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EMERY E. HARDY AND NAPOLEON DUBRUL, OF JOLIET, ILLINOIS.

Letters Patent No. 104,303, dated June 14, 1870.

IMPROVED CORN-PLANTER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, EMERY E. HARDY and NAPOLEON DUBRUL, of the city of Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Corn-Planters; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a top or plan view, with the seed-box or hopper removed;

Figure 2, a longitudinal vertical section;

Figure 3, a section of the hub and its attachments;

Figure 4, a detached view of the covering device;

Figure 5, a perspective view of the seeding device, detached;

Figure 6, a view of the hopper, inverted; and

Figure 7, a view of one of the cams, detached.

The nature and object of our invention consists in so constructing a corn-planting machine that the wheels shall move in unison; in placing cams on the sides of the wheels to operate the dropping mechanism; in making such cams adjustable; in a novel mode of making the discharging orifice of the hopper adjustable; in a novel mode of adjusting the cut-off; in the adjustable mode of attaching the seeding devices to and on the cross-beam; and in the several parts and combinations hereinafter more fully described.

To enable others skilled in the art to make and use our invention, we will describe its construction and operation.

The wheels A we make, usually, two feet and three inches in diameter, and make them entirely of cast-iron, or with cast hub and wood spokes and felloes, as may be desired.

The hubs A' are made circular on the inside so far as the castings C are inserted, and square on the outside where the part I of the shaft B is inserted.

The casting C, shown in section at fig. 3, is provided with a ledge, G, upon which rests the cross-beam D. A similar ledge or projection may be placed at the upper end of C, but it is not necessary.

On the opposite side we cast a cylindrical projection, H, which projects about two-thirds of the distance through the hub of the wheel, and forms the axle upon which the wheel turns. The shaft B passes through these axles H, and is fitted to the balance of the hub by being made square.

The wheels are held in place by screws and nuts at the ends of the shaft.

It will be evident that the shaft B turns with the wheels. This arrangement is necessary in order to keep the cams on the wheels in place and insure their operation at the proper time.

The beam D is fitted to the end-sockets C, and

is made of any suitable size, and of any desired length, as we design placing on said beam any desired number of dropping-tubes with seeding devices, from one to four for corn-planting, and from ten to eighteen for seed-drilling.

In order to attach the seeding devices to the beam, we make a clasp-band, Y, which is usually cast to fit the beam, which band has a rear projection, O, through which the seeding-tube N passes, and by which it is secured to the machine.

This band Y is movable on the beam D, and, when adjusted to its proper place, is secured by a set-screw, g, or other suitable device.

On the top of this band we place a plate, K, which is provided with a lateral opening for the passage of the bar E, and a vertical opening, M, for the passage of the grain through it into the side tube L, and through that into the main tube N.

This opening M is enlarged or contracted by means of a slide, c, fig. 1, which slide is provided with a slot, b, and a set-screw, a, so that it can be adjusted to suit different sizes of grain, or to different quantities of the same grain.

When the band Y is adjusted, the plate K is placed in proper position over it, and then fastened to the bar E by a set-screw, d, or other suitable device.

The plate K may be so adjusted to the reciprocating bar E that opening M will pass entirely over the end of the tube or opening L, or only partially over it, in its movements, so as to furnish an additional means of adjusting the opening for the downward passage of the grain, and measuring the quantity of grain to be discharged at each operation.

To the band Y we raise two projections, J, which serve as guides for the bar E, which passes through them, and also hold the hopper V by means of dovetail projections, as shown at fig. 5.

The bottom of the hopper is provided with a suitable opening, or number of openings, for the passage of the grain to the plate K, and on the lower side we place a cut-off plate, k, fig. 6, so that, if any grains of corn or other grain interferes with the operations of plate K, it will cut its way through.

Above the opening through the bottom of the hopper we place a slide, f, within reach of the driver, so that, in traveling with the machine, or in turning corners, the discharge of seed may be avoided without stopping the movement of the cut-off or seeding devices.

The reciprocating bar E passes entirely across the machine, and a reciprocating movement is given to it by means of the cams F, which are attached to the band U of the wheels A.

These cams F are attached to the disk or band U by the screw-bolts h, which pass through the holes i

of the disk U. This disk is provided with a number of holes, so that an additional number of cams can be placed on the wheels, or the position of those already on changed.

The length of the space between the hills planted is determined by the number and position of these cams. The number will also depend upon the size of the wheels. Two to each wheel of the size given will be sufficient for ordinary corn-planting. For drilling we propose to increase the number, and also to duplicate the hole M in the plate K, so that each movement of the bar E will drop a hill or measured quantity of grain.

The seeding-tube N projects above the plate K, as shown, and passes through O and extends down to the ground. This tube may be set in position and firmly held in place by the set-screw e, if desired, or it may be left to play loosely through O, so as to rise and fall with the undulations of the ground, independently of the movement of the wheels, and, in case it is so used, it will be advisable to attach a chain or rod, l, to the shoe or runner Z, to prevent its passing too low, and to prevent binding in the socket O.

The shoe Z is carried in front, as shown, and made sharp, so that it cuts its way through the ground, and opens a sufficient furrow for the seeds, which pass down the hollow of the tube.

Following each tube N we have a covering device, which consists of two converging wings, Q, attached by a hinged rod, P, as shown at figs. 1 and 4. Behind these wings we place a rake, S, or, if desired, a roller, which is attached by a hinged bar, R. This covering device may be raised by means of a suitable lever attached to the rod T.

A suitable draught-pole is placed in the hands x, and a seat, w, is provided for the driver.

The operation of the machine will be evident from

the description, and it is also evident that this machine can be used for other seeds and grains.

In making the wheels, when cast, the disk u will be cast on, but when wood spokes are used, it is attached by staples, j, passing around the spokes and riveted or screwed to the disk.

Having thus fully described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. In a corn-planting machine, constructed substantially as described, the combination of the hubs A', shaft B, and axle-bearings H, with the support C, cams F, and reciprocating rod or bar, E, for operating the seed-slides, substantially as specified.

2. The adjustable cams F, in combination with the bar E and wheels A, substantially as and for the purposes specified.

3. The combination of the cams F, bar E, plate K, and openings M and L, when constructed and applied substantially as described.

4. The adjustable plate K, provided with the slide c and set-screws a and d, substantially as specified.

5. The adjustable band Y, in combination with the beam D and the tube N, when constructed and operating substantially as described.

6. The tube N, when provided with the shoe Z, in combination with the socket O and set-screw e, substantially as specified.

7. The wings Q, when attached by a hinged shaft, in combination with a rake or roller, S, and located in rear of a furrow-opener, substantially as described.

E. E. HARDY.

NAPOLÉON DUBRUL.

Witnesses:

E. A. WEST,

O. W. BOND.