

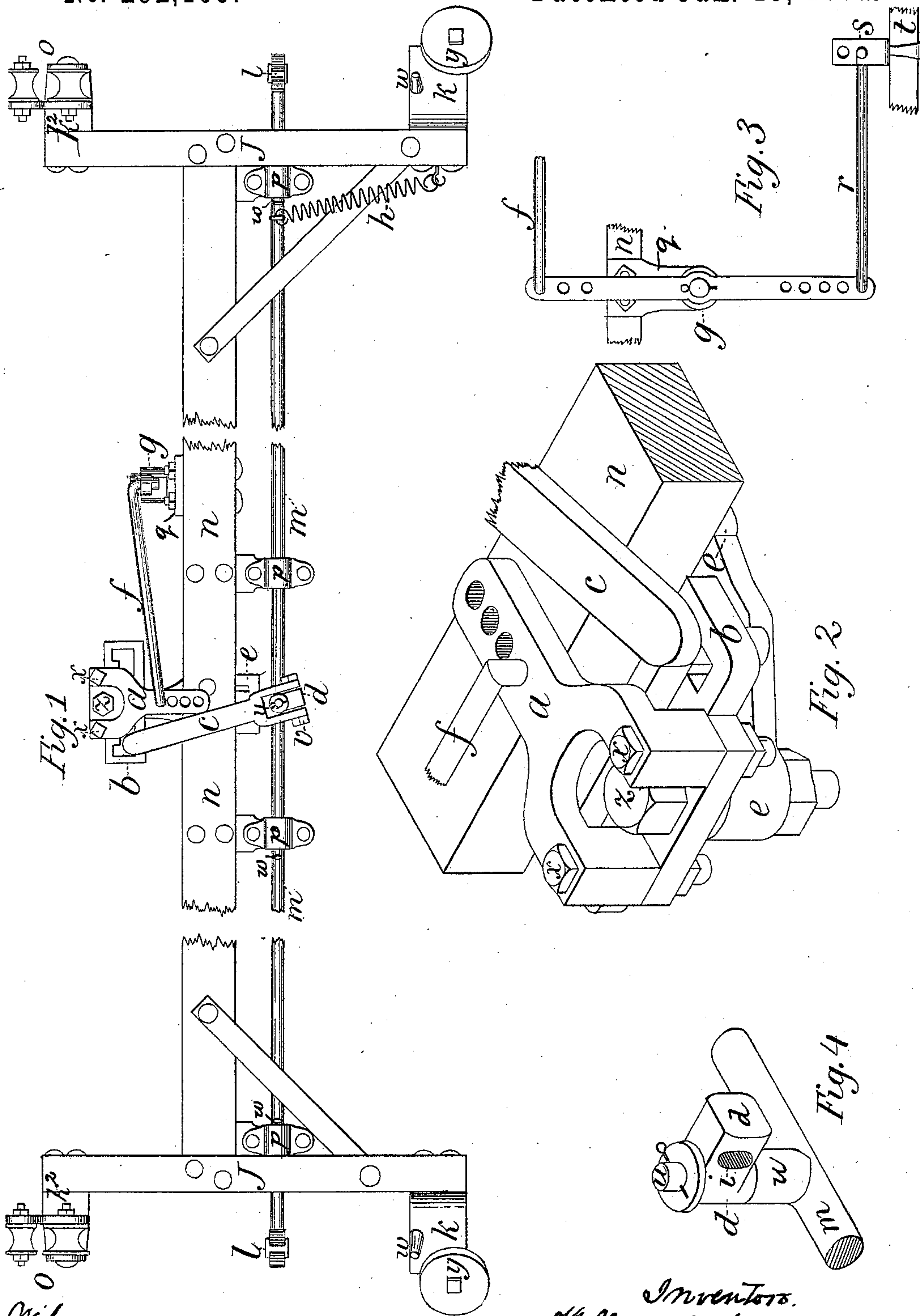
(No Model.)

W. & J. ERDWINS.

CHECK ROWER.

No. 292,109.

Patented Jan. 15, 1884.



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# UNITED STATES PATENT OFFICE.

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## CHECK-ROWER.

SPECIFICATION forming part of Letters Patent No. 292,109, dated January 15, 1884.

Application filed August 28, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM ERDWINS and JOHN ERDWINS, citizens of the United States, residing at Compromise P. O., in the county of Champaign, in Illinois, have jointly invented a new and useful Improvement in Check-Rowers, of which the following is a specification.

Our invention relates to improvements in check-row machines or check-row attachments for planting-machines; and it consists in certain novel features of construction, hereinafter described and claimed, and illustrated by the accompanying sheet of drawings.

Figure 1 of these drawings is a top view of our check-rower shortened by two breaks, with its moving parts in a central position. Fig. 2 is a perspective rear view at the middle of the machine or attachment on a larger scale. Fig. 3 is a small rear elevation at another point, showing the connection with the dropping-slide of the planter; and Fig. 4 is a perspective front view of certain other parts shown at *d u* in Fig. 1.

Like letters of reference indicate the same parts in the several figures.

A pair of wooden bars, *J J*, parallel with the sides of the planter, and a main bar, *n*, also of wood, connecting the former, securely bolted together and braced, as shown in Fig. 1, constitute the frame of our check-row attachment or machine. The working parts, with their more immediate supports, as hereinafter described, are designed to be made of iron, mostly in malleable castings, except the onespring of the machine, which may be of steel or brass wire. The respective ends of said bars *J* are provided with laterally-projecting brackets *k k'*, of which the brackets *k* at the front of the machine support inclined grooved pulleys *y*, for taking up the knotted rope, which is kept in the pulleys by a stud, *w*, on each bracket. The rear brackets, *k'*, support the customary pairs of horizontal grooved pulleys *o*, for discharging the knotted rope onto the ground behind the machine. The customary pair of lever-forks *l*, to engage with the knotted rope, project upward from beneath the lines of the latter

about midway between said pulleys *y* and *o*, being attached at their lower ends to the extremities of a rock-shaft, *m*, and constituting therewith the main operating part of the machine. This is connected with the frame-bar *n* by four brackets, *p*, Fig. 1, which form journal-bearings for said rock-shaft, while stops *w w* on the latter, engaging with the sides of the brackets, prevent endwise displacement of the rock-shaft. A spiral spring, *h*, stretched between the extremity of an arm on said rock-shaft and an eyebolt on one of the bars *J*, effects the return movements, which follow the releases of either of the lever-forks by successive knots, as hereinafter more fully set forth.

A lever-arm, *u*, on the rock-shaft *m*, at mid-length, provides for transmitting motion therefrom, and here begin those parts of our machine in which patentable novelty is claimed. Said lever-arm, as best seen in Fig. 4, is constructed with a pivotal upper end, upon which a knuckle-piece, *d*, is swiveled. This knuckle-piece is drilled to receive said upper end of the lever-arm *u*, and is provided in front thereof, and at right angles thereto, with a hole, *i*, to receive a transverse pivotal bolt, *v*, to complete the connection with the rock-shaft *m* of a laterally-swinging push-finger, *c*, the front end of which is bifurcated and drilled to embrace the knuckle-piece *d* and receive said bolt *v*. The sides of the knuckle-piece within the fork have been made convex and the hole *i* vertically elongated, as shown, to permit a slight rocking motion of the push-finger in a vertical plane at right angles to that of the rock-shaft; but this in practice is found to be unessential. The rear end of said push-finger *c* is provided with a downwardly-projecting stud-pin, which works in the slot of a peculiarly-constructed "intermittent mover," as it may be termed, composed of two parts, *b a*, united by bolts *x*, so as to move together, and pivoted by a vertical bolt, *z*, to the rear extremity of a bracket, *e*, which in turn is bolted to the bottom of said frame-bar *n*, as clearly shown in Figs. 1 and 2. The bracket *e*, as shown in Fig. 1, was slotted to render it adjustable backward and forward; but this is



considered unessential. The slotted lower part, *b*, of said intermittent mover is a small flat casting, adapted to be readily milled, and to be cast of steel, if preferred, to insure correct working and durability. The push-finger *c* rests on the smooth flat top of said part *b* by its own gravity, with its stud-pin within the slot in said part *b*, as aforesaid. This slot, it will be observed, is a simple straight slot at right angles to the perforated transmitting-arm of the part *a*, with rearward extensions or notches equidistant from the axis of the pivotal bolt *z* at its respective extremities. It is partly masked above by said transmitting-arm, which projects across the paths of the push-finger, being sufficiently elevated to prevent interference by means of heels or downward projections at its rear extremities, through which the bolts *x* pass, as seen in Fig. 2. This part *a* is of Y shape, and its third end or stem is the said perforated transmitting-arm, which performs its main function in transmitting regulated motion through a horizontal rod, *f*, a vertical lever, *g*, Figs. 1 and 3, a second horizontal rod, *r*, and a suitable coupling, *s*, to the shake-bar or dropping-slide *t* of the planter, to which the check-rower is attached. Said vertical lever *g* is pivoted to a bracket, *q*, bolted to the back of the frame-bar *n*, and its respective extremities are provided with stroke-regulating holes, as clearly seen in Fig. 3. The rod *r* will be suited to each style of planter upon which the check-rower may be used.

The operation and advantages of our mechanism above described may be stated as follows: The parts do not in practice rest at any time in the "central positions" in which, for convenience, they are shown in the drawings, the spring *h* acting to turn the rock-shaft *m*, so that the lever-forks *l l* project forward at an angle of about forty-five degrees to the perpendicular when at rest, and this movement of said rock-shaft serves also, by means of said pivotal arm *u*, knuckle *d*, cross-pivot *v*, and push-finger *c*, to draw the stud-pin of the latter (seen in Fig. 2) into the foremost end of the slot in said part *b* of said intermittent mover, the latter having been left at a corresponding angle at its last previous actuation. Supposing the check-rower attached to a corn-planter, and the parts at rest, with the pin of said push-finger in the left-hand end of the slot of the intermittent mover, as seen in Fig. 1, at the next contact of a knot with either of the lever-forks *l l* these will be caused to move relatively to the frame *J n J* until they project rearwardly with reference to the perpendicular at an angle of about forty-five degrees. During this movement the rock-shaft *m*, through its pivotal arm *u*, knuckle *d*, and cross-pivot *v*, will give the push-finger *c* a longitudinal thrust biased only at the outset, owing to this combination of parts, by the direction in which said push-finger projects. Its pin will thus be caused to enter the notch at the left-hand end of the

slot in the example, and being held by this notch against deflection, it will act on the left-hand wing of said part *b*, oscillating the intermittent mover upon its pivot *z*, and through the transmitting-arm of its part *a*, together with the said rod *f*, lever *g*, rod *r*, and coupling *s*, moving the shake-bar or slide *t* of the planter to the left-hand end of its stroke and dropping two hills of corn. At the end of this operation said knot escapes from the lever-fork, and the retracting-spring *h* instantaneously brings again to a condition of rest said moving parts, to and including the push-finger *c*, beyond which the effect of said spring does not extend. Its first effect on said push-finger is to draw its pin from the notch with which it was engaged into contact with the smooth front wall of the slot, along which it glides to the opposite extremity of the slot, where it is in position to enter the right-hand notch, into which it is thrust, and within which it acts when the next knot is reached by the working lever-fork and while it remains therein, and thus the operations proceed. The completion of each return-stroke of the push-finger is insured by the favorable direction of the slot and the momentum of the loose push-finger. No springs are required or used, except the single retracting-spring, and its work is rendered very light, while the planting movements are all positive movements, effected by the knotted rope as directly as possible, and consequently with the utmost uniformity.

The moving parts are believed to be of peculiar simplicity and freedom from liability to become inoperative for any reason.

The slotted part *b*, particularly—which is the part requiring the greatest nicety of construction with reference to the described automatic action, and is, moreover, subjected to the most wearing strains—is adapted by its distinctness and its simple form, as hereinbefore set forth, to be readily made with special reference to working freely and resisting wear, while the peculiar combination of parts in said knuckle-joint *u d v* is considered of great importance, owing to the required free and eccentric, and at the same time positive, motions of the push-finger *c*, which it provides for faultlessly, obviating the use of additional springs and other complications heretofore considered essential.

Having thus described our said improvement in check-rowers, we claim as our invention and desire to protect under this specification—

1. The combination, in a check-rower, of the within-described intermittent mover, having a vertical pivot, *z*, and composed of rigidly-united parts *a b*, constructed, the former with elevating-heels and a rearwardly-projecting transmitting-arm, and said part *b* with a straight or substantially straight slot at right angles to the line of said arm, and having rearward extensions or notches at its respective extremities, and the push-finger *c*, adapted to



engage with said part *b* within its respective notches alternately, substantially as herein specified, for the purposes set forth.

2. In the within-described check-rower, the  
5 combination of the horizontal rock-shaft *m*,  
constructed with an upright pivotal lever-arm,  
*u*, the knuckle *d*, swiveled on said arm, the  
horizontal cross-pivot *v*, passing through said  
knuckle, and the loosely swinging and gravi-  
10 tating push-finger *c*, bifurcated and drilled to

embrace said knuckle and receive said cross-pivot, with a slotted intermittent mover, *b a*, adapted to be actuated by said push-finger, substantially as shown, for the purposes set forth.

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