(No Model.) 2 Sheets—Sheet 1.

G. LANING.

CORN PLANTER.

No. 350,752. Patented Oct. 12, 1886.

Fig. 1.

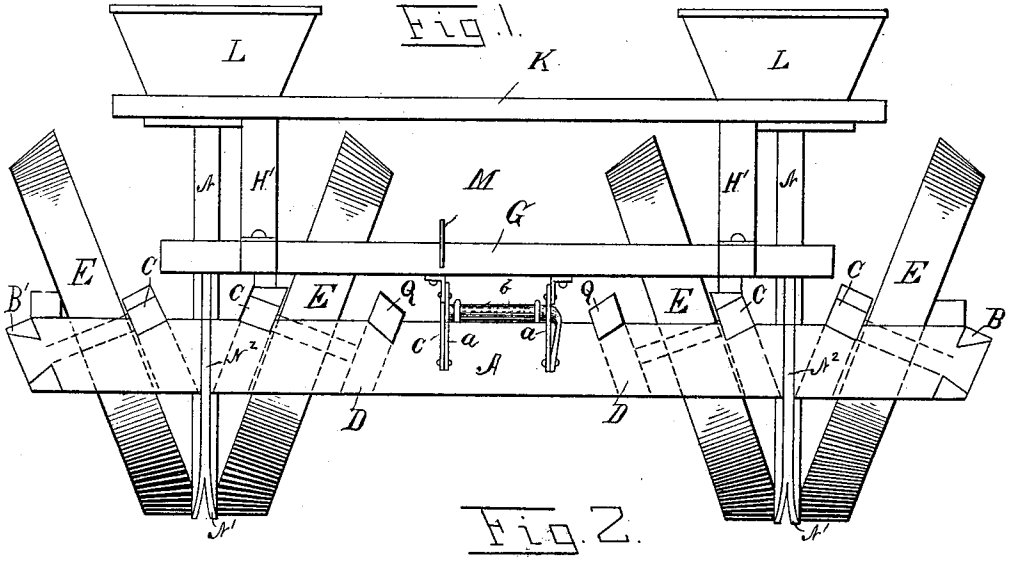
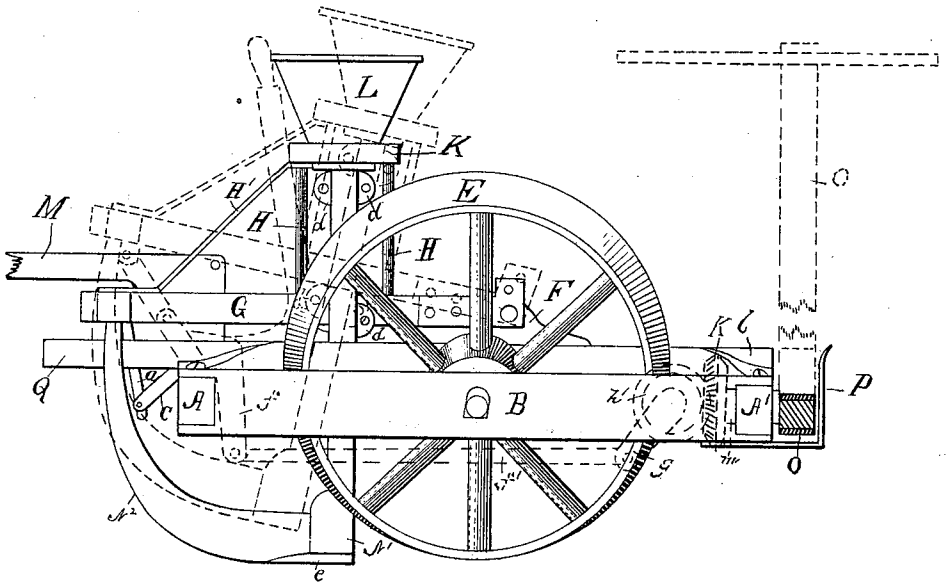


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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CORN PLANTER.

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Fig. 3.

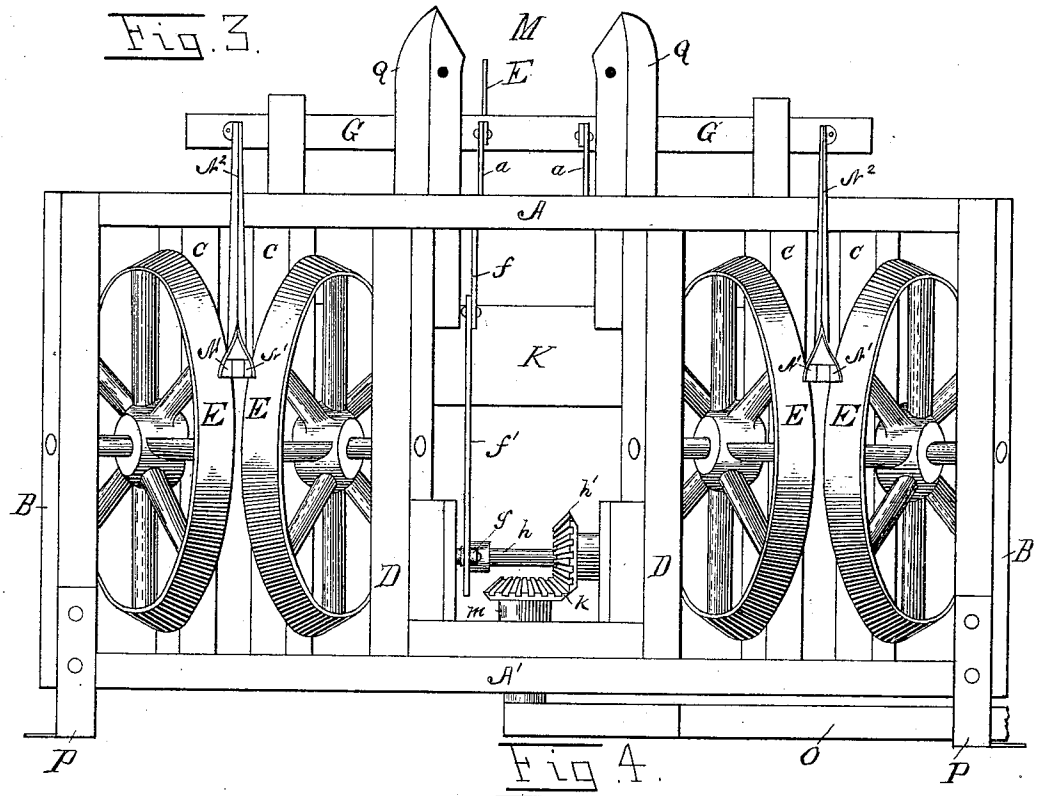


Fig. 4.

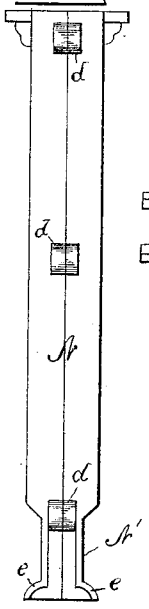


Fig. 5.

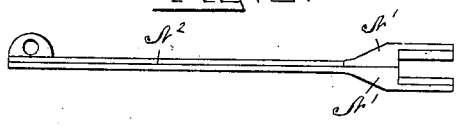
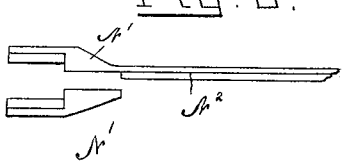


Fig. 6.



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UNITED STATES PATENT OFFICE.

GEORGE LANING, OF LA SALLE, ILLINOIS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 350,752, dated October 12, 1886.

Application filed January 2, 1886. Serial No. 187,458. (No model.)

To all whom it may concern:

Be it known that I, GEORGE LANING, a citizen of the United States, residing at La Salle, in the county of La Salle, State of Illinois, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain improvements in corn-planters.

The objects I have in view are as follows: first, by proper arrangement of the shoes and runners with respect to the wheels of the planters, to insure the shoes making a uniform furrow throughout, irrespective of any irregularities in the surface; second, by a novel arrangement and construction of the shoe to insure the earth disturbed thereby, falling back of its own accord into the furrow; third, by a novel arrangement and construction of the wheel of the planter, to insure the closing of the furrow, and consequently the perfect covering of the seed deposited therein; fourth, by improving the general construction of the legs, shoes, and runners, to add to the general utility and durability of such parts.

To the accomplishment of the above the invention consists of certain novel devices and combination of devices as indicated hereinbefore, and as will be hereinafter fully described and specifically claimed.

Reference will be made to the accompanying drawings, in which, Figure 1 is a front view of a planter with my improvement shown; Fig. 2, a side elevation thereof; Fig. 3, a bottom plan view; and Figs. 4, 5, and 6, views in detail.

Like letters refer to like parts in each view.

The frame-work proper of the machine consists of front and rear pieces, A A′, and the side pieces, B B′, suitably joined thereto. Each end of the front and rear pieces, A A′, is beveled, as shown in Fig. 1, and the side pieces, B B′, are secured thereto on an incline. Front and rear pieces, A A′, are also connected by rails C C C C, all resting upon the tops of such pieces, but extending down therebetween and by rails D D, which are situated entirely between the pieces A A′.

By reference to the drawings, it will be seen that there are two sets of rails, C, one set upon each side of the machine. It will also be seen that these rails C, as also rails D, and side pieces, B B′, are placed on inclines, the two rails C of each set inclining at their lower edges toward each other, the rails D inclining away from each other at their lower edges, and rails B B′ inclining at their lower edges, respectively, toward the adjacent rails C, this arrangement serving to divide the rails into pairs placed on the same inclination, one rail of each pair being on a higher plane than the other, and the two adjacent sets being on a different inclination. Between the side bar, B, and the adjacent rail C, one wheel, E, is mounted, the trunnions of said wheel having bearings in the rails, and the wheel consequently inclining at its lower side toward the center of the machine. Between the next rail C and its adjacent rail D a second wheel, E, is mounted, the trunnions of this wheel having bearings in the rails named; and because of the relative position of the said rails with respect to those in which the first wheel is mounted, the two wheels will incline toward each other at their lower sides, or at those points where they rest upon the ground. A similar arrangement of wheels upon the opposite side of the machine is obtained, as will be seen by reference to the drawings. I prefer to have these several wheels placed at an angle of about sixty-seven and one-half degrees from the horizontal plane, and prefer that they should be separated about one-quarter of an inch at the points where they rest upon the ground. The rims of wheels E, I form in a bevel, so that while I provide an inclined roller, a flat running-surface is provided.

Mounted upon the two inner rails C are bearing-blocks F, to which the frame G is pivoted. Mounted upon said frame are suitable standards, H, and braces H′, upon the upper ends of which the cross-piece K, which carries the seed-boxes L and the driver's seat, is mounted. Pivoted in suitable brackets secured to the under face of the rear of frame G, are two arms, *a*, one of which at its lower end is pivoted to the bent end of a rod, *b*, mounted in suitable brackets, *c*, mounted upon the rear piece, A′, of the main frame, the remaining

arm, *a*, being pivoted at its lower end to a branch arm, *c*, of a lever, M, to which rod *b* is secured. By this arrangement of parts as the lever M is operated the frame G may be raised or lowered to allow the shoes and runners secured to frame G, and which will now be referred to, to be raised from the ground or to rest thereupon to cut the necessary furrows, as will be readily understood. The different positions occupied by these parts are clearly shown in Fig. 2.

Secured to the under side of cross-piece K, and communicating with the feed-boxes, are the legs N, on the lower ends of which the shoes N′ are cast, and also runners N². Heretofore it has been customary to form each leg of one piece of cast-iron, and the shoe and runner of suitably-forged plow-steel, the parts being then suitably riveted together. The construction of these parts according to my design is clearly shown in Figs. 4, 5, and 6. As therein shown, the leg N is formed of two pieces provided with suitable lugs, *d*, through which suitable bolts or rivets may be passed to hold the parts together. These legs are formed of cast-iron, and to the lower end of each half one-half of the shoe N′ is cast. With one-half of the leg and shoe the runner N² is cast, said runner being formed with a shoulder, as indicated in Figs. 5 and 6, against which the end of the ramaining half of the shoe abuts, the parts being suitably held together at this point. The entire leg, shoe, and runner is formed of cast-iron, and so much of it as forms the shoe and runner is cast in a chill. It will be understood that there is a vertical passage leading from the top of the leg or from the seed-box down to the shoe. Heretofore the shoe has been enlarged at the top or where it connects with the leg, and has extended down with an equal width throughout, whereby the furrow is formed with vertical or perpendicular sides throughout. By this arrangement there is no certainty of the earth falling back into the furrow, and such an arrangement is therefore objectionable. To obviate this difficulty I provide my shoe on its lower end with ribs or flanges *e*, Fig. 4, whereby the ground on each side of the furrow is undermined, and the wheels pressing thereupon with the inward pressure, as will be described, a certain cover for the furrow is provided.

Secured to the lever M, hereinbefore referred to, is a connecting-rod, *f*, which at its opposite end is secured to an arm, *f′*, provided at one end with a slot, into which a pin of a crank-arm, *g*, is inserted, said crank-arm being formed upon a shaft, *h*, mounted in the rails D D, hereinbefore referred to. Mounted upon this shaft is a miter-wheel, *h′*, arranged to mesh with a similar wheel, *k*, mounted upon a stud, *m*, mounted in a bearing-block, *l*, secured upon rear piece, A′, said stud protruding through said block. Upon the outer end of this stud is mounted the marker O, of usual construction and use. This marker rests in brackets P, secured to rear piece, A′, and is operated through the line of gearing described.

O represents beams to which the pole of the machine is secured.

As indicated in Fig. 2, the axles for the wheels have a certain side play at one end, whereby, when any obstruction enters between the wheels they will be allowed to separate for the time.

By reference to the drawings, and especially to Fig. 2 thereof, it will be seen that the relative position of each leg, and the set of wheels on its side of the machine is such that the legs and shoes enter between the wheels slightly forward of the center thereof. By this arrangement the shoes are adapted to follow the course of the wheels however uneven the surface, and a furrow of uniform depth is formed at all times, irrespective of any irregularities in the surface.

Through the medium of the flaring or flanged shaped lower end of my shoes the furrow formed thereby is undermined on both sides, and the earth thrown to each side rendered more liable to fall back into the furrow. The complete closing of the furrow and covering of the seed deposited therein is rendered certain by the arrangement of the wheels, as has been described. These wheels being placed in an incline, and one wheel of each set pointing toward the furrow formed by the shoe which has just preceded it, naturally has a tendency to force the earth into the furrow and close the same. The manner of operating the marker, as hereinbefore described, greatly simplifies the manipulation thereof, and adds greatly to the convenient handling of the device.

By substituting the chilled iron runners and shoes for the steel ones now in use greater strength and durability is obtained.

I am aware that corn-planters provided with four wheels abreast have been used; that such wheels have been arranged in pairs with a discharge-spout for each pair, and that such wheels have been placed on inclines; and I am also aware that discharging-legs have been formed in two parts riveted together, the two-part shoes being secured thereto, or cast therewith, and I therefore lay no claim to such construction; but,

Having thus described my invention, what I claim is—

1. The combination, in a corn-planter, and with the frame-work thereof, of wheels therefor, such wheels placed in inclines, and provided with beveled rims, as set forth.

2. The combination, in a corn-planter, and with the frame thereof, of four wheels therefor, such wheels placed abreast and in pairs, each wheel being placed on an incline, and each provided with a beveled rim, as set forth.

3. The combination in a corn-planter, and with the frame thereof, of wheels therefor, such wheels placed in pairs, each on an incline, and each provided with a beveled rim, and a grain-

discharge spout located between each pair of wheels, as set forth.

4. An improved discharging-leg for corn-planters, consisting of two parts riveted together, each part being cast with one half of a shoe, one part being also cast with one part of the runner, and the other part having the remaining part of the runner secured removably thereto, and each part of the shoe formed at its lower edge with a flaring part, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE LANING.

Witnesses:

G. F. CONTANT,

GEORGE M. MURPHEY.