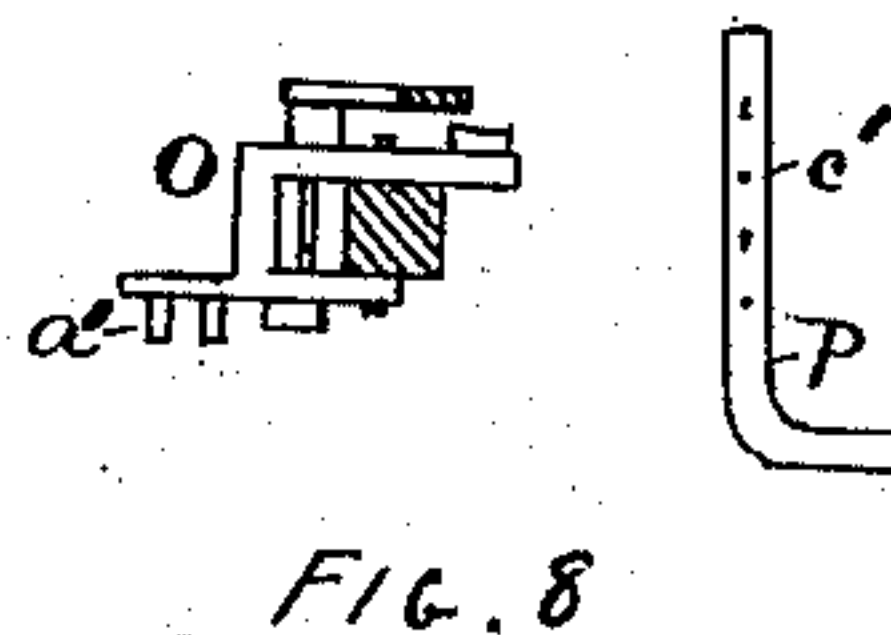
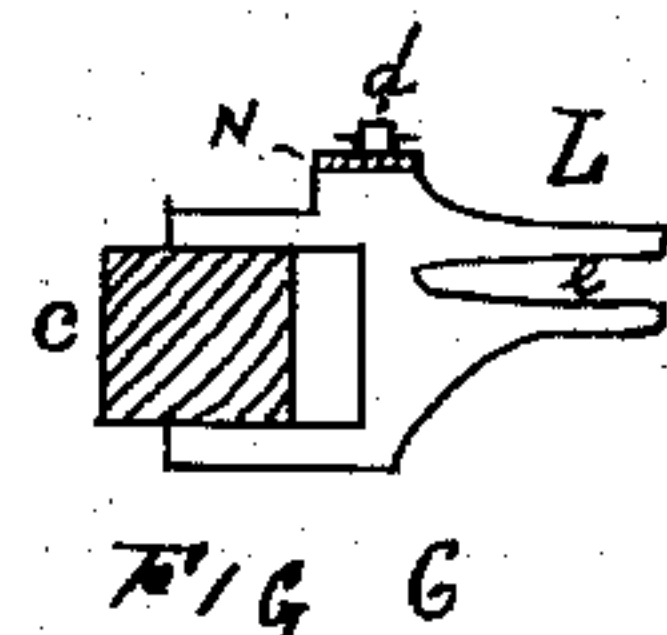
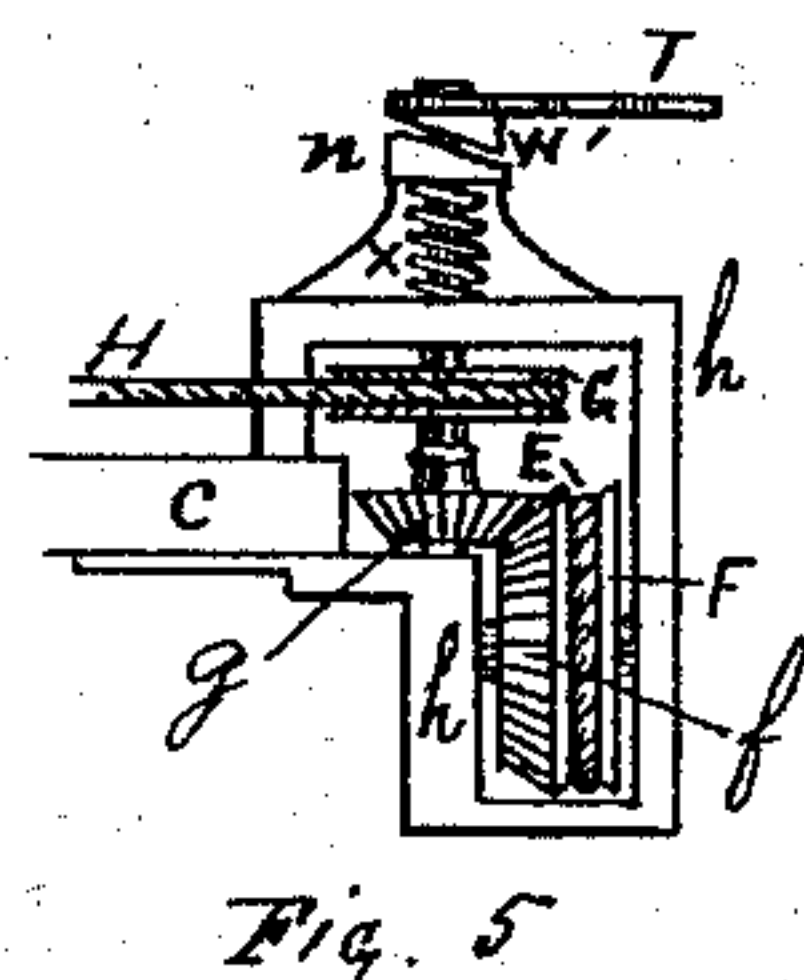
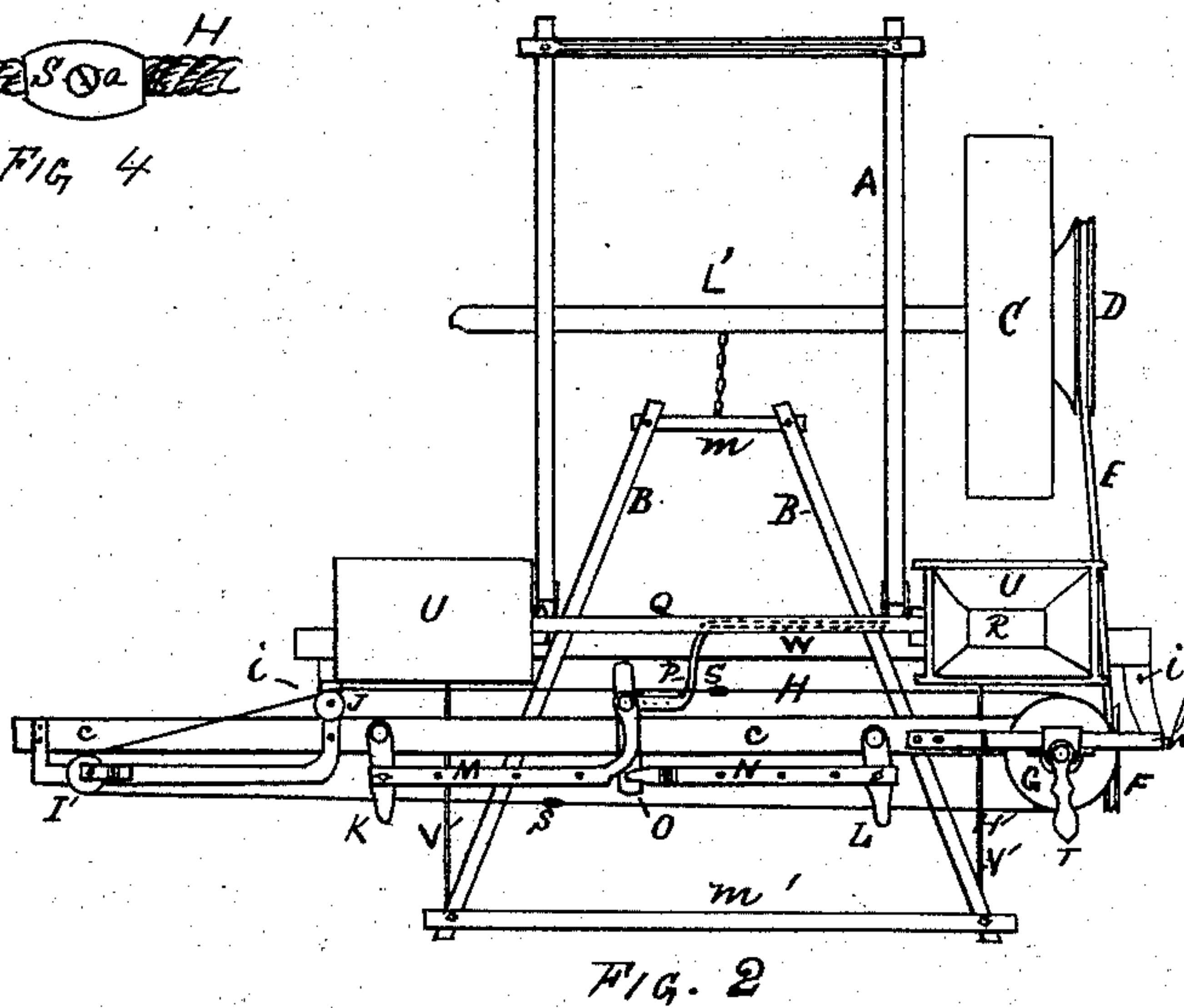
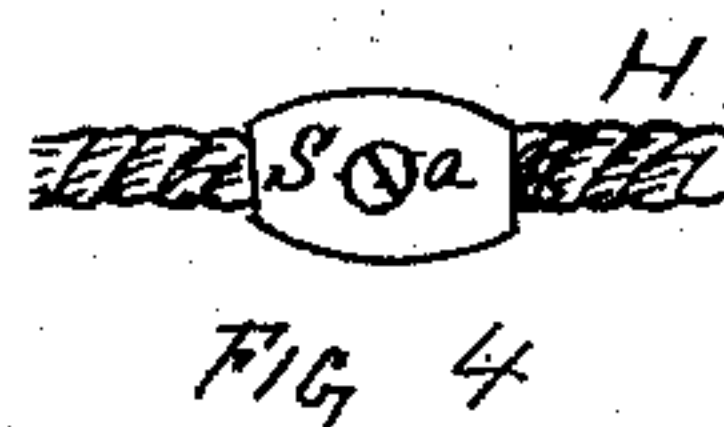
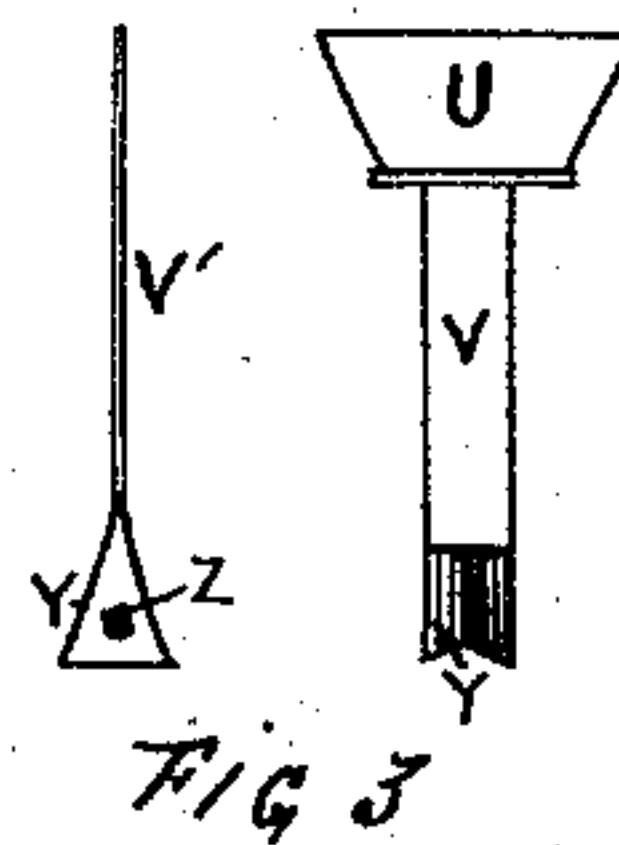
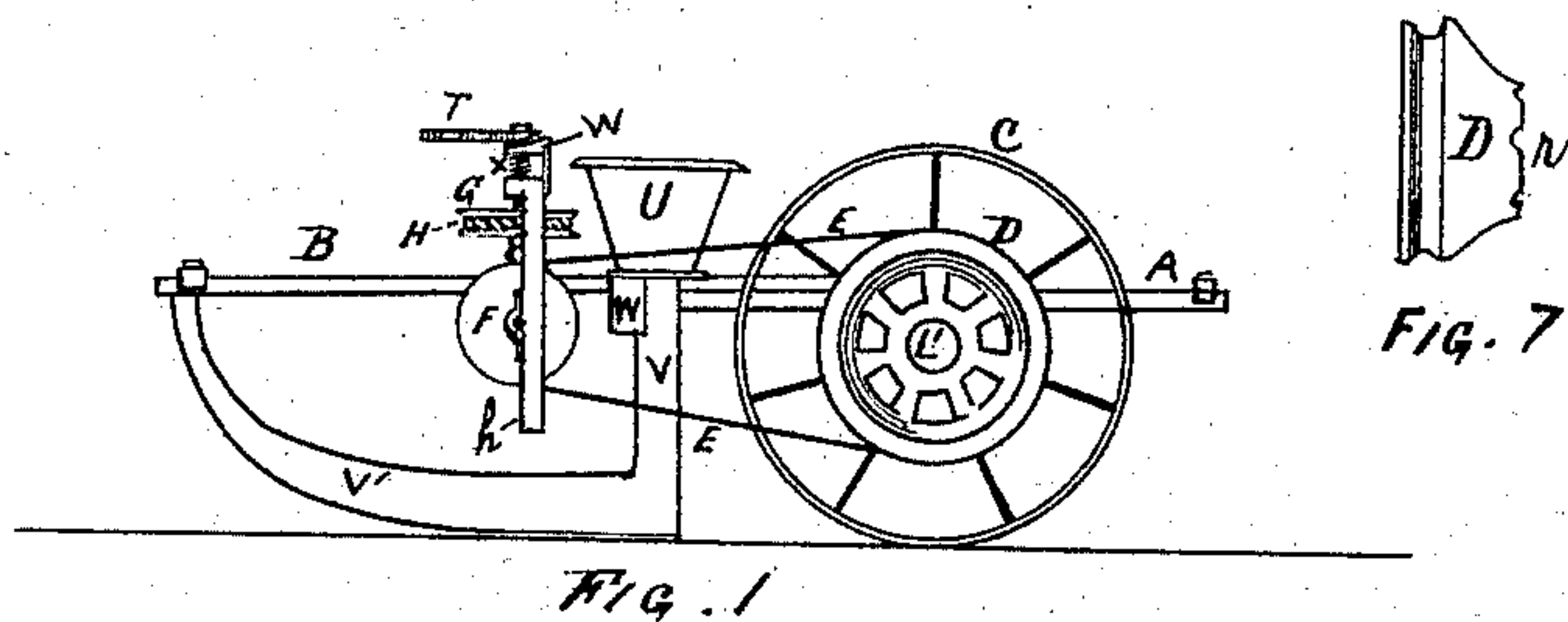


J. M. BANKER.

Check-Row Attachments for Corn-Planters.

No. 156,870.

Patented Nov. 17, 1874.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN M. BANKER, OF TUSCOLA, ILLINOIS.

IMPROVEMENT IN CHECK-ROW ATTACHMENTS FOR CORN-PLANTERS.

Specification forming part of Letters Patent No. **156,870**, dated November 17, 1874; application filed June 13, 1874.

To all whom it may concern:

Be it known that I, JOHN M. BANKER, of Tuscola, in the county of Douglas, State of Illinois, have invented a certain new and useful Improvement in Check-Row Attachments for Corn-Planters, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 is a side elevation of a planter provided with my improved check-rower; Fig. 2, a plan or top view of the same; Fig. 3, sectional views of the drill or plow; Fig. 4, a sectional view of the rope; Fig. 5, a sectional view, showing the main gear and the mechanism for throwing the check-rower out of gear; Fig. 6, a view of the forked shipping-lever; Fig. 7, a view of the main belt-wheel detached; and Fig. 8, a detail to be referred to.

Like letters of reference indicate corresponding parts in the different figures of the drawing.

My invention relates to that class of check-rowers which are automatic in their operation; and consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a simpler and more effective implement of this character is produced than is now in common use.

In Figs. 1 and 2, W is the main beam or cross-bar of the planter, to which is attached the triangular frame-work, composed of the beams B B *m m'*, and upon the ends of which are disposed the seed-hoppers U U. The shoes V' V' are connected at their forward ends with the beams B B, expanding at their rear ends to form plows or drills, as at *y*, Fig. 3. Extending downwardly from the hoppers are conductors V V, provided with openings *z* for the passage of the corn or seed. The lower ends of these conductors are connected with the rear ends of the shoes, Fig. 1, and the upper ends open into the hoppers. Hinged to the rear of the beam W there is a rectangular

frame, A, mounted on the axle L', on which axle the covering-wheel C is disposed.

In the drawing but one covering or presser wheel is shown, but it will be understood that each end of the axle is to be provided with corresponding wheels.

Projecting forward from the beam W are two brackets, *i i*, carrying the main check-rower beam *c*, to one end of which is attached the mechanism, (best seen in Fig. 5,) consisting of the frame *h h*, in which are disposed the intersecting beveled gears *f g*, arranged, respectively, upon horizontal and vertical axes. Upon the axis or shaft of the gear *f* there is a fast pulley, F, and upon the shaft of the gear *g* a fast pulley, G. Attached to the upper end of the last-named shaft there is a lever, T, having a cam-shaped annular flange, W', projecting from its under side around said shaft. The frame *h* is extended upwardly, terminating in the cap *n*, through which the shaft passes, which cap also has its upper surface inclined to correspond with the cam W'. A coiled spring, *x*, rests on a boss or fast collar attached to the shaft, its upper end pressing against the lower side of the cap *n*. A pulley, D, is attached to the outer side of the wheel C, being connected with the pulley F by the belt E. Pivoted to the bar *c* there is a crank-shaped lever, O, Fig. 2, to one end of which lever is attached the sliding rod M, and to the other the sliding rod N. To the outer end of the rod M is pivoted the bifurcated lever K, and to the outer end of the rod N a corresponding lever, L, these levers being hinged at one end to the beam *c*, so as to swing laterally. A sliding bar, Q, connects the seed slides or valves R in the hoppers U U, and a bent rod, P, is pivoted at its ends, respectively, to the inner end of the lever O and to the bar Q. An adjustable pulley, I, is vertically journaled at the end of the beam *c* opposite the pulley G, and there is also a guide or friction pulley, J, arranged on a vertical axis near the lever K, but on the opposite side of the beam *c*. Passing around the pulley G and the pulleys I J there is an end-

less rope or belt, H, provided at regular intervals with artificial knots S, Fig. 4. This rope passes through the slot *e* in the lever L, Fig. 6, and also through a similar slot in the lever K.

From the foregoing the nature and operation of my invention will be readily obvious to all conversant with such matters.

The hoppers U U being properly filled with corn or seed, the planter is drawn forward over the field in a direct line by the beam *m'*, the plows or shoes V' opening the furrows or drills, and the wheels C covering and pressing down the same in the usual manner. As the wheel C revolves, carrying with it the fast pulley D, the belt E will communicate motion to the pulley G through the pulley F and gears *f g*, causing the rope H to traverse the pulleys G I J, and through the slots *e* in the levers K L. As the rope advances one of the knots S will be brought first into contact with the lever L, and, being too large to pass through the slot *e*, the lever will be swung around laterally, thereby toward the lever K, causing the rod N to move the outer end of the lever O toward the lever K, and the inner end toward the lever L. The rod M, being pivoted to the inner end of the lever O, and to the lever K, will, when the lever O is moved as described, cause the lever K to be moved or swung around toward the lever L, the rod P at the same time moving the bar Q toward the pulley G, and opening the seed valves or slides R. The knot S, being unable to pass through the slot *e* in the lever L, when said lever has been swung around sufficiently, will escape, or slip out of or past the same, continuing on its course until it strikes the lever K, which will be swung around thereby in the direction of the pulley I, drawing with it, in the same direction, the rods M P and bar Q, thus closing the slides R. This movement of the lever K also swings the lever O on the beam *c*, causing the lever L to move in the direction of the pulley G preparatory to being acted upon by another knot on the rope H, to again open the slides R, in a manner which will be readily apparent without a more explicit description.

In check-rowers of this class, as ordinarily constructed, the rope is many rods in length, being attached by its ends to stakes at the sides of the field, and so arranged as to pass around loose pulleys and through slotted levers, like the levers L K, herein described; but the objection to such an arrangement is, that the stakes are apt to be pulled down, causing much delay and trouble, while the rope produces a side draft to the machine, and, by its great length, is easily stretched, causing the mechanism to work unevenly, and to give very imperfect results.

My invention is designed to obviate this difficulty; and to this end I construct the

check-rower as described, making use of the endless knotted rope H, actuated by the pulley D through the belt E, pulley F, gears *f g*, and pulley G.

The pulley D, Fig. 7, is provided with a serrated annular flange, *r*, the teeth of the flange fitting between the spokes of the wheel, the pulley being secured to the wheel by means of staples passing around the spokes and into the pulley. This construction of the pulley prevents it from turning or slipping on the wheel, and enables it to be fastened more readily and securely than when constructed in any other manner with which I am acquainted.

The artificial knot S, Fig. 4, consists of two oblong rounded pieces of wood or iron, having flat faces, grooved longitudinally to receive the rope, being fastened together and to the rope by the screw *a*. A knot of this description is much better than one tied in the rope in the usual manner, as it can be readily adjusted to any position, is cheaply constructed, and prevents the rope from wearing out and breaking.

The lever T, cam W', and cap *n* are for unshipping the machine or throwing the gear *g* out of contact with the gear *f* at the ends of the rows, or whenever desired, thus stopping the action of the levers K L and slides R, and preventing the seed from being dropped from the hoppers.

It will be seen that, when the lever T is turned to the right or left in a horizontal plane, the cam W' will be brought against the inclined surface of the cap *n*, raising the shaft on which the gear *g* is disposed, and also said gear vertically, the shaft being loosely fitted in the frame *h*, to admit of this elevation; also, that, when the lever T is released, the spring *x*, acting expansively against the under side of the cap *n* and upper side of the box or fixed collar on the shaft, will press the gear *g* downwardly, causing it to engage the gear *f*.

The pulley I may be rendered adjustable on the beam *c*, to tighten the rope H, by any convenient means. The inner end of the lever O, Fig. 8, on its lower side, is provided with a series of pins, *a'*, which fit in corresponding holes, *c'*, in the rod P, for adjusting these parts so as to lengthen or shorten the stroke of the planter, or to adapt the check-rower to planters having a long or short stroke of the seed-slide.

No novelty is claimed for the shoes V', frames B A, hoppers U, wheel C, or other parts especially pertaining to a planter, when in and of themselves considered, the check-rower being adapted to any ordinary planter of this character; neither do I claim the forked levers L K, for operating seed-slides, when in and of themselves considered, the same being old and well known; but

What I claim is, in a check-rower attach-

ment for planters, the following instrumentalities, to wit:

1. The knotted endless rope H, pulleys G and I, forked elevators K L, lever O, and rods M N, combined to operate the seed-slides of the planter, substantially as specified.

2. In combination with the endless rope H, the pulley F, gears *f g*, and pulley G, actuated by the belt E and pulley D, and constructed and arranged to operate substantially as specified.

3. The pulley D, provided with the serrated

flange *r*, substantially as and for the purpose set forth.

4. The lever O, provided with the pins *a'*, and the rod P, provided with the holes *c'*, combined and operating to adapt the check-rower to planters with seed-slides having different lengths of stroke, substantially as set forth.

JOHN M. BANKER.

Witnesses:

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CHARLES D. CRAFTS.