No. 618,685. Patented Jan. 31, 1899.

W. KLEIN.

CORN PLANTER.

(Application filed June 6, 1898.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

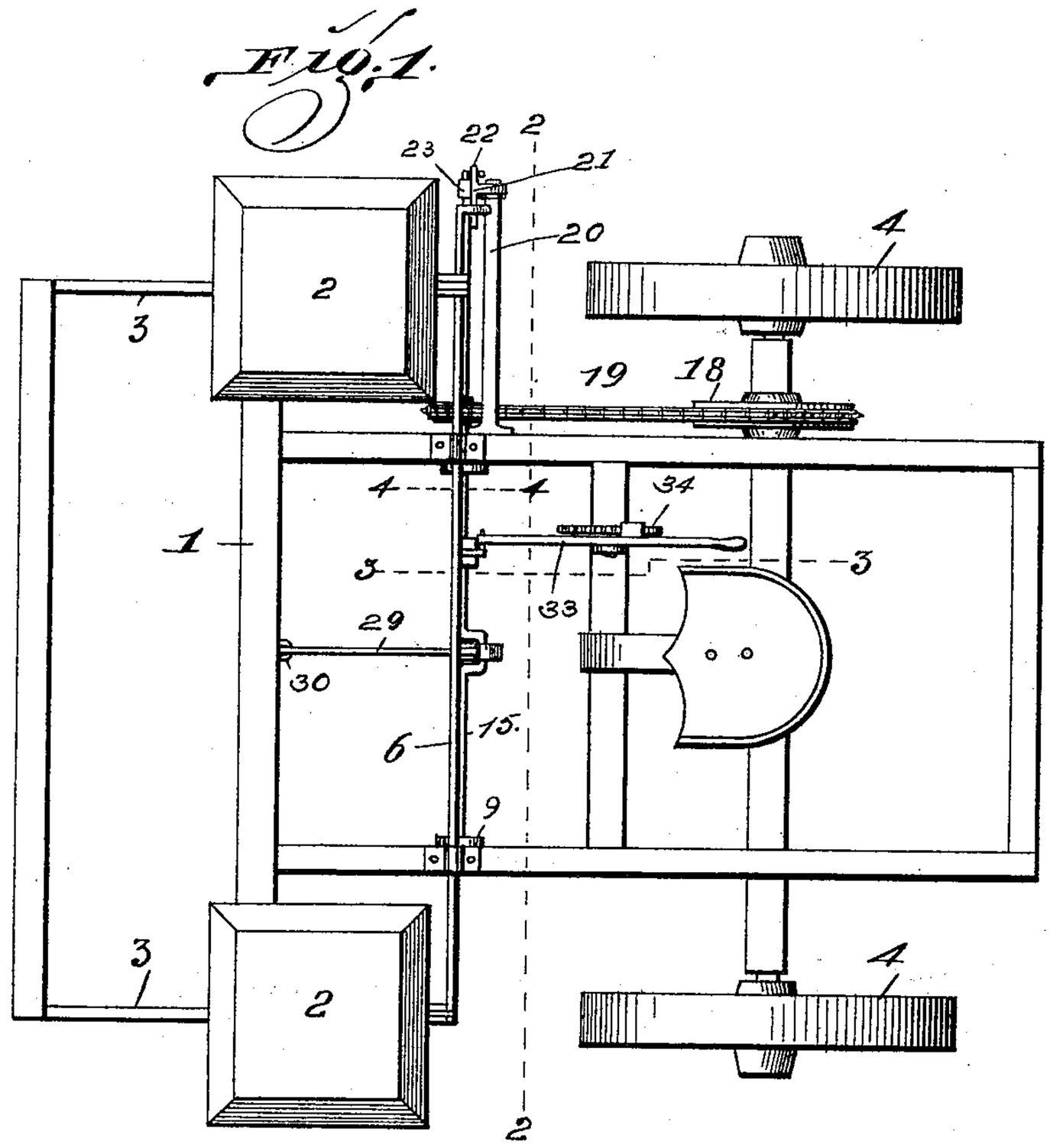

Fig. 2.

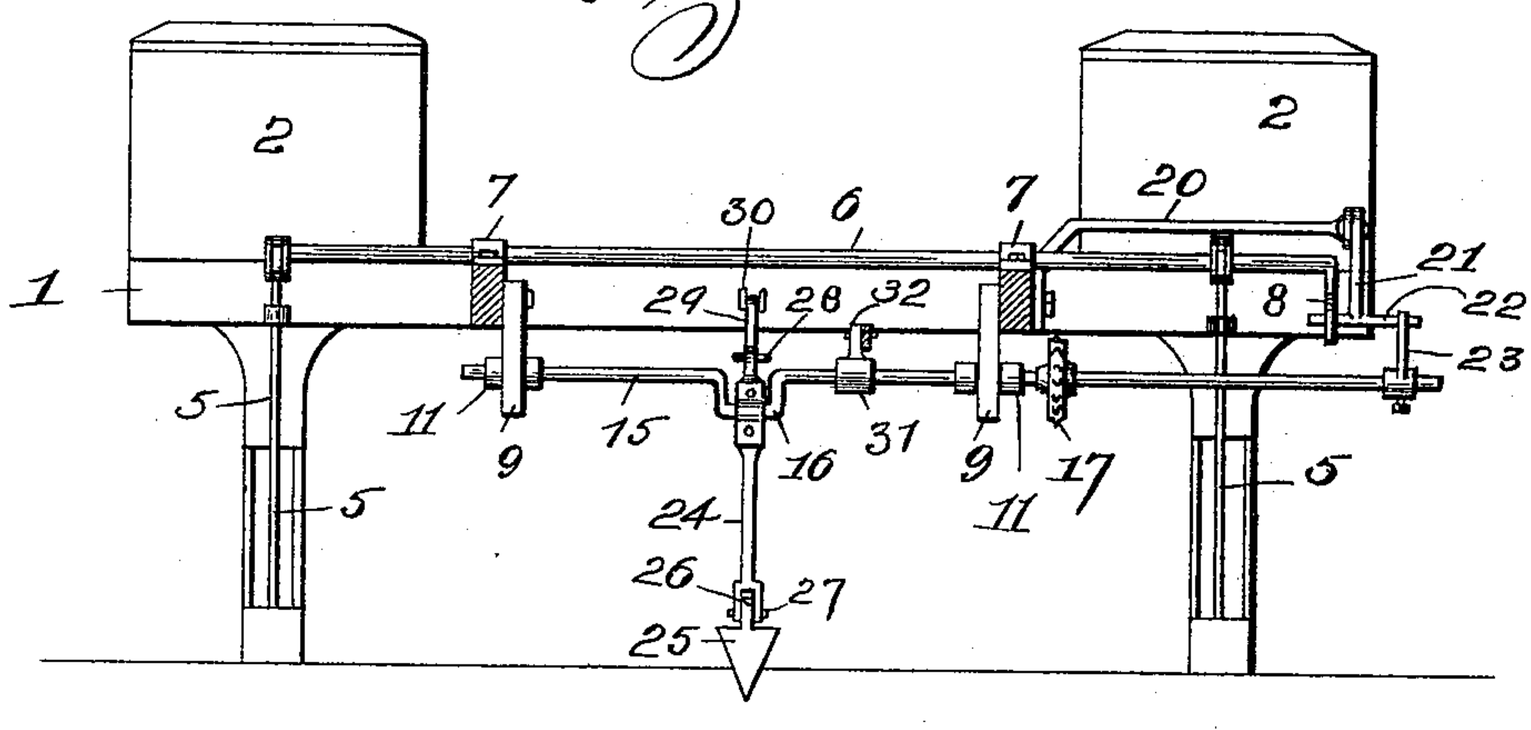

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Fig. 3.

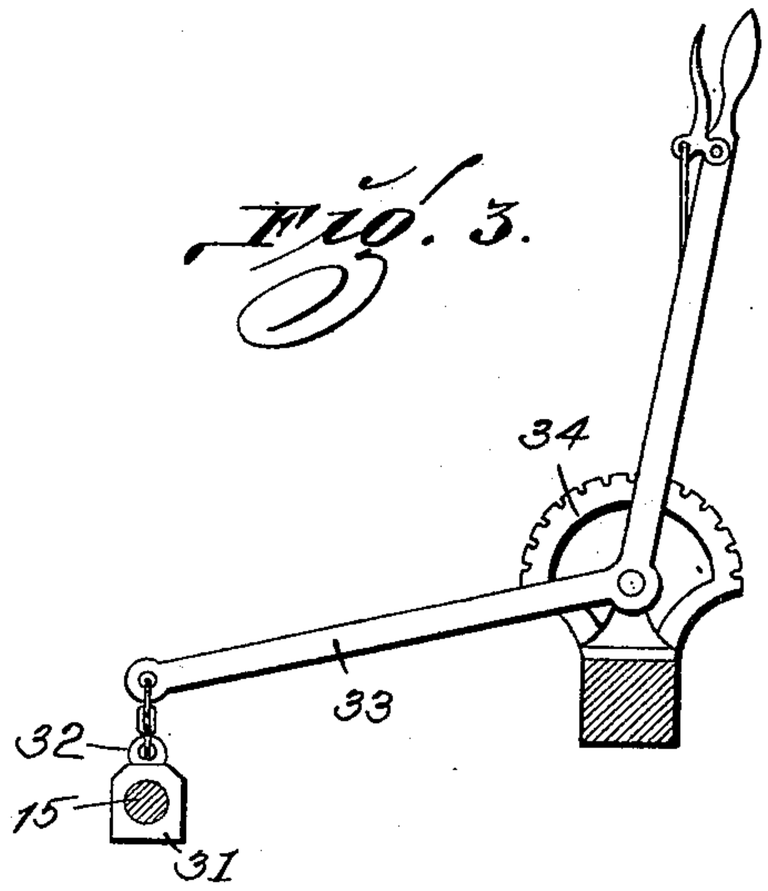


Fig. 4.

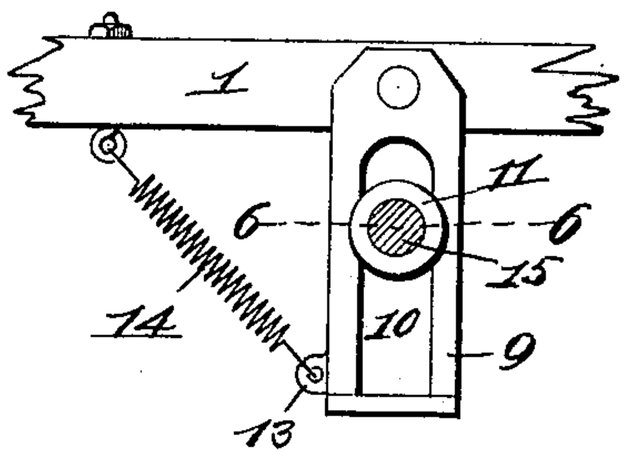


Fig. 5.

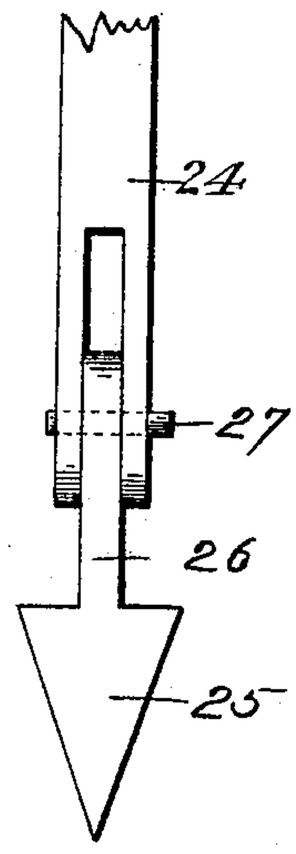
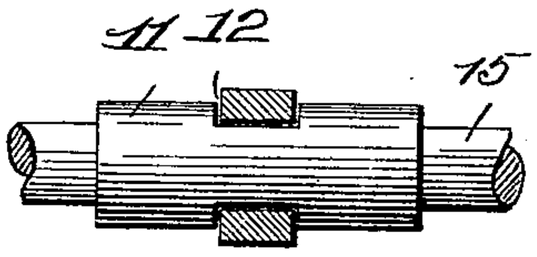


Fig. 6.



Attest

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UNITED STATES PATENT OFFICE.

WALTER KLEIN, OF ST. LOUIS, MISSOURI.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 618,685, dated January 31, 1899.

Application filed June 6, 1898. Serial No. 682,794. (No model.)

To all whom it may concern:

Be it known that I, WALTER KLEIN, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Corn-Planters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates generally to corn-planters, and more particularly to the marking attachments therefor; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

Figure 1 is a plan view of the frame of a corn-planter having my improved marking attachments applied thereto as required for practical use. Fig. 2 is a transverse sectional view taken approximately on the line 2 2 of Fig. 1. Fig. 3 is an enlarged sectional view taken approximately on the line 3 3 of Fig. 1. Fig. 4 is an enlarged sectional view taken approximately on the line 4 4 of Fig. 1. Fig. 5 is an enlarged side elevation of the lower end of the marker. Fig. 6 is a sectional view taken approximately on the line 6 6 of Fig. 4.

Referring by numerals to the accompanying drawings, 1 indicates the frame of the corn-planter, which is of the usual form and construction, upon which frame is mounted in the usual manner the seedboxes 2, and said frame being also provided with the usual runners 3 and traction-wheels 4.

5 5 indicate the vertical rods that operate the valves which control the dropping of the seed, said rods being operated in the usual manner by the transverse shaft 6, which is arranged in suitable bearings 7, located upon top of the longitudinally-extending timbers of the frame 1 immediately behind the lower ends of the seedboxes 2. One end of this shaft 6 extends beyond the point where it connects with one of the vertical rods 5, and said end is extended downwardly and bifurcated, as indicated by the numeral 8.

Pivoted to the inner faces of the longitudinal timbers of the frame 1 and extending downwardly therefrom are the boxes 9, provided with the vertical slots 10, in each of which boxes is located and arranged for vertical movement the sleeves 11, in the sides of which are formed rectangular notches 12, in which the sides of the boxes 9 engage when said sleeves 11 are located in said boxes. Apertured lugs 13 are formed integral with the lower ends of said boxes, and the lower ends of coil-springs 14 are connected to said apertured lugs, and the upper ends of said coil-springs are secured to the frame of the machine at points in front of said boxes 9. Arranged for rotation in these sleeves 11 is a shaft 15, the same being provided with the integral crank 16, which is positioned at a point in the center of the width of the machine, and said shaft 15 is extended beyond the sleeve 11 upon the same side as is the extended end of the shaft 6. Rigidly carried by the extended end of the shaft 15, just outside of the sleeve 11, is a sprocket-wheel 17.

Located upon the rotating axle which carries the traction-wheels 4 is a large sprocket-wheel 18, and a sprocket-chain 19 connects the sprocket-wheels 17 and 18, thus driving the crank-shaft 15.

Secured to the frame 1 and extending laterally therefrom adjacent the extended end of the shaft 6 is a bracket 20, to the outer end of which is hinged in any suitable manner a short downwardly-pending bar 21, with the lower end of which is formed integral a horizontal bar 22, one end of said horizontal bar 22 passing between the forks of the bifurcated end 8 of the shaft 6.

Adjustably located upon the extended end of the crank-shaft 15 is a finger 23, which during its rotation strikes against the outer end of the rod 22.

Journaled upon the crank 16 of the crank-shaft 15 is the upper end of an arm 24, the lower end of which carries a pointed blade or marker 25, which blade is provided with the integral shank 26, that passes upwardly between the portions of the bifurcated lower end of the arm 24 and is held in position by a wooden pin 27. The upper end of the arm 24 is provided with a ring 28, and a connecting-rod 29 connects said ring with a staple 30, that is secured to the front end of the transverse timbers of the frame of the planter.

Loosely mounted upon the crank-shaft 15 adjacent the crank 16 is a sleeve 31, with which is formed integral an upwardly-extending lug 32, to which is secured by a link the forward end of a bell-crank lever 33, said

bell-crank lever being fulcrumed to one of the transverse timbers of the frame of the planter, the upper end of this bell-crank lever being formed into a handle and provided with a ratchet-engaging device that is intended to operate in connection with the segment 34, carried by the frame, adjacent the point where the bell-crank lever is fulcrumed.

The operation of my improved corn-planter is as follows: As the planter is advanced over the ground in the usual manner the axle carrying the traction-wheels 4 will rotate, and thus rotary motion will be transmitted by the sprocket-chain 19 to the sprocket-wheel 17, located upon the crank-shaft 15, and necessarily said crank-shaft 15 will rotate. As said crank-shaft 15 rotates the arm 24, carrying the marker or blade 25, will be given a vertical movement, and necessarily every time the blade or marker 25 reaches its lowermost limit of movement it will pass into the ground and make a mark. As the crank-shaft 15 rotates the finger 23 will necessarily be rotated or carried with said crank-shaft 15, and during its travel it will strike the outer end of the rod 22, and the rod 21, carrying said rod 22, will swing upon its pivot, and the opposite end of the rod 22 being connected to the bifurcated end 8 of the shaft 6 will slightly rock said shaft 6, and in so doing will operate the rods 5, that control the dropping-valves of the planter. As the dropping-valves of the rods 5 and the shaft 6 and connections are of the ordinary well-known construction I do not deem it necessary to illustrate or describe the same in detail, as it is only necessary to provide the end of the shaft 6 with a downwardly-bent bifurcated portion in order to permit of its being connected with my improved mechanism. Thus it will be seen how the operation of making a mark and the operating of the seed-dropping valves are simultaneously accomplished.

The sleeves 11, carrying the crank-shaft 15, are vertically movable in the boxes 9, and consequently if the hand-lever, which is the upper part of the bell-crank lever 33, is properly manipulated the crank-shaft 15 can be raised or lowered, as desired, and the depth to which the blade or marker enters the ground can be very easily regulated. In this manner a deep or shallow mark is made, and when the planter is not in use, but is being transported from one point to another, the marker can be raised so that it does not touch the ground at all. Should the blade or marker 25 strike a stone, root, or other obstruction with sufficient force to break said blade or the arm 24, the wooden pin 27 will break or give way before said blade or arm breaks, and in this event the blade or marker 25 can be repositioned in the lower end of said arm by merely constructing a new wooden pin and placing it in position.

By providing the coil-springs 14 the boxes 9, together with the sleeves carrying the crank-shaft, will swing in an easy manner beneath the frame of the planter and by so swinging will be relieved of any sudden jar or jolt due to the passage of the planter over rough ground or when the marker encounters a stone or root. This construction greatly reduces the danger of the breakage of any of the parts of my improved attachment.

An attachment of my improved construction is very simple, inexpensive, can be readily applied to any of the corn-planters now in use, and is very durable and efficient.

I claim—

1. In a corn-planter, a pair of swinging boxes provided with vertical slots, a crank-shaft vertically adjustable in said boxes, and a marker-arm carried and operated by said crank-shaft, substantially as specified.

2. In a corn-planter, a pair of boxes swung from the planter-frame, tubular sleeves arranged for vertical movement in said boxes, a crank-shaft rotatably carried by said sleeves, a marker-arm carried and operated by said crank-shaft, means whereby said crank-shaft is rotated, means whereby said crank-shaft is raised or lowered within the boxes, and suitable connections from said crank-shaft to the seed-dropping valves whereby said valves are operated simultaneously with each stroke of the marker, substantially as specified.

3. In a device of the class described, a rotating crank-shaft, a marker-arm journaled upon the crank of said shaft, the lower end of which marker-arm is bifurcated, a pointed blade or shovel carried by said bifurcated lower end, and a wooden pin connecting said shovel with the marker-arm, substantially as specified.

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

WALTER KLEIN.

Witnesses:

ALBERT J. MCCAULEY,

JOHN C. HIGDON.