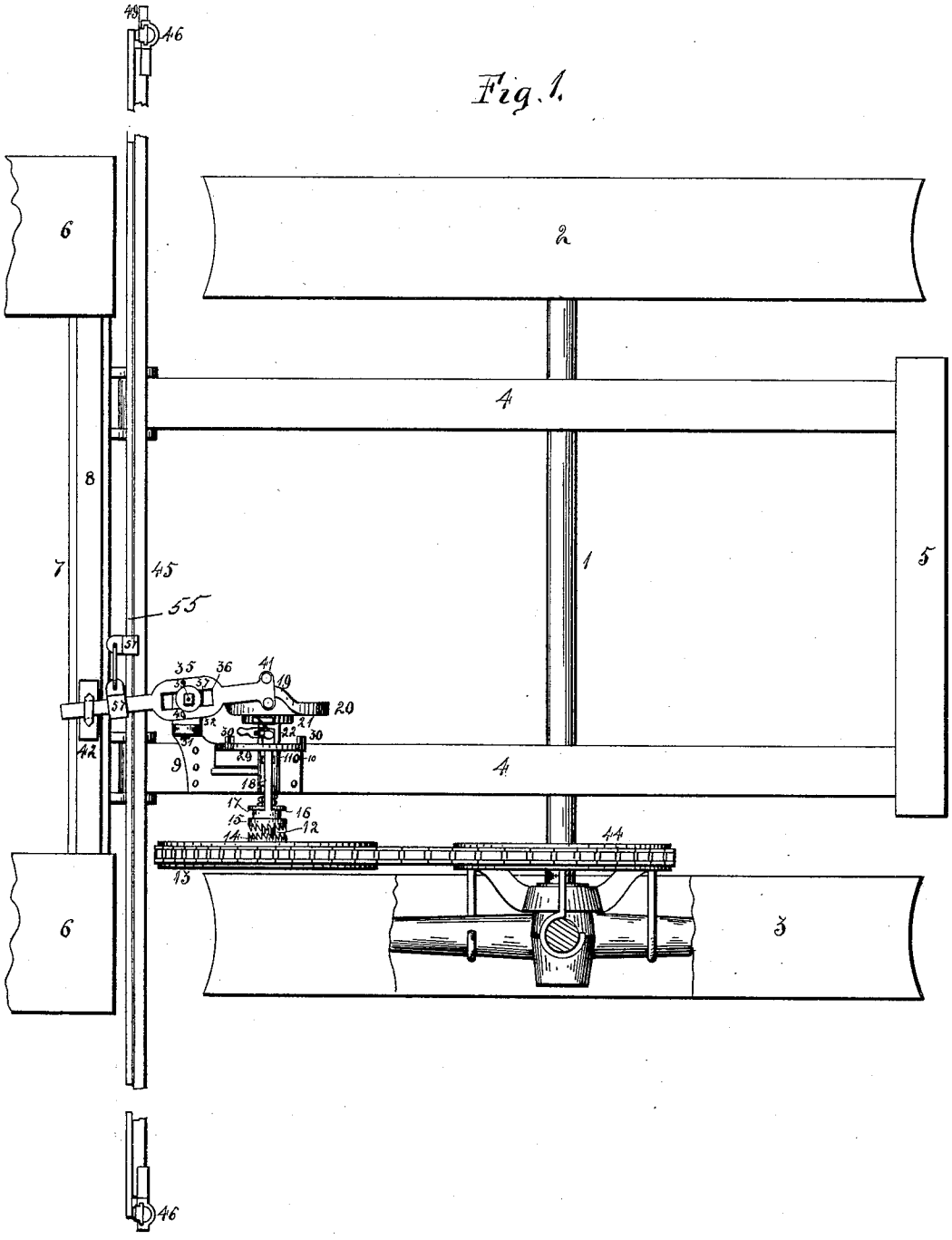
(No Model.) 2 Sheets—Sheet 1.

C. W. CHAFEE.

MARKING ATTACHMENT FOR PLANTERS.

No. 482,075. Patented Sept. 6, 1892.

Fig. 1.



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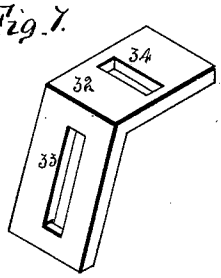

Fig. 2.

Fig. 5.

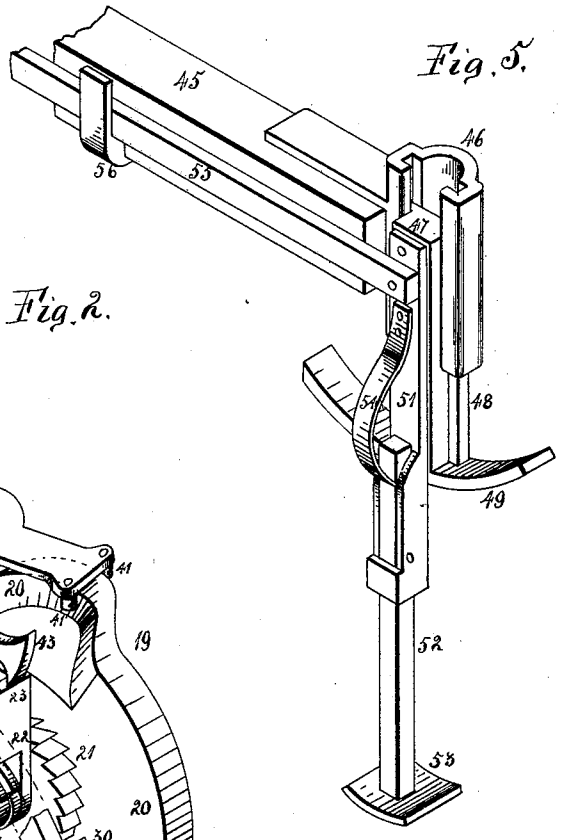

Fig. 6.

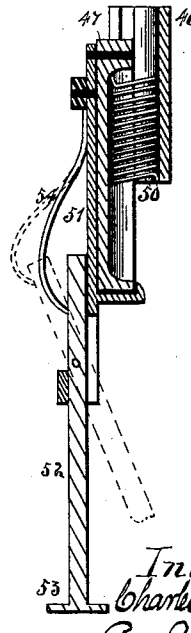

Fig. 4.

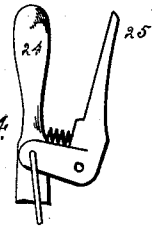

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES W. CHAFEE, OF MARENGO, ILLINOIS.

MARKING ATTACHMENT FOR PLANTERS.

SPECIFICATION forming part of Letters Patent No. 482,075, dated September 6, 1892.

Application filed March 12, 1892. Serial No. 424,722. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. CHAFEE, a citizen of the United States, residing at Marengo, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Check Rower and Marker Attachments for Corn-Planters, of which the following is a specification.

The object of this invention is to equip corn-planters already in use with self checking and marking attachments, which attachments are operated from the supporting-wheels of the machine.

The device for operating the seed-slide consists, mainly, of a lever pivoted midway its ends, one end of said lever having a connection with the seed-slide and the other end operated upon through the medium of the cam-wheel, so as to impart an oscillatory movement to the lever. To this cam-wheel is imparted a rotary movement by having suitable connections with the driving supporting-wheel of the machine. The marking device consists of a bar running transverse of the machine, which supports an actuating-bar for the markers. A reciprocating movement is imparted to this by having a connection with the lever which operates the seed-slide. This actuating-bar in its reciprocating movements oscillates the marker upon a pivot, so that at each reciprocation the marker is caused to dip into the ground so as to leave its impression, and the marker is made yielding in a vertical direction, also made yielding backward, so that should an obstruction be encountered the marker will readily give to prevent its breakage.

In the accompanying drawings, Figure 1 is a plan view of a corn-planting machine embodying my improvements. Fig. 2 is an isometrical representation of the device for imparting a reciprocating movement to the seed-slide. Fig. 3 is a vertical lengthwise section through the dropping shaft of the device. (Shown at Fig. 2.) Fig. 4 is a face representation, partly in section, of the lever for setting the markers and seed-slide to correspond with the impressions previously made by the marker. Fig. 5 is an isometrical representation of the marker device, showing its connection with its supporting-beam. Fig. 6 is a vertical central section through the marking device, showing the spiral spring, which permits a vertical yielding movement to the marker. Fig. 7 is an isometrical representation of the bracket 32, which supports the lever which has a connection with the seed-slide.

My improvements may be attached to any of the known forms of corn-planters in which the runner-frame and the supporting-frame are in two parts, having a hinge-joint connection so as to permit the runner-frame to be raised and lowered for the purpose of planting or for transportation over the field, and in this instance such machine is composed of an axle 1, upon each end of which are fixed carrying-wheels 2 and 3, the axle being supported upon lengthwise beams 4, connected together at their rear ends by a cross-beam 5. The front ends of these lengthwise beams have a pivotal connection with the runner-frame, as shown in the drawings. The runner-frame consists of two seed-boxes 6, supported upon a lengthwise beam 7 in the usual manner. A seed-slide 8 has a connection at each end with the seed-feeding devices, and may be provided with a flipper-valve in the heel of the runner for the purpose of driving the seed.

I will first describe the mechanism for imparting the reciprocating movement to the seed-slide. Such mechanism is located near the front end of one of the lengthwise beams 4, and consists of a plate 9, firmly bolted thereto, and which is provided with a series of holes 10, so that it may be adapted to different machines, the lengthwise beams of which vary in their distance from the supporting-wheel. A hub portion 11 rises from the face of the plate 9, and is lengthwise bored for the reception of a driving-shaft 12. On the outer end of the shaft is loosely pivoted a sprocket-wheel 13, the inner face of which is formed with a saw-tooth clutch 14. The teeth of this saw-clutch engage the teeth of the movable part 15 of the clutch, supported on the driving-shaft 12 between the sprocket-wheel and the end of the hub 11. The movable part of this clutch has a feather connection with the drive-shaft, so that it may be rotated therewith and may be moved in the lengthwise direction of the shaft, for the purpose of disengaging the two parts of the clutch. The mov-

able parts are provided with an annular groove 16, which receives a segment 17, projecting from the end of a movable bar 18, so that as the bar is moved in its lengthwise direction the clutch will be thrown into or drawn out of engagement, and a spiral spring surrounds the driving-shaft and is located between the hub 11 and the inner face of the movable part, so that its force will tend to hold the clutch in engagement, but will yield to permit its disengagement. On the inner face of this driving-shaft I locate a cam-wheel 19, which has two semi-circular prejections, lying in different planes, said projections connected together forming an irregular track. The outer face of this cam-wheel is provided with a ratchet-wheel 21. This combined cam-wheel and ratchet are firmly secured to the inner end of the driving-shaft 12. A portion of the hub 11 extends inward beyond the face of the base-plate 9 and supports a bracket 22 in such a manner as to oscillate upon the hub, as shown at Fig. 3. The upper end of this bracket is formed with two ears 23, between which is supported a hand-lever 24, the upper end of which is provided with the usual thumb-lever 25, and the lower end is somewhat reduced and engages a segmental groove 26, formed in a segmental plate 27, attached to the inner end of the movable bar 18. By moving this hand-lever upon its pivot in the lengthwise direction of the driving-shaft, the lower end, seated in the segmental groove 26 of the movable bar 18, will impart a lengthwise movement to this bar, and, as before explained, the other outer end of the bar, having a connection with the saw-tooth clutch, will move the clutch out of engagement for the purpose of stopping the rotation of the driving-shaft and the spiral spring will hold the saw-tooth clutch in engagement when the hand of the operator is released from the lever. This movable bar 18 is supported in brackets rising from the upper face of the hub 11. A pin through the outer ears prevents the outer end from flying up.

At Fig. 4 I have shown a side elevation of the hand-lever 24, and in which the ratchet-wheel is shown in section. By reference to this figure it will be seen that I mount a dog 28 on the outer face of the bracket 22. Said dog has a link connection with the thumb-lever of the hand-lever, and as the bracket which supports the hand-lever is mounted concentrically with the driving-shaft around the inner end of the hub 11 an oscillatory movement may be given to this hand-lever, so that the dog 28 will engage the teeth of the ratchet-wheel 21, and when the lever is moved in its forward position the dog will hold in engagement with the ratchet-wheel, thereby causing the combined ratchet-wheel and cam-wheel to move in a forward direction. The object of making the plate 27 segmental and providing the segmental groove 26 is in order to enable the lower end of the hand-lever 24 to be always in engagement with the segmental groove during its oscillatory movement, so that the segmental clutch will be held out of action during the oscillations of this lever. A curved arm 29 is secured to the base-plate 9 and extends across the face of the hand-lever near its pivotal connection and is provided with two projecting lugs 30, which lie in the path of the oscillatory movement of the hand-lever, and these lugs act as stops to limit the extent of the oscillatory movement of the hand-lever in either direction. An ear 31 rises from the upper face of the plate 9, to which is supported a bracket 32. This bracket is of angle-iron form, having a vertical slot 33 to permit the vertical adjustment of the bracket, and a horizontal slot 34 for a purpose to appear hereinafter. A lever 35 is provided with a central slot 36. A plate 37 is provided with a central elevation, which fits the slot 36, and this plate is located on the upper face of the bracket 32, and a bolt 38 attaches this plate to the bracket in such a manner as to permit of its adjustment to the extent of the slot 36, and a bolt 39, passing through the plate 37, receives a washer 40 on its upper face, and a nut firmly clamps the lever 35 to the plate 37, and the bolt 38 acts as the pivot upon which the lever 35 oscillates. One end of this lever 35 has two rollers 41 depending from its under face, said rollers passing on either side of the projections 20 of the cam-wheel 19, and as the cam-wheel is rotated it will be seen that this lever 35 will oscillate upon its pivot back and forth as the rollers pass from one projection of the cam-wheel to the other.

At Fig. 1 I have shown a bracket 42 secured to the seed-slide 8 in such relation to the end of the lever 35 that said lever will pass through the loop of the bracket, and it will be seen that any movement imparted to the lever 35 will also impart a reciprocatory movement to the seed-slide. Should the operator desire to hold the saw-tooth clutch out of engagement it will be necessary for him to press the upper end of the hand-lever outward and to turn the pivot-latch 43 so that the lower face will rest against the upper face of the bracket 22, as shown at Fig. 3, and when the saw-tooth clutch is in engagement this pivot-latch will be in the position shown at Fig. 4.

The means for connecting the driving-shaft 12 with the supporting-wheel consists of a sprocket-wheel 44, of skeleton form, secured to the spokes of the driving-wheel so as to form a rigid connection therewith. The face of this sprocket-wheel extends beyond the inner face of the supporting-wheel so as to permit a chain-belt connection with this sprocket-wheel and the sprocket-wheel 13, loosely mounted on the driving-shaft.

The mechanism composing the marking device is supported by a beam 45, extending transversely of the machine and some distance beyond the supporting-wheels. At the ends of this beam is secured a socket 46, which is provided with vertical guideways. Within

this socket is supported a guide 47, provided with flanges 48 and a guide at the lower end 49. This guide is fitted so as to be capable of a vertical sliding movement within the socket, and a coil-spring 50, having its upper end secured to the guide and its lower end to the socket, permits this guide to have a yielding vertical movement. On the face of this guide I locate an arm 51, carrying a marker 52. This arm has a pivotal connection with the guides 47 near their upper ends, while the lower end of the arm is in socket form. The marker-arm has a pivotal connection with the arm 51 near its lower end and upon the extreme lower end of which is located a shoe 53. A spring 54 is connected to the arm 51 and extends from and engages the end of the marker-arm 52.

A bar 55 extends along one side or face of the beam 45 and is held in position by cleats 56. The ends of this bar are connected to the bar 51 below its pivotal connection with the guide 47. A link connection is formed between the bar 55 and the end of the lever 35 by clips 57. When a reciprocating movement is imparted to the seed-slide a reciprocating movement will also be imparted to the bar 55 through the link connection, and the reciprocation of this bar 55 by its connection with the arm 51 will move said arm on its pivotal connection with the guide 47 in a direction transverse of the machine and the lower curved end 49 of the guide serves to hold the arm 51 in proper position.

In use the machine is drawn over the field, and should the shoe 53 encounter a hard substance the coil-spring 50 will yield so as to prevent the breakage of any parts by allowing the shoe to rise in a vertical direction, and should the shoe encounter a hard substance in the advance movement the spring 54 will allow the marker-arm 52 to yield backward until the obstruction is passed when the spring 54 will return the marker-arm to its normal position, as shown at Fig. 5. When the machine has made one movement across the field, the shoes will leave their impression in the soil, and upon the machine making a movement again across the field it will be necessary that one of the shoes should dip in the same spots which it did when going first across the field. In order to properly adjust the shoe so as to dip in the proper place, the operator by means of the hand-lever will disengage the saw-tooth clutch of the machine and cause the dog to engage the saw-tooth ratchet, and by the continued movement of this hand-lever the machine will be rotated sufficiently to impart the required movement to the bar 55 and consequently to the marker-arm 52, carrying the shoe, until the dip of the same will be in the marks previously made, and should the field be level the shoes will dip in the marks previously made without further regulation; but should the field be unlevel it may be necessary to regulate the shoes when such unevenness is encountered.

I claim as my invention—

1. A corn-planter having a main frame, supporting-wheels therefor, a sprocket-wheel affixed to one of the supporting-wheels, a shaft on the frame, a cam-wheel and a sprocket-wheel secured to the shaft, a marker-rod and a seed-slide, a pivoted lever engaging the rod and the slide and having, also, an engagement with the cam, and an oscillatory marker-arm having a pivoted connection with the marker-rod, said marker moving transverse to the line of advance of the planter.

2. A corn-planter having a main frame, supporting-wheels therefor, a sprocket-wheel secured to one of the supporting-wheels, a shaft journaled in the frame, a sprocket-wheel and a cam-wheel on the shaft, a belt connection between the sprocket-wheels, a clutch for connecting the driven wheel and its shaft, a lever for operating the clutch, a seed-slide and a marker-rod, a lever having an enlargement with the slide and the rod and with the cam-wheel, and a movable joint for said lever.

3. A corn-planter having a main frame, supporting-wheels therefor, a seed-slide and a marker-bar, a marker-arm having a pivotal connection with the marker-bar, said arm having an upward-yielding movement and a backward yielding movement for its lower end.

4. A corn-planter having a main frame, supporting-wheels therefor, a seed-slide and a marker-bar, a marker-arm having a pivotal connection with the marker-bar, said arm sliding in vertical ways and having an upward yielding movement therein, the lower portion of the arm having a pivotal connection with the upper portion, and a spring for holding the two parts in a vertical line.

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