

(No Model.)

5 Sheets—Sheet 1.

N. O. STARKS.
CORN PLANTER.

No. 555,713.

Patented Mar. 3, 1896.

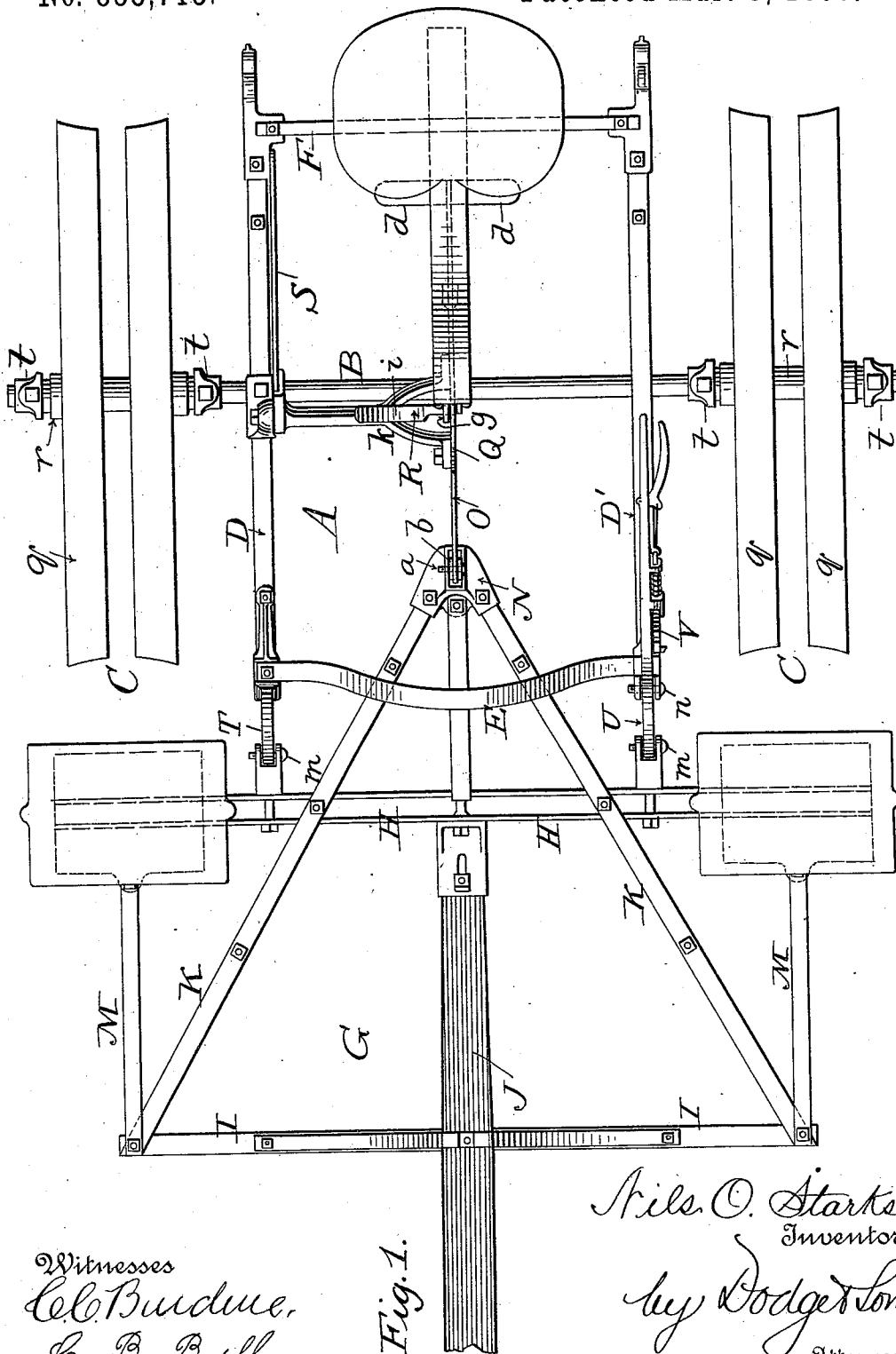


Fig. 1.

Witnesses
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Attorneys.

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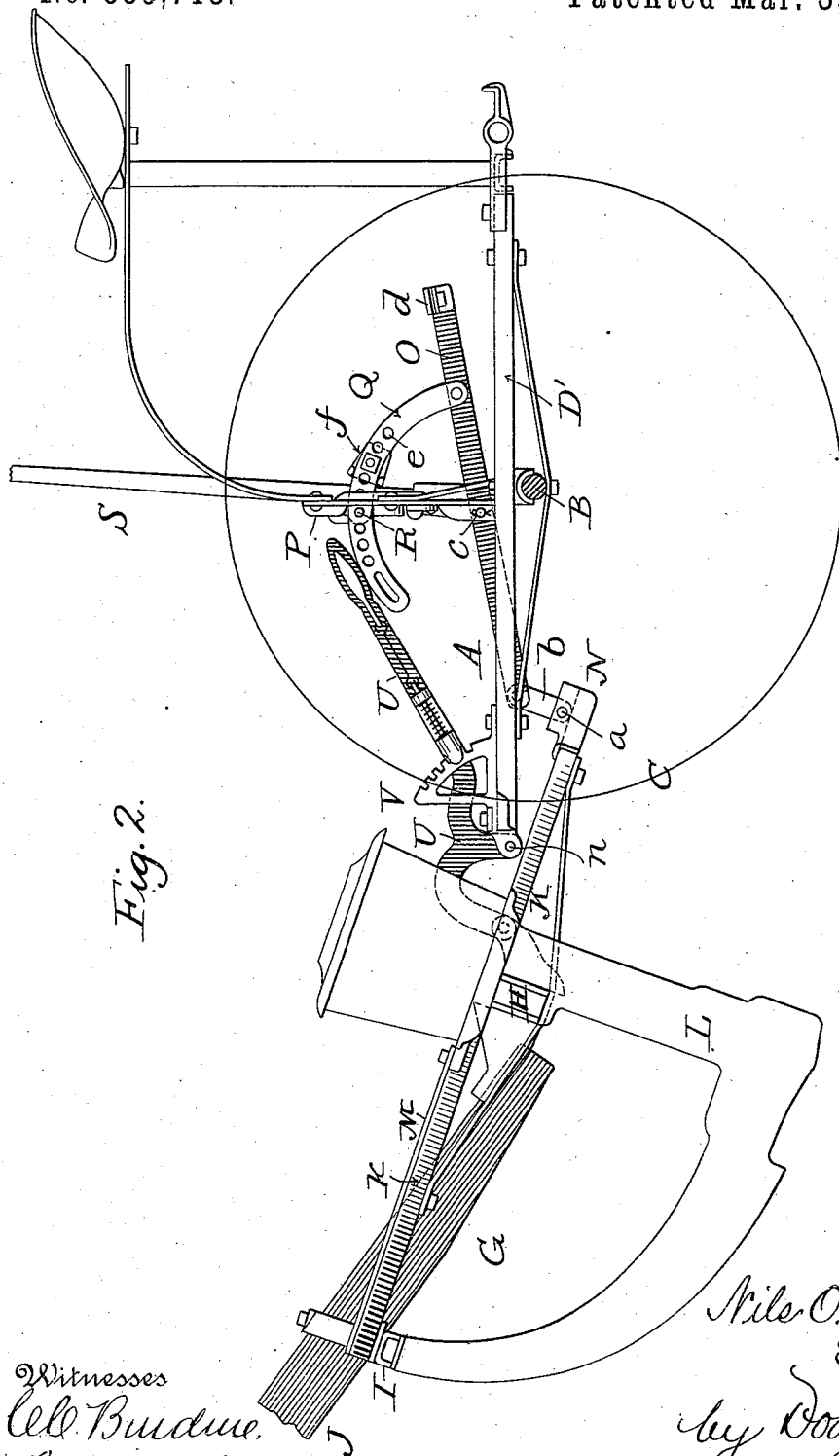


Fig. 2.

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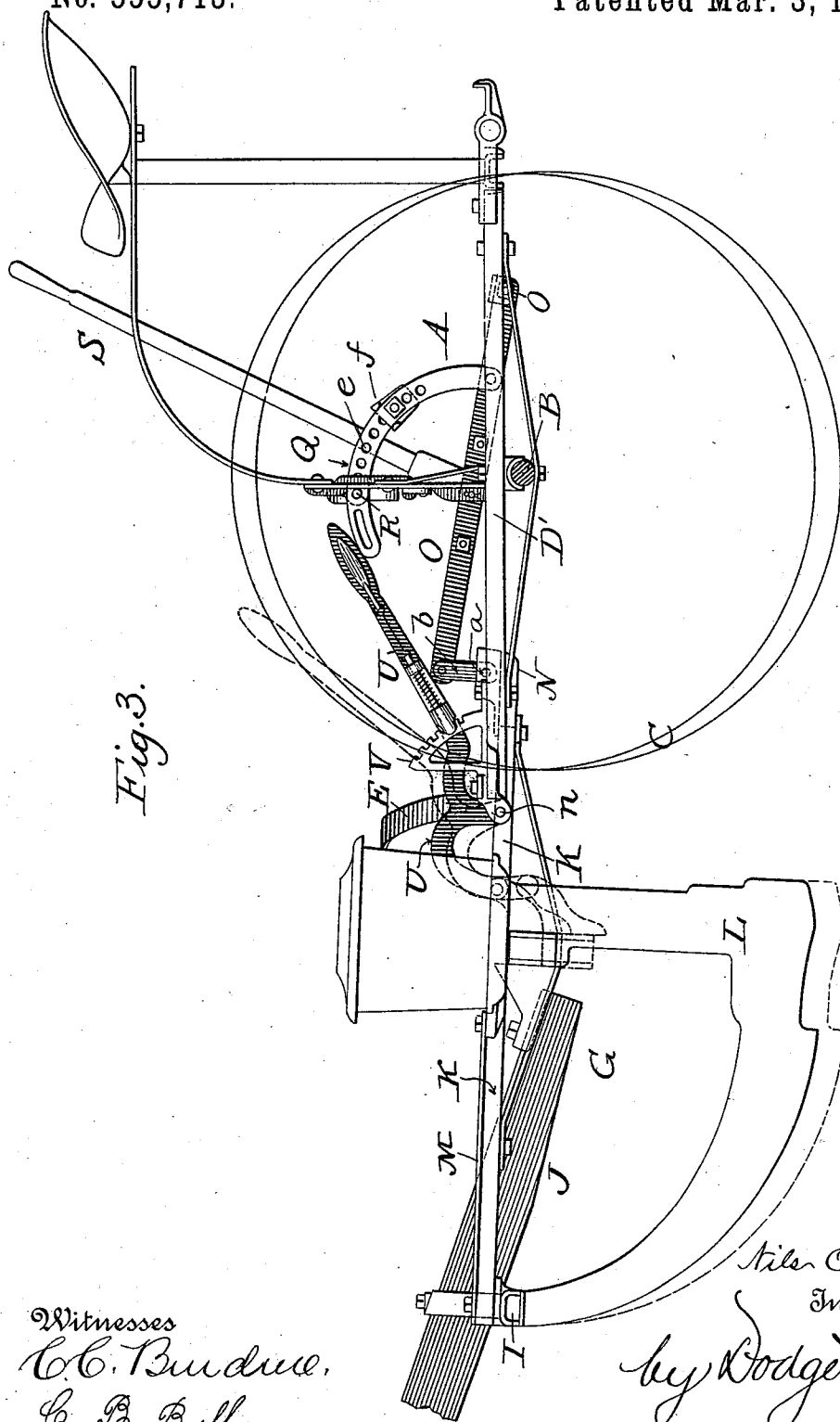
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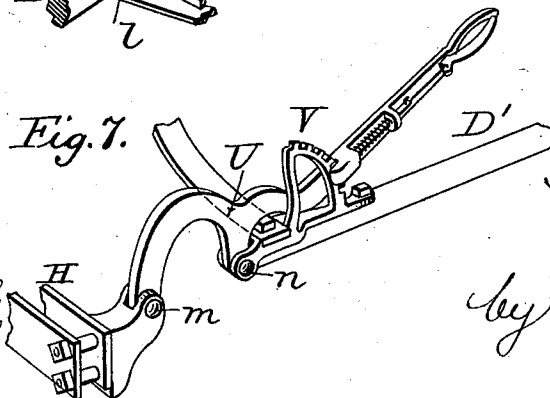
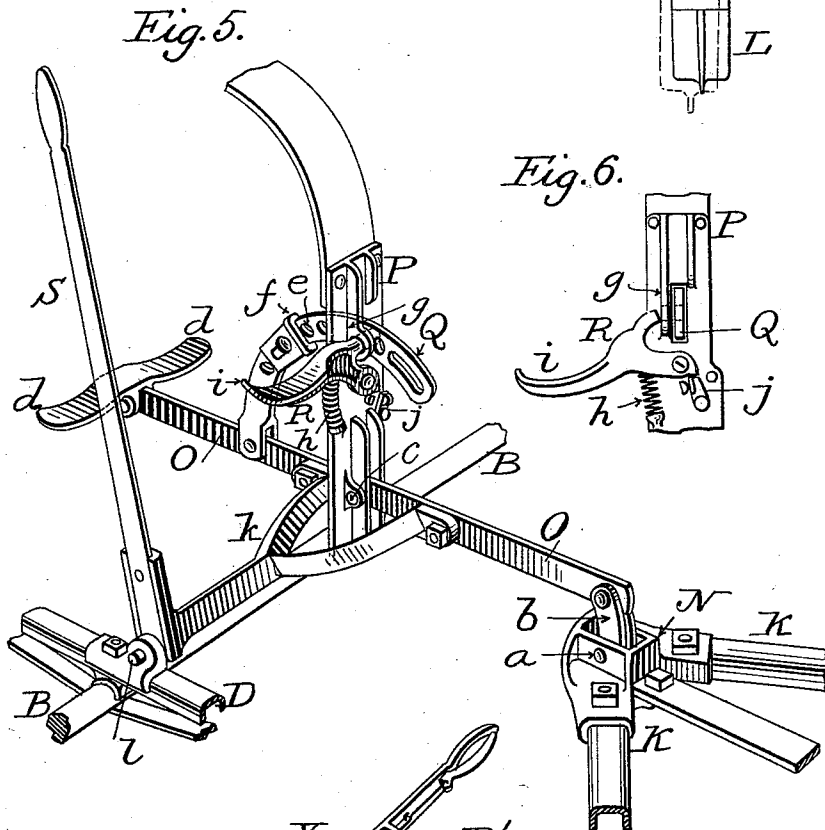
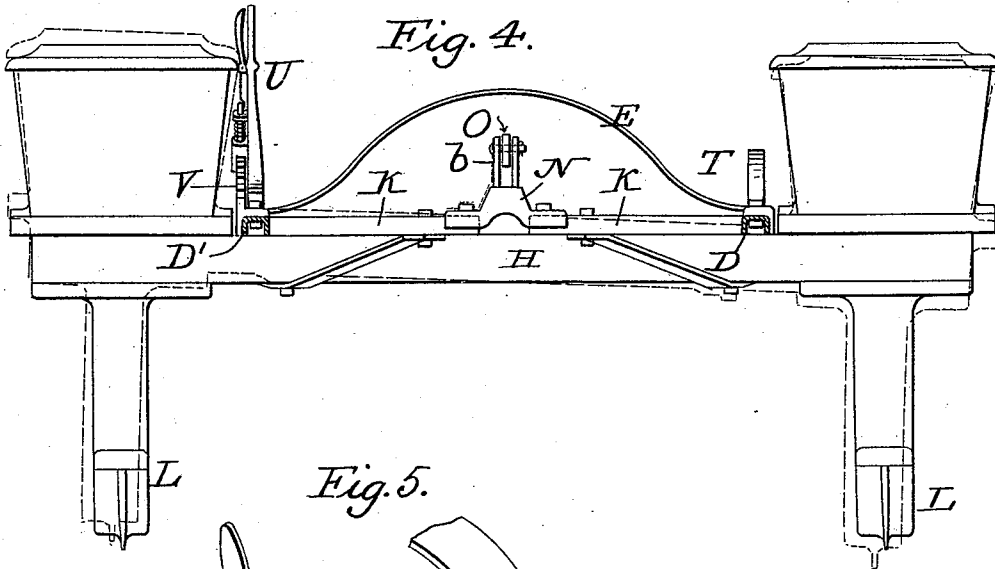
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5 Sheets—Sheet 5.

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Fig. 8.

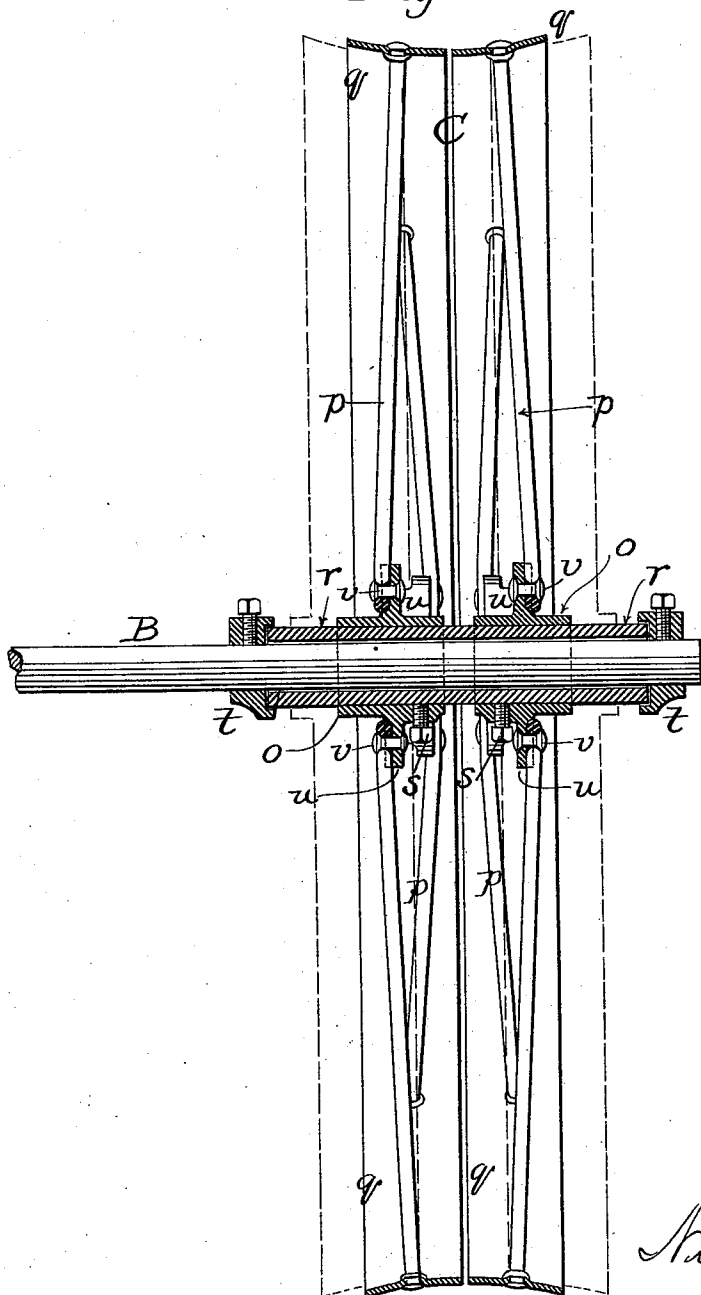
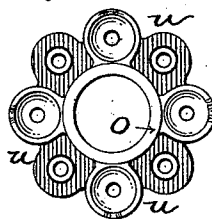


Fig. 9.



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UNITED STATES PATENT OFFICE.

NILS O. STARKS, OF MADISON, WISCONSIN.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 555,713, dated March 3, 1896.

Application filed October 28, 1895. Serial No. 567,174. (No model.)

To all whom it may concern:

Be it known that I, NILS O. STARKS, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification.

My invention relates to corn-planters; and it consists, first, in a novel means for tipping the runner-frame relatively to the main wheeled frame; second, in a novel means for rocking the runner-frame laterally with reference to the main wheeled frame while in motion; third, in a novel connection between the two frames whereby tipping and rocking of the runner-frame are permitted, and, fourth, in a novel construction of the wheels of the main frame.

In the drawings, Figure 1 is a top plan view of so much of a planter as is necessary to illustrate my invention; Figs. 2 and 3, side elevations showing the runner-frame in different positions; Fig. 4, a transverse sectional view illustrating the rocking of the runner-frame; Figs. 5 and 6, detail views of parts of the mechanism for tipping the runner-frame; Fig. 7, a perspective view of the rocking lever and connections; Fig. 8, a vertical sectional view through one of the wheels; and Fig. 9, a view illustrating the construction of the wheel-hub.

A indicates the main frame as a whole, comprising the axle B, wheels C, side bars D D', and cross-bars E and F. G indicates the runner-frame as a whole, comprising the cross bars or beams H and I, tongue J, diagonal bars K, shoes or runners L, and side bars M, as shown in Fig. 1. Except as hereinafter specified these parts may be of usual construction.

The rear ends of the bars K are connected by a suitable plate or socket-piece N, Figs. 1, 2, 3, and 5, which carries a pivot pin or bolt *a* passing through the lower end of a link *b*. The opposite end of the link is connected with the forward end of a lever O, which is pivoted between its ends upon bolt *c* to the seat-standard P, fastened rigidly to the axle. At its rear end this lever O is provided with foot-pieces *d*. Secured to the lever and projecting through a slot in the standard P is a curved arm Q, provided with holes *e* and with a stop *f*, preferably adjustable, the stop being de-

signed to engage the rear face of the standard and thus limit the movement of the lever.

On the front face of the standard is pivoted a pawl or latch R, whose nose is adapted to enter any one of the holes *e* in the curved arm Q and a hole formed in a flange *g* on the standard, the said pawl being held normally up into engagement with the curved arm by means of a spring *h*, Figs. 5 and 6, and being provided with an extension *i* to receive the foot of the operator.

A dog *j* is pivoted to the standard below the pawl, Figs. 5 and 6, to engage the pawl and hold the latter out of engagement with the curved arm when it is desired to leave the tipping devices free to be operated at will.

S indicates a hand-lever connected by means of arm *k* to the lever O and pivoted to the side bar D of the main frame, as at *l*, the pivot *l* being in line with the pivot *c* of the lever. From this construction it is obvious that the lever O may be rocked or tipped by hand through lever S or by the foot of the driver, or by both; but in either case the depression of the front end of the lever O, as in Fig. 2, will tip the runner-frame vertically and cause the heels of the runners to cut deeper into the soil.

The runner-frame is hung or suspended from the side bars of the wheeled main frame by means of the bowed or curved arms T and U, to the forward ends of which the runner-frame is connected by means of the bolts *m*.

The arm T projecting from side bar D is made preferably rigid with said side bar, but the arm U on the side bar D' is made in the form of a lever (see Figs. 1, 2, 3, 4 and 7) and pivoted to said side bar at *n*.

A curved rack V on the side bar D' is designed to be engaged by the locking-pawl of the lever so as to hold the lever in its adjusted positions.

When the lever is thrown back it raises that side of the runner-frame with which the lever is connected, and when the lever is thrown forward it depresses said side of the frame. This is indicated by the dotted lines in Figs. 3 and 4, and, it will be noted, permits the adjustment of the runner-frame while in motion to work on hillsides. By this arrangement the machine can always be made to plant rows of even depth, or in case one runner

should be dull it may be caused to cut deeper than the other.

The motion being comparatively slight, there is no occasion to provide any special
5 pivot upon which the runner-frame may rock or oscillate.

The wheels C each comprise two sections which are duplicates of each other—that is to say, they each comprise a hub *o*, spokes *p*, and
10 a rim *q*, the two rims being of less diameter at their meeting edges than at their outer edges, so that when the two parts of the wheel are brought close together, as in Fig. 8, the two rims will form in effect one concave rim.
15 The sections of the double wheel are held in proper relative positions upon the loose thimble *r* by means of set-screws *s*, while the thimble is held in position upon the axle by the collars *t t*. By separating the sections, as
20 indicated by dotted lines in Fig. 8, a space is left between them, so that when the wheel rolls along it will crowd and press the soil up into the furrow.

The hub *o* is provided with a radial flange
25 *u* formed of offset sockets having seats or recesses in opposite faces alternately, as shown, to receive the eyes formed on the ends of the spokes, suitable rivets *v* passing through said eyes and sockets, as shown.

30 Having thus described my invention, what I claim is—

1. In combination with the wheeled frame, and the runner-frame pivotally connected therewith; a rocking lever O pivoted in the
35 main frame and connected at its front to the runner-frame; curved bar Q carried by the lever; and pivoted pawl or dog R carried by a standard as P, to engage the bar Q.

2. In combination with the pivotally-connected frames A and G; the rocking lever O
40 with its arm Q; the pawl R to engage the arm Q; and a latch or dog *j* to hold the pawl R out of action.

3. In combination with the pivotally-connected frames A and G; a standard P slotted
45

and provided with perforated flange *g*; lever O pivoted in the standard and provided with perforated arm Q; and the pawl R pivoted to the standard.

4. In combination with the frame A; an
50 arm T and a pivoted arm or lever U projecting therefrom; and a runner-frame G pivotally connected with the arms T and U.

5. In combination with the frame A; an
55 arm T at one side; a pivoted arm U at the opposite side; a runner-frame G pivotally connected with said arms; and a rack V upon frame A to receive the locking-dog of the arm U.

6. In combination with a wheeled frame
60 and a runner-frame connected thereto, means controllable by the operator carried by the wheeled frame for positively rocking the runner-frame laterally while the machine is in
65 motion.

7. In combination with a wheeled frame
65 and a runner-frame connected thereto; a lever controllable by the operator for tipping the runner-frame at its rear end; and a second lever also controllable by the operator for
70 rocking the runner-frame laterally.

8. A wheel comprising the hub having offset radial flanges, with sockets on opposite
75 faces alternately; a rim; spokes secured to the rim and provided each with an eye to fit the respective sockets; and rivets uniting the spokes to the flanges.

9. In combination with the axle; the loose
80 sleeve *r* thereon; collars for holding said sleeve against longitudinal movement; the wheel-sections adjustable relatively to each other upon the sleeve; and means for securing the sections to the sleeve.

In witness whereof I hereunto set my hand in the presence of two witnesses.

NILS O. STARKS.

Witnesses:

C. H. ALLYN,

W. R. BAGLEY.