3 Sheets—Sheet 1.

J. BERGEY.

COMBINED CULTIVATOR AND SEEDER.

No. 186,979 Patented Feb. 6, 1877.

Fig. 1.

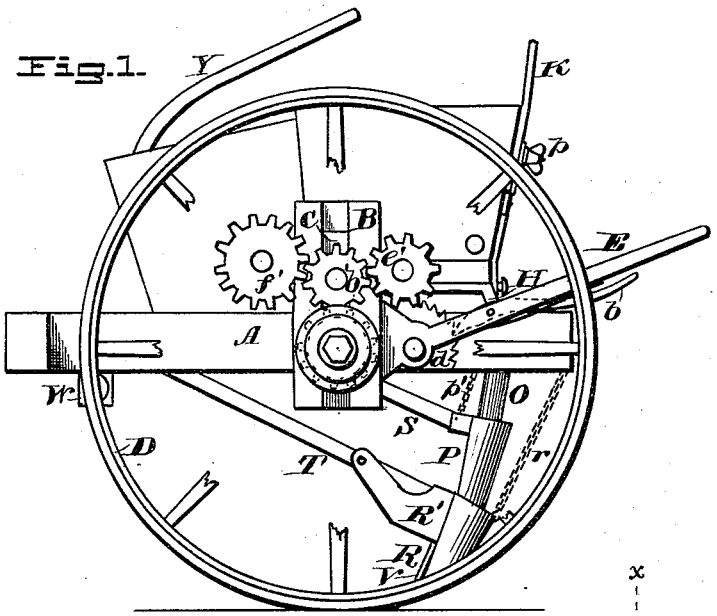

Fig. 2.

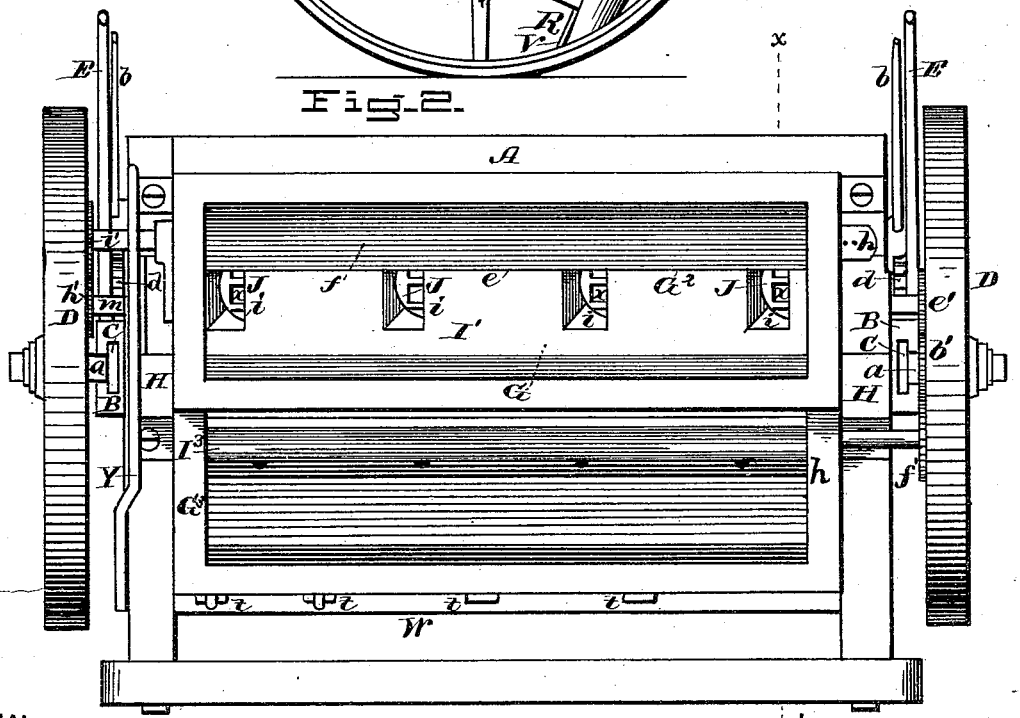

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Fig. 3.

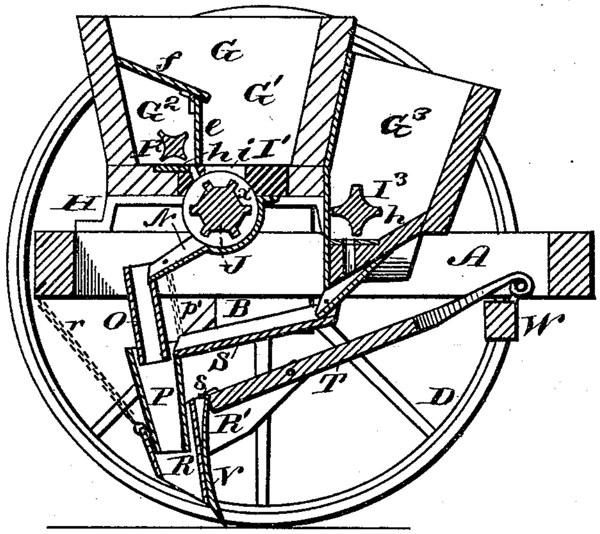

Fig. 4.

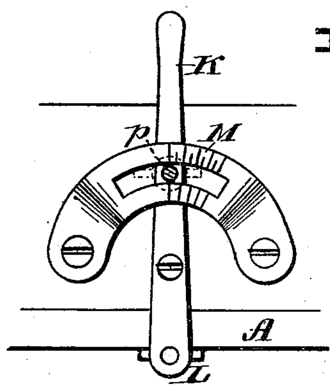

Fig. 6.

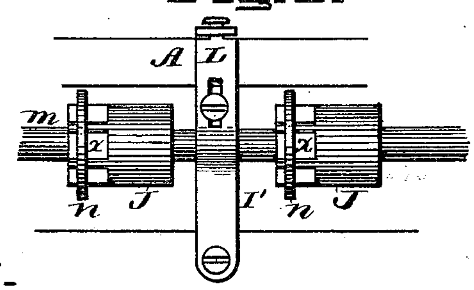

Fig. 5.

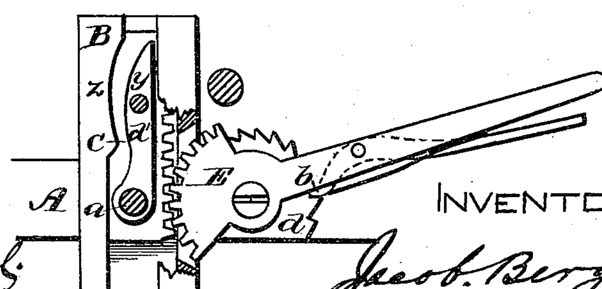

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Fig. 7.

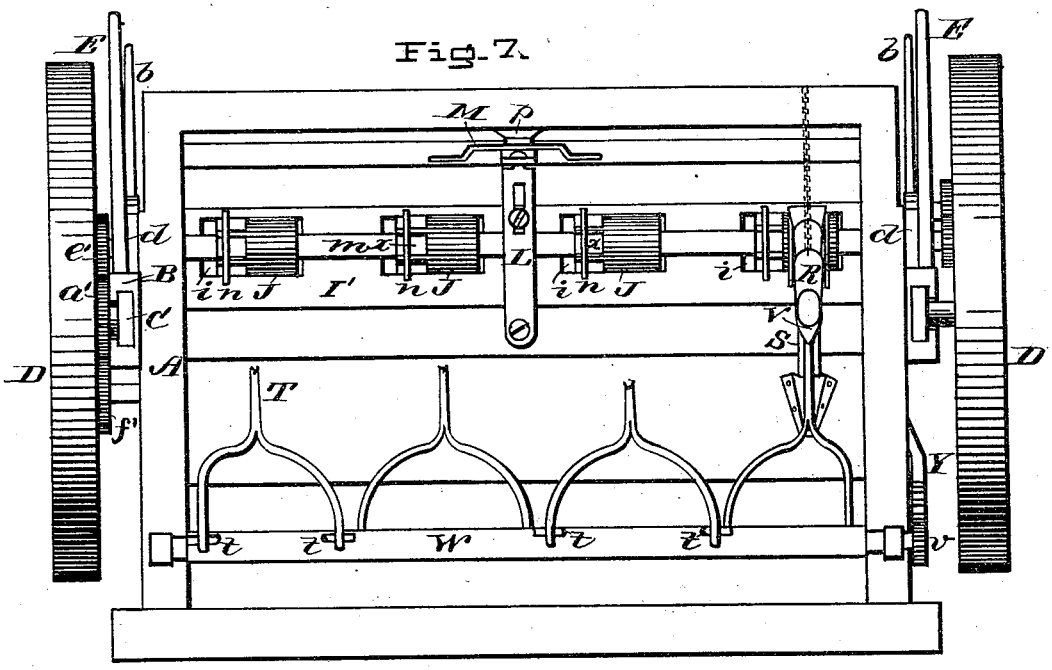
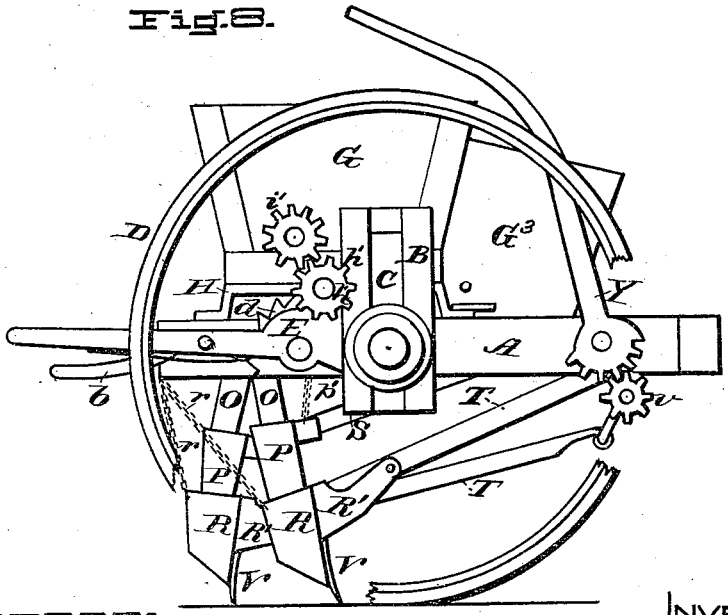


Fig. 8.



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UNITED STATES PATENT OFFICE.

JACOB BERGEY, OF WADSWORTH TOWNSHIP, MEDINA COUNTY, OHIO.

IMPROVEMENT IN COMBINED CULTIVATOR AND SEEDER.

Specification forming part of Letters Patent No. **186,979**, dated February 6, 1877; application filed November 7, 1876.

To all whom it may concern:

Be it known that I, JACOB BERGEY, of Wadsworth township, in the county of Medina, and State of Ohio, have invented certain new and useful Improvements in Combined Cultivator and Seeder; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side view, the spokes being removed. Fig. 2 is a top view. Fig. 3 is a section taken on the line *x x*, Fig. 2. Fig. 4 is a view showing the lever K for operating the slide I′. Fig. 5 is a section showing the cogged lever E. Fig. 6 is a bottom view of the seed-box, showing the rollers J J on the shaft *m*. Fig. 7 is a bottom view. Fig. 8 is a side view.

A represents a rectangular frame of any suitable dimensions, provided on each end with a vertically-grooved casting, B, in which is placed a slide, C, having a spindle, *a*, projecting from it to receive the driving-wheel D. The rear edge of each slide C is formed with cogs like a rack-bar, and into the same takes a segmental cogged lever, E, which works through a slot in the casting. Each lever E is provided with a spring-pawl, *b*, of any suitable construction to take into a ratchet-plate, *d*, secured to the frame A, and thus hold the slide C at any height desired in the casting B, thereby, in other words, raising or lowering the frame A, as may be required. On each end piece of the frame A is secured a casting, H, and upon these two castings is placed and fastened the seed-box G, which has a longitudinal partition, *e*, dividing the box into a grain-compartment, G^1, and a seed-compartment, G^2, as shown, the latter compartment being provided with a hinged cover, *f*. To the front of the box is attached another box, G^3, for distributing phosphates or other fertilizer. The boxes G^2 and G^3 are provided with longitudinally corrugated or grooved stirrers or agitators I^2 I^3, respectively, and in the bottoms of said boxes are perforated slides *h h* for regulating the amount of seed and phosphate distributed. In the bottom of the grain-box G^1 is a slide, I^1, having a series of holes, *i i*, of suitable size. Under this slide runs a shaft, *m*, having its bearings in the castings H H, and upon this shaft are secured a number of rollers, J J, corresponding with the number of openings *i* in the slide I^1. These rollers enter recesses in the under side of the slide, said recesses being longer than the rollers, so that the slide can be moved a certain distance back and forth. Each roller J is made smooth-surfaced for a suitable distance from one end inward, and at the other end are formed a number of pockets or elongated recesses, *x*. Over this part of the roller is placed a loose washer, *n*, which enters a groove made for that purpose in the slide J, so that while said washer rotates with the roller it also moves laterally thereon with the slide when the same is moved.

It will be noticed that by moving the slide I^1 the space between each washer *n* and the smooth part of its roller J is increased or reduced, thus enlarging or diminishing the size of the pockets *x* under or in the openings *i*, thereby regulating the amount of grain deposited as the roller revolves.

The slide I^1 is operated by means of a lever, K, pivoted on the back of the seed-box, and its lower end connected with a pivoted arm, L, having a slot, into which is inserted a pin projecting from the bottom of the slide. The lever K passes under a graduated scale, M, attached to the seed-box, and the lever is held at any point thereon by means of a set-screw, *p*. By means of this scale the operator can determine the exact quantity of grain to be sown.

The grain from each roller falls into a casing, N, underneath and through a hinged spout, O, attached thereto, into a conductor, P, and from the conductor through the drill-hoe R into the ground. The conductor P is hinged to a jointed arm, S, attached to the bottom of the front box G^3, and the conductor is suspended from the top of the spout O by a cord or chain, *p′*.

The drill-hoe R is also suspended by a cord or chain, *r*, from the back of the frame A; and it is provided with two arms, R^1, the

front ends of which are pivoted to the drag-bar T. To each hoe R is firmly fastened the point V, which is formed with a spring-arm, *s*, extending up between the arms R^1, and bearing against the extreme rear end of the bar T. The pressure of the spring-arm *s* on the bar T is sufficient to hold the drill-hoe and point in proper position for ordinary work to open the furrow; but if the point should strike a stone or other obstruction, the arm *s* will yield and allow the hoe to turn backward, and thus prevent breakage of any of the parts.

By this means I obviate the necessity of using a break-pin, as now ordinarily used; though, if desired, such a pin may be passed through the bars R^1 above the rear end of the drag-bar T.

The front end of each drag is forked, and has a hole through each prong, fastening the bar upon the hooks *t t*, secured in a bar, W, which is journaled in suitable boxes under the front part of the frame A. These hooks *t* are arranged in the top and bottom edges of the bar W, so that the drag-bars will be attached alternately to the top and bottom of the bar. On one of the journals of the bar W is secured a pinion, *v*, into which meshes a segmental cogged lever, Y, by means of which the bar W may be turned on its journals, so as to throw alternate hoes forward and alternate hoes back. This is intended especially in cultivating when it is desired to have some plows in front and the others in rear.

On the inner end of the hub of one of the driving-wheels D is formed or attached a pinion, *a'*, which meshes with a pinion, *b'*, mounted on a stud projecting from a bar, *d'*, which is placed upon the spindle *a* against the slide C and in the groove of the casting B. The pinion *b'*, when in gear, meshes with a pinion, *e'*, on the end of the shaft *m*, and with a pinion, *f'*, on the journal of the fertilizer-agitator I^3, whereby the seed-rollers J and agitator I^3 receive their rotary motion.

The bar *d'* is formed with a curve on one side, as shown at *y*, and a corresponding concavity, *z*, is made in the casting B, said concavity being on a circle concentric with the pinion *e'*. This construction is of importance in raising the slide C with the bar *d'*, so as to cause the pinion *b'* to mesh with bolt-pinions *e'* and *f'*.

It will be noticed that as the pinion *b'* is raised it first engages with the pinion *e'*, and is then forced over into mesh with the pinion *f'* by the convexity *y* of the bar *d'* entering the concavity *z* in the casting.

By lowering the slide C, or, more properly speaking, raising the frame A, the mechanism is thrown out of gear. Upon the opposite end of the shaft *m* is a pinion, *h'*, which gears with a pinion, *i'*, on the journal of the seed-agitator I^2, and thus communicates motion to the same.

By removing the screws which fasten the castings H to the frame, the entire seeding devices can be lifted off and the machine used as a cultivator.

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

1. The combination of the frame A, grooved casting B, cogged slide C, with spindle *a*, carrying the wheel D and bar *d'*, the segmental cogged levers E, with spring-pawl *b*, and the ratchet-plate *d*, substantially as and for the purposes herein set forth.

2. The combination, in a grain-box, G', of the slides I^1, having openings *i* and recesses on its under side, the smooth rollers J, having elongated pockets *x* at one end, and the washers *n*, all constructed substantially as and for the purposes herein set forth.

3. In a grain-drill the combination, with the grain-delivery roller or other equivalent mechanism, of the casing N, with hinged spout O, the conductor P hinged to a jointed arm, S, the hoe R hinged to the drag-bar T, and the suspending cords or chains *p'* and *r*, substantially as herein set forth.

4. The combination of the hoe R with arms R', drag-bar T, and the point V, with spring-arms *s*, substantially as and for the purposes herein set forth.

5. The combination, with the pinion *a'*, on the driving-wheel D, and the pinions *e' f'*, of the pinion *b'*, the bar *d'*, having convexity *y*, and placed on the spindle *a*, the slide C, and the casting B, having concavity *z*, all substantially as and for the purposes herein set forth.

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

JACOB BERGEY.

Witnesses:
E. C. WEAVER,
J. C. HAVILAND.