

No. 632,122.

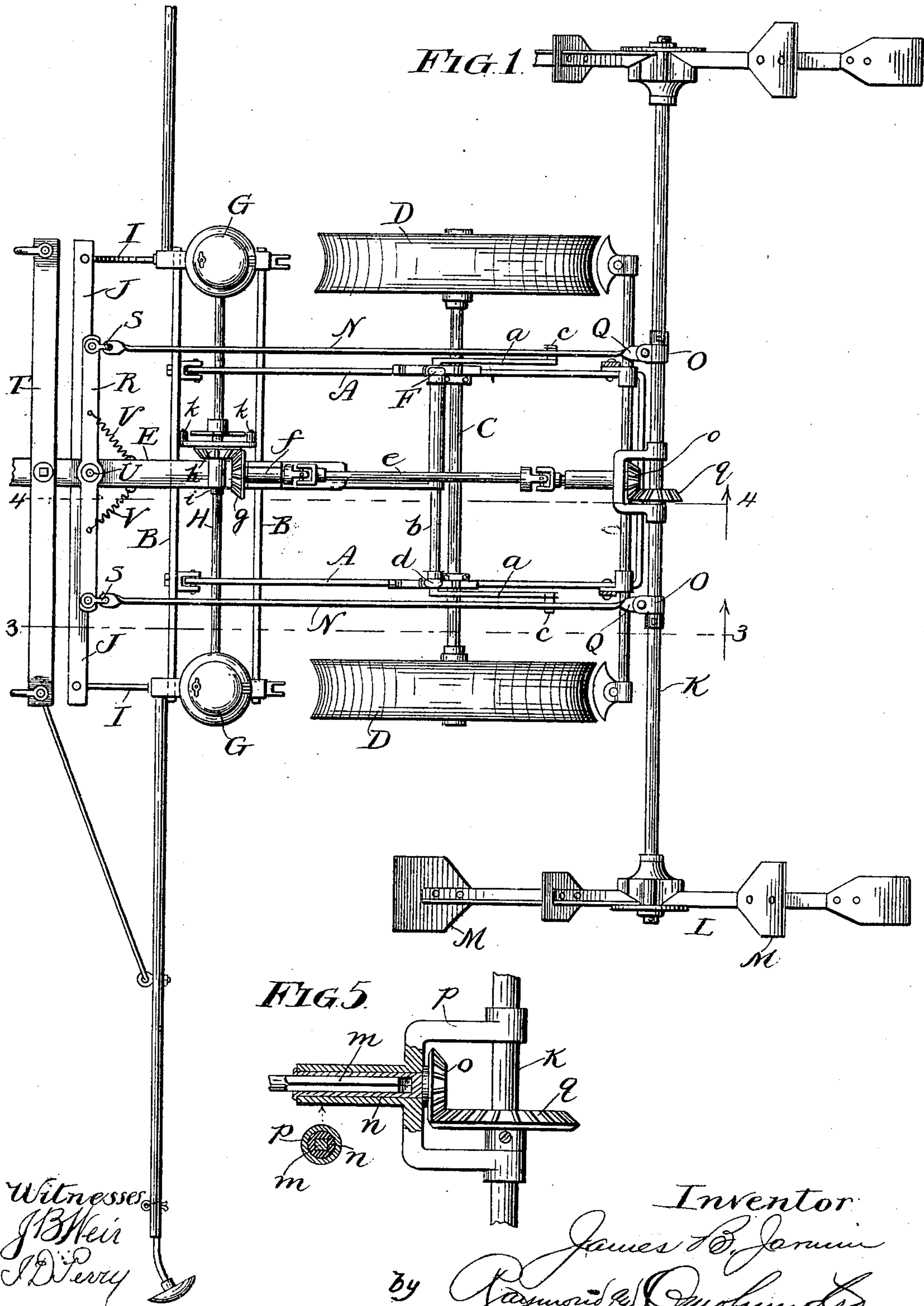
Patented Aug. 29, 1899.

J. B. JARMIN.  
AUTOMATIC CHECK ROW PLANTER.

(Application filed July 10, 1899).

(No Model.)

3 Sheets—Sheet 1.



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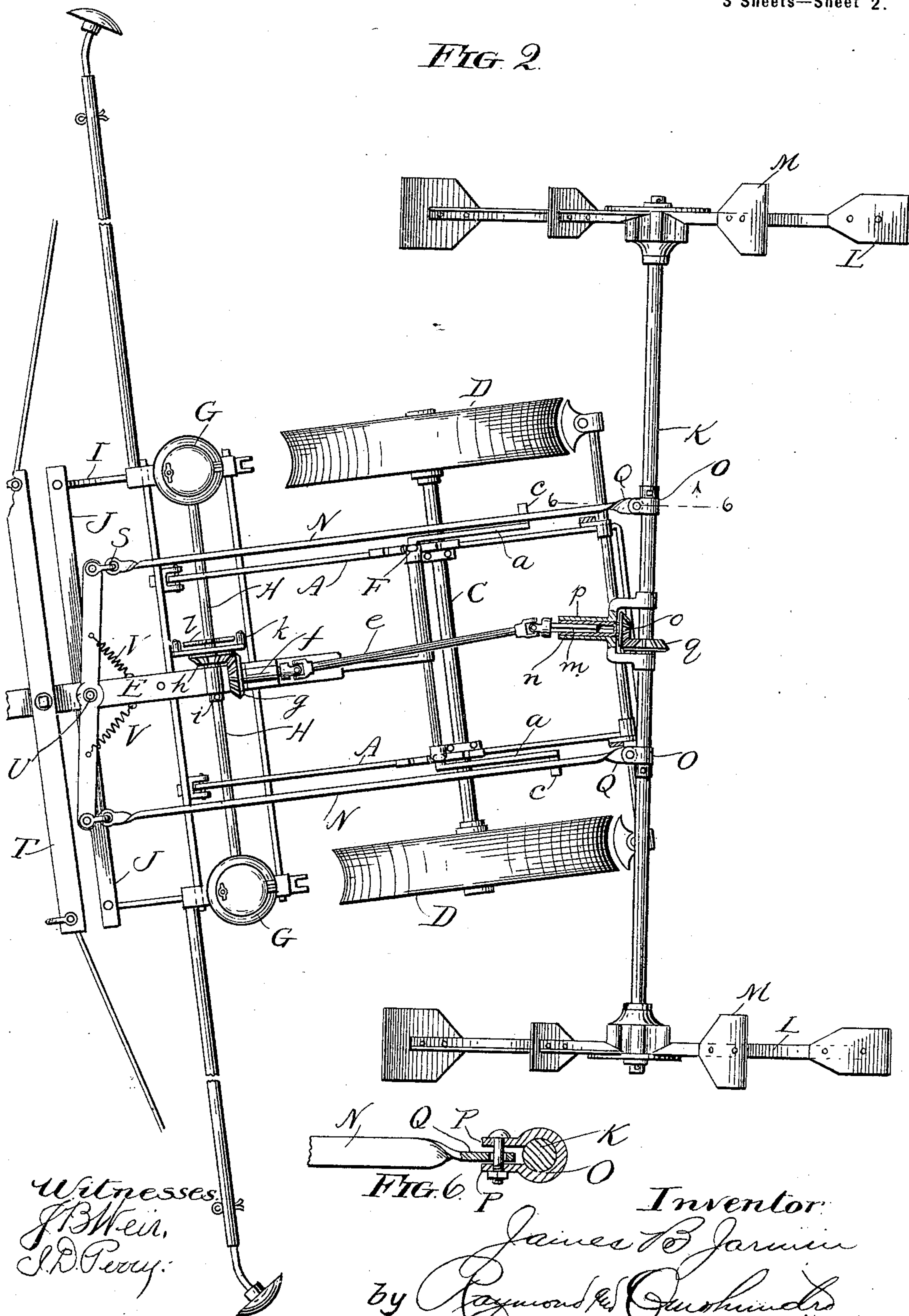
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3 Sheets—Sheet 2.

FIG. 2.



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3 Sheets—Sheet 3.

FIG. 3

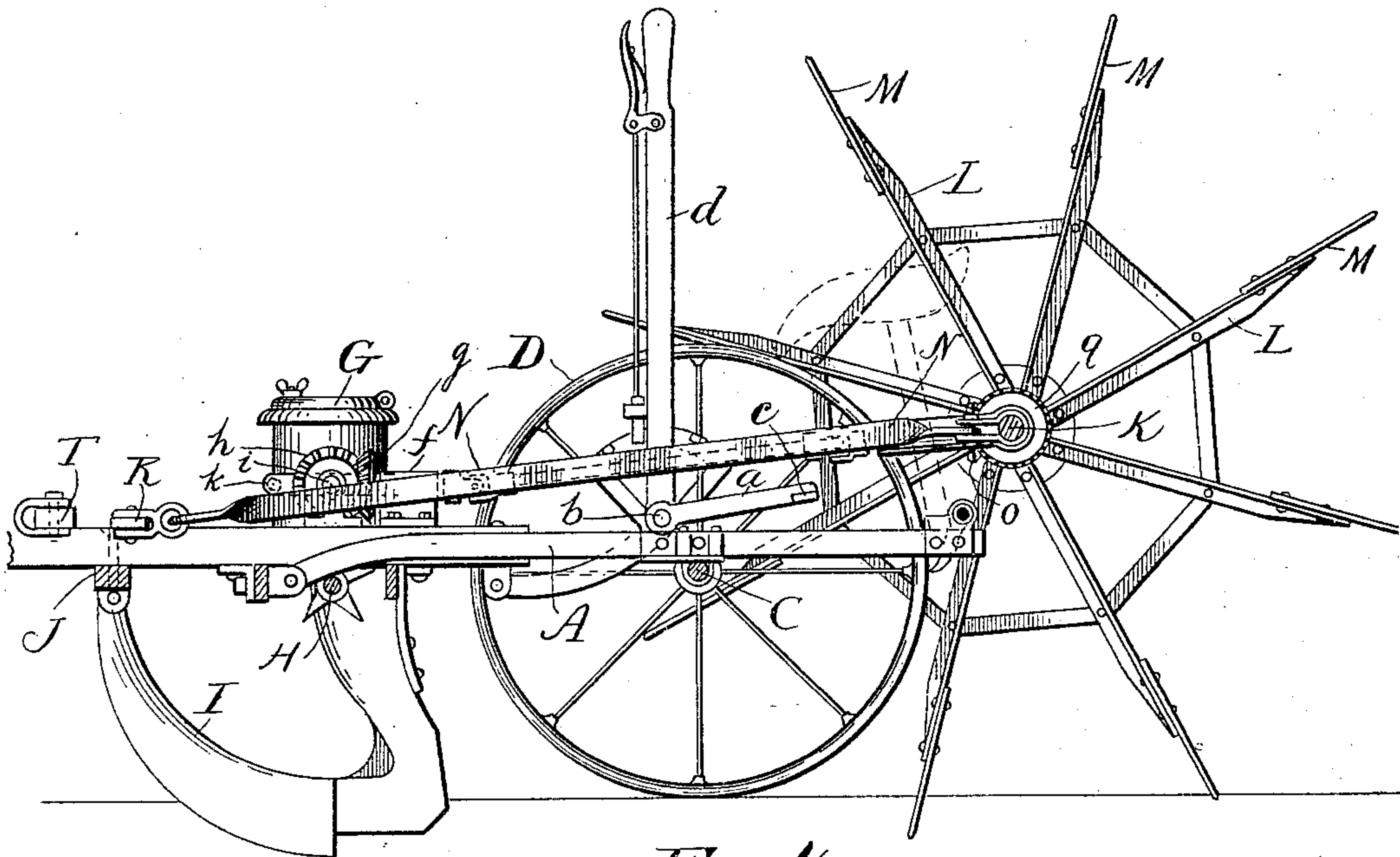
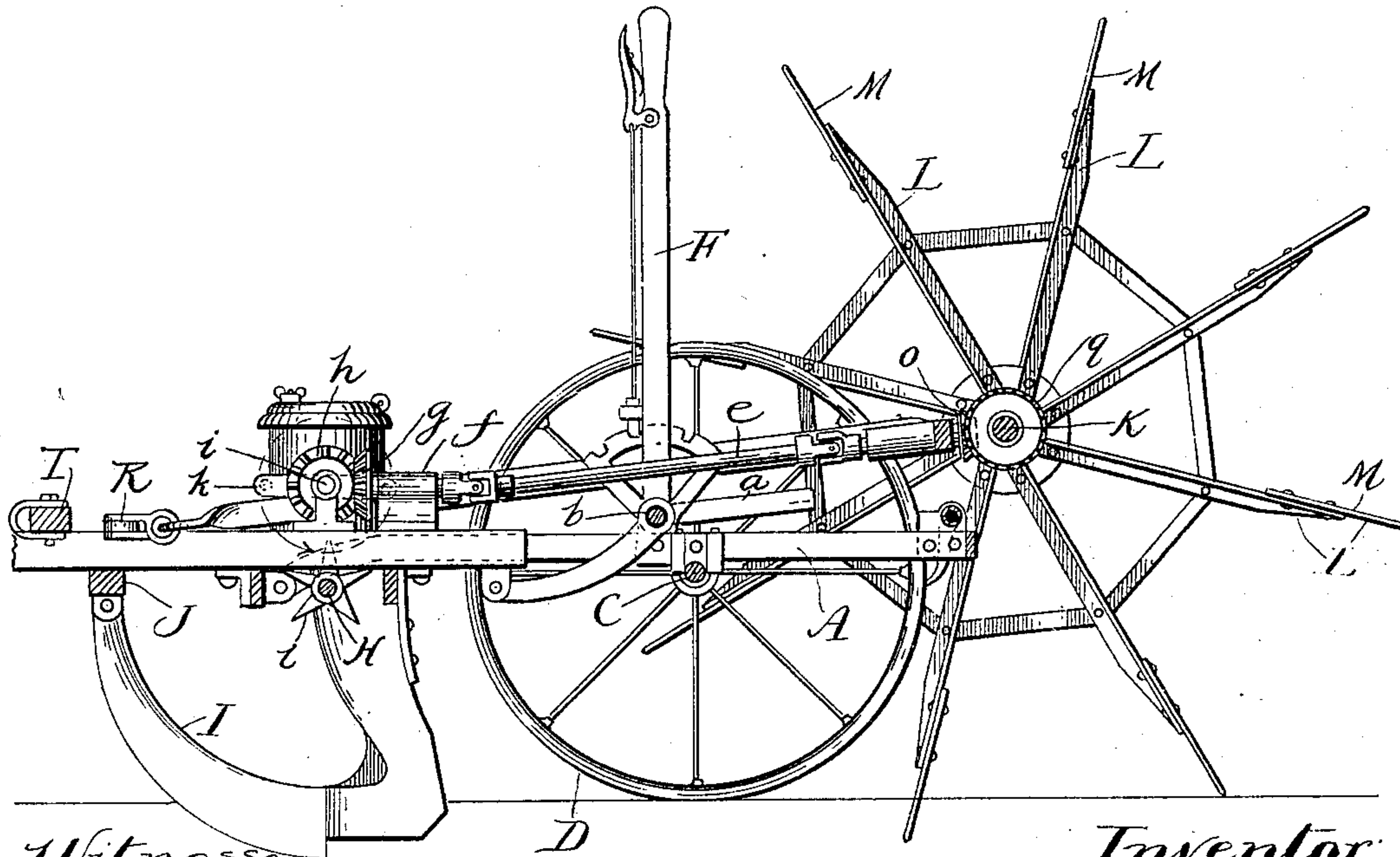


FIG. 4



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# UNITED STATES PATENT OFFICE.

JAMES B. JARMIN, OF OSCEOLA, NEBRASKA, ASSIGNOR TO A. B. FRENIER,  
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## AUTOMATIC CHECK-ROW PLANTER.

SPECIFICATION forming part of Letters Patent No. 632,122, dated August 29, 1899.

Application filed July 10, 1899. Serial No. 723,398. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES B. JARMIN, a citizen of the United States, residing at Osceola, in the county of Polk and State of Nebraska, have invented certain new and useful Improvements in Automatic Check-Row Corn-Planters, of which the following is a specification.

This invention relates to improvements in automatic check-row corn-planters of the type exemplified by the machines illustrated in my two former applications for Letters Patent, filed June 5, 1899, Serial No. 719,484, and Serial No. 721,853, filed June 26, 1899, the present machine being a different embodiment of the broad invention described and claimed in the last-mentioned of the above applications.

The object of my present invention, like that of my former inventions, is to have the marker so connected with the planter that the planter may be swung to the right or to the left out of a straight line in operation without affecting the line of travel of the marker—that is, without deflecting it from a straight course.

Another object is to have the connection between the marker and the planter of such construction that it shall be capable of application to any part of the planter; that it shall be a cheap, simple, and durable connection, subject to the least danger of breakage or becoming deranged, and that it shall permit the operation of the seed-dropping mechanism from the marker continuously, notwithstanding constant changes in the angularity between the marker and planter.

A further object is to have a single pivotal connection between the marker and the planter, combined with connecting devices between the pivot and the marker, of such character that notwithstanding the pivot connection will swing laterally out of line with the planter the marker will remain in line and undeflected.

These and such other objects as may hereinafter appear are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of an automatic check-row corn-planter embodying my inven-

tion. Fig. 2 is a similar view thereof, but showing the planter swung out of line or oblique to the marker instead of at right angles thereto. Fig. 3 is a vertical section on the line 3 3 of Fig. 1 looking in the direction indicated by the arrows. Fig. 4 is a vertical section on the line 4 4 of Fig. 1 looking in the direction indicated by the arrows. Figs. 5 and 6 are enlarged detail views that will be described farther on.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the planter-frame, pivotally connected to the runner-frame B, as usual, and mounted upon the axle C of the ground-wheels D. As shown in the drawings, the tongue E is connected with the runner-frame in the usual manner, so that by the well-understood operation of the lifting-lever F the runner-frame may be raised from the ground. As shown in the drawings, the runner-frame carries the usual seedboxes G at opposite sides thereof in line with the ground-wheels, within which is located any suitable seed-dropping mechanism to be operated in any desired manner by power communicated from the intermittently-rotated shaft H, journaled in the runner-frame. The runners I are shown as connected at their forward ends by a bar J, secured at its center of length to the tongue; but of course such bar is not essential, as any other means of properly connecting the runner-frame, tongue, and runners may be employed, as these features form no part of my present invention. Indeed the detailed construction and arrangement of all of the planter so far described is utterly immaterial to my present invention so long as the planter is adapted to have my invention applied thereto.

Back of the ground-wheels and extending transversely of the planter is the marker-shaft K, carrying upon its respective ends the marker-wheels, comprising spokes L, carrying blades M upon the end thereof, adapted to sink into and so engage the ground as to compel rotation of the marker-shaft when the wheels are drawn across a field. The marker-wheels are preferably located a dis-



tance outside of the planter-wheels corresponding with one-half of the distance between the planter-wheels, so that the marker upon one side of the planter will retrace its steps when planting the next pair of rows going in the opposite direction, according to the way in which the planter turns. The marker blades or spades are preferably arranged so that each alternate blade is wider than the intermediate blades and are so spaced with reference to the seed-dropping mechanism as that the broad blades will indicate the point at which the seed is dropped, which arrangement renders it easy for the operator to start correctly at the beginning of a row or whenever the planter is interrupted for any reason. This marker shaft and wheels are not unlike those of my above-mentioned applications, the novelty in my present invention residing more particularly in the connection between the "marker," by which I mean the marker shaft and wheels, and the planter. This connection consists of a pair of parallel arms N, extending parallel with the longitudinal center of the planter at opposite sides thereof, each of which is connected at its rear end with the marker-shaft by a flexible coupling of some kind, which may, if desired, be an ordinary universal joint, but which I prefer to be simply a flexible pivotal connection, like that shown more clearly in Fig. 6, comprising a clip O, embracing the marker-shaft K loosely and provided with ears P, between which fits loosely the end of the bar N, which is provided with an enlarged hole Q, through which and through suitable perforations in the ears P extends an ordinary bolt securing the parts together. By reason of the holes Q in the parallel coupling-bars N being of greater diameter than the pivoting-bolt and the distance between the ears P being considerably greater than the thickness of the coupling-bars the connection between the shaft and the coupling-bars is rendered sufficiently flexible to allow all of the necessary movements of the marker without binding, regardless of the relative positions of the marker and planter. The forward ends of the parallel coupling-bars also have a flexible pivot connection with the ends, respectively, of a draft-bar R, which connection is afforded by a link S, pivotally connected with the draft-bar and passing through enlarged holes in the ends of the coupling-bars. The draft-bar R may be pivoted upon a vertical pivot with any suitable part of the planter; but I prefer to have the same pivoted to the planter-tongue just back of the doubletree T, as at U, which brings such pivot at the longitudinal center of the planter, and I also prefer to have the draft-bar connected at opposite sides of its center by springs V with the tongue, which springs serve to assist in maintaining the draft-bar in a position at right angles to the tongue, and therefore serve to assist in restoring the parts to their normal position whenever the planter is turned

from a straight line—such, for instance, as to the position shown in Fig. 2, which shows the planter swung laterally to almost its extreme position and to a position which it would seldom assume, for but little further movement would cause the planter-wheels to bear against the marker-shaft. It will be seen, however, by a comparison of Figs. 1 and 2 that notwithstanding the pivot U, connecting the marker directly with the planter, swings out of line with the planter the marker remains unaffected thereby, because the coupling-bars maintain their parallelism at all times and the draft-bar R also maintains its parallelism with the marker-shaft, so that full compensation is made for the change in the point of pivotal connection between the marker and the planter with reference to the straight line of travel of the planter, and as the planter-blades are sunk deep in, so as to engage the ground, they will at all times afford sufficient resistance to deflection to maintain their line of travel and cause the swinging of the draft and coupling bars to compensate for the turning of the planter to either side of the straight line of travel caused by careless driving or the necessity for avoiding obstructions, and the marker will maintain its position, traveling parallel with the straight line until the planter is again brought back into line.

To raise and lower the marker, I provide a pair of crank-arms *a* on the shaft *b*, which arms have stirrups *c* underlying the coupling-bars N, so that whenever said arms are swung up the stirrups will engage the coupling-bars and swing the marker up clear of the ground, the links S serving as the pivot for such action. The shaft *b*, by which the arms are operated, is preferably provided with an ordinary lock-lever *d* for convenience in manipulating the same.

The mechanism for communicating power from the marker-shaft to the seed-dropping mechanism does not differ materially from that described, illustrated, and claimed in my application filed June 26, 1899, Serial No. 721,853, and therefore a brief description herein will serve to make the operation clear.

The driving mechanism or gear connection must be located substantially at the longitudinal center of the planter and must be telescopic or extensible in character, so that the transmission of power may be continuous, notwithstanding the changes in position between the marker and planter. To this end I provide a flexible shaft *e*, one end section of which is journaled in a suitable box *f*, mounted on the tongue of the planter, and carries upon its end a beveled gear *g*, meshing with a beveled gear *h*, mounted upon a stud-shaft *i*, also journaled on the tongue of the planter, which gear is provided with tappets *k*, arranged to engage a star-wheel *l*, mounted upon the shaft H in the runner-frame, so as to cause intermittent rotation of said shaft. The other end section of the flexible shaft is squared at its end, as at *m*,



(see Fig. 5,) and fits into a correspondingly-squared socket in the hub *n* of a beveled gear *o*, journaled in a yoke *p* and meshing with a beveled gear *q* upon the marker-shaft *K*, to which shaft the yoke *p* is pivotally connected. It will thus be seen that a permanent gear connection is provided the marker and the seed-dropping mechanism, which continues to transmit power from the marker-shaft to the operating-shaft of the seed-dropping mechanism regardless of the changes of position between the marker and the planter and notwithstanding the rising and falling of the marker and planter bodily or of one side thereof independent of the other side, all of the usual movements of the planter and marker being fully provided for without any interference with the continuous operation of the planter.

Of course it will be understood that while the tongue is pivotally connected to the planter, so that it may move vertically independent thereof, yet it is, as usual, held against any lateral movement independent of the planter, so that whenever the tongue is swung to one side or the other the planter must go with it; but by the interposition of my devices between the planter and tongue and the marker the marker will remain unaffected by such lateral swinging of the planter and tongue and will continue in a straight line.

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

1. The combination with a check-row corn-planter and the seed-dropping mechanism thereof, of an automatic check-rower attachment comprising a pair of spade marker-wheels operatively connected with the seed-dropping mechanism, a draft-bar pivoted to the planter and a pair of parallel coupling-bars flexibly connected at their ends respectively to the draft-bar and the marker, substantially as described.

2. The combination with a check-row corn-planter and the seed-dropping mechanism thereof, of an automatic check-rower attach-

ment comprising a pair of spade marker-wheels, a draft-bar pivoted to the planter-tongue, a pair of parallel coupling-bars pivotally connected at their ends, respectively, to the draft-bar and marker and opposing springs connecting the draft-bar at opposite sides of its pivot with the tongue, substantially as described.

3. The combination with a check-row corn-planter and the seed-dropping mechanism thereof, of an automatic check-rower attachment comprising a marker-shaft and spade marker-wheels secured to the ends of said shaft, respectively, a draft-bar pivoted at its center of length to the planter and a pair of parallel coupling-bars flexibly connected at their ends, respectively, with said draft-bar and the marker-shaft, substantially as described.

4. The combination with a check-row corn-planter and the seed-dropping mechanism thereof, of an automatic check-rower attachment comprising a pair of spade marker-wheels, a draft-bar pivoted to the planter, a pair of parallel coupling-bars flexibly connected at their ends, respectively, to said draft-bar and the marker attachment and a flexible and extensible gear connection between the marker and the seed-dropping mechanism at the longitudinal center of the planter, substantially as described.

5. The combination with a check-row corn-planter and the seed-dropping mechanism thereof, of an automatic check-rower attachment comprising a pair of spade marker-wheels operatively connected with the seed-dropping mechanism, a draft-bar pivoted to the planter, a pair of parallel coupling-bars flexibly connected at their ends, respectively, with the draft-bar and the marker, pivoted lifting-arms having ends underlying, and adapted to engage, the coupling-bars and means for operating said lifting-arms, substantially as described.

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Witnesses:

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