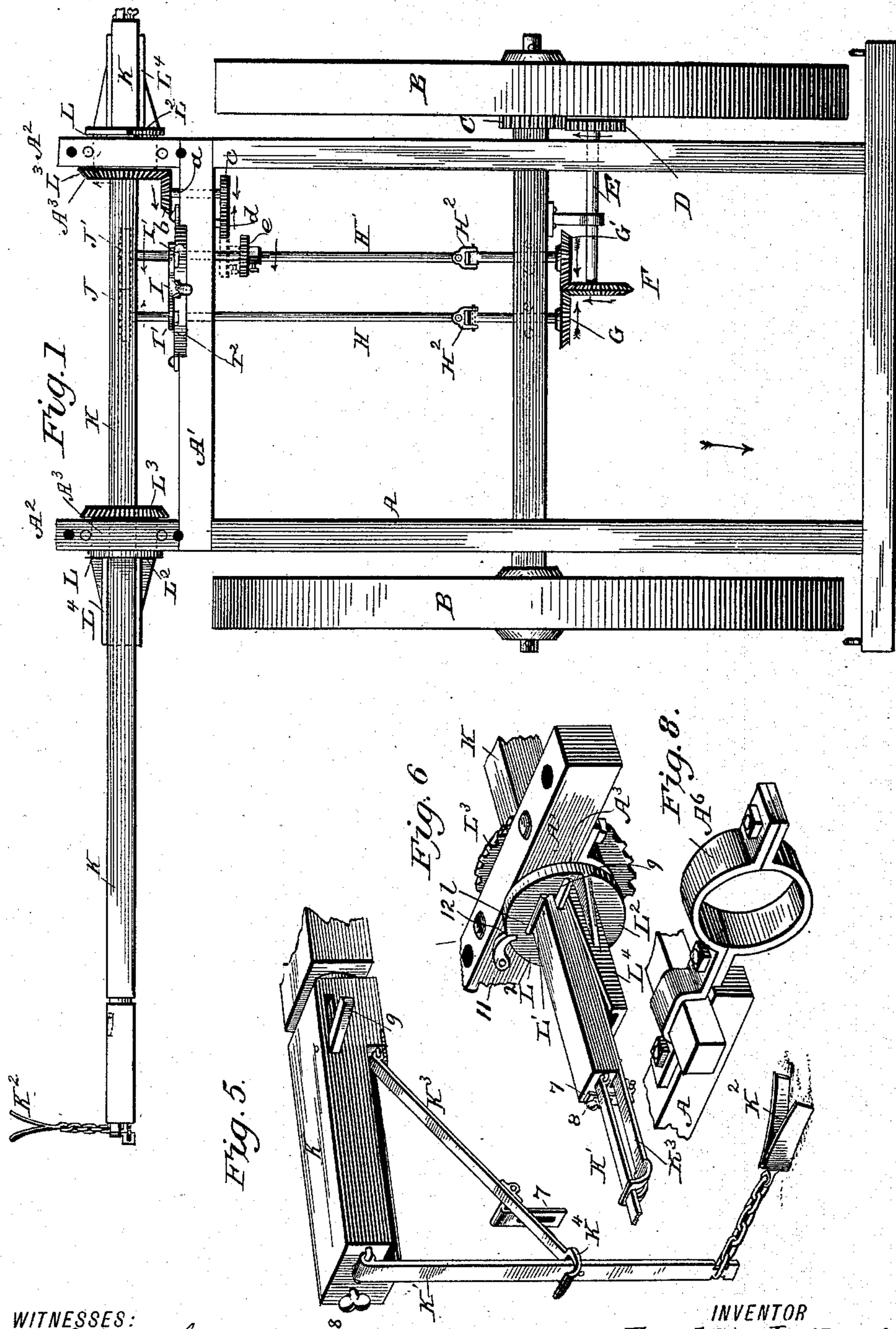


3 Sheets—Sheet 1.

CHECK ROW CORN PLANTER AND MARKER.

Patented Oct. 22, 1889.



WITNESSES:

WITNESSES:
Fred G. Dretterich
Jos. A. Ryan

INVENTOR

Franklin L Menefee

BY

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ATTORNEY

(No Model.)

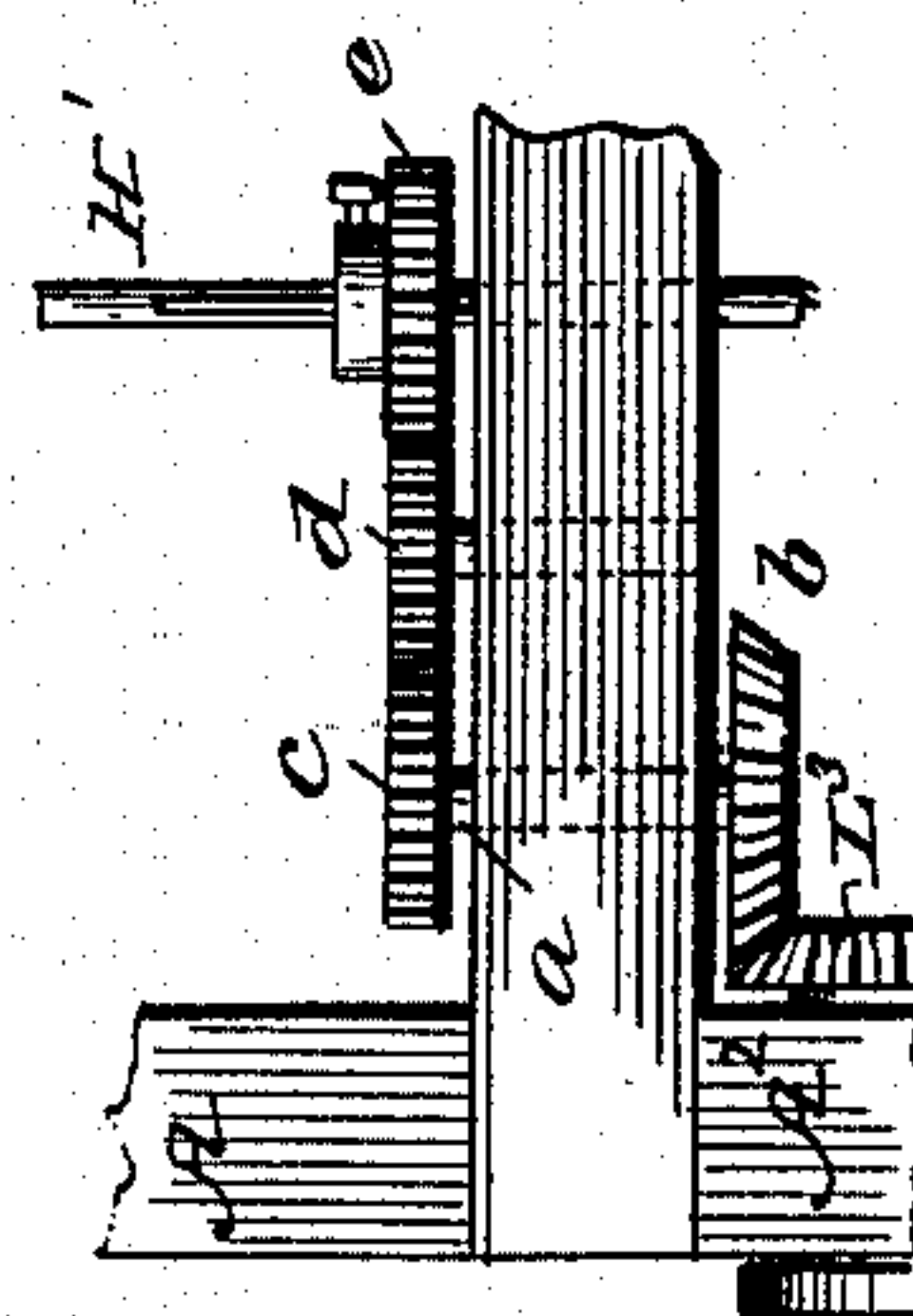
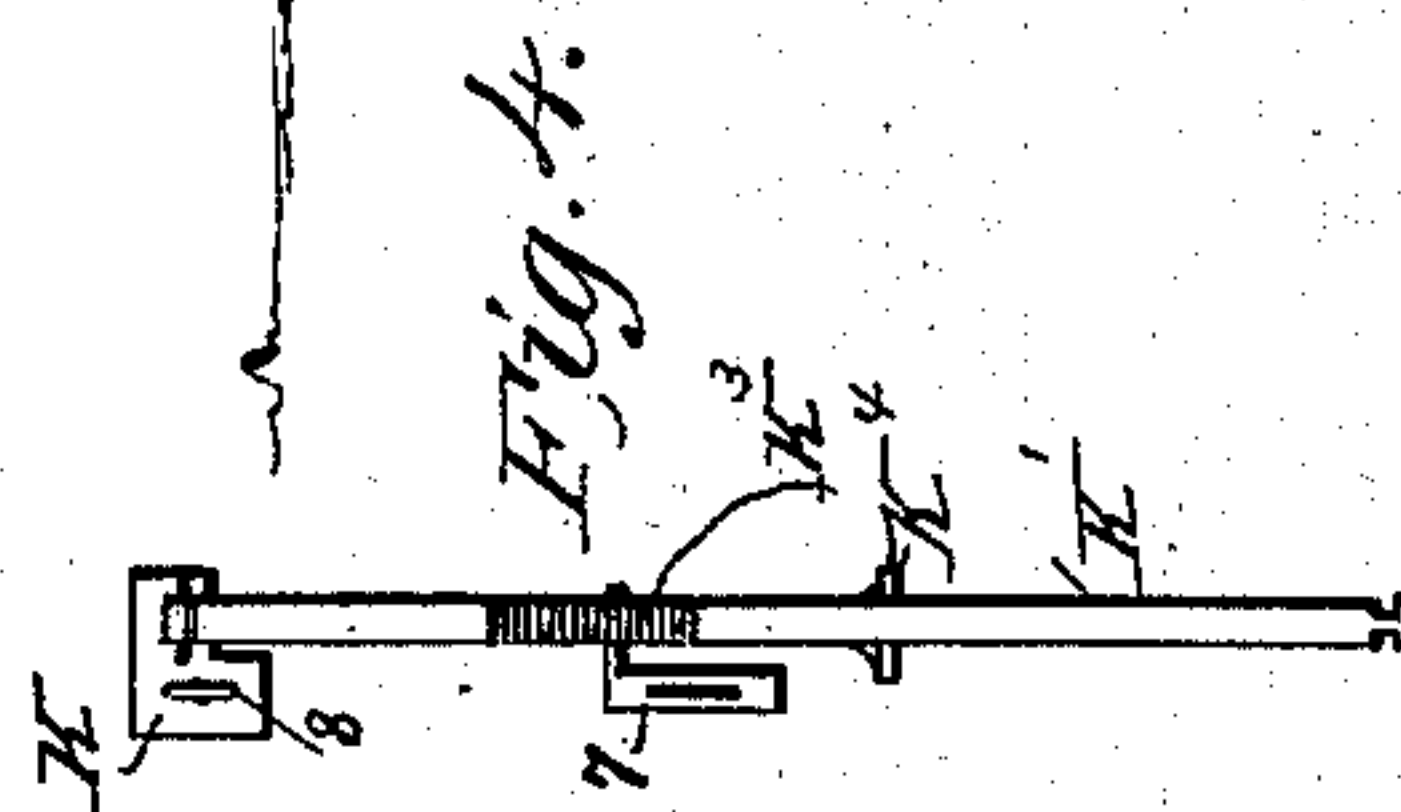
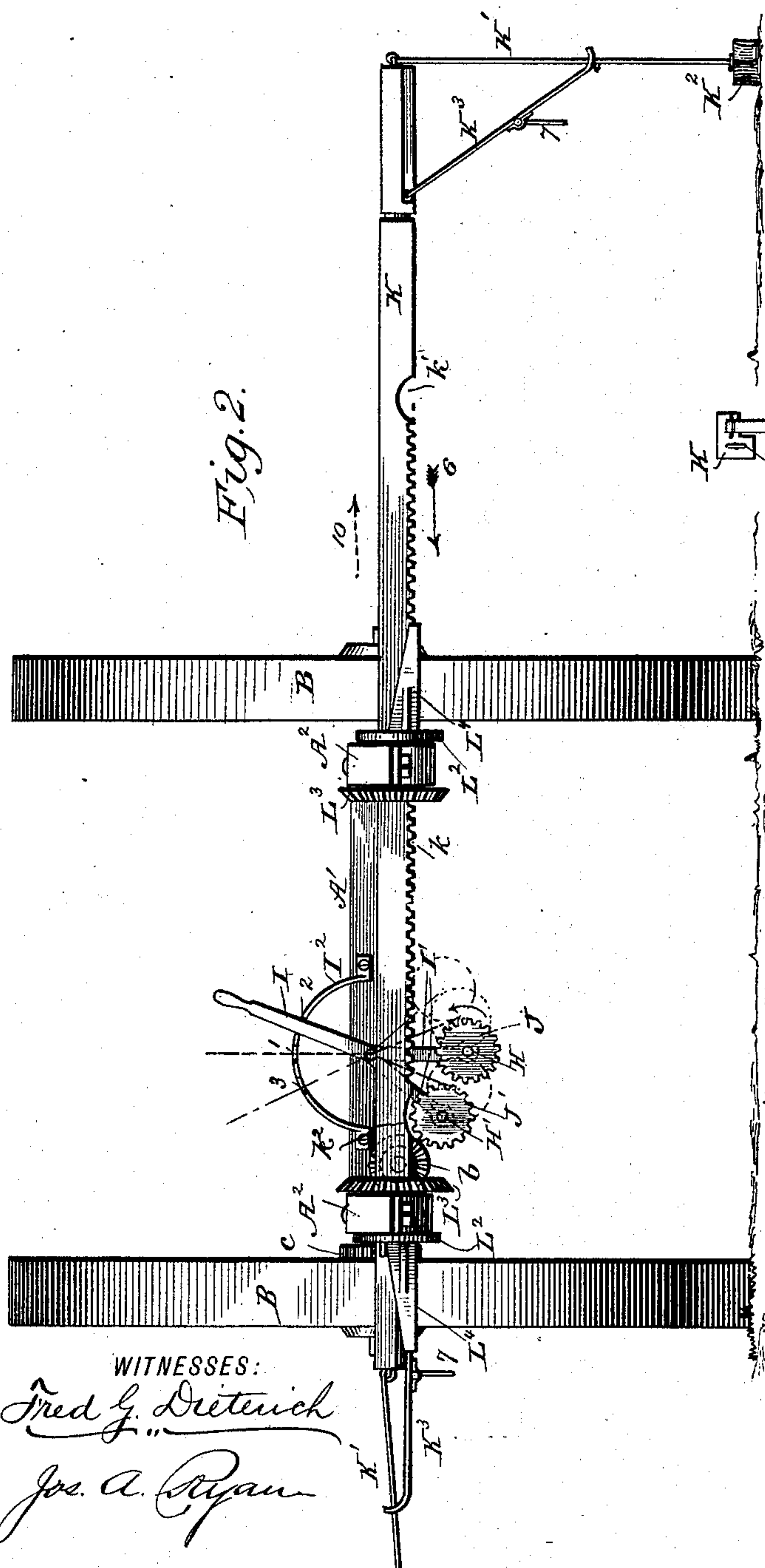
3 Sheets—Sheet 2.

F. L. MENEFEE.

CHECK ROW CORN PLANTER AND MARKER.

No. 413,406.

Patented Oct. 22, 1889.



WITNESSES:

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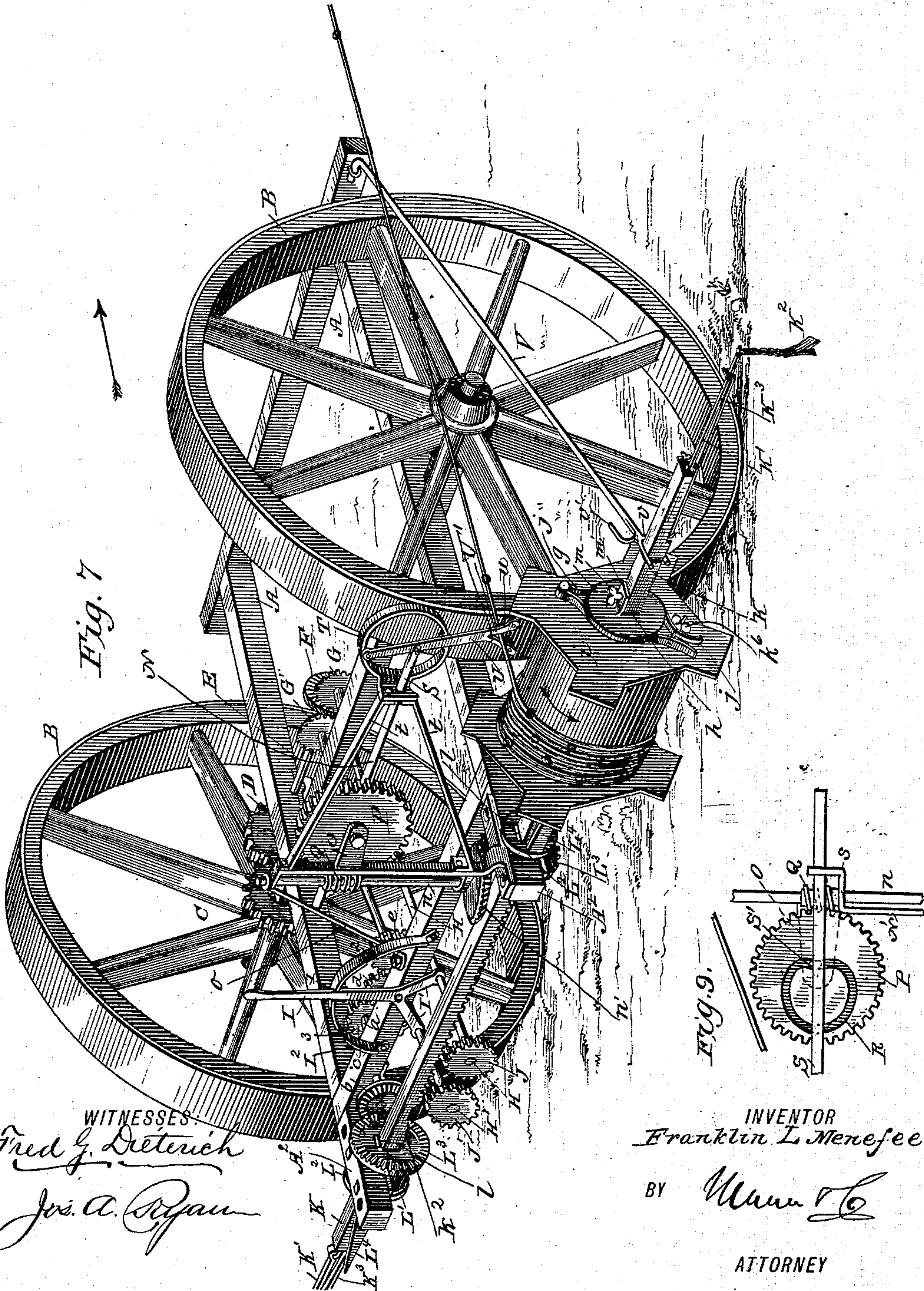
3 Sheets—Sheet 3.

F. L. MENEFEE.

CHECK ROW CORN PLANTER AND MARKER.

No. 413,406.

Patented Oct. 22, 1889.



WITNESSES
Fred G. Dieterich
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UNITED STATES PATENT OFFICE.

FRANKLIN L. MENEFEE, OF AURELIA, IOWA.

CHECK-ROW CORN PLANTER AND MARKER.

SPECIFICATION forming part of Letters Patent No. 413,406, dated October 22, 1889.

Application filed April 6, 1889. Serial No. 306,263. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN L. MENEFEE, residing at Aurelia, in the county of Cherokee and State of Iowa, have invented certain new and useful Improvements in Check-Row Corn Planters and Markers, of which the following is a specification.

My invention relates more particularly to means for automatically reciprocating the marking-bar from side to side and to hold same when desired in an extended position to admit of a wire-reel being inserted thereon, and whereby said bar may be revolved, and whereby the unwinding or taking up of the check-wire may be effected when desired.

My invention consists in certain novel features of construction and peculiar combination of parts, all of which will be hereinafter fully described in the annexed specification and particularly pointed out in the claims.

As my improvements are connected with the rear or truck frame of the planter, and as they may be used in connection with any novel arrangement of seed-dropping devices, I have only shown so much of a planter-frame as is necessary to clearly illustrate the operation of my invention.

Referring to the drawings, Figure 1 is a top plan view of the truck-frame of a check-row corn-planter, showing the marking attachment in position for operation. Fig. 2 is a rear view of the same. Fig. 3 is a detail view hereinafter referred to. Fig. 4 is an end view of the marking bar and arm. Fig. 5 is a detail perspective view of one end of the marker bar and arm. Fig. 6 is a similar view showing said bar in connection with one of its bearings and the marking-arm in horizontal position. Fig. 7 is a perspective view illustrating the wire-reel in position on the marking-arm and the automatic wire-shifting devices secured in place on the frame of the machine. Figs. 8 and 9 are detail views hereinafter referred to.

In the drawings, A A denote the main frame, which is mounted upon the drive-wheels B B in the usual manner.

C denotes a gear-wheel secured upon the inner face of the hub of one of the wheels B, which engages a gear D on the outer end of a short shaft E, mounted in the frame A, and which is provided at its inner end with a

double-beveled cog-gear F, which meshes with gears G G' upon one end of the longitudinal shafts H H', mounted in the frame A at their front ends, their rear ends having a movable bearing in the lower ends of a shifting-lever I, pivoted to the rear cross-bar A' of the main frame.

J J' denote cog-wheels upon the rear ends of the shafts H H', which may be normally adjusted to be both disengaged from the marking-bar K or be adjusted to alternately engage said bar in a manner as will be presently described.

The side beams of the frame A are extended, as at A² A², and form bearings A³ for circular disks L L, held to rotate in said bearings, which are each provided with a central squared aperture L' L', in which the marker-bar K is held to slide. Each of the disks L L is provided with a collar L² on its outer face and a bevel-gear L³ on its inner face, by means of which they are prevented from lateral movement in their bearings, the bevel-gear L³ being, however, also employed for an additional purpose, as will hereinafter be described. Each of the disks L L is also provided with lateral outwardly-extending open sockets L⁴ L⁴, forming additional bearings for the sliding marker-bar and serving to automatically raise the marker-arms K' when the bar K is drawn in.

The disks L L, which I have previously stated are mounted to rotate in the bearings A³ A³, are, when the bar K is in operation for marking, held from rotation by a gravity-pawl 11, adapted to engage a recess 12 in one of the collars L², as clearly shown in Fig. 6 of the drawings.

The shifting-lever I, previously referred to, and which is most clearly illustrated in Fig. 2 of the drawings, consists of the lever proper and the diverging arms I', in which the ends of the shafts H H' are journaled.

I² denotes a segment provided with notches 1 2 3, with which the lever I engages when adjusted in different positions.

The shafts H H' are provided with universal couplings H², as clearly shown in Fig. 1, to admit of their rear ends being moved in a manner presently described.

The marker-arms K', which are hinged at the outer ends of the bar K, have secured to

their lower ends the flexible markers K^2 , as most clearly shown in Fig. 5 of the drawings.

K^3 K^3 denote lifting-arms hinged to the under side of each end of the bar K , the outer free ends of which are forked, as at K^4 , and embrace the arms K' .

The operation of the marking devices is as follows: The parts being in position, as shown in Figs. 1 and 2, and the machine traveling in the direction indicated by the arrow, and it is desired to change the marker from one side to the other, the driver swings the lever I so as to cause the wheel J to engage the bar K , which is provided on its under face with a cog-rack k . The lever is then set in engagement with the notch 3 of the segment. The cog-wheel J , which is caused to revolve in the direction shown by arrow by the drive-wheel and the intermediate gearing devices described, will cause the bar K to travel in the direction shown by arrow 6 until the cog-wheel J engages a recess k' formed in the lower face of the bar K , when it will cease to move the same forward.

It will be observed by reference to the drawings that when the bar K is moved, as described, the marking-arm K' at one end will be raised by the lifting-arm K^3 engaging the sockets L^4 on the disks, and that the arm K' at the opposite end will fall into place.

To hold the arms K' out of operative position when desired, I arrange a pivoted latch 7 to each arm K' , which is adapted to engage a nut or keeper 8 on the end of the bar K , as clearly shown in Figs. 4, 5, and 6 of the drawings.

To afford an additional means of preventing the bar from being moved too far, I provide near each end thereof a hinged stop 9, which will engage the outer sides of disks L' when the recessed portions $K' K^2$ are over the cog-gears $J J'$. When it is desired to move the bar K in a direction opposite to the one described, the lever I is shifted so as to bring the same into the notch 2 of the segment and cause the cog-wheel J' to engage the rack K and thereby move the same into the direction shown by arrow 10, Fig. 2, until the wheel J' engages the recess k^2 in the bar, when it will cease to move the bar, as before described.

From the foregoing it will be seen that the bar may be quickly and automatically shifted to either side by simply adjusting the lever I , and that the marking devices will also be automatically thrown in or out of operative position.

To facilitate the travel of the bar through the disks $L L$, I provide the same with friction-rollers $l l$, as shown at Fig. 6. When it is desired to take up the check-wire, the marker-bar is adjusted in one of its outer positions, and the reel and the wire-shifting devices are secured in position, said reel and shifting devices being clearly shown in operative position in Fig. 7 of the drawings.

When the reel attachments are employed,

the shifting-lever I is adjusted to the central notch 1, and the cog-wheels $J J'$ both thrown out of engagement with the bar K . The pawl 11 is also thrown out of engagement with the notch 12, so as to permit of the disks $L L$ being revolved.

Journalled in the frame A , adjacent to the disk L' , is a short shaft a , arranged parallel with the shafts $H H'$, which is provided with a bevel-pinion b , which engages the bevel-gear L^3 , and a cog-pinion c on its opposite end, engaging an idle gear-wheel d , journalled on the frame, which meshes with a sliding gear-wheel e mounted on the shaft H' , as clearly shown in Figs. 1 and 3. The gear e rotates with the shaft H' , and is moved out of engagement with the gear d when the bar K is used for marking.

f denotes the reel, which consists of the hub portion g , provided with a central squared aperture h , and the reel portion i , which fits on the hub portion, as shown in Fig. 7. The hub g extends laterally to each side of the reel, and over said extended portions pass spring-plates $j j$, which are secured at one end to the sides of the reel i , and which have their outer ends adjustably connected by means of the thumb-screw k^6 . The object of providing the spring-plates j will be described farther on.

In adjusting the reel in position the same is slid onto the bar K and held thereto by means of the set-screw m , passing through a lip or projection m' on the hub-section and engaging the bar K .

N denotes the automatic device for moving the wire into proper position while it is being wound up on the reel. Said device consists of a skeleton frame which is detachably secured to one end of the frame A , in which is mounted a vertical shaft n , provided with a bevel-gear n' at its lower end, adapted to engage the bevel-gear L^3 on the disk L , said frame and shaft being suitably braced in position by the brace-bar o , as shown.

O denotes a bracket projected laterally from the frame N , in which is journalled a gear-wheel P , which meshes with a worm Q on the shaft n .

Disposed in front of the gear-wheel P and adapted to reciprocate backward and forward in bearings formed by a bracket s on the frame N , and in outwardly-projecting arms $t t$ secured thereto, is a rod S , which is provided with a projecting stud S' , adapted to engage with a cam-groove R in the front face of the gear-wheel P , as clearly shown in Fig. 9 of the drawings. The outer end of the rod S is connected to a swinging arm U , pivoted to a circular bracket T , fixed on the outer ends of the arms $t t$, the lower end of which is forked at $U' U'$ and provided with friction-rollers u , as shown. The lower end engages the wire in a manner clearly understood by reference to Fig. 7 of the drawings.

V denotes a brace-rod provided with a forked rear end v , which engages the rod K .

when the strain of said rod is forward, the forward end of said rod engaging the frame, as shown. The rod V is also provided with loop *v'* at said end, which engages the bar K when the strain is in a rearward direction.

When the reel is adjusted in position to take up the wire, as shown in Fig. 7, the end of the wire will be passed over the reel and secured thereto. Now, when the planter travels in the forward direction, the intermediate gearing devices will be revolved by the drive-wheel B and the cog-wheel C in the directions indicated by the arrows, thereby revolving the disks L L and the bar K, which in turn will revolve the reel in the rearward direction, and thereby wind up the wire. During this operation the wire-shifting devices will be operated by the bevel-gear *L*³ on the disk L and cause the swinging arm U to gradually move back and forth in front of the reel and shift the wire so the same will be evenly wound on the reel.

It will, of course, be understood the several gearing devices are so adjusted in relation to each other that the reel will revolve at the proper speed to gradually take up the wire during the continued movement forward of the planter. The shifting devices are also so adjusted that they will feed back and forth as the wire fills up on the reels in layers. As the wire fills up the reel and one layer has been wound thereon, it will be observed that the mean diameter of the reel will have been increased, and that the wire will then wind up at a faster speed. As it, however, is necessary that the same should always wind thereon at the same degree of speed, I form the reel of two sections or portions, as before stated.

By the said construction of reel it will be seen that should the wire exert any increased tension on the reel the reel portion proper will slip backward on the hub portion and thereby equalize the take-up speed of the reel. The friction of the reel on the hub portion may be adjusted by the spring-plates *j j'*. When it is desired to unwind the wire to place same in position in the field, the reel is inserted on the rod K so the wire will feed out from the under side thereof. When the reel is adjusted in this position, the strain on the bar will be rearward, and the brace-bar V will be hooked over the bar, as before stated, to relieve the said bar from strain.

It will be understood that the reel and the wire-shifting devices may be adjusted to operate on either side of the machine.

In adjusting my improvements to a planter-frame of ordinary construction I provide detachable metal bearings A⁶, which are secured to the frame A in the manner clearly shown in Fig. 8 of the drawings, and which form the bearings for the circular disks L.

From the foregoing description, taken in connection with the drawings, the operation and advantages of my improvements will be readily understood. It will be seen that the same may readily be adjusted to the truck-

frames of corn-planters, and the operation thereof is exceedingly simple.

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

1. In a check-row corn-planter, the combination, with the main frame, of a laterally-extending marker-arm held to rotate in said frame and adapted to support wire-reel and means for rotating said marker-arm, substantially as shown and described.

2. The combination, with the main frame, revolving disks secured in the ends of said frame, and detents for holding said disks from turning, of a reciprocating marker-arm journaled in said disks, adapted to receive and support a reel on its extended free end, and means for operating the disk, substantially as shown and described.

3. The combination, with the main frame, the revolving disks mounted thereon, and detents for holding said disks from turning, of a marking-bar journaled in said disks, the extended end thereof adapted to receive and support a wire-reel, and means for revolving the marker-bar, substantially as shown and described.

4. The combination, with the main frame, the revolving disks provided with gear-teeth mounted thereon, and detents for holding said disks from turning, of a marking-bar journaled in said disks, the extended end thereof adapted to receive and support a wire-reel, said gear-surfaces of the revolving disks adapted to engage and operate wire-shifting devices, and means for operating the said disks, substantially as described.

5. The combination, with the main frame and the drive-wheels, of a reciprocating marker-bar held to slide in the rear end of said frame, shafts mounted at one end to the frame, the rear ends journaled in movable bearings, cog-gears mounted on the said rear ends adapted to alternately engage the marking-bar, a shifting-lever for adjusting said shafts and gears into said alternate positions, and intermediate gearing devices between said shafts and one of the drive-wheels, whereby said shafts are operated, substantially as and for the purpose shown and described.

6. The combination, with the main frame, the drive-wheels, and bearings provided at the ends of said frames, having outwardly-extending open sockets, of a reciprocating marker-bar held to slide in said bearings, said bar provided with hinged marker-arms at its outer end, said arms adapted to fall into position by gravity and to be raised out of operative position by engagement with the said extending sockets, and intermediate gearing devices, substantially as shown and described, between the marker-bar and one of the drive-wheels for operating said bar, substantially as and for the purpose set forth.

7. The combination, with the main frame and the drive-wheels, of a reciprocating marker-bar K, provided with marking devices at

each end, said bar held to slide transversely in the rear ends $A^2 A^2$ of said frame, said bar provided with a cog-rack k on its under face, longitudinal shafts $H H'$, journaled at their front ends in the frame, gear-wheels $J J'$, secured upon their rear ends, a shifting-lever I , pivoted upon the main frame, provided with depending diverging arms $I' I'$, forming bearings for the rear ends of said shafts $H H'$, said lever adapted to alternately swing the gears into engagement with the rack k on the marking-bar K , and the intermediate gear devices between said shafts $H H'$ and one of the drive-wheels, whereby said shafts are operated, substantially as shown and described.

8. The combination, with the main frame and bearings formed in the rear ends thereof, provided with outwardly-extended socket projections, of a marker-bar held to slide in said bearings transversely across the frame, marker-arms hinged to the outer ends of said bar and carrying markers at their lower ends, and swinging arms hinged at one end to the lower side of the marker-bar, their outer ends engaging the hinged marker-arms, said swinging arms adapted to rise and elevate the marker-arms when they engage the projecting socket portions of the bearings during the operation of sliding said bar from one side to the other and adapted to fall by gravity when released from contact with said projections, substantially as shown and described.

9. The combination, with the main frame A , the drive-wheels B , the longitudinal shafts $H H'$, provided with articulated joints H^2 , jour-

naled at one end in the frame A , provided with cog-wheels $J J'$ at their rear ends, a shifting-lever I , pivoted on the main frame, provided with depending diverging arms I' , forming bearings for the rear ends of the shafts $H H'$, and intermediate gearing devices between said shafts and one of the drive-wheels, as shown, and the bar K , provided with marking devices at each end, held to slide transversely in the rear end of the frame A , said bar provided with a rack k on its under side, recesses $k' k^2$, disposed one at each end of the rack portion, said bar adapted to be alternately engaged by the cog-wheels $J J'$, said wheels adapted to engage with either of said recesses $k' k^2$ when the bar is slid to its limit in either direction, substantially as and for the purpose described.

10. The combination, with the main frame provided at its rear end with bearings A^3 , of a marker-bar K , held to slide transversely in said bearings, arms K' , hinged on each end of said bar, lifting-arms K^3 , hinged to the under side of the ends of said bar, said arms K^3 engaging the arms K' and adapted to elevate the same when raised up, a swinging latch 7 , secured to the arms K^3 , and studs 8 on the ends of the bar K , adapted to engage said latch to hold said arms $K' K^3$ in elevated position, substantially as and for the purpose described.

FRANKLIN L. MENEFFEE.

Witnesses:

ROBERT MENEFFEE,
CLARK MENEFFEE.