

(No Model.)

2 Sheets—Sheet 1.

A. V. BIGGS.

CHECK ROW ATTACHMENT FOR CORN PLANTERS.

No. 529,104.

Patented Nov. 13, 1894.

FIG. 1.

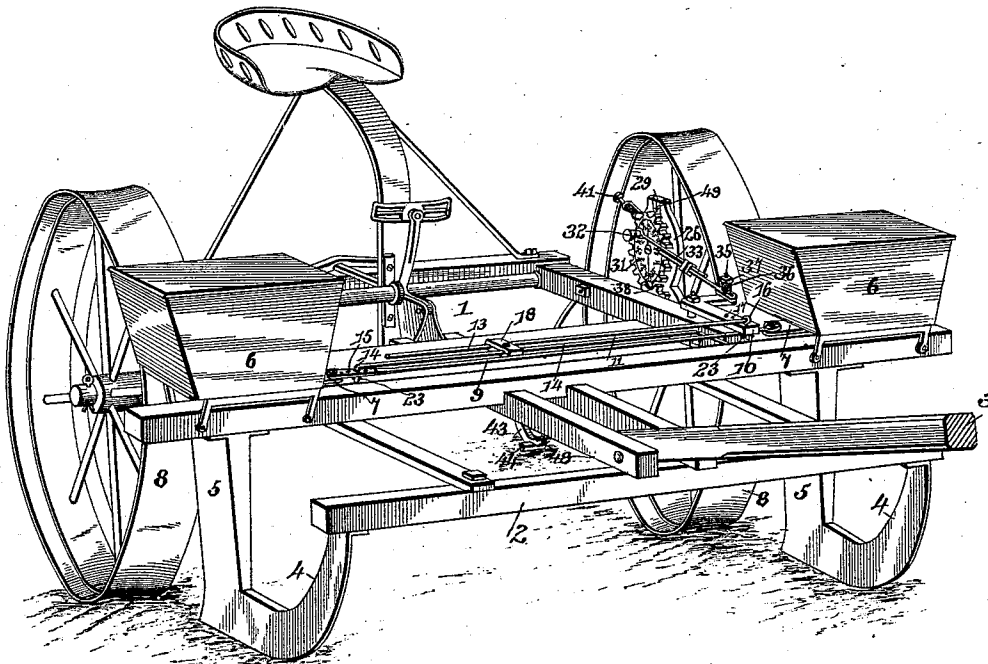


FIG. 5.

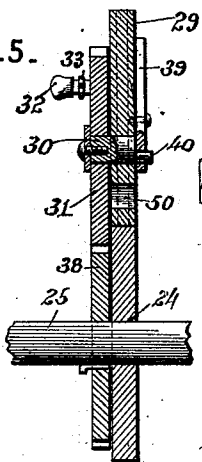
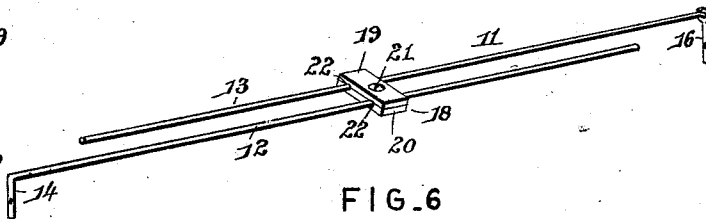


FIG. 6



Inventor

Arthur V. Biggs

Witnesses

Jas. K. McLaughlin
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(No Model.)

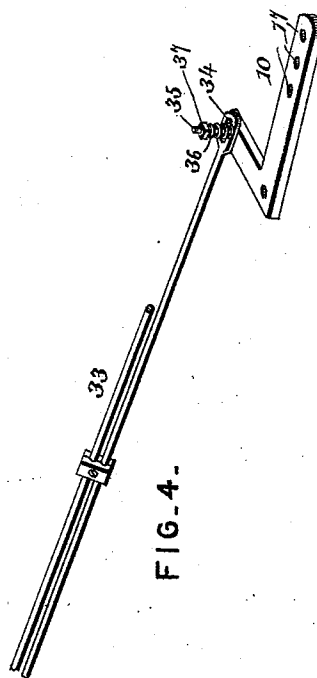
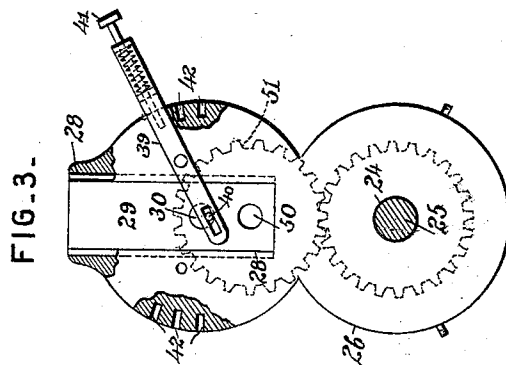
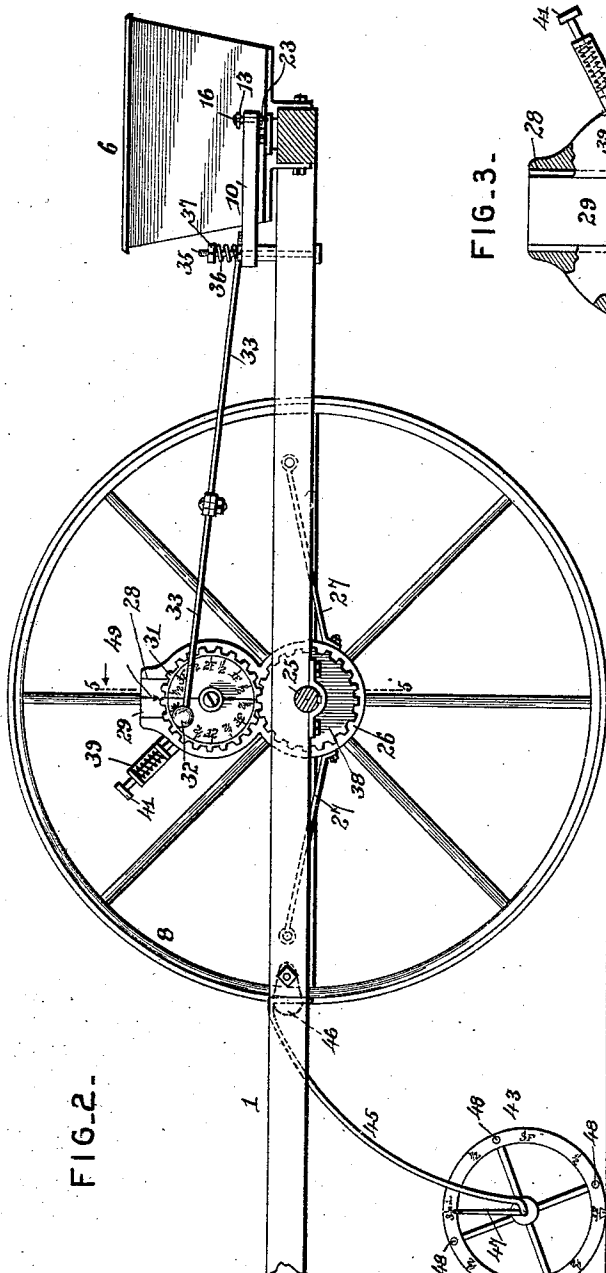
2 Sheets—Sheet 2.

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Patented Nov. 13, 1894.



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UNITED STATES PATENT OFFICE.

ARTHUR V. BIGGS, OF FRANKLIN, KENTUCKY.

CHECK-ROW ATTACHMENT FOR CORN-PLANTERS.

SPECIFICATION forming part of Letters Patent No. 529,104, dated November 13, 1894.

Application filed March 31, 1894. Serial No. 505,879. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR V. BIGGS, a citizen of the United States, residing at Franklin, in the county of Simpson and State of Kentucky, have invented a new and useful Check-Row Attachment for Corn-Planters, of which the following is a specification.

The invention relates to planters, and particularly to a check-row attachment for corn-planters, and it has for its object to provide a simple and efficient device adapted to be applied to an ordinary planter and provided with simple means for adjustment whereby the seed-slide operating mechanism and marker may be set, independently, to attain uniformity of operation; to provide simple means for adjusting said parts to plant the initial hill upon the given base-line and thus secure regular cross rows; and furthermore, to provide simple means for arranging the hills at the desired intervals in the rows and for arranging the parts to plant in drills.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view of the improved check-row attachment applied in the operative position to a planter. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a detailed view of the shifting-plate and support and means for adjusting the former, a pair of drilling gears being applied thereto and shown in dotted lines. Fig. 4 is a detailed view, in perspective, of the connecting rod and bell-crank lever whereby motion is communicated to the seed-slides. Fig. 5 is a vertical section of the shifting-plate and support upon the line 5—5 of Fig. 2. Fig. 6 is a detailed view, in perspective, of the extensible reciprocating rod whereby motion is communicated from the bell-crank lever to the seed-slides.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the framework of the planter, which may be of any preferred construction; 2, the transverse draft-beam at the front end of said framework; 3, the tongue which is attached to said draft-beam; 4, the furrow-opening shoes provided with the seed-chutes 5; 6,

the hoppers or seed-boxes communicating with said seed-chutes and provided with the reciprocating seed-slides 7, of the ordinary construction, and 8 the ground-wheels. These seed-slides are connected for simultaneous operation by a transverse bar 9, which is bolted at its extremities thereto, and 10 represents a bell-crank or angle lever, one arm of which is connected to said bar 9 by a reciprocating rod 11. This connecting-rod is extensible to suit the location of the bell-crank lever, and comprises the longitudinally adjustable members 12 and 13, of which the former is provided with a terminal fixed pin 14 to engage a perforation 15 in the bar 9 and the latter is provided with a loose or swiveled pin 16 fitting in one of a series of perforations 17 in the front arm of the bell-crank lever. These members of the extensible rod are connected and held at the desired adjustment by the split clamping-block 18, of which the twin members 19 and 20 thereof are connected by a set-screw 21 and are provided with seats 22 for the reception of the rods. The terminal pins 14 and 16 are held in place in their respective perforations by split pins 23.

Secured to the framework of the planter adjacent to one of its side-beams, and provided near its lower end with an opening 2 to receive the shaft 25 of the ground-wheels, is a supporting-plate 26, which is held in place by means of the front and rear braces 27. This supporting-plate is provided at its upper end, and in its outer side, with a dovetailed countersink or guide 28 in which is fitted, slidably, the shifting-plate 29. In the construction illustrated in the drawings the guide 28 is formed by providing the supporting plate with a vertical slot.

The slide or shifting-plate 29 is provided upon its inner side with a spindle 30 upon which is loosely and removably mounted the peripherally toothed or spurred indicator-wheel 31, having a stud or knob 32 upon which is swiveled one end of an extensible connecting-rod 33. The construction of this rod is similar to that of the reciprocating rod 11, with the exception that it is provided at its front end with a slot 34 engaging a stud 35 on the lateral arm of the bell-crank lever 10, a friction spring 36 being coiled upon said stud to bear upon the upper surface of

the slotted portion of the rod, and a nut 37 being threaded upon the upper end of said stud to bear upon the upper end of the spring and regulate the tension of the same. This loose connection between the rod 33 and the bell-crank lever is employed to avoid jarring and straining of the parts and allow a slight independent movement of the rod when the adjustment of the throw of the bell-crank lever does not agree accurately with the movement of the seed-slides. The pressure of the spring upon the rod produces sufficient friction to insure the prompt movement of the lever, and hence of the seed-slides.

A gear 38 is fixed to the hub of the ground-wheel adjacent to the plane of the supporting-plate and in position to mesh with the peripheral teeth or spurs of the indicator-wheel.

To stop the operation of the planting or feeding-mechanism the shifting-plate or slide 29 is elevated in its guide, and this elevation of the shifting-plate or slide is accomplished by means of an operating lever 39, pivoted to the outside of the supporting-plate and slotted to receive a pin 40 on the slide. Mounted upon the operating lever is a spring-actuated locking-pin or bolt 41 to engage one of a series of sockets 42 formed in the edge of the supporting-plate. A series of these sockets is arranged in the front as well as the rear edge of the supporting-plate, whereby the lever may be mounted for operation at either side thereof.

The marker which is employed in connection with the above described mechanism consists of a marker-wheel 43 provided with a peripheral marking-tooth 44 which extends laterally beyond the plane of the wheel, and a curved standard 45, upon the lower end of which the wheel is mounted and which is, in turn, swiveled at its upper end in a bearing-block 46 secured to the framework of the planter. This marker-wheel is arranged to operate directly in rear of the ground-wheel. Rising from the lower end of the standard and preferably forming a part thereof, is a pointer 47 which extends radially outward to the rim of the wheel to indicate graduations thereon and said rim is provided with spaced studs 48 whereby the wheel may be turned to "set" it as hereinafter explained.

The rim of the marker-wheel is divided to indicate feet and fractions thereof, according to the size or circumference thereof, and the face of the indicator-wheel is provided with a corresponding series of graduations, to enable the marker and planting-mechanisms to be adjusted accurately to operate in unison. A stationary pointer or arrow 49 is arranged upon the slide or shifting-plate adjacent to the rim of the indicator wheel, and as the seed-slides drop at the end of each linear movement and as one revolution of the indicator-wheel will cause two movements of the seed-slides, the graduations upon one half of the indicator-wheel correspond with the grad-

uations upon the complete circumference of the marker-wheel. The size of the marker-wheel and the gearing whereby the indicator-wheel derives its motion are so related that the former makes two revolutions to one of the latter.

As above stated the graduations upon the marker-wheel indicate feet and fractions thereof, and in the construction illustrated in the drawings, the circumference thereof measures three feet and ten inches, whereby when the mark indicating that measurement is opposite the pointer the machine will move forward a distance of three feet and ten inches before the marking tooth will come in contact with the surface and make another impression. If it is desired that the machine shall move forward any fractional part of that measurement, in order to cause the first mark to fall upon a certain prescribed line the wheel must be "set" to bring the mark representing the desired distance opposite the pointer. In the same way the indicator-wheel is "set" to agree with the marker-wheel, whereby the seed will be dropped at the proper time to place it at a predetermined point as the starting or initial hill of a row.

It will be understood that by changing the sizes of the marker-wheel and indicator-wheel any desired distances between hills may be secured.

The slide or shifting-plate is provided near its lower end with an opening 50 which may be used to receive a spindle of a gear 51 which is shown in dotted lines in Fig. 3, and a similar gear of small diameter, such as indicated in dotted lines in said figure, may be attached to the hub of the ground wheel in lieu of the gear shown in full lines in the other figures of the drawings, suitable connection being provided between said gear 51 and the seed-slides, to adapt the machine for planting in drills.

Various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

It is my intention to use the ordinary measuring stick and pegs to lay off the field, in connection with the above described mechanism, but as the use of these auxiliaries is well known in the art a detailed description thereof is unnecessary.

Having thus described my invention, I claim—

1. In a device of the class described, the combination with seed-slides, of a check-row wheel, connections between said wheel and the seed-slides, operating devices for said wheel, means for adjusting the wheel independently of the operating devices, and a marker-wheel having graduations indicating linear measurement, said check-row wheel having similar graduations indicating measurements corresponding with those on the marker-wheel, substantially as specified.

2. The combination with a frame-work, ground-wheels, and planting mechanism having seed-slides, of a grooved frame rising from said framework adjacent to one of the ground-wheels, a slide mounted in the groove of said frame, a check-row-wheel mounted on a stub-shaft carried by said slide, a gear fixed to the said adjacent ground wheel and meshing with peripheral teeth on the check-row wheel, a lever fulcrumed upon said frame and loosely connected to the slide, means for locking said lever in its adjusted positions, and extensible connections between the check-row wheel and the seed-slides, substantially as specified.

3. The combination with a framework, ground-wheels and planting-mechanism including seed-slides, of a bar connecting said seed-slides and provided with perforations 15, a horizontal bell-crank lever having one arm provided with perforations 17, an extensible connecting rod 11 having parallel, relatively-adjustable members connected by a clamping block, one of said members terminating in a pin 14 to engage one of the perforations 15, and the other member terminating in a loose pin 16 to engage one of the perforations 17, a check-row wheel meshing with a gear on one of the ground wheels, and connections between said check-row wheel and the other arm of the bell-crank lever, substantially as described.

4. In a device of the class described, the combination with a framework, ground-wheels, and seed-slides, of a bell-crank lever, an extensible connecting-rod between the seed-slides and one arm of the bell-crank lever, means for adjusting the connection between said rod and the arm of the lever to

vary the throw of the seed-slides, a check-row wheel operatively connected with a ground-wheel, an extensible connecting-rod between the said check-row wheel and the other arm of the bell-crank lever, the end of said rod being slotted to engage a pin on the lever, and a pressure spring arranged upon said pin and bearing upon the end of the connecting rod and provided with tension adjusting devices, substantially as specified.

5. In a device of the class described, the combination with a framework, ground-wheels, and seed-slides, of a frame or support secured to said framework, a shifting-plate or slide mounted in a slot or guide in the upper end of said frame or support, an operating-lever fulcrumed upon the frame or support and having a slotted terminal to engage a stud on the shifting-plate or slide, a spring-actuated locking-bolt carried by the operating lever to engage sockets in the edge of the frame or support, a gear fixed to the hub of the adjacent ground-wheel contiguous to the plane of the frame or support, a check-row wheel mounted upon a spindle on the shifting-plate or slide and adapted, when the latter is in its depressed position, to mesh with the gear on the ground-wheel, and connections between the check-row wheel and the seed-slides, substantially as specified.

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

ARTHUR V. BIGGS.

Witnesses:

A. T. BRADLEY,
W. R. JACKSON.