No. 873,673. PATENTED DEC. 10, 1907.

C. E. MENTZER.

CORN PLANTER.

APPLICATION FILED OCT. 9, 1905. RENEWED JULY 27, 1907.

3 SHEETS—SHEET 1.

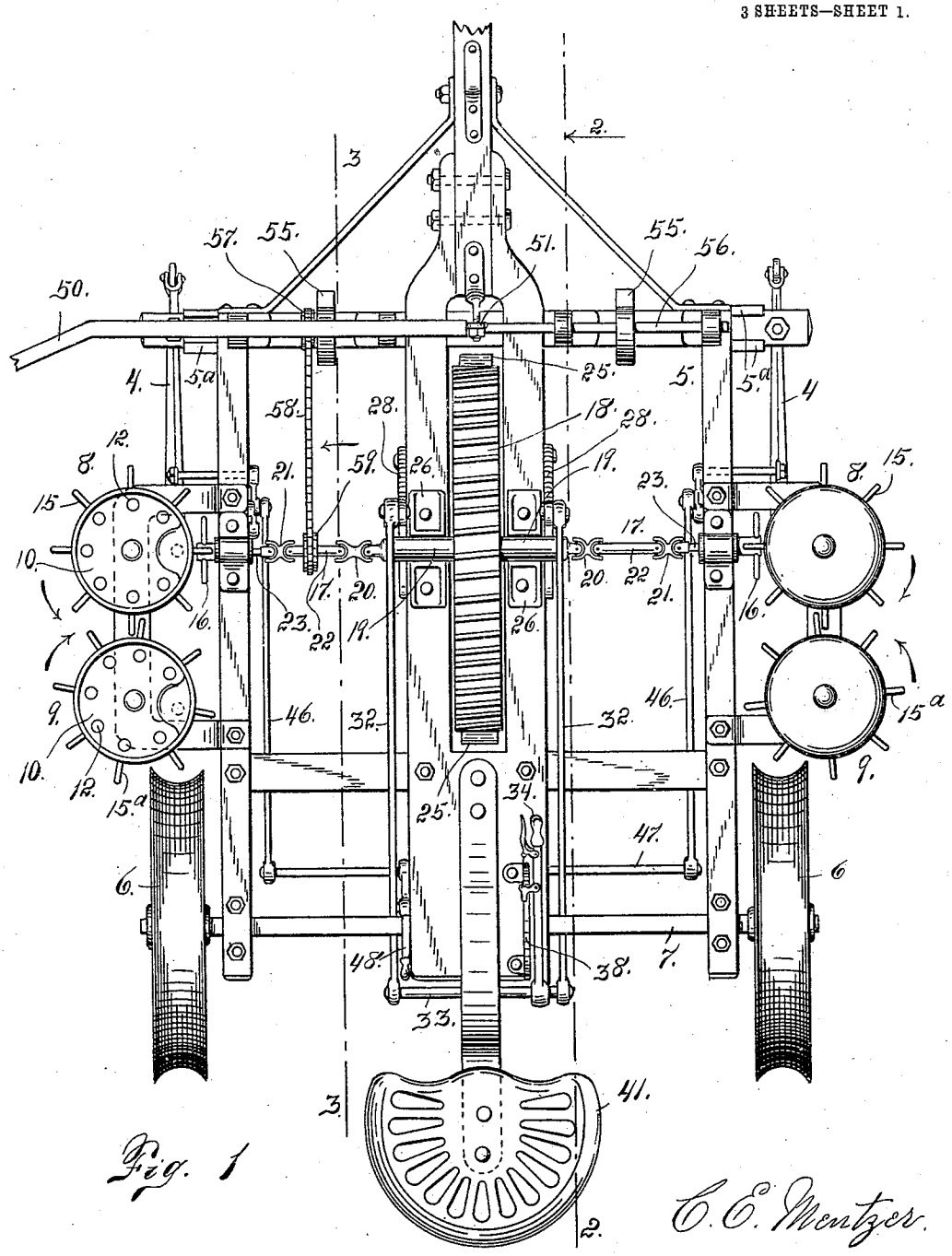


Fig. 1

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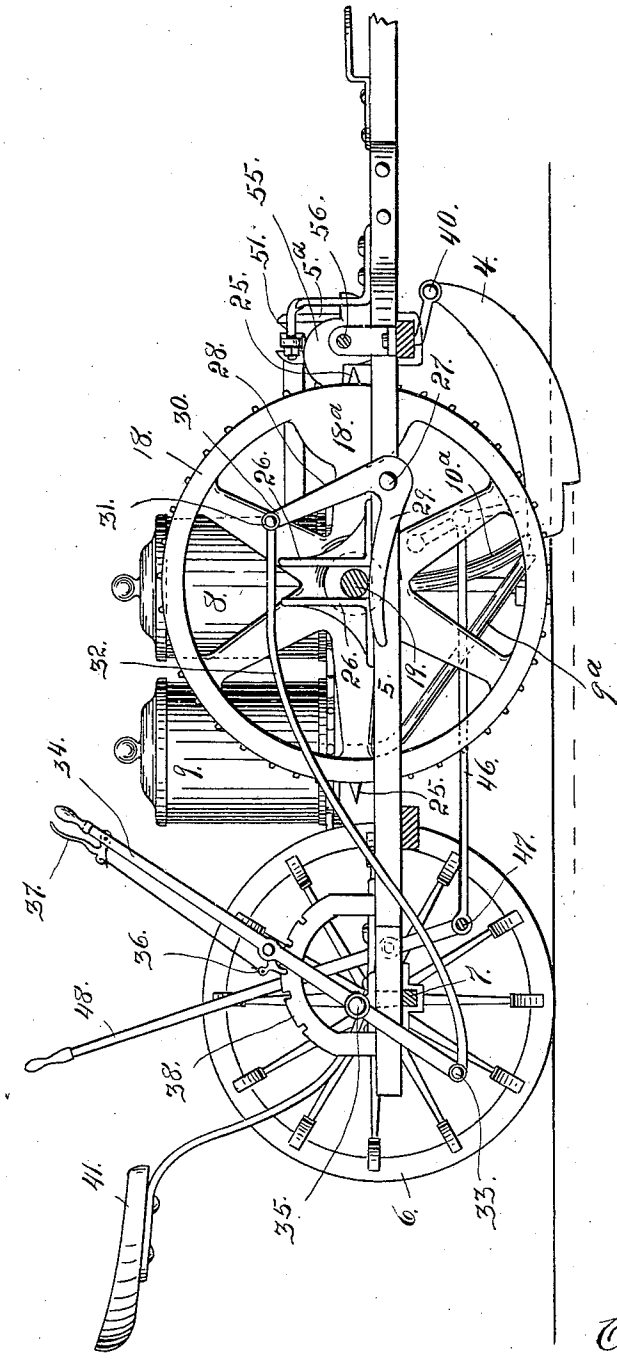


Fig. 2.

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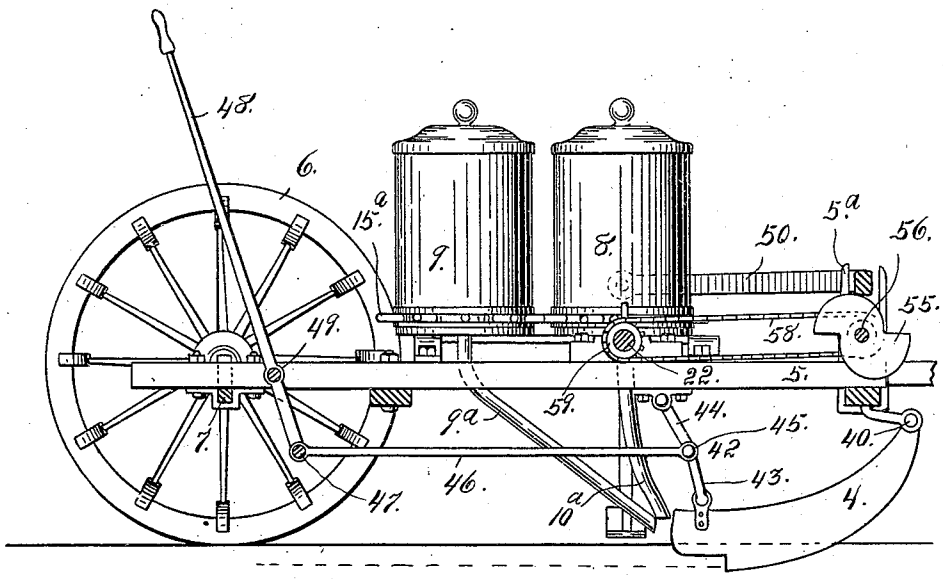


Fig. 3.

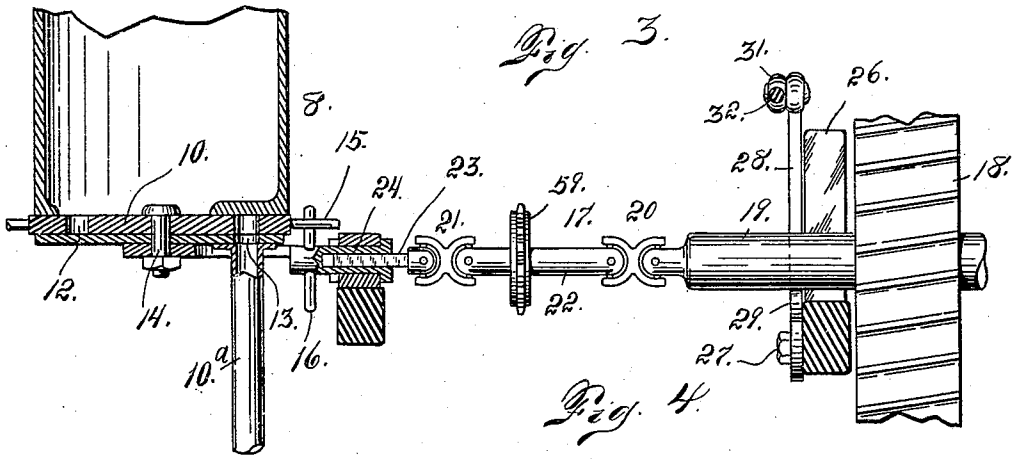


Fig. 4.

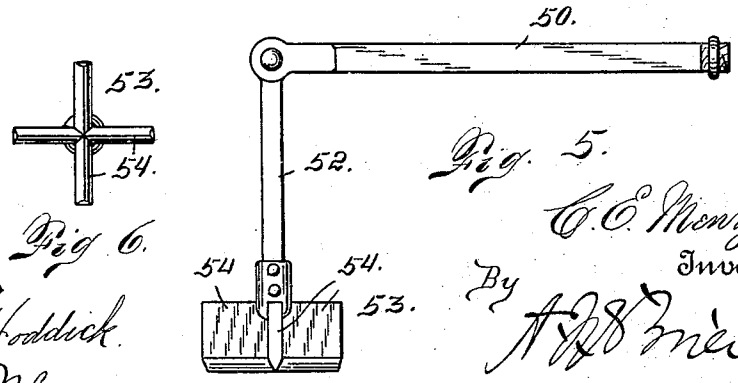


Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

CLAUDE E. MENTZER, OF DENVER, COLORADO, ASSIGNOR OF TWENTY-FOUR AND ONE-HALF ONE-HUNDREDTHS TO FRANK V. JOHNSON AND SEVENTY-FIVE AND ONE-HALF ONE-HUNDREDTHS TO FRANK R. MANSFIELD, BOTH OF DENVER, COLORADO.

CORN-PLANTER.

No. 873,673. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed October 9, 1905, Serial No. 282,057. Renewed July 27, 1907. Serial No. 385,809.

To all whom it may concern:

Be it known that I, CLAUDE E. MENTZER, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Corn-Planters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in corn planters, my object being to provide a thoroughly practicable construction for automatically dropping the corn as the machine is drawn across the field.

The mechanism will now be described in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a top plan view of a corn planter equipped with my improvements. Figs. 2 and 3 are sections taken on the lines 2—2 and 3—3 of Fig. 1, respectively. Fig. 4 is a fragmentary detail view illustrating the automatic dropping mechanism, the parts being shown on a larger scale. Fig. 5 is a detail view of the automatic marking device and Fig. 6 is an underneath view of the marker head.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a suitable frame work provided with rear ground wheels 6 journaled upon an axle 7. To the forward extremity of the frame work is attached shoes or furrow opener 4 adapted to form small furrows into which the corn is dropped. The wheels 6 are in line with these furrows and as they pass over them, the dirt is pressed down upon the corn. These features are of ordinary construction and nothing is claimed thereon broadly in this application.

On each side of the frame work are mounted two receptacles or hoppers 8 and 9, one holding the corn to be planted and the other fertilizing material to be deposited with the corn. The bottom of each receptacle is provided with a revoluble disk 10 having a series of recesses 12 adapted to register with a recess 13 when the disk is rotated. The recess 13 may be said to be formed in the stationary bottom of each receptacle, said bottom being connected with the disk by a bolt 14 upon which the disk 10 is journaled. The receptacle 9 has a depending tube 9^a communicating with the opening 13, while the receptacle 8 has a smaller tube 10^a communicating with a corresponding opening in its bottom. The two tubes or depending pipes 9^a and 10^a are so arranged that the material from the two receptacles on the same side of the machine, is deposited in the same place. The object of the fertilizing receptacle is to economize in fertilizing the material, by placing a small quantity of the said material in immediate proximity to the deposited kernels or seeds, in order to obtain the best possible results. Of course the fertilizing receptacle may be omitted if desired.

Each disk 10 is provided with pins 15 projecting from its periphery. These pins belonging to the disk of the receptacle 8, are directly acted on by pins 16 connected with a shaft 17. The pins 16 extend at right angles to the pins 15 so that as the shaft is turned, the disk is actuated. It will be understood that the parts are so arranged and connected that every time a pin 16 acts upon a pin 15 to give the disk 10 a partial rotation, a recess or opening 12 of the disk will be made to register with an opening 13 of the stationary bottom of the receptacle, whereby the contents of the recess or opening 12 are dropped through the orifice 13 into the spout 9^a or 10^a as the case may be. The pins 15 of the disk 10 belonging to the receptacle 8, act on corresponding pins 15^a connected with the disk of the receptacle 9 whereby a partial rotary movement is imparted to the disk of the receptacle 9 every time a movement is imparted to the disk of the receptacle 8, with the result that a quantity of fertilizing material is discharged into the spout 9^a every time a number of grains of seed is discharged into the spout 10^a of the receptacle 8.

As shown in the drawing the shaft 17 is provided with two pins 16 located on opposite sides of the shaft, whereby a pin 15 is acted on by a pin 16 every time the shaft 17 makes a half revolution. The shaft 17 is actuated by a ground wheel 18 fast on an axle 19, the latter in reality forming a part

of the shaft 17. The shaft part 19 is connected on opposite sides of the wheel 18 with the shaft parts 17 by universal joints 20. The shaft 17 is also provided with a second universal joint 21 which connects the shaft part 22 with a shaft part 23 longitudinally slidable in a hollow shaft part 24 to one extremity of which the pins 16 are directly connected.

During the operation of the machine provision is made for raising and lowering the ground wheel 18, and in order to make this practicable it is necessary that the shaft 17 shall have an extensible feature and this is found in the telescoping parts 23 and 24. The universal joint construction of the shaft 17 as heretofore explained, also permit the raising and lowering of the shaft 19, since it allows the shaft parts 22 on opposite sides of the shaft part 19, to occupy an inclined position when the wheel 18 is adjusted to bring the part 19 above or below the shaft parts 22.

Attention is called to the fact that the ground wheel 18 is provided with two projections 25 located at the opposite extremities of a diameter of the wheel. These projections coincide as to position with the pins 16 of the shaft 23. Hence every time a tooth or projection 25 enters the ground at a point directly below the axis of the wheel, one of the pins 16 engages a pin 15 for the purpose heretofore stated. The distance between the points where the corn is dropped to the ground through the spout 10^a as heretofore described, is therefore equal to half the circumference of the wheel 18, the size of this wheel being regulated to bring about this result.

The wheel 18 is reinforced on one side as shown at 18^a. This reinforcement extends equally on both sides of one of the projections 25. Its object is to permit the adjustment of the wheel to compensate for inaccuracies that may be discovered in the proper dropping of the corn. For instance if it is found that for any reason as during the turning of the machine at the ends of the field, the mechanism is so moved that the dropping of the corn, would not be directly in line with the transverse direction of the rows thus far planted, the machine may be stopped in such position that the lowest point of the wheel 18 will be directly in line with the transverse direction of a row. The wheel 18 may then be raised from the ground sufficiently to allow it to swing clear thereof. By virtue of the reinforcement 18^a, the wheel will automatically move downwardly in one direction or the other until the projection 25 opposite the reinforcement 18^a will occupy a position directly below the axis of the wheel. The latter is then lowered and the machine will be accurately adjusted as will be readily understood.

In order to permit the raising and lowering of the wheel 18, the axle 19 of the latter occupies a space between two angle brackets 26, one being located on each side of the wheel. The vertical members of these brackets are of sufficient length to allow the axle of the wheel to be raised and lowered within certain limits. Upon each side of the wheel is fulcrumed as shown at 27, a bell crank lever 28, one arm of which occupies a position underneath the axle 19. The other arm 30 of this lever is connected as shown at 31 with one extremity of a rod 32 whose opposite extremity leads to a transverse rod 33 with which the lower extremity of a hand lever 34 is connected. This hand lever is provided with the usual dog 36 controlled by a hand piece 37. The dog 36 engages a notched quadrant 38 in the usual manner. It will be understood that there is a bell crank lever 28 and a connecting rod 32 on each side of the wheel 18, the two connecting rods 32 being connected at their rear extremities by the transverse rod 33. Assuming that the parts are in the position shown in Fig. 2 of the drawing, if it is desired to lift the wheel 18 for the purpose heretofore stated, it is only necessary for the operator sitting upon the seat 41, to grasp the lever 34 and draw its upper arm toward him. This will lift the arm 29 of the bell crank lever and raise the wheel 18 for the purpose set forth. As soon as the wheel has been properly adjusted, it may be dropped to the ground by reversing the movement of the lever 34 as will be readily understood.

Attention is called to the fact that the shoes or furrow openers 4 are pivotally connected with the frame work of the machine as shown at 40. The rear extremity of each shoe is connected with the frame by means of a toggle joint 42 composed of two members 43 and 44. The inner extremities of these members are connected as shown at 45 with a rod 46. It will be understood that there is a toggle joint 42 and a rod 46 on each side of the machine. The rear extremities of the rods 46 are connected by a transverse rod 47 to which is connected in operative relation the lower extremity of a hand lever 48 fulcrumed on the frame as shown at 49. The shoes 4 may be controlled by the manipulation of the lever 48. When it is desired to lower the shoes to their operative position in the ground, the lever 48 is thrown to the position shown in the drawing whereby the connected extremities of the toggle members are thrown to a position slightly forward of the head center, thus locking the shoes in their lowered position. If it is desired to raise the rear extremities of the shoes from the ground, the position of the lever 48 is reversed as will be readily understood.

In connection with my improved corn

planter I employ a suitable marking device designated in the drawing by the reference characters 50, 51, 52, 53, 54, 55, 56, 57, 58, and 59. As nothing is claimed on the marking mechanism in this application, a description in detail of the construction and operation of the said marking device will not be given.

From the foregoing description the use and operation of my improved machine will be readily understood. The machine as shown in the drawing is constructed to be drawn by two horses and the mechanism is arranged to plant two rows at a time. As the machine is drawn across the field, the disks of the two receptacles 8 and 9 on each side of the machine, are intermittently actuated from the shaft 17. The pins on the shaft 17 act directly on corresponding pins of the disk of the receptacle 8 whereby partial rotary movement are imparted to the disk of the receptacle 8 at predetermined intervals, the said intervals being so regulated as to properly space the hills of corn. At the same time the pins 15 of the disk of the receptacle 8 act on the pins 15^a of the disk of the receptacle 9 and actuate the last named disk whereby a small quantity of fertilizing material is dropped to the ground simultaneously with each corn dropping act, the fertilizing material being dropped in immediate proximity to the kernels of corn. The corn and fertilizing material are dropped into small furrows made by the shoes 4 on each side of the machine and the ground wheels 6 run over these furrows and press the earth upon the corn whereby it is buried to a sufficient depth to properly germinate.

Attention is called to the fact that by virtue of the construction of the wheel 18 whereby it is reinforced or weighted upon one side, the correction of inaccuracies of row-alinement may be effected without stopping the travel of the machine, since it is only necessary to lift the wheel 18 clear of the ground, when the said wheel will automatically assume the position with the weighted portion of its periphery lowermost, thus performing the correction or compensation desired.

Having thus described my invention, what I claim is:

1. In a corn planter, the combination with a suitable frame and the ordinary supporting ground wheels, of a centrally located ground wheel provided with journals, bearings in which the journals of the wheel are vertically movable, a shaft operated from the auxiliary ground wheel and connected with the journals of the latter by universal joints, the said shaft being also extensible to permit the raising and lowering of the ground wheel, a corn dropping device, and a suitable operative connection between the shaft of the auxiliary ground wheel and the said device for the purpose set forth.

2. The combination with a frame work, supporting ground wheels and seed dropping devices mounted on opposite sides of the machine, an auxiliary centrally located ground wheel, an extensible shaft operated from said ground wheel, the said shaft being provided with jointed members, and a suitable operative connection between the said shaft and the corn dropping devices on both sides of the machine.

3. The combination with a frame work and supporting ground wheels, of seed receptacles mounted on opposite sides of the machine, corn dropping disks located in the bottom of said receptacles, the said disks being provided with peripheral pins, an operating shaft having pins disposed at right angles to the pins of the corn dropping disks, and a ground wheel for actuating the shaft, the said ground wheel having peripheral projections coinciding in position with the pins of the operating shaft, the said ground wheel being journaled to have a vertical adjustment on the frame work, and the shaft parts on opposite sides of the ground wheel being connected with the journals of the latter by universal joints, the operating shaft being also extensible for the purpose set forth.

4. In a machine of the class described, the combination with a suitable frame work and ground wheels, of shoes having their forward extremities pivotally connected with the frame work, and means for raising and lowering the rear extremities of the shoes comprising toggle joint connections between the frame and the rear extremities of the shoes, a hand lever and a connection between the hand lever and the toggle joints of the shoes, substantially as described.

5. In a machine of the class described, the combination with a suitable frame work and ground wheels, of shoes having their forward extremities pivotally connected with the frame and located on opposite sides of the machine, the said shoes being in alinement with the ground wheels of the machine, a toggle joint connection between the rear extremity of each shoe and the frame, rods connected with the joints of the toggle members, and a lever for actuating the said rods, whereby the rear extremities of the shoes may be raised and lowered at will.

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

CLAUDE E. MENTZER.

Witnesses:
DENA NELSON,
A. J. O'BRIEN.