

No. 692,222.

Patented Jan. 28, 1902.

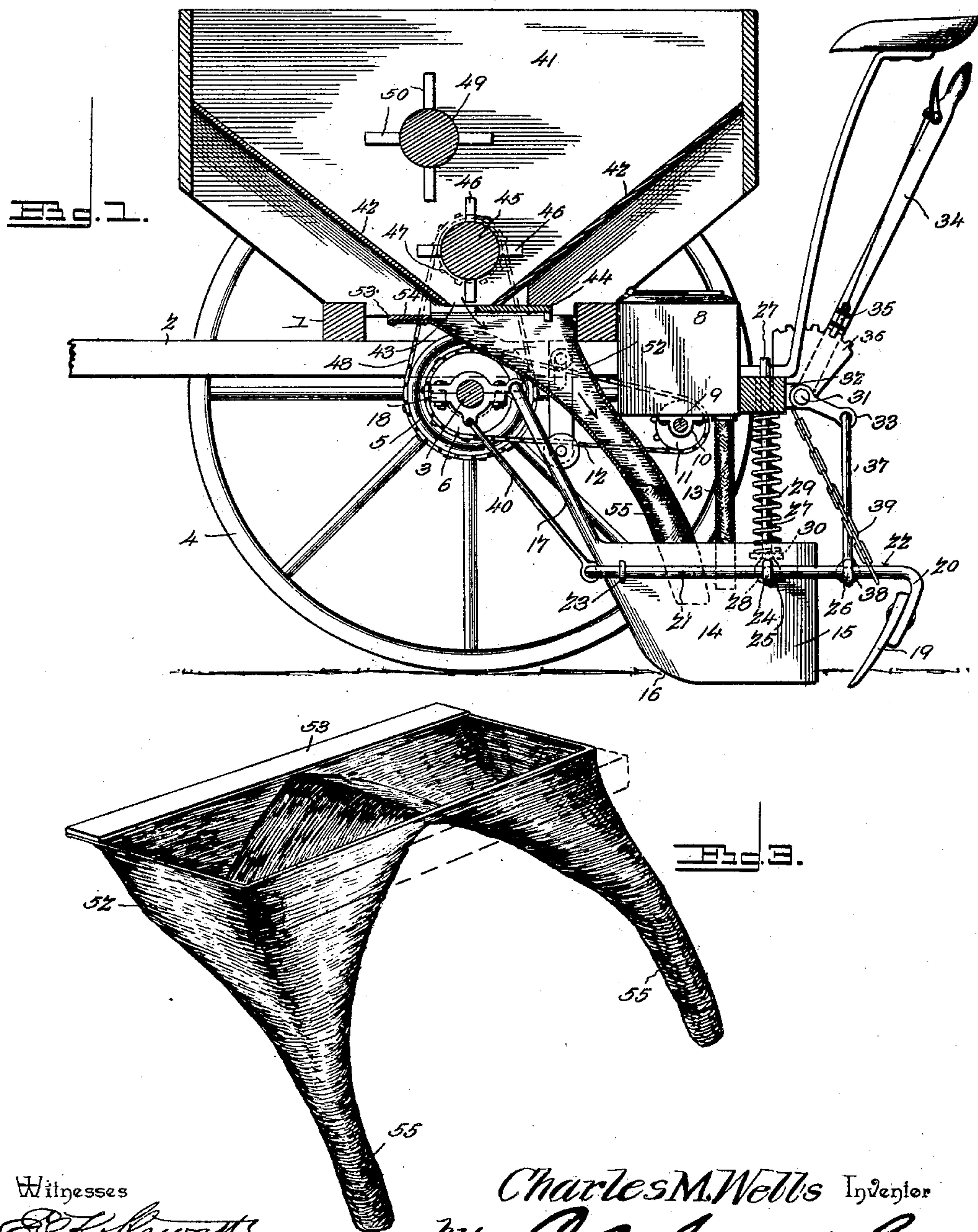
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COMBINED CORN DRILL AND MANURE DISTRIBUTER.

(Application filed Oct. 15, 1900. Renewed Dec. 20, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
E. F. Stewart
J. W. Garner

Charles M. Wells Inventor
by *C. A. Snow & Co.*
Attorneys

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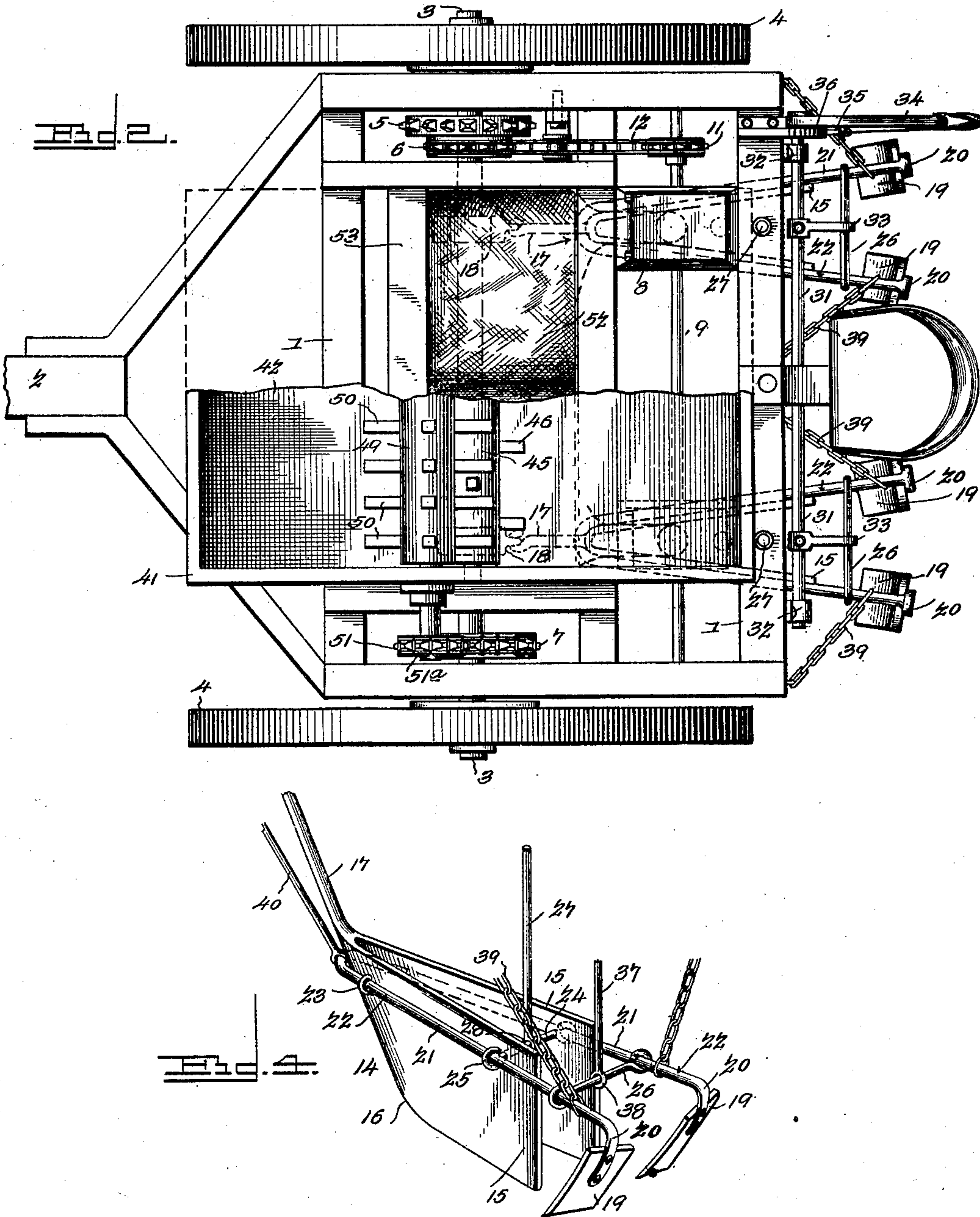
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E. F. Stewart
J. Warner

Charles M. Wells Inventor
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES M. WELLS, OF EOLIA, MISSOURI, ASSIGNOR OF ONE-HALF TO
MARY A. BRAGG, OF EOLIA, MISSOURI.

COMBINED CORN-DRILL AND MANURE-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 692,222, dated January 28, 1902.

Application filed October 15, 1900. Renewed December 20, 1901. Serial No. 86,709. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. WELLS, a citizen of the United States, residing at Eolia, in the county of Pike and State of Missouri, have invented a new and useful Combined Corn-Drill and Manure-Distributor, of which the following is a specification.

My invention is an improved combined corn-drill and manure-distributor, one object of my invention being to provide improved means for stirring the manure in the manure-hopper, for discharging the same therefrom, and for conveying the manure to the drills or furrows.

A further object of my invention is to effect improvements in the furrow-opening shoes or runners and in the covering devices and in the means for raising and lowering said shoes or runners and said covering devices.

My invention consists in the peculiar construction and combination of devices herein-after fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of a combined corn-drill and manure-distributor embodying my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a detail perspective view of the conveying-apron for conveying the manure as it is discharged from the hopper to the drills or furrows. Fig. 4 is a detail perspective view of my improved furrow-opening shoe or runner and the covering devices which operate in connection therewith.

The frame 1 is substantially rectangular in form and provided with a tongue 2, by which the machine is drawn. An axle-shaft 3 is journaled in suitable bearings under the sides of the frame 1, and said axle-shaft is provided at its ends with the usual traction and supporting wheels 4 and the usual pawl-and-ratchet mechanisms. (Not shown.) Near one end of the axle-shaft are sprocket-wheels 5 6, which are fast thereon, and near the opposite end of the axle-shaft and fast thereon is a sprocket-wheel 7. A pair of seedboxes 8 are secured in the rear side of the frame 1. A revoluble shaft 9 is journaled in bearings 10 under the said seedboxes, and said revolu-

ble shaft operates seed-dropping mechanism. (Not here shown, as the same may be of any suitable form and is not of my invention.) The said seed-dropping shaft 9 is provided at one end with a sprocket-wheel 11, which is connected to the sprocket-wheel 6 by an endless sprocket-chain 12. Thereby power is communicated from the axle-shaft 3 to the shaft 9, as will be understood. The seed-tubes 13 depend from the seedboxes 8.

The furrow-opening shoes or runners 14 are formed of rearwardly-diverging blades 15, the lower front corners of which are curved upward, as at 16. Each furrowing shoe or runner has at its front end an upward-extending forwardly-inclined trailing arm 17, and said trailing arms are pivotally attached to saddles 18 on the axle-shaft 3. The lower ends of the seed-tubes 13 are disposed between the blades 15 of the furrow-opening shoes or runners. Coverers 19 are secured to the downturned rear ends 20 of the rearwardly-diverging arms 21 of covering-frames 22, which are substantially V-shaped and receive the furrow-opening shoes or runners the latter having their blades or wings 15 disposed within the diverging arms 21 of frames 22 and secured thereto near their front ends by eyebolts, as at 23. A bolt 24 extends transversely through the wings or blades 15, near the rear upper corners thereof, and has eyes 25 formed in its ends, through which the arms 21 of the covering-frame 22 are passed. Link bolts 26, which are similar to the bolts 24, connect the rear portions of the arms 21 in rear of the furrow-opening shoes or runners. Vertically-movable depressing-rods 27 have their upper portions passed through and movable in vertical openings in the cross-bar forming the rear side of frame 1. The lower ends of said depressing-bars are attached to the bolts 24, said depressing-bars having eyes 28, through which the said bolts 24 are passed. Depressing-springs 29 on the said depressing-bars bear between the under side of the rear cross-bar of frame 1 and plates or washers 30 on the lower ends of said depressing-bars, and said springs and depressing-bars serve to press the furrow-opening shoes or runners and the coverers downward and keep the same at work, so that the

furrow-opening shoes or runners will as the machine advances open drills for the seed, and the coverers will cover the same.

A rock-shaft 31 is journaled in bearings 32 on the rear side of the frame 1. Said rock-shaft has rock-arms 33 and is provided at one end with an operating-lever 34, which has the usual locking-bolt 35, that acts in connection with a sector-shaped rack-plate 36 to secure said lever at any desired position. The said lever, as will be understood, serves to raise and lower the rock-arms 33. Said rock-arms are pivotally attached to the upper ends of elevating-rods 37, the lower ends of said rods being attached to the bolts 26, as at 38. The function of the rock-shaft, with its lever and rock-arms, together with the elevating-rods 27, is to raise and lower the furrow-opening shoes or runners and the coverers and adjust the same so that they may operate in the soil at any desired depth. Brace-chains 39 connect the rear portions of the frames 22 to the rear side of the frame 1, as shown, the function of the said brace-chains being to prevent the furrow-opening shoes or runners and the coverers from moving laterally when the machine is in operation. The front ends of the covering-frames 22 are connected to the saddles 18 on the axle-shaft by means of draft-rods 40. Hence the furrow-opening shoes or runners and the covering-frames, while connected together, as hereinbefore described, are drawn independently of each other, the furrow-opening shoes or runners being drawn by the trail-bars 17 and the covering-frames being drawn by the rods 40.

I will now describe my improved manure-distributing devices, which operate to distribute manure in the drills as the same are being planted with corn in order to fertilize the drills.

A manure box or hopper 41 of suitable size is supported on the frame 1. The bottom of said manure box or hopper is formed of the downwardly-converging boards or plates 42, a discharge-opening 43 being formed transversely across the bottom of the manure box or hopper. A slide-plate 44, which is supported in suitable guides, is disposed under the bottom of the hopper and is adapted to be so adjusted as to cut off or close the opening 43 and to partially open the same to any desired extent, and hence regulate the quantity of manure discharged therefrom. A discharge-roller 45 is disposed transversely in the manure box or hopper, near the lower side thereof, and has its bearing in the sides of the said hopper, the said discharge-roller being provided with a series of radial stirring-spurs 46, which are substantially square in cross-section and are disposed spirally on the roller. The shaft of the said roller 45 is extended at one end and provided with a sprocket-wheel 47, which is indicated by a dotted circle in Fig. 1 of the drawings, and an endless sprocket-chain 48 connects said sprocket-wheel 47 with the sprocket-wheel 5 on the axle-shaft 3. The

said sprocket-wheel 47 is considerably smaller than the sprocket-wheel 5, and hence the speed of the discharge-roller 45 is increased as compared with the rate of revolution of the axle-shaft 3. A stirring-roller 49, which is nearly identical in construction with the discharge-roller 45, is also journaled in the sides of the manure box or hopper and is disposed above and somewhat in advance of the discharge-roller 45. Said stirring-roller 49 is provided with radial spurs 50, which are substantially identical with the spurs 46 of roller 45, but are not disposed spirally. One end of the shaft of said roller 49 is extended beyond one side of the manure box or hopper and provided with a sprocket-wheel 51. An endless sprocket-chain 51^a connects the sprocket-wheels 7 and 51, and hence the stirring-roller 49 is rotated and also at a higher rate of speed than the axle-shaft 3, because the sprocket-wheel 51 is of less diameter than the sprocket-wheel 7.

A downward rearwardly-inclined apron 52, which is made of cloth or other suitable flexible material, is disposed under the discharge-opening of the hopper. A plate or bar 53 is secured to the front side of the said apron and serves to stiffen and support the same, the ends of the said plate or bar being secured under the side walls of the manure box or hopper, as at 54. The rear portion of the conveying-apron is bifurcated and formed into discharge-trunks 55, the lower ends of which are disposed between the blades or wings 15 of the furrow-opening shoes or runners in advance of the seed-tubes 13.

It will be understood from the foregoing description and by reference to the drawings that the manure in the manure box or hopper will be thoroughly stirred by the revoluble rollers 45 49 and the radial spurs thereof and broken up into small particles, which will be discharged through the discharge-opening onto the apron and conveyed by the trunks of the latter to the drills.

I do not desire to limit myself to the precise construction and arrangement of devices herein shown and described, as it is evident that modifications may be made therein without departing from the spirit of my invention.

The frame of the machine may be made of wood, iron, or any other suitable material, and the machine may be adapted to drill and plant either one or two rows at a time.

Having thus described my invention, I claim—

1. In a combined planter and fertilizer-distributor, the combination of a frame having an axle-shaft and supporting and traction wheels, a manure-box on said frame, spurred stirring and discharge rollers therein, driven from said axle-shaft, a conveying-apron under the manure-box, and having depending discharge-trunks, seed-hoppers in rear of said manure-box, a revoluble shaft in said seed-boxes to operate the seed-dropping mechanisms, said shaft being driven from said axle-

shaft, seed-tubes depending from said hoppers and in rear of the discharge-trunks of the said conveying-apron, and the furrow-openers having rearward-diverging wings, said
5 discharge-trunks and seed-tubes having their lower ends disposed between said wings, and coverers in rear of said furrow-openers, substantially as described.

2. In a planter, a furrow-opening shoe or
10 runner having rearward-diverging blades or wings, a covering-frame having rearward-diverging arms disposed on the outer sides of said blades or wings and secured thereto, said
15 arms being adapted at their rear ends, in rear of the furrow-opening shoe or runner, for the

attachment of covering-shovels, a draft-bar attached to the front end of the covering-frame and a trail-bar attached to the front end of said furrow-opening shoe or runner, and means to raise and lower said shoe or runner, and said covering-frame, substantially as described.

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

C. M. WELLS.

Witnesses:

Mrs. M. A. POLLARD,
W. E. POLLARD.