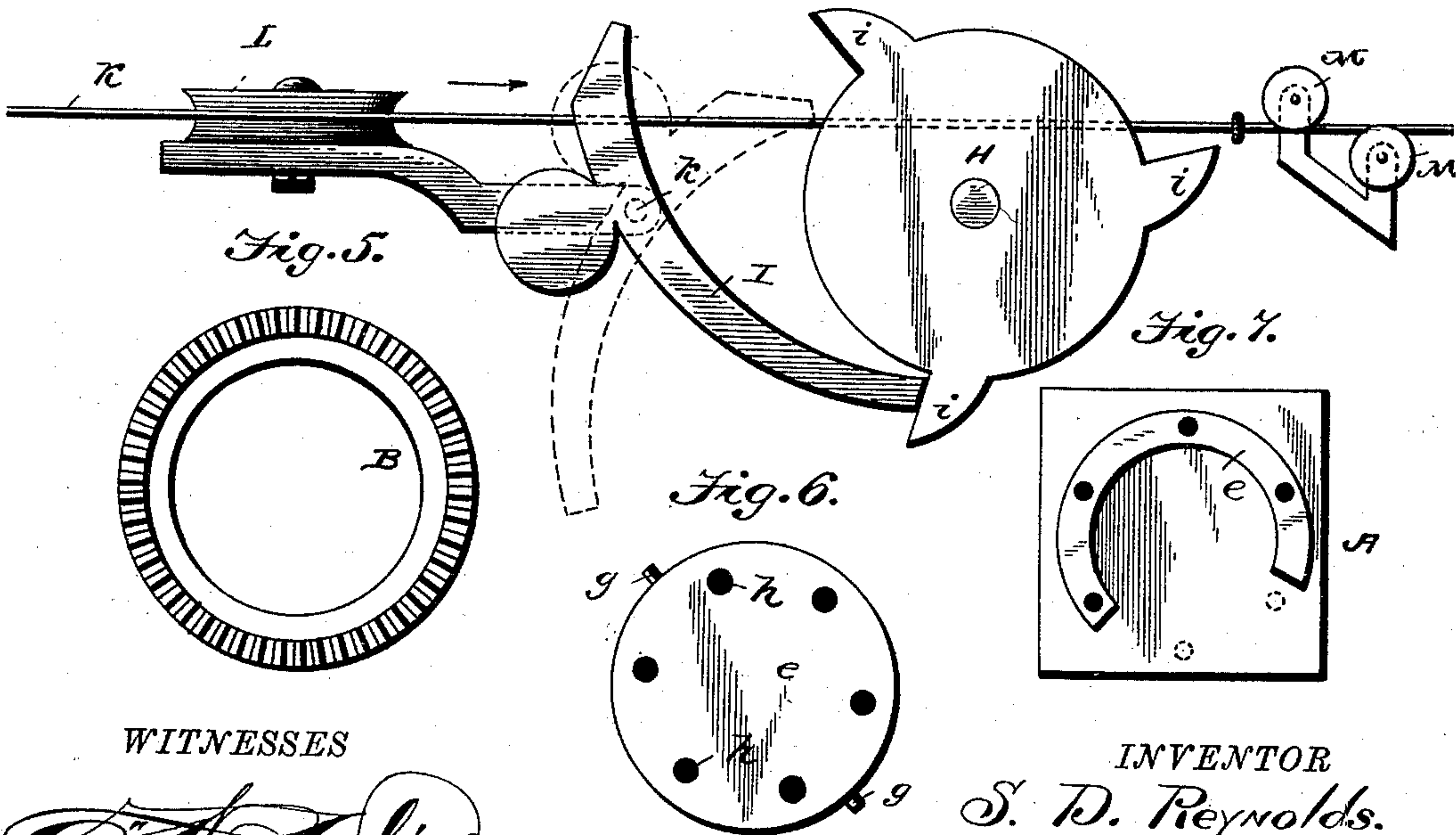
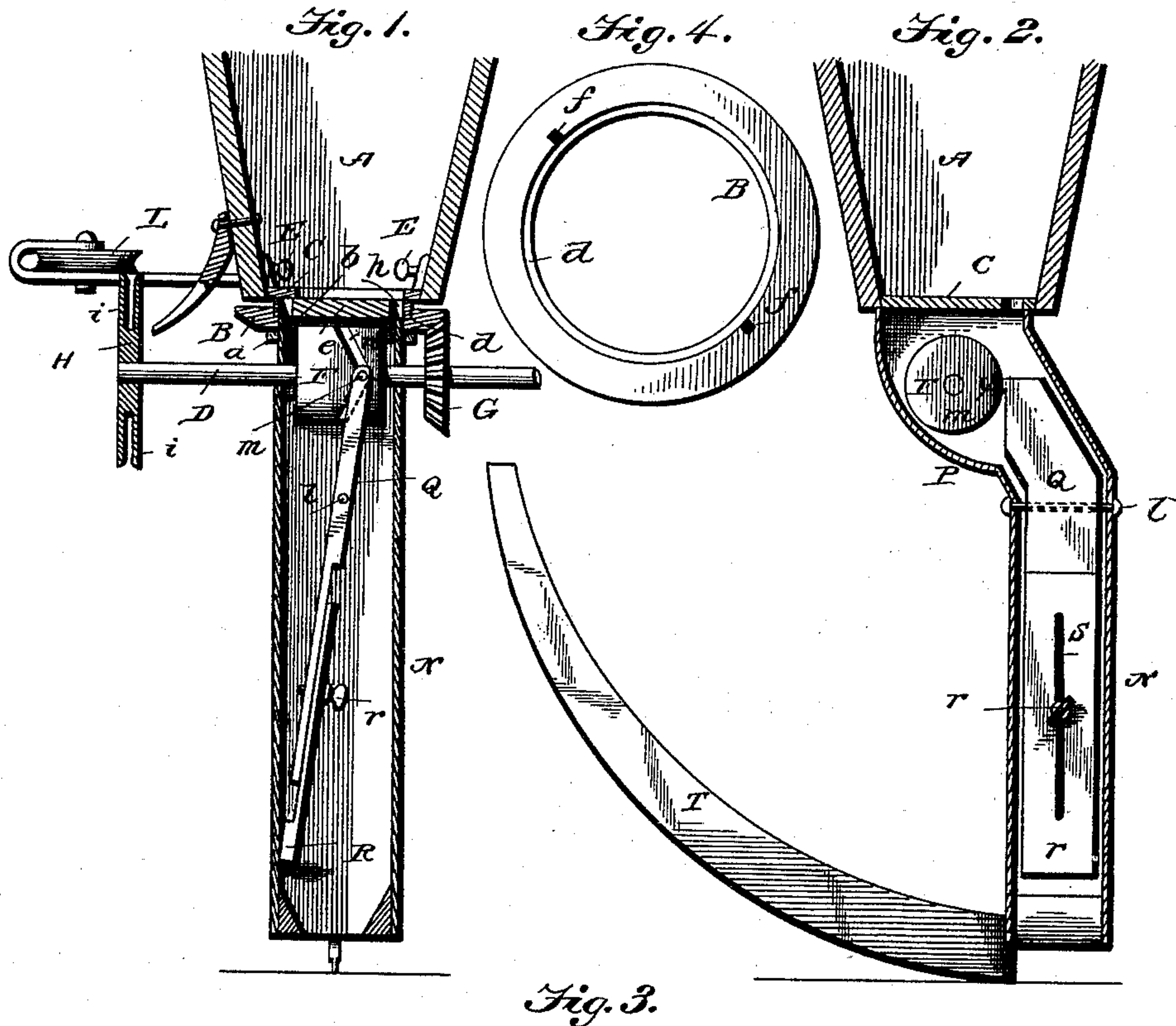


(No Model.)

S. D. REYNOLDS.
CHECK ROW CORN PLANTER.

No. 409,502.

Patented Aug. 20, 1889.



WITNESSES

J. A. Ashwell
J. E. Dupuis

INVENTOR

S. D. Reynolds.

By James J. Shuey
Attorney

UNITED STATES PATENT OFFICE.

STEPHEN D. REYNOLDS, OF NEVADA, MISSOURI.

CHECK-ROW CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 409,502, dated August 20, 1889.

Application filed April 26, 1889. Serial No. 308,662. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN D. REYNOLDS, a citizen of the United States, residing at Nevada, in the county of Vernon and State of Missouri, have invented certain new and useful Improvements in Check-Row 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.

This invention has relation to improvements in corn and seed planters, and the novelty will be fully understood from the following description and claims, when taken in connection with the annexed drawings, in which—

Figure 1 is a vertical sectional view of one of the valve-boxes or seed-tubes and the operating mechanism through a part of one of the seed-boxes. Fig. 2 is a view of similar parts, taken in a plane at right angles to Fig. 1. Fig. 3 is a side elevation of the forked spur-wheel and the lock or catch with the check-row line and sheave-wheels in position. Fig. 4 is a plan view of the annulus for supporting the cog-gear. Fig. 5 is a plan view of the cog ring or gear. Fig. 6 is a plan view of the seed-plate, and Fig. 7 is a view of the cover for the plate.

Referring by letter to the said drawings, A indicates a seed-box, which may be of the general construction usually employed in check-row corn-planters. This seed-box is provided in its bottom with an annulus or ring *a*, which is provided with a circumferential recess *b*, and is suitably secured in position to support a beveled cog-ring B. This beveled cog-ring, which is arranged horizontally beneath the hopper or seed-box and sustained by the recessed annulus, is provided on its inner upper side with an annular groove or recess *d*, which is designed to receive and sustain a seed-plate *e*. This seed-plate is held in position by a cover C, which is adjustably secured to the inclined walls of the hopper by set-screws E or other suitable fastening devices. The cog gear or ring B is provided on its upper side at diametrically-opposite points with recesses *f*, and the seed-plate *e* is

provided at corresponding points with studs or lugs *g*, adapted to enter the said recesses of the ring and receive motion therefrom. The seed-plate *e* is provided with a suitable number of properly-arranged seed-holes *h*, which in practice are designed to register with holes in the cover to drop the seed at proper intervals.

D indicates a horizontal shaft, which is suitably journaled transversely in the main frame and passes through the upper portion of the valve-boxes directly beneath the hoppers. This horizontal shaft has fixed to it within each valve-box a cam-cylinder F, for a purpose which will be presently explained.

G indicates a beveled cog-gear, there being one employed for each hopper. These cog-gears are fixed to the shaft D in a vertical position, so as to engage and impart motion to the cog-ring beneath the hopper.

H indicates a forked wheel, which is also secured to the horizontal shaft D. This wheel is forked or recessed sufficiently for the passage of the check cord or line, and its spurs *i* are adapted to be encountered by the lugs or knots upon the cord.

I indicates a lock or catch for the forked wheel. This lock or catch, which is of a form substantially shown in Fig. 2 of the drawings, is suitably pivoted at the point *k*, so that it may be made to engage the spurs of the forked wheel during its intermittent rotative motion. This lock or catch may be weighted above the pivotal point, so as to normally assume the position shown in full lines in Fig. 3, the lug on the wire throwing its upper end against the spur-wheel, and the weight holds it for the action of said wheel.

K indicates the check-line, which is suitably guided by a sheave-wheel L, arranged by the side of one of the hoppers, and sheave-wheels M, also arranged upon the main frame at a point to properly guide the line.

N indicates the seed-tube, there being one employed beneath each hopper. These tubes, which extend from the base of the hoppers, are curved rearwardly, as shown at P, and their vertical portion carried to a plane in rear of the said hoppers and rotative shaft D.

Q indicates a valve, which is pivoted in the

walls of the seed-tube by a pivot-bolt *l*. These valves are provided at their upper ends with a lug *m*, which are designed to enter the cam-groove *n* in the cylinders *F*. It will thus be
 5 seen that as the cylinders are rotated by the shaft *D* the valve will be given a vibratory motion within the boxes or tubes *N*. These valves extend a sufficient distance below the pivotal point to strike the inner walls of the
 10 boxes or tubes in their vibrating motion, so as to interrupt or hold the falling grain at intervals. These valves *Q* are provided at a suitable point with an aperture to receive a thumb-screw *r*, and an adjustable section *R*
 15 is employed to extend the length of the valve. This section *R* is provided with a longitudinal slot *S*, through which the thumb-screw *r* passes, and the two parts of the valve may be extended or shortened by manipulating this
 20 screw. By this means it will be seen that I may regulate the drop according to the speed of the team. With a fast team I lengthen the valve and give the grain a less distance to fall after it has been retarded or inter-
 25 rupted in its descending movement, while for a slow team the valve is shortened, thereby interrupting the fall of the grain at a higher point within the valve-box, and consequently causing more time for the grain to fall from
 30 the interrupted point to the earth.

T indicates the furrow openers or runners. These runners may be of the ordinary construction, and are secured to the forward lower ends of the seed-tubes or valve-boxes.

35 The operation of my invention is as follows: A sufficient quantity of corn or grain being placed in the hopper or seed-boxes and the check-line stretched across the field and placed in a position to be guided by the sheave-
 40 wheels, it is passed through the forked or grooved portion of the fork-wheel *H*, after which the team is started. As soon as one of the knots or lugs upon the check-line engages the upper end of the lock or catch *I*, it throws
 45 said end in the direction shown by the dotted lines in Fig. 3. This releases the opposite end of the catch from the lower spur of the wheel, when the lug upon the line immediately engages the uppermost fork. The wheel, being
 50 freed by such action, is caused to make a third of a revolution. The team advancing all the time, the catch, being returned by gravity to

the position shown in full lines, encounters the next lowest fork of the wheel and prevents it from turning until a knot or lug engages
 55 the upper end of the lock and also the upper fork of the wheel. By this action the fork-wheel, being fixed to the shaft *B*, will impart a similar motion thereto, turning the beveled gears *C* thereon, so as to operate the cog-ring,
 60 and consequently the seed-plates, and simultaneously operate the cam-cylinder and oscillate the pivoted valve to drop the grain.

Having described my invention, what I claim is—

1. In a check-row planter, the combination, with a hopper, of a valve-box arranged beneath the same and a vertically-adjustable oscillating valve arranged in said box, substantially as specified.

2. In a check-row planter, the combination, with a hopper, of a valve-box or seed-tube, an intermittently-rotating shaft passing through said box and having a cam-cylinder secured thereto, and a valve pivoted in the box and
 75 having an adjustable extension at its lower end and its upper end adapted to engage the groove of the cylinder, substantially as specified.

3. In a check-row planter, the combination, with a hopper, of a valve-box or seed-tube arranged beneath the same, a cylinder having a cam-groove and journaled in the seed-tubes, and the vertically-adjustable oscillating valve,
 80 also arranged in the tube and having a lug at its upper end to engage the groove of the cylinder, substantially as specified.

4. In a check-row planter, the combination, with a seed-tube, of a shaft journaled therein, a grooved cylinder fixed to the shaft, a vertically-adjustable oscillating valve arranged in
 90 the tube, a forked wheel fixed to the shaft, and the lock or catch *I*, pivoted and weighted, the said catch being arranged so as to have one end engaged by the check-line and its opposite
 95 end adapted to engage the forks of the wheel, so as to limit the movement of the latter, substantially as specified.

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

STEPHEN D. REYNOLDS.

Witnesses:

J. B. HARRIS,

JOHN T. BIRDSEYE.