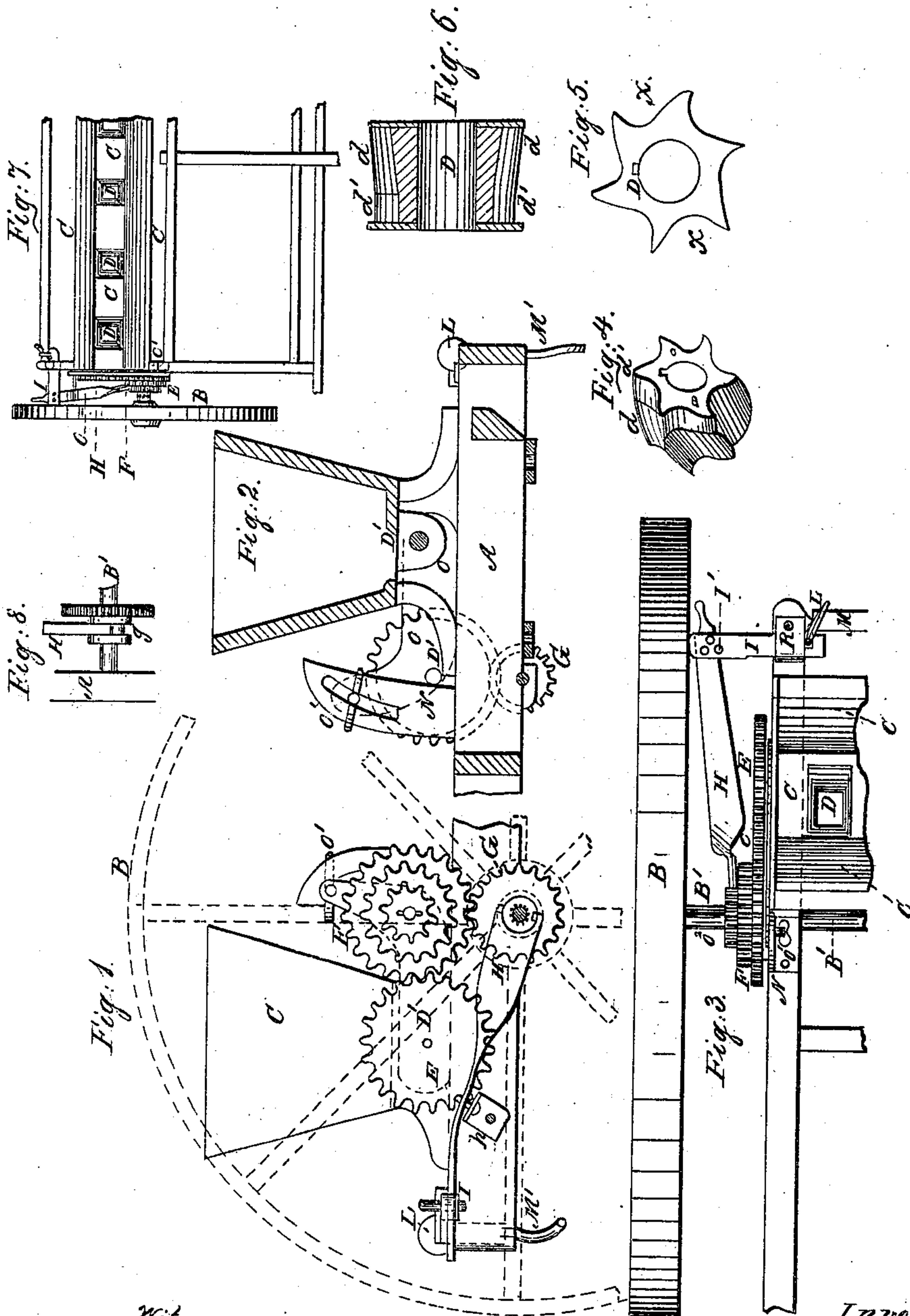


B. KUHN'S.
Seed Planter.

No. 85,455.

Patented Dec. 29, 1868.



Witnesses.
C. F. Clausen
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Inventor.
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United States Patent Office.

BENJAMIN KUHN, OF DAYTON, OHIO.

Letters Patent No. 85,455, dated December 29, 1868.

IMPROVEMENT IN SEED-PLANTERS.

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, BENJAMIN KUHN, of Dayton, in the county of Montgomery, and State of Ohio, have invented a new and useful Improvement in Seed-Drills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation;

Figure 2 is a vertical longitudinal section;

Figure 3 is a top view;

Figure 4 is a perspective view of the pocketed roller;

Figure 5 is a section of the same;

Figure 6 is a side elevation of the same;

Figure 7 is a top view of the hopper; and

Figure 8 is an elevation of the shifting spur-wheel.

The same letters in all the figures indicate identical parts.

My improvements relate to the dropping-mechanism of seeding-machines, and consist in a novel construction of the pocketed rollers, and also in the manner of constructing and arranging the gearing for giving different degrees of motion to the seeding-mechanism.

In the annexed drawings—

A represents the frame of an ordinary seed-drill, carried upon two wheels, B, one turning upon the spindles of the axle B'; and the other keyed to the axle, so as to cause the latter to rotate with it, within suitable boxes attached to the frame.

C is the hopper in common use, in which the seeds to be sown are deposited.

It has holes in the bottom, in the usual manner, into which the seeds are fed by the pocketed rollers D, placed upon the shaft D', in a manner in common use.

The construction of these pocketed rollers is peculiar. They have been heretofore constructed with ribs running straight in the direction of their axis, forming the partition between the pockets. They have also been constructed with spiral ribs.

The peculiarity of construction adopted by me is, that I make the rib spiral for part of its length, at d , and straight for the remainder, as at d' , by which means I am enabled to secure the advantages of a spiral rib, and avoid the objection of its serving as a screw to press the grains against the heads d'' , and thus crush and injure them.

My improved roller, then, consists in constructing the pockets with solid heads, d'' , and partitions, part spiral and part straight.

The seeds are dropped into tubes in the ordinary manner.

The seeding-rollers are caused to revolve by the spur-wheel E, connected, by the intermediate cone-pinion F, with the driving-wheel G, attached to the axle B' by a feather, which permits the said wheel G to be moved freely into or out of gear with the intermediate pinion, by means of a shifting-lever, H. This lever

is bifurcated, having points fitting into an annular groove, g , on the sleeve of the driving-pinion G, so that by shifting the lever the said pinion may be thrown out of or into gear.

The lever H is pivoted to a point, h , on an arm extending from and securely fastened to the main frame.

The end of the lever is passed through a slot in the sliding-bar I, and adjustably attached by a pin passing through one of a series of holes, I'.

By fixing the end of the lever H further from or nearer to the frame of the machine, the distance to which it will move the sliding-pinion G along the axle, is correspondingly regulated, for a purpose to be hereinafter explained.

One mode of operating the shifting-bar I, I have shown. A helical plate, L, is set with its edge in a notch in the edge of the bar I. The plate is centrally placed upon a rod or beam, M, which may be turned on its axis by the lever M'. By raising or lowering this lever, the helical plate L will cause the bar I to slide in its bearings in the plate K, and thereby move the pinion G, upon the axle, to a point to be determined by the hole I', to which the shifting-lever H is attached.

It is desirable to give to the pocketed rollers such a motion as the condition and quality of the grain, or character of the work to be done may require.

This variable speed has been sometimes obtained by means of a series of separate pinions of several sizes, and also by means of a face-wheel having a series of concentric rows of cogs, which may be used to give a greater or less speed to the revolution of the working-mechanism.

The variable motion has also been attained by means of cone-pulleys, but it is preferable to use gearing for the purpose, and I have accordingly constructed and arranged it as follows:

The intermediate cone-pinion F is composed of a series of wheels, cast on one hub, having a uniform pitch, and of different diameters, forming a cone of, say, four (more or less) wheels, all turning upon the same axis, and cast in one piece, or permanently attached to a single sleeve.

In order that any of these wheels may be made to mesh into the driving-pinion G, the intermediate pinion is attached so as to turn upon a stud-pin projecting from the face of the oscillating arm O, turning upon the shaft D', which is the shaft of the wheel E.

The larger of the progressive series of wheels is geared into the spur-wheel E, and as the latter has a common centre with the centre of oscillation of the arm O, it follows that the intermediate pinion may be raised or lowered, without affecting the mesh of the cogs. The arm O is attached at its front end, adjustably, by a set-screw, O', working on a wrist-pin projecting from the face of the said arm, and passing through a curved slot in the standard N, permanently and securely bolted to the main frame.

As the main frame and the pinion G have a common centre of oscillation and rotation, viz, the axle B', it follows that any of the series of intermediate pinions will mesh into the cogs of the driving-pinion G.

Thus, by raising or lowering the oscillating arm O, either of the intermediate cone-pinions F may be made to mesh, both into the pinion G and spur-wheel E; and by adjusting the lever H in one of the holes I, the throw of the pinion G may be regulated in reference to the pinion in the cone which is to be used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The rollers D, constructed with pockets, formed by fixed heads d^2 , and intermediate partitions, formed by ribs, part spiral and part straight, substantially as set forth.

2. In combination with the spur-wheel on the hub or axle, and the spur-wheel on the seed-roller, an intermediate set of pinions, cast in one piece, concentric with one another, so as to form a cone spur-pinion, so arranged as to give a variable speed, by shifting the wheels in relation to one another, substantially as set forth.

3. The combination of the cone-wheel, the oscillat-

ing arm, and sliding-pinion, arranged in relation to one another, substantially as set forth.

4. The combination of the sliding-pinion G, frame A, standard N, oscillating arm O, intermediate cone-wheel F, and wheel E, substantially as and for the purpose set forth.

5. The combination of the lever, the sliding-pinion and cone-pinion, substantially as and for the purpose set forth.

6. The combination of the oscillating bar M, helical plate L, and sliding-arm I, substantially as and for the purpose set forth.

7. So arranging the intermediate pinion and the stationary and sliding spur-wheels, that while the intermediate pinion swings on an arm concentric with one of the wheels, it shall at the same time swing on a centre common with the other, substantially as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

Witnesses:

T. O. CONNOLLY,
H. GARRETT.

B. KUHNS.