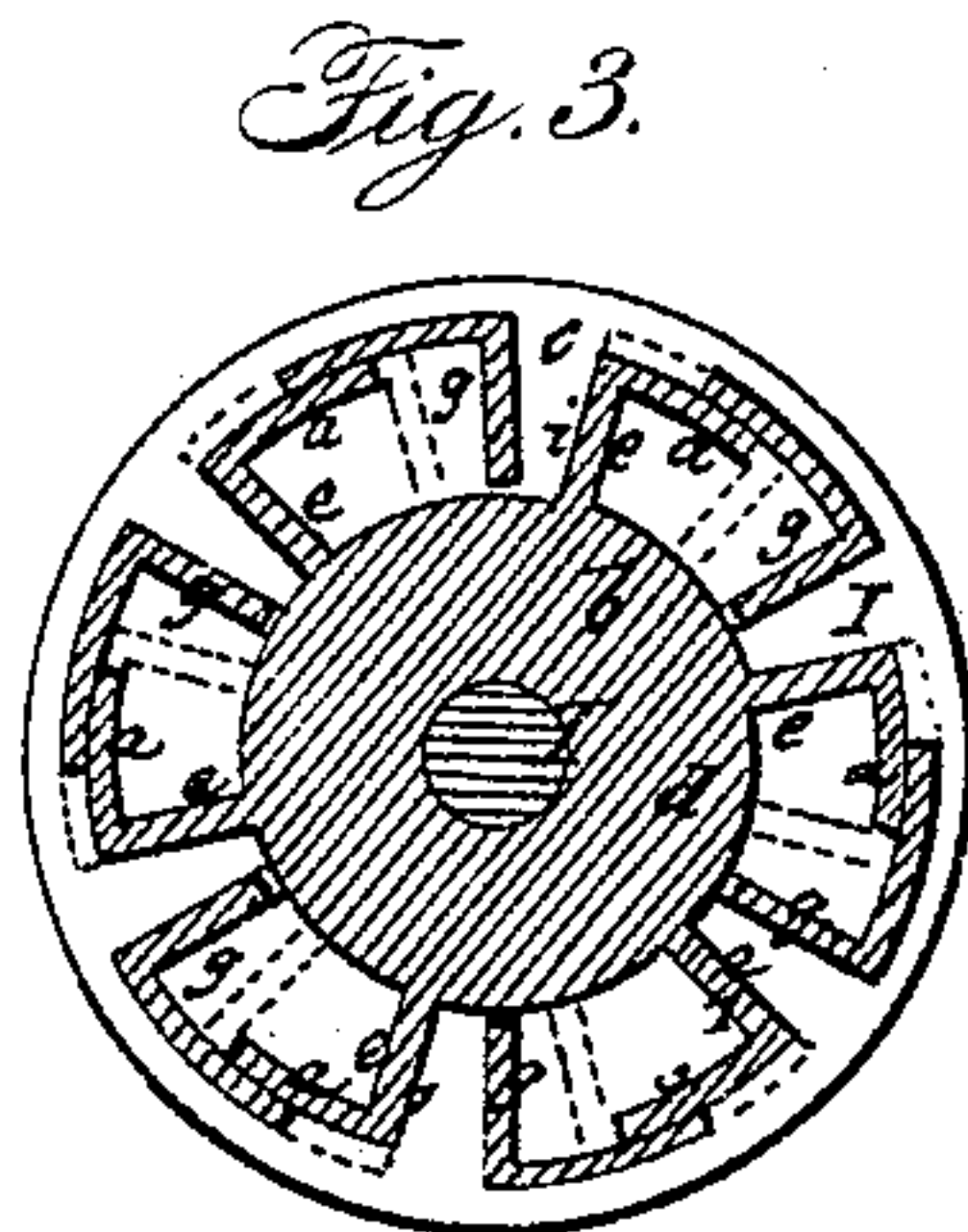
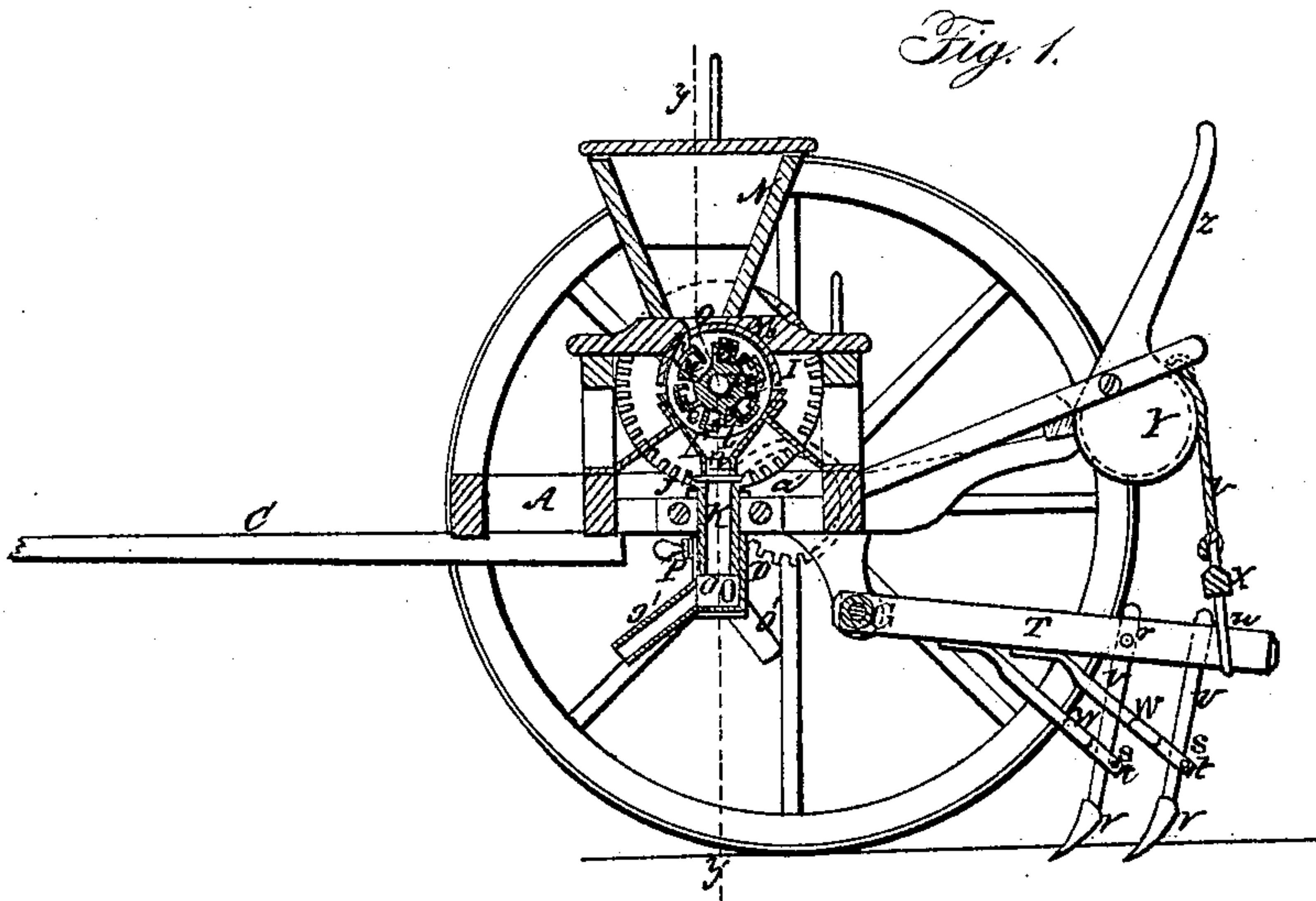


S. E. TYLER.

Grain Drill.

No. 42,975.

Patented May 31, 1864.



Witnesses:

*Ho Cornubs*  
*Geo W Reed*

Inventor:

*S E Tyler*  
*per Munn & Co*  
*Attys*



# UNITED STATES PATENT OFFICE.

S. E. TYLER, OF HORICON, WISCONSIN, ASSIGNOR TO WILLIAM W. GILBERT.

## IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. 42,975, dated May 31, 1864.

*To all whom it may concern:*

Be it known that I, S. E. TYLER, of Horicon, in the county of Dodge and State of Wisconsin, have invented a new and Improved Broadcast-Seeding Machine; 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, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a transverse vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 3, an enlarged detached transverse section of the seed-discharging wheel, taken in the line *z z*, Fig. 4; Fig. 4, a face view of Fig. 3.

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

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a rectangular frame, which is mounted on two wheels, B B, and is provided with a draft-pole, C, arranged in the usual way.

To the hub of one of the wheels B there is attached concentrically a toothed wheel, D, which gears into a corresponding wheel, E, on a shaft, F, the latter being placed transversely on the frame A and fitted in suitable bearings, *a a*. The wheel E is placed loosely on the shaft F, and is connected with it, when necessary, by a clutch, G, operated by a lever, H.

On the shaft F there is permanently secured a bevel-wheel, I, which gears into a corresponding pinion, J, on a vertical tube, K, which is fitted loosely in a short longitudinal bar, *a'*, in the frame A, the pinion J being on the upper end of said tube.

On the shaft F, adjoining or nearly adjoining the wheel I, there is permanently attached the part *b* of a seed-discharging wheel, L. This part *b* is composed of a circular plate, *c*, and hub *d*, with buckets *e* attached, the latter being formed of radial plates 1, having curved or segment flanges 2 at their outer ends. (See more particularly Fig. 3.) The flanges 2 do not extend out as far as the periphery of the plate *c*, as will be seen by referring to Fig. 3. The other part, *f*, of the wheel L is formed precisely similar to the part *b*, but it is placed loosely on the shaft F, and its buckets *g* are fitted between the buckets *e* of the part *b*. The plate

*h* of the buckets *g* has a hub, *i*, at its outer side, with notches *j* in it to receive the ends of arms *k k*, which are attached to a hub, *l*, the latter being fitted on the shaft F and secured thereon by a set-screw, *m*. By turning the hub *l* on the shaft F the spaces between the buckets *g e* may be increased or diminished at pleasure and the capacity of the wheel regulated as desired. This will be understood by referring to Fig. 3, in which an adjustment of the buckets *g* is shown in red.

L' is a small hopper underneath the seed-discharging wheel L. This hopper is provided with a small spout, *n*, which is directly over the tube K, and over the wheel L there is a semicircular plate or cap, M, which is attached to the bottom of a seed-box, N, and has an opening, *o*, made in it to admit of seed passing from the seed-box down upon the wheel L.

To the under side of the cap M there is secured a projection, *p*, which is in contact with the flanges of the buckets *g*, and prevents seed from passing out between the wheel L and said cap. (See Fig. 1.)

On the lower end of the tube K there is fitted a tube, O, the latter being secured on the former by a set-screw, P, and adjusted higher or lower, as occasion may require. This tube O has a series (three, more or less) of inclined tubes, O', attached to it.

To one side of the seed-box N there is attached a horizontal arm, Q, having a slot made longitudinally in it for the lever H to pass through, the arm Q having a spiral spring, R, upon it, which bears against the lever H, and has a tendency to keep the clutch G connected with the wheel E.

S is a shaft, the ends of which are fitted in bearings *q q*, attached to the under side of the frame A. On this shaft S the inner ends of a series of parallel bars, T, are fitted loosely and allowed to work freely.

To the outer ends of the bars T there are attached, by pins *r*, rods U, having covering-teeth V at their lower ends, and each rod U passes through a loop, *s*, at the back ends of bars W, the front ends of which are attached to the under sides of the bars T. The rods V are retained in the loops *s* of the bars W by pins *t*, which may be of wood, so that they may break and release the rods U in case of the teeth V meeting with any obstructions in the earth.

The back part of each bar T is encompassed

by a loop, *u*, and these loops are attached to a bar, *X*, which is connected by a cord, *v*, with an eccentric, *Y*, at the lower end of a lever, *Z*, at the back part of the frame *A*.

As the machine is drawn along a rotary motion is given the shaft *F* from one of the wheels *B* by means of the wheels *D E*, and the seed-discharging wheel *L* is rotated, the seed from the box *N* being discharged by the wheel *L* into the small hopper *L'*, and in greater or less quantities, as may be required, by adjusting the part *f* of said wheel, as previously described. The seed falls from the small hopper *L'* through the spout *n* into the tube *K*, which is rotated through the medium of the gearing *I J*, a rotary movement being consequently given the inclined tubes *O'*, and the seed is projected therefrom in a broadcast manner, and covered in the earth by the teeth *V*.

The teeth *V* may be elevated above the sur-

face of the ground, when required, by drawing forward the upper end of the lever *K*, and the seed-distributing mechanism may be stopped at any time by drawing forward the upper end of the lever *H*.

I do not claim the tooth-bars *T*, nor the arrangement of means for elevating the same, for they have been previously used; but,

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

The rotary seed-discharging wheel *L*, in connection with the rotary inclined tubes *O'*, cap *M*, and hopper *L'*, all arranged to operate in the manner substantially as and for the purpose herein set forth.

S. E. TYLER,

Witnesses:

H. H. RICH,

WM. DREKER.