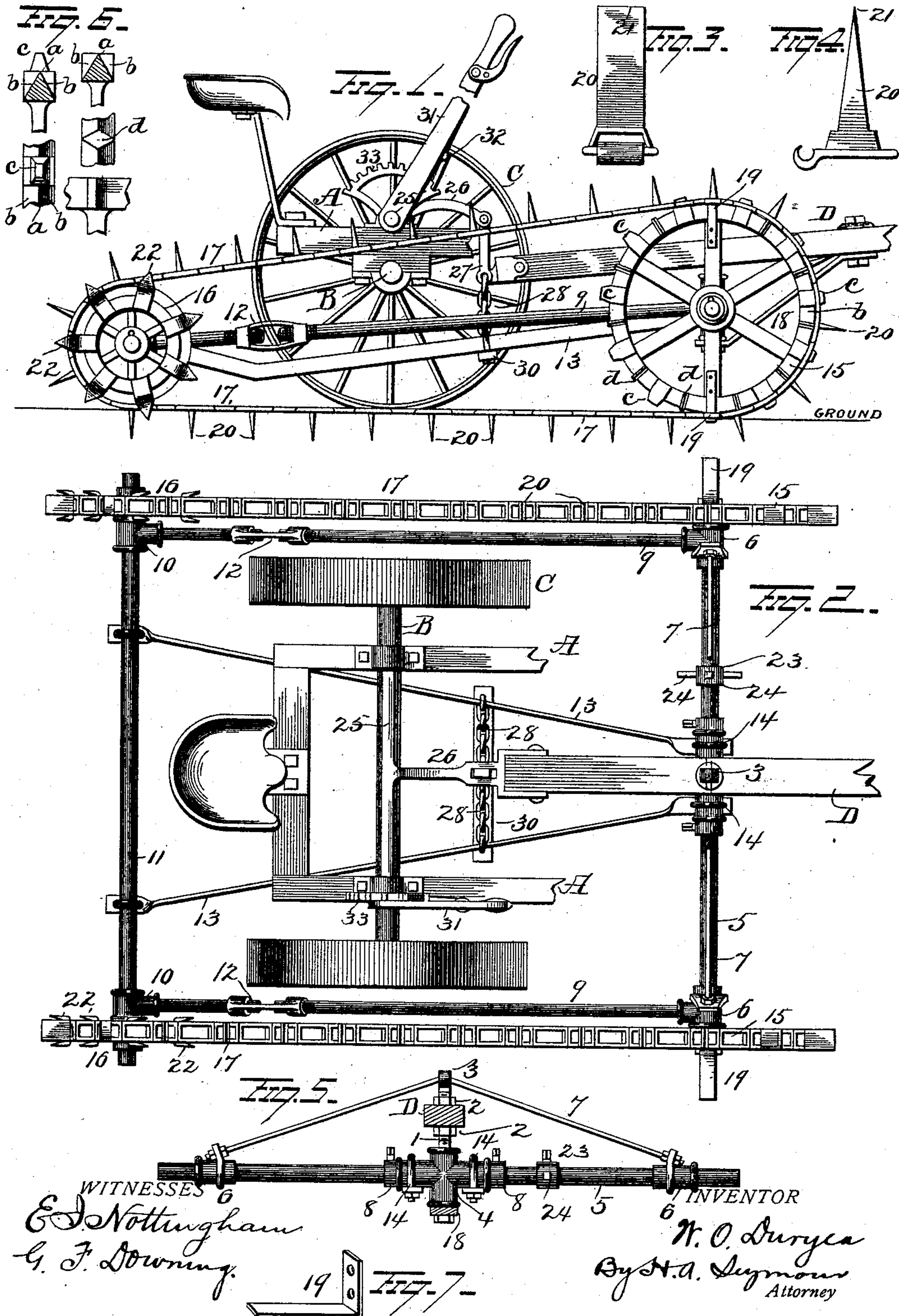


(No Model.)

W. O. DURYEA.
CHECK ROWER FOR CORN PLANTERS.

No. 605,634.

Patented June 14, 1898.



UNITED STATES PATENT OFFICE.

WILBUR O. DURYEA, OF MORNING SUN, IOWA.

CHECK-ROWER FOR CORN-PLANTERS.

SPECIFICATION forming part of Letters Patent No. 605,634, dated June 14, 1898.

Application filed November 12, 1897. Serial No. 658,324. (No model.)

To all whom it may concern:

Be it known that I, WILBUR O. DURYEA, a resident of Morning Sun, in the county of Louisa and State of Iowa, have invented certain new and useful Improvements in Check-Rowers for Corn-Planters; and I do hereby 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 ap-
10 pertains to make and use the same.

My invention relates to an improvement in automatic check-rowers for corn-planters, the object of the invention being to provide simple and efficient means for operating the dropping mechanism of a corn-planter so that the
15 seed will be dropped in straight lateral rows, or, in other words, so that the rows will be in perfect check without the use of a line or wire.

20 A further object is to provide a check-rower with simple means whereby to accurately operate markers without the use of wires.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of
25 parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a part of a corn-planter and showing a side view of my improvements. Fig. 2 is a plan view. Figs. 3 and 4 are detail views of lugs or projections on some of the links of the sprocket-chains. Fig. 5 is a detail elevation of the front axle and mount-
30 ings of the same. Fig. 6 illustrates the form and construction of the front wheel, and Fig. 7 is a perspective view of one of the markers.

A represents a portion of the frame of an ordinary corn-planter; B, the main axle; C, the carrying-wheels, and D the tongue. A screw 1 passes through the tongue and is held in proper position by means of jam-nuts 2, the upper end of said screw being provided with a loop or eye 3 and the lower end made
40 to enter a casting 4, which serves as a bearing for a revoluble shaft or axle 5. The shaft or axle 5 also has bearings near its ends in T-couplings 6 6, which are connected together by means of a truss-rod 7, passing
50 through the loop or eye 3 on the upper end of screw 1. The revoluble shaft 5 is prevented from longitudinal movement in its bearings

by means of collars 8, secured thereto by means of set-screws and adapted to bear against the respective ends of the casting 4. 55 Side rods or bars 9 are secured to the T-couplings 6, and, extending rearwardly parallel with but outside the carrying-wheels C, are secured at their rear ends to T-couplings 10, the latter serving also to receive a fixed shaft 60 11. Thus the front shaft or axle 5, the bearing or casting 4, the side bars or rods 9, and the rear shaft 11 form a frame, and in order to permit the adjustment of this frame longitudinally the side rods or bars 9 are each 65 made in two sections connected together by means of turnbuckles 12. The frame is also braced by means of diagonally-disposed rods or bars 13, connected at their forward ends to the casting 4 by means of suitable staples 70 14 and connected at their rear ends in a similar manner to the fixed shaft 11. It is apparent that when the frame is adjusted the connections of the rear ends of the rods or bars 13 with the fixed shaft will be moved 75 toward or away from each other as the frame is lengthened or shortened.

Sprocket-wheels 15 are secured to the revoluble shaft 5, and sprocket-wheels 16 are mounted loosely on the respective ends of the fixed shaft 11. Over these pairs of sprocket-wheels sprocket-chains 17 pass, and it is for the purpose of tightening or regulating the tension of these chains that the said frame is made adjustable, and in order that said frame 85 may be pulled forward properly as the apparatus moves forwardly and without putting too much strain on the bolt or screw 1 the center of the casting is connected with the tongue by means of a brace or truss rod 18. 90

Each wheel 15 is made of such size that one-half a revolution of the same will represent the distance between two rows, and each wheel is provided at diametrically opposite points with markers 19. The wheels 15 and 16 are 95 so arranged with respect to each other that the sprocket-chain 17 will pass over the ground from one wheel to the other. Some of the links of each chain are provided with lugs 20, (preferably having sharp free ends 21,) 100 adapted to enter the ground as the machine moves forward and thus insure the accurate rotation of the wheels 15 16, and consequently the accurate marking of the rows. In order

to prevent dirt from packing under the sprocket-chains as they pass over the wheels 15, the rims of said wheels are made triangular in cross-section, so as to present a sharp edge *a* and inclined faces *b*. The wheel 15 is also made with enlargements for the accommodation of the sprocket-teeth *c*. Between the sprocket-teeth transverse enlargements *d* are formed and adapted to serve as seats for the links of the chain having the lugs 20 thereon, and said enlargements *d* are preferably made diamond-shaped, so as to present sharp edges and inclined or beveled faces. When the rims of the wheels 15 are thus constructed, there will be no danger of dirt packing between the sprocket-chains and the rims of the wheels.

The rear wheels 16 are made much smaller than the wheels 15, and, as hereinbefore intimated, are mounted loosely on the fixed shaft. These wheels are made with rims triangular in cross-section and may be made without sprocket-teeth, if desired, and in fact I prefer to make these rear wheels without sprocket-teeth. In order to properly guide the chains over the rear wheels 16, the latter are provided with U-shaped projections 22, which embrace the chains as they pass over said wheels 16, and to further insure against the chains becoming clogged with dirt the inner edges of the projections 22, which engage the chains, are preferably made sharp.

The revoluble shaft 5 is provided with an adjustable collar 23, provided at diametrically opposite points with pins 24, adapted to operate the dropping mechanism (not shown) and are adapted to act in unison with the marking devices, so that whenever one of the markers engages the ground the seed will be dropped.

A shaft 25 is mounted on the main frame A of the planter and provided between its ends with an arm 26. To the free end of this arm a link 27 is pivotally connected, and to the lower end of said link the upper ends of two chains 28 28 are secured. The lower ends of the chains 28 are attached to the rods or bars 13, or, more properly speaking, said chains are attached to a cross-bar 30, disposed under the bars 13 under the rear end of the tongue. The shaft 25 is provided with an operating-lever 31, having a locking-dog 32 to engage a toothed segment 33 on the frame A. By means of the lever 31 and coöperating devices the frame can be raised, as usual, and at the same time my improved checker-rows devices will be raised also.

In operation the planter is driven across the field at one side thereof and the markers permitted to leave an impression in the ground at every hill or place where the seed is to be dropped. The driver will then at the end of the rows raise the frame out of the ground in the ordinary way, and the machine will be turned around, when the driver will lean over and turn the sprocket-wheels until one of the markers on the chain is in alinement

with an impression left by the marker in the row last made. The driver will then lower the frame and proceed across the field.

It is evident that instead of providing the chains and marking devices at both sides of the machine a single set of these devices may be employed at one side of the machine.

Various slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

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

1. The combination with the frame of a corn-planter and a tongue, of a frame connected with said tongue, wheels carried at each side of said last-mentioned frame, a chain passing over each pair of wheels and adapted to engage the ground, markers on one wheel of each pair, and means for raising said last-mentioned frame, substantially as set forth.

2. The combination with the frame and tongue of a corn-planter, of a movable frame attached to the tongue, wheels carried by said movable frame, markers carried by one of said wheels, a chain passing over said wheels and adapted to engage the ground, a crank-shaft mounted on the frame of the planter, a rod or link connected with said crank-shaft, chains connecting said rod or link with said movable frame, and an operating-lever secured to said crank-shaft, substantially as set forth.

3. The combination with the frame and tongue of a corn-planter, of a screw passing through said tongue and having an eye or loop at its upper end, a casting secured to the lower end of said screw, a revoluble shaft having a central bearing in said casting, lateral bearings for said shaft, a truss-rod secured at its ends to said lateral bearings and passing through the eye or loop on the screw, wheels carried by said shaft and markers carried by said wheels, substantially as set forth.

4. The combination with the frame and tongue of a corn-planter, of a casting secured to said tongue, a revoluble shaft having a central bearing in said casting, lateral bearings for said shaft, a fixed shaft, bearings therefor, adjustable connections between the lateral bearings for the revoluble shaft and the bearings of the fixed shaft, wheels secured to the revoluble shaft, markers on said wheels, wheels mounted loosely on the fixed shaft, chains passing over said wheels and means for causing said chains to engage the ground, substantially as set forth.

5. The combination with the frame and tongue of a corn-planter, of a casting secured to the tongue, a revoluble shaft having a central bearing in said casting, lateral bearings for said shaft, a fixed shaft, lateral bearings for the fixed shaft, connections between said lateral bearings, and rods or bars connected

at one end to said casting and at the other end to said fixed shaft, wheels mounted loosely on the fixed shaft, wheels secured to the revoluble shaft and carrying markers and chains
5 passing over said wheels and adapted to engage the ground, substantially as set forth.

6. In a check-rower for corn-planters, the combination with suitable framework, of two wheels carried by said framework, one of said
10 wheels having a rim triangular in cross-section so as to present inclined faces, sprocket-teeth projecting from said rim, enlargements between said sprocket-teeth and having beveled or inclined faces, a sprocket-chain passing
15 ing over said wheels, and lugs projecting from links of said chain and adapted to enter the ground, substantially as and for the purpose set forth.

7. In a check-rower for corn-planters, the
20 combination with suitable framework, of two

wheels carried by said framework, each wheel having a rim provided with inclined or divergent faces, a chain passing over said wheels, and lugs on said chain to engage the ground, substantially as set forth.

8. In a check-rower for corn-planters, the combination with suitable framework, of wheels carried thereby, one of said wheels carrying markers, a chain passing over said wheels, each wheel having a rim made triangular in cross-section, and U-shaped projections on one of said wheels and adapted to guide the chain, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILBUR O. DURYEA.

Witnesses:

THOS. M. EDGAR,
GUY J. TOMLINSON.