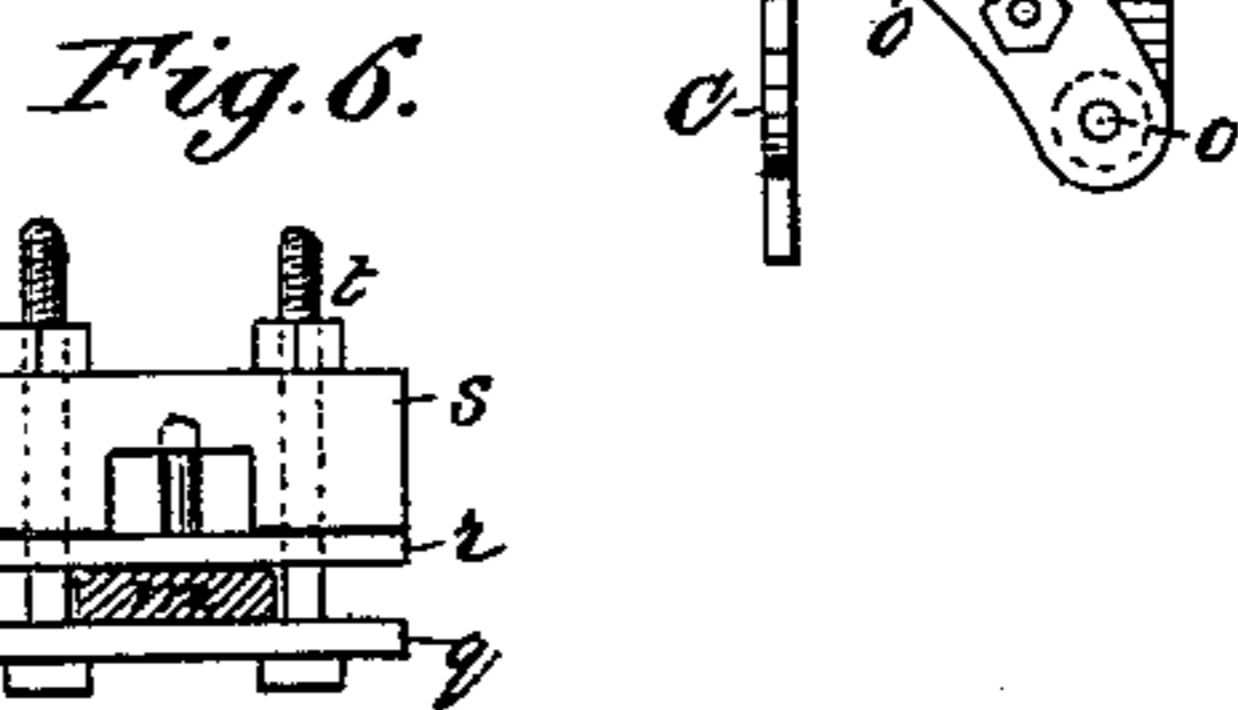
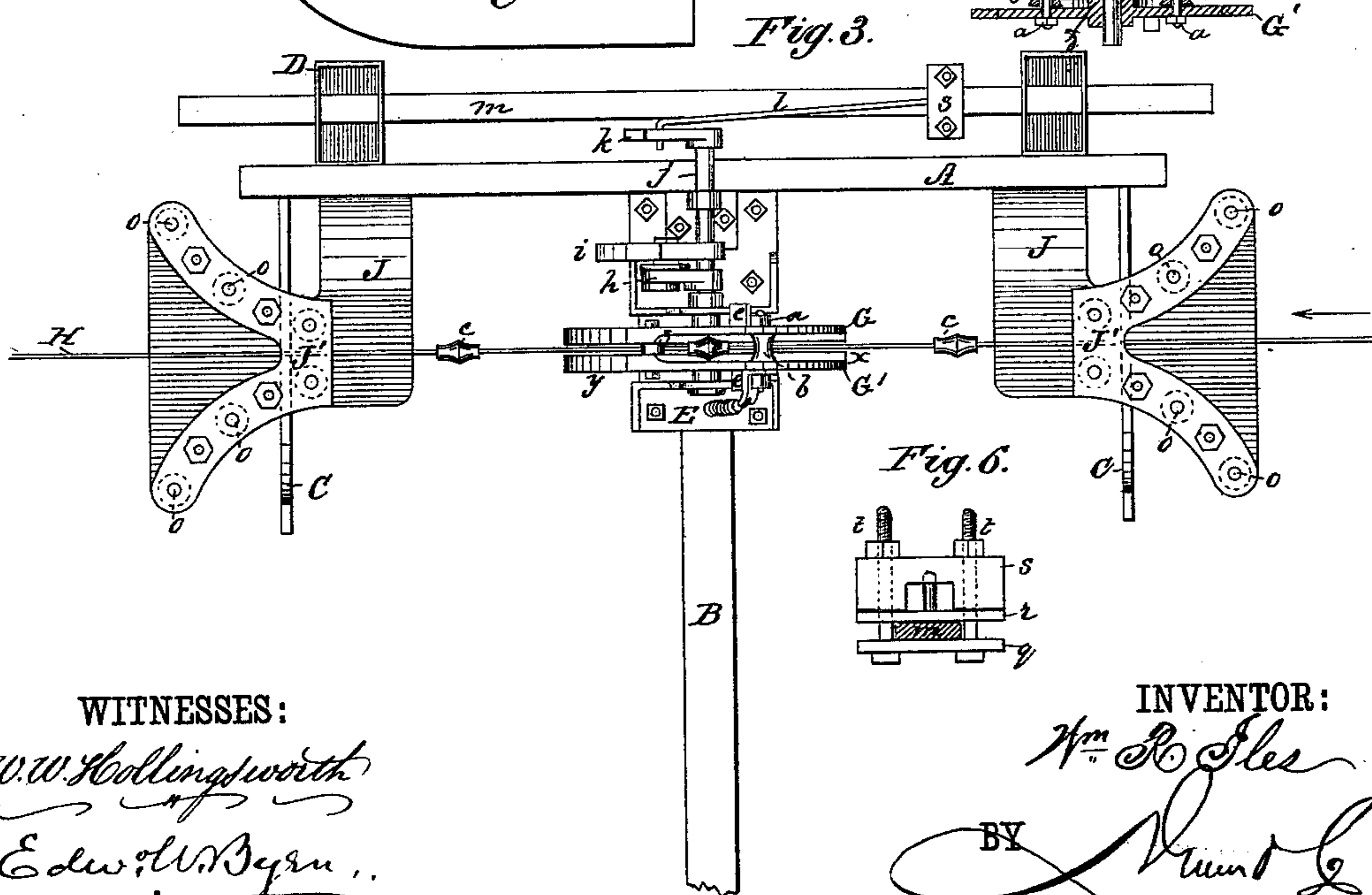
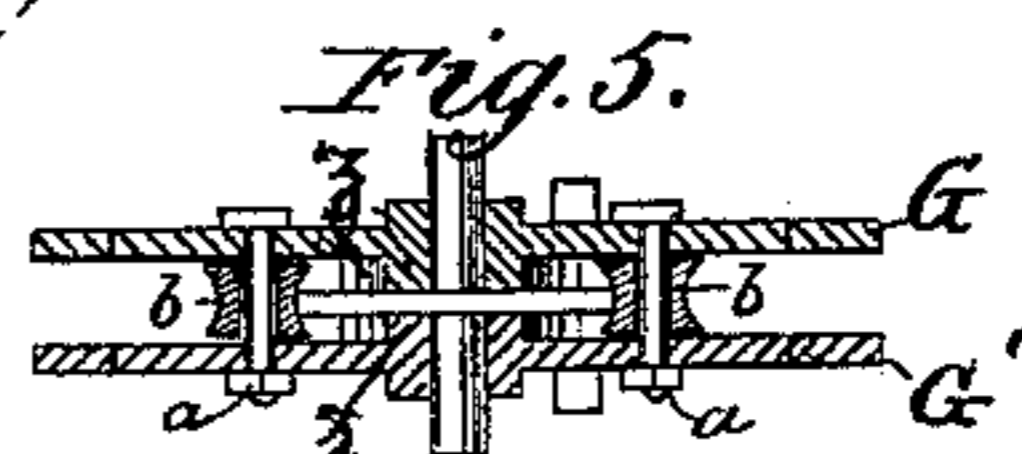
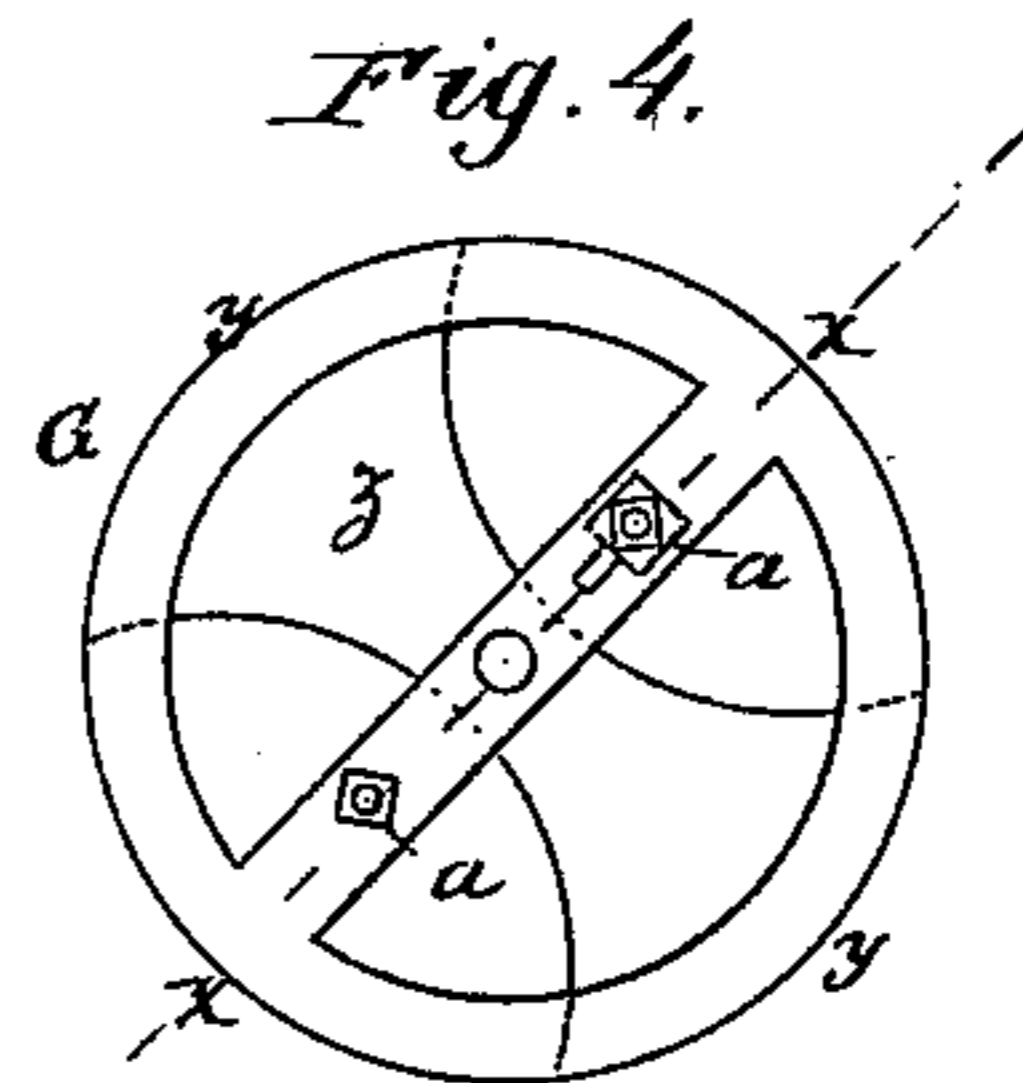
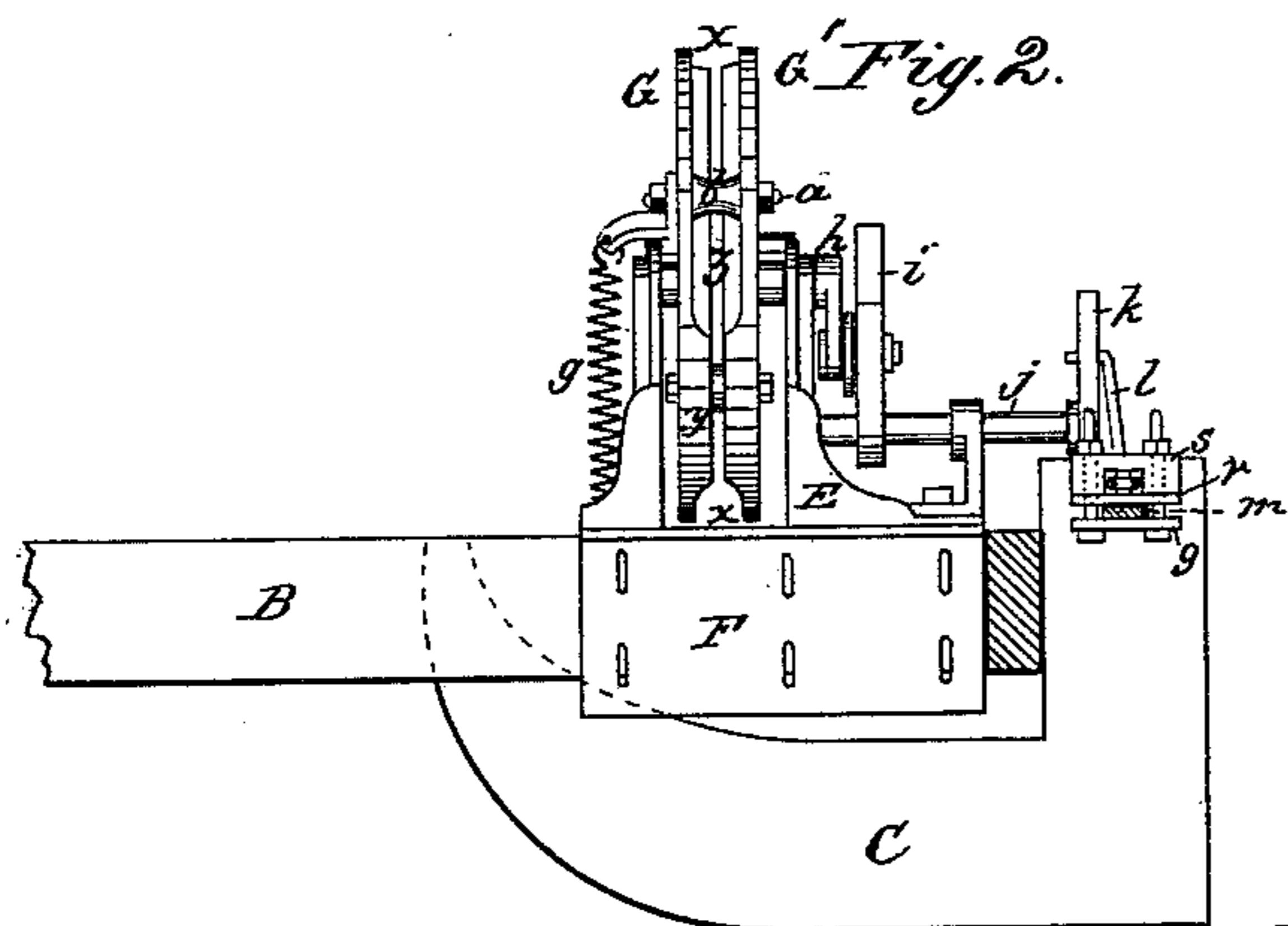
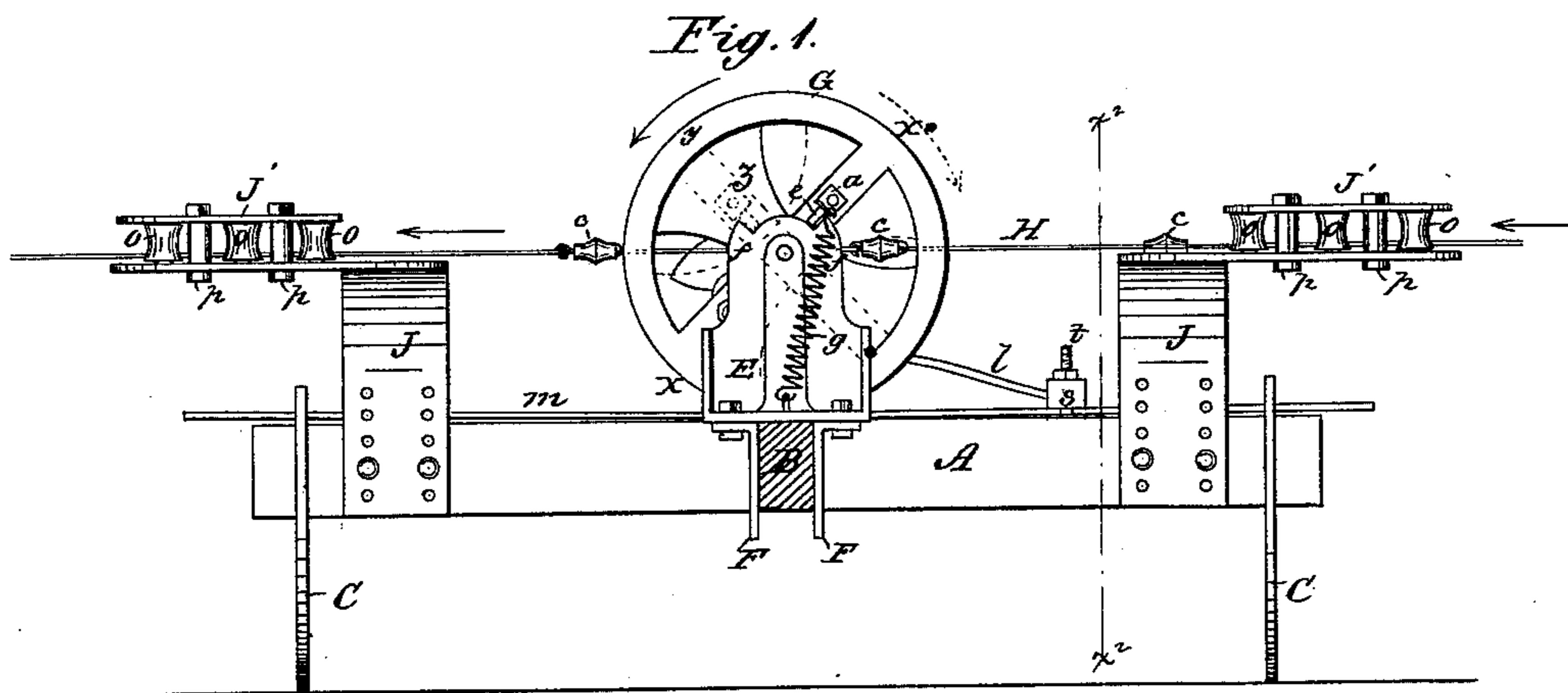


W. R. ILES.
Check-Row Dropper Attachment for Corn-Planters.
No. 222,278. Patented Dec. 2, 1879.



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UNITED STATES PATENT OFFICE

WILLIAM R. ILES, OF FAIRMOUNT, ILLINOIS.

IMPROVEMENT IN CHECK-ROW DROPPER ATTACHMENTS FOR CORN-PLANTERS.

Specification forming part of Letters Patent No. **222,278**, dated December 2, 1879; application filed October 1, 1879.

To all whom it may concern:

Be it known that I, WILLIAM R. ILES, of Fairmount, in the county of Vermillion and State of Illinois, have invented a new and Improved Check-Row Dropper Attachment for Corn-Planters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation; Fig. 2, a vertical section through the line $x^2 x^2$ of Fig. 1. Fig. 3 is a plan view. Figs. 4 and 5 are details of the oscillating wheel. Fig. 6 is a detail of the clamping device for connecting the pitman with the seed-slide.

My invention relates to an improved check-row planter of that general form in which a cord or chain is provided at regular intervals with lugs, tappets, or knots, which cord is staked upon opposite sides of the field, and which knots or tappets, as the machine is drawn across the field, successively operate the dropping devices to cause the corn to be dropped in perfect check-row.

The improvements consist, first, in the novel construction of the device upon which the cord or chain acts to impart the motion to the seed-slides; secondly, in the peculiar construction of guides from which the rope or chain passes out to the front and rear of the machine; and, thirdly, in the peculiar means for connecting the pitman to the seed-slide, all as hereinafter fully described.

In the drawings, A represents a bar constituting the main frame, and B is the tongue extending at right angles therefrom. C are runners which support the main frame, and above which, at their rear ends, are located the seed-boxes D D.

To the common form of seed-planter, as so far described, is attached my improved check-row device, consisting of two principal parts, the dropping mechanism and the guides for the rope. The dropping mechanism is mounted upon a metal frame, E, having two downwardly-projecting plates, F F, which straddle the tongue and are securely bolted to the same, the said bolts passing through slots to permit a vertical adjustment of the frame on the tongue. These plates F are made also ad-

justable away from each other, to accommodate different widths of tongue.

In bearings in the upright portion of the frame E are arranged the journals of the twin wheels G G', which journals do not extend from wheel to wheel to make a continuous axle, but which wheels at the center are entirely disconnected, and are bolted together midway between their centers and their rims by bolts *a a*, and upon which bolts between the wheels loose guide-rollers *b b* are placed. These twin wheels, at two diametrical portions, *x*, of their peripheries, are set a distance wide enough apart from each other to admit the lugs or tappets *c* of the chain H, and at the intervening points *y* are set closer together, so that while the wire links of the chain can pass between, the passage of said lugs or tappets *c* is opposed. Extending from one of these portions *y* of the peripheries of each wheel to the other diametrical portion are two double-curved plates, *z z*, which are parallel with each other, and throughout their entire extent preserve the same adjacent position to each other that they do at the periphery of the wheel. This twin wheel is not designed to rotate, but simply oscillates from the action of the cord or chain, in a manner which will hereinafter be described.

For limiting the extent of oscillation, lugs *e e* on the wheels strike against stop-projection *f f* of the frame E, while for holding the wheel against rebound at the end of each oscillation a spring, *g*, connects the frame E with an offset on the front wheel by one of the bolts *a*. As the wheels oscillate a crank, *h*, attached to the rear wheel, oscillates with its pin in a slot in a weighted arm, *i*, attached to a rock-shaft, *j*, which shaft is journaled in bearings in parallel position with the tongue, and at its rear end has a crank-arm, *k*, connected by pitman *l* with the seed-slide *m*. For varying the throw of the seed-slide the pitman *l* may be adjusted for greater or less throw by being inserted in any one of a series of holes in the crank-arm *k*.

For guiding the chain H to and from the twin wheels guide-frames are employed, one on each side of the machine. These guide-frames are formed of angular metal plates J J, bolted adjustably to the main frame A, and

then bent forward at right angles into a horizontal position. Upon the upper surface of these plates is arranged a tapering series of rollers, *ooo*, which converge toward the wheel and are arranged upon axes fastened between the lower plates, *J*, and upper plates, *J'*, which latter are secured to the lower plates by means of pillars *p*. The guide-frames thus formed are in the nature of tapering mouths, converging toward the wheels and widening outwardly with a curve.

The object of this peculiar construction is to allow the machine to be turned around at the end of a row without removing or disconnecting the rope or chain, the latter being simply reversed in position in the guide-frames, or thrown from one side to the other of the same.

The arrangement of the series of rollers, it will be seen, is on each side, in the arc of a circle of a very much larger radius than any single pulley which can be practically employed, and herein lies another advantage, for the reason that there is much less friction and binding in the rope or chain in turning the two angles of the machine. This is especially advantageous when a chain made of linked rods is employed.

For connecting the pitman *l* to the seed-slide three plates, *q r s*, Fig. 6, are employed. Of these plates the lower one, *q*, has simply two perforations, through which the bolts *t* pass, while *r* has two corresponding holes and a central vertical stud, and *s* has a recess, into which the stud projects, and two holes also, through which the bolts *t* pass. Between the plates *q* and *r* the feed-slide is clamped at any suitable point on said slide, with the eye of the pitman entering the recess of *s*, and the pin of *r* passing through the eye of the pitman and into a seat in the upper plate, *s*, so that when the bolts *t* are tightened the pitman is firmly, but loosely, fastened to the plates, and the latter rigidly clamped to any portion of the feed-slide.

With respect to this feature, I do not claim, broadly, operating the feed-slide through an adjustable connection, but only the peculiar construction and arrangement of the parts forming said connection.

In the operation of my devices I prefer to use a metal chain, *H*, composed of link-rods having tappets or lugs, for the reason that a rope will at times become contracted by dampness and throw the rows out of check. This chain is staked or anchored at opposite sides of the field in the usual manner, or is fixed to an anchor traveling on a guide, and runs from one end to one of the guide-frames, thence at right angles to the line of draft to the twin wheels,

thence to the other guide-frame, and from this point to the other side of the field. Now, as the machine moves across the field, the chain with its tappets enters the twin wheel through the wide spaces between the two wheels, and passes in the direction of the arrow between the rollers *b b*. Now, the parts being in the position shown in Figs. 1 and 3, the first tappet *c* strikes the upper edges of curved bars *z z*, and as it cannot pass through the result is that the wheel is thrown into the position shown in dotted lines, Fig. 1. The next tappet then, passing between the wheels below the bars *z z*, strikes the under side of the same and throws the wheels in the direction of the dotted arrow into the original position again, and so on the wheel is oscillated by the tappets on the chain as the machine is drawn across the field. When the machine is moved in the opposite direction the symmetrical construction of the wheel permits a similar action to take place.

Having thus described my invention, what I claim as new is—

1. The combination, with a rope or chain having tappets *c* thereon, of the twin wheel having wide spaces *x x* and narrow spaces *y y* on its periphery, the said wheels having their diametrical parts at *y y* connected by cam-bars *z z*, together with mechanism for connecting the oscillating twin wheel with the seed-slide, substantially as described.

2. The twin wheels having independent axes, cam-bars *z z*, and connected by bolts carrying rollers *b b*, in combination with a chain and mechanism for communicating the motion to the feed-slide, substantially as described.

3. The oscillating twin wheels *G G'*, having lugs *e e*, combined with the frame *E*, having stop-projections *f f*, and a spring, *g*, for resisting the rebound, substantially as described.

4. The guide-frames consisting of the right-angular plates *J*, the double series of circularly-arranged rollers *ooo*, the pillars *p*, and the upper plate, *J'*, combined with a check-row dropper operated by a cord or chain, substantially as described.

5. The combination, with the pitman and seed-slide of a corn-dropper, of the clamp-plate *q*, plate *r*, having vertical stud, plate *s*, having a recess, and the bolts *t*, passing through, all substantially as described.

The above specification of my invention signed by me this 25th day of September, 1879.

WILLIAM R. ILES.

Witnesses:

EDWD. W. BYRN,
 SOLON C. KEMON.