

H. H. PERKINS.

Cultivators.

No. 137,478.

Patented April 1, 1873.

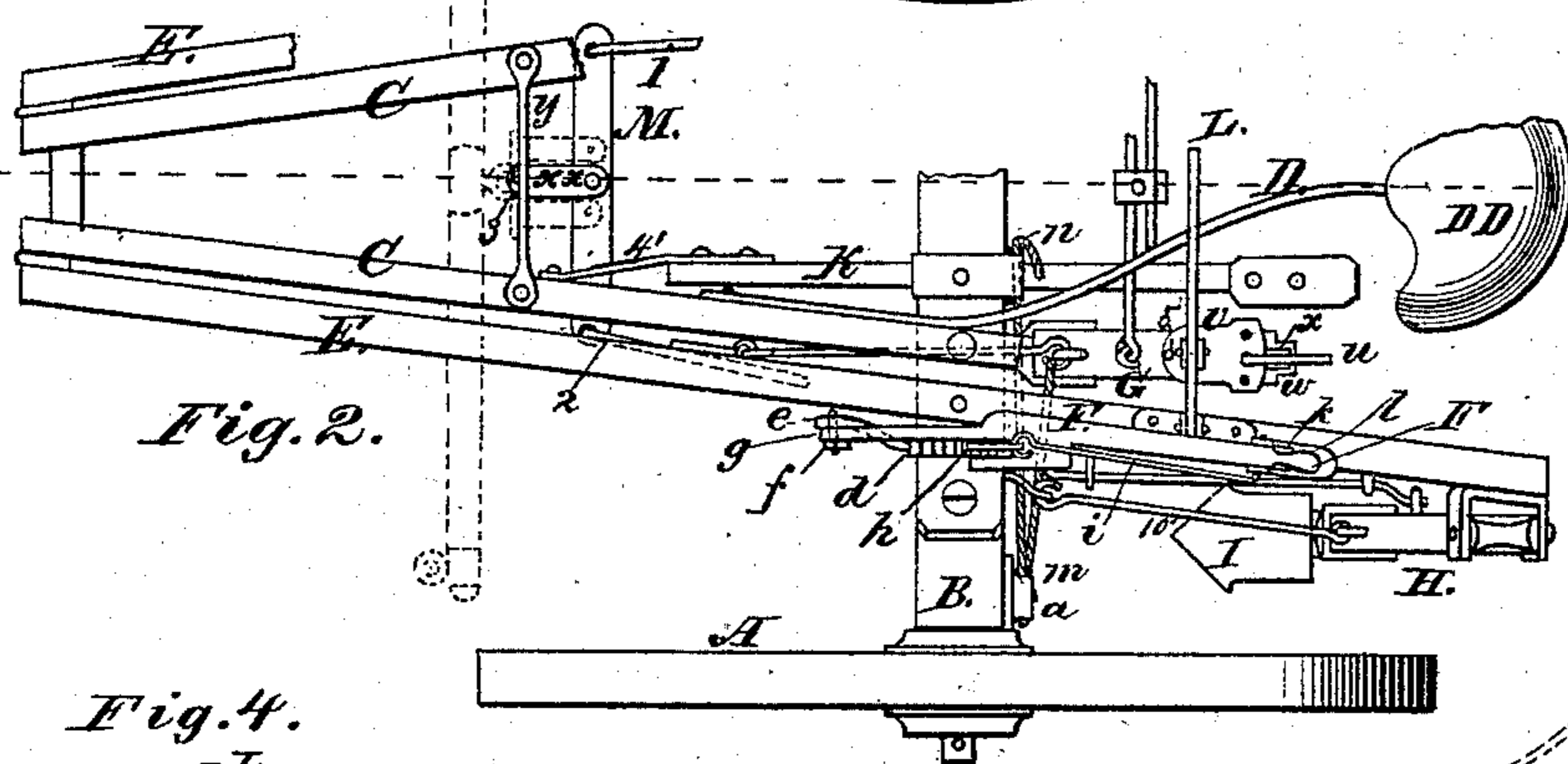
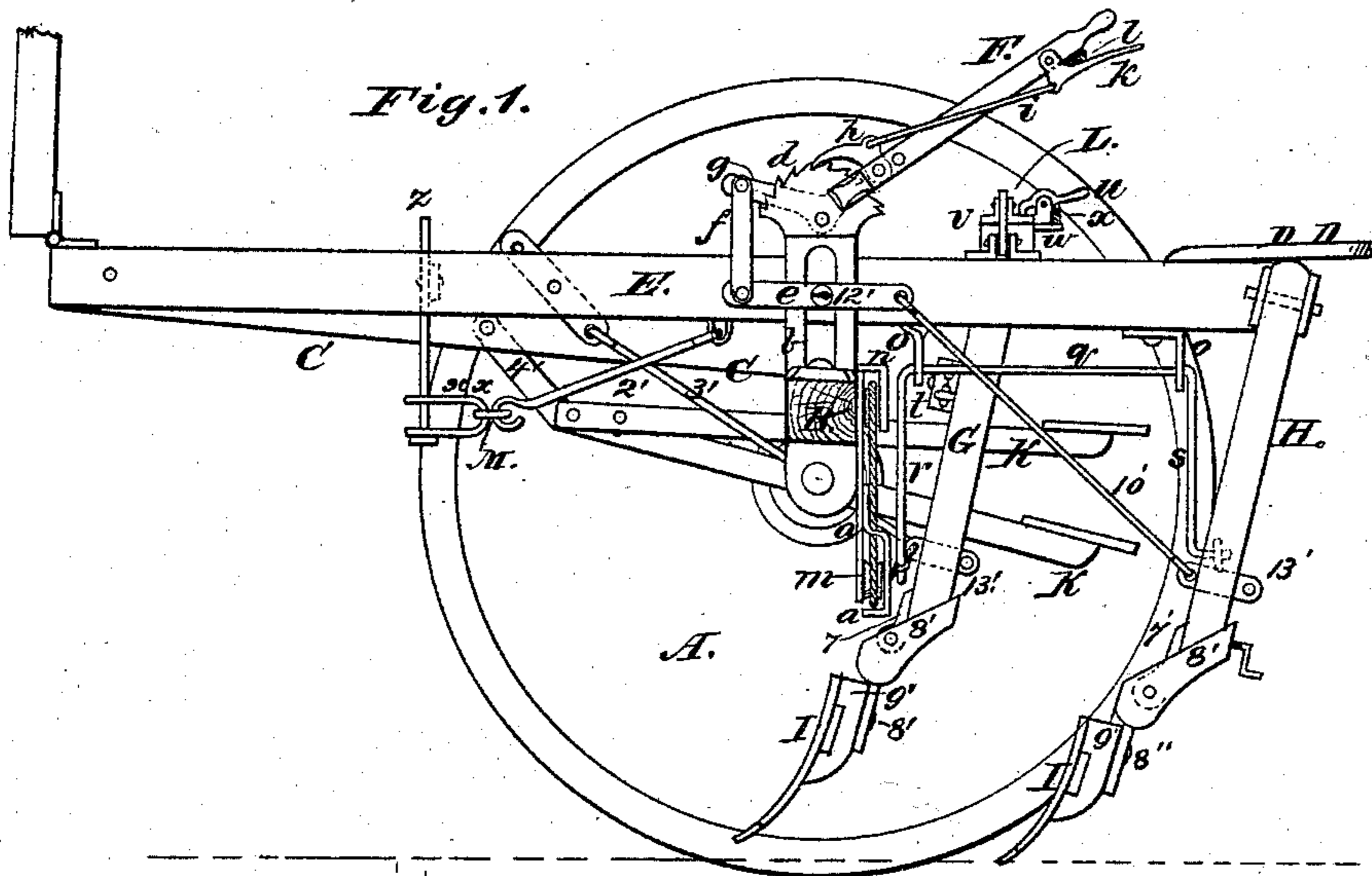


Fig. 4.

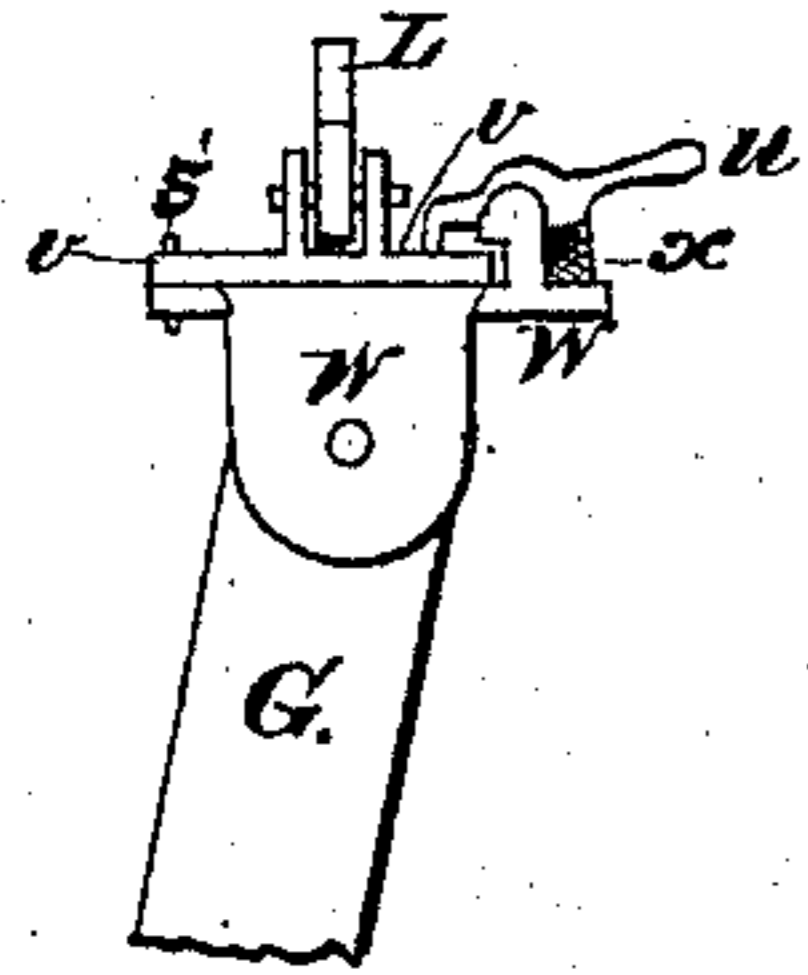


Fig. 3.

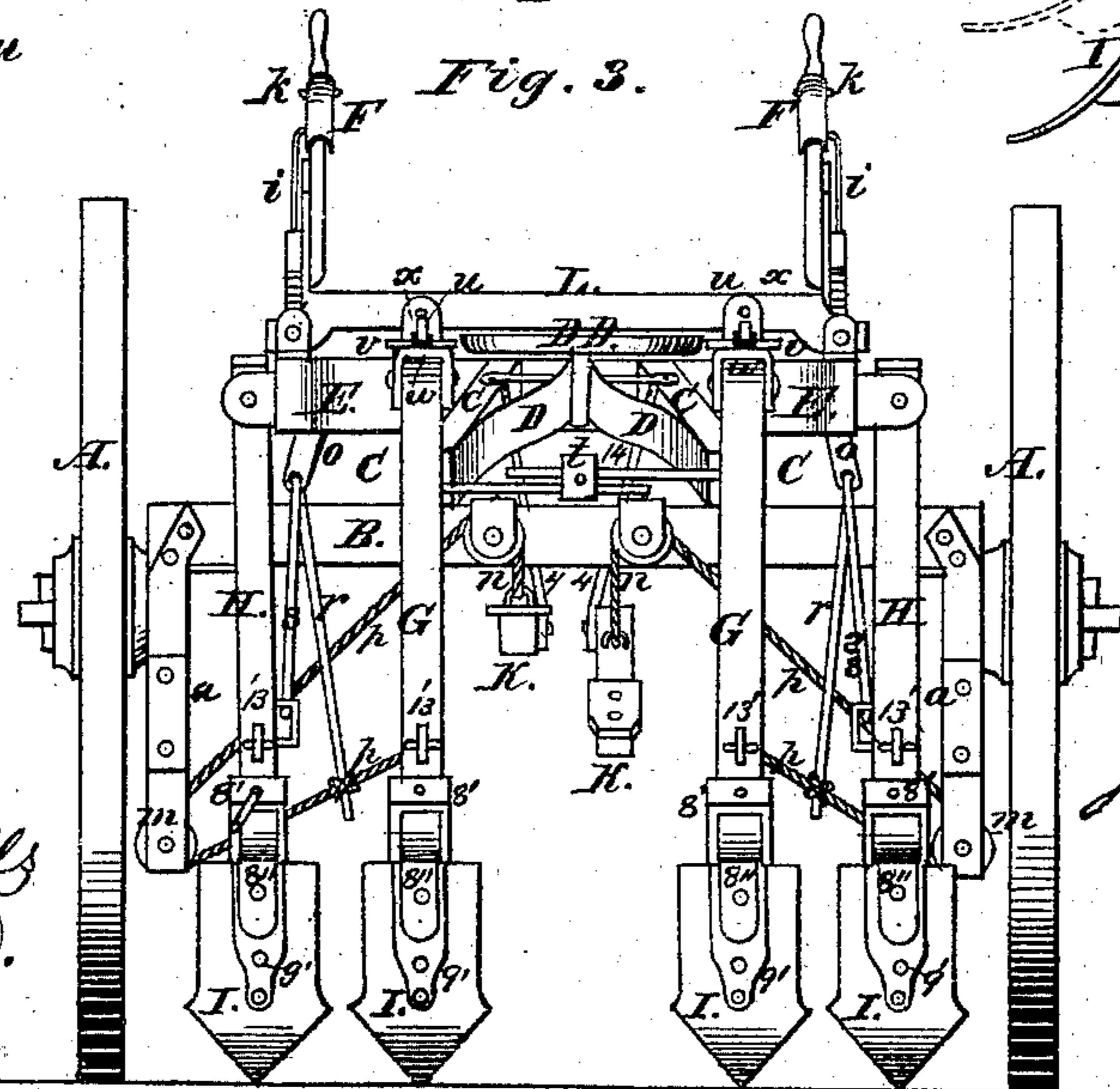
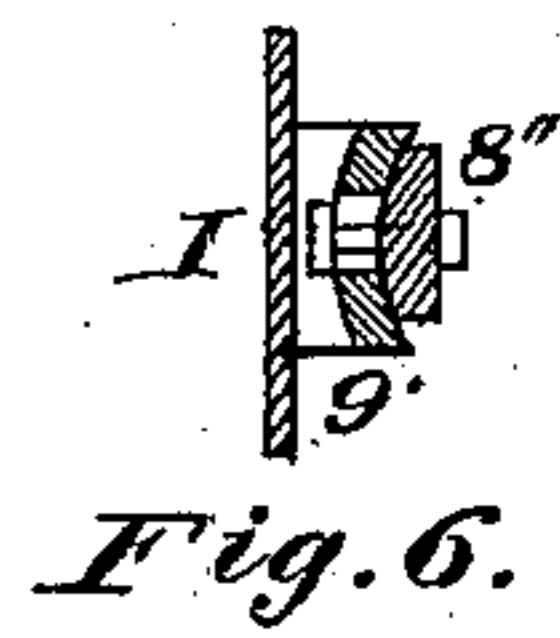
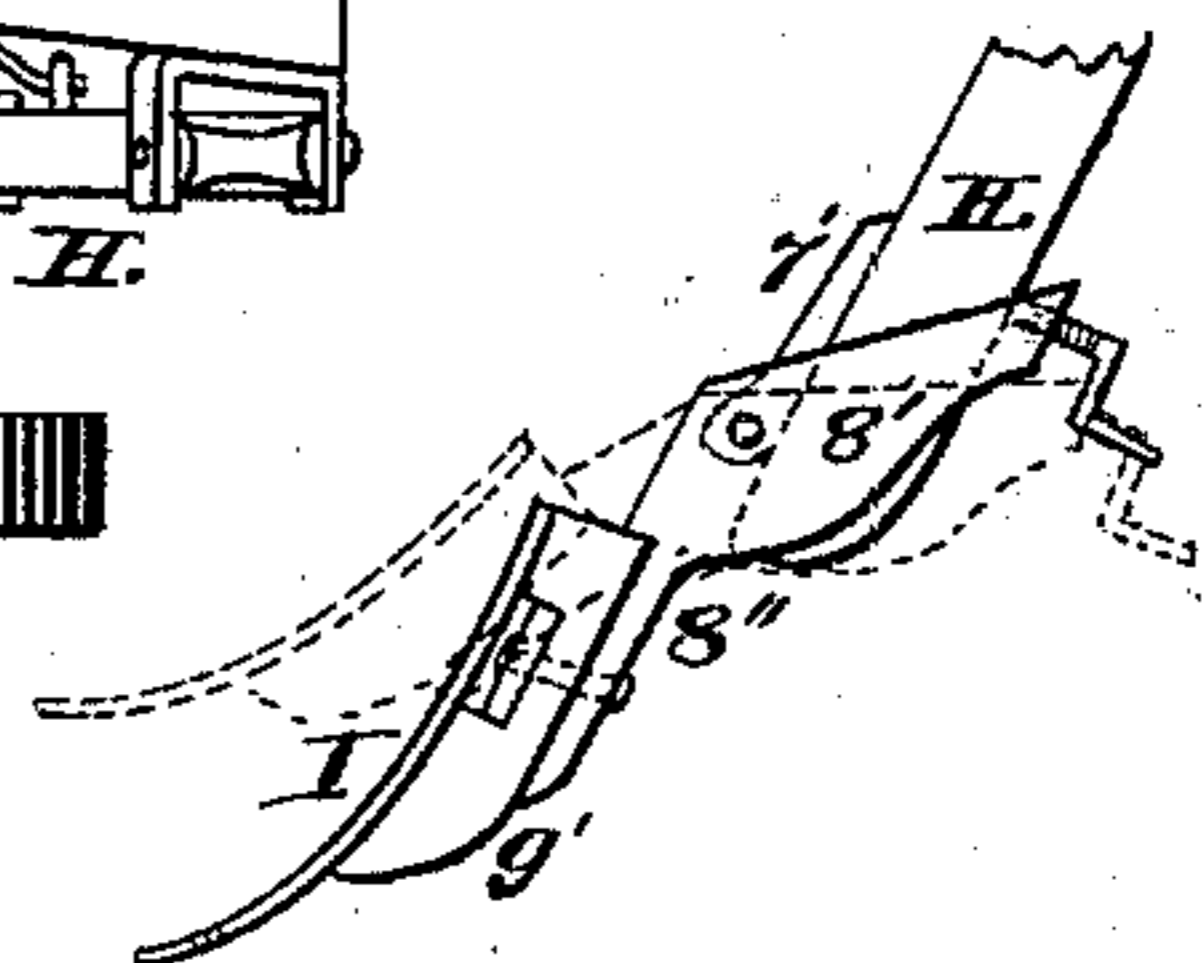


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

HAZEN H. PERKINS, OF OSCEOLA, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 137,478, dated April 1, 1873; application filed October 1, 1872.

To all whom it may concern:

Be it known that I, HAZEN H. PERKINS, of Osceola, in the county of Stark, in the State Illinois, have invented an Improvement in Sulky Corn-Cultivators; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a longitudinal elevation; Fig. 2, a plan of the left half of the machine; Fig. 3, rear elevation; Fig. 4, side elevation of pivoting device of the forward shovel-stems; Fig. 5, side view of the adjustment of shovels to their stems; Fig. 6, section through shovel-block and its seat on the adjustable joint 8'.

This machine has levers with ratchets on either side of the plow-beams to adjust the shovels to the required depth of tillage; also, treadles for moving the shovels from right to left, or vice versa; also, pivots to the upper ends of the forward shovel-stems for the purpose of inclining them so as to throw the soil to or from the corn-row; also, an arrangement of braces, which part from the shovel-stem when the shovel strikes an obstruction in the soil, combined with the pivoting of the upper end of the stem to the beam; also, a device for elevating the points of the shovels and holding them so in plowing hard ground.

A A represent the wheels; B, the axle; C C, the hounds, (or, properly, the tongue,) attached to, and extending forward from, the axle, and to which the parallel pieces of the frame E E are pivoted at the forward end of the tongue. D' D' are braces or supports for the seat D D, attached to the inside of the hounds, and converging at the rear of the machine between shovel-stems, and supporting there the seat D D for the driver; E E, two beams united in front of the machine to form the tongue, and diverging thence to the rear of the wheels, and terminating in the shovel-stems H H. Over the axle B these beams are separately adjusted by a bolt or pin, 12', to the slotted staples b b rising from the axle B on the outside of each beam. They are further united by a cross-brace, L, to which the forward shovel-stems G G are pivoted. F F are elevating-levers, respectively pivoted to

the upper end of the staples b b. They have each an arm, g, connected by a rod, f, with a brace, e, fixed to a bolt or pin, 12', which passes through the slot of the respective staples b b into the beam E. Each lever has a short lever, k, pivoted to the handle, and a small spring of rubber, or an equivalent, to press the arm of the small lever against the rod i, which is attached to the pawl h to keep the latter engaged in the semicircular ratchet d, which terminates the staple b. G G are the forward shovel-stems, (I I, the shovels,) each ending above in a cap, w, pivoted at 5' to the front part of a horizontal plate, v, hung to the cross-bar L, which connects the beams E E. The plate v is perforated with several holes for the admission of the point of a small catch, u, pivoted to the rear part of the cap w, and is kept engaged in the holes by means of a small rubber block or other spring, x, between the handle of the catch and the cap w. The stems G G, being thus similarly mounted, are by this device adjusted to set the shovels to plow to or from the corn. They are further braced forward to the hounds or tongue C C by a brace, 3' 3', each connected by a bolt or plate, 13', set in a slot of the stem, which is held in the rear of the latter by a wooden peg or equivalent. These stems are united, and their parallelism maintained, by means of parallel rods 14', one rod attached horizontally to each stem, and engaged between the stems in an adjusting-block, t. The stems G G and their shovels are each dodged laterally by means of a cord or chain, p, attached to the lower part of each stem, and extending hence to the adjoining pulley m on the lower end of a hanger, a, pendent from each end of the axle, whence the cord passes diagonally upward over a second pulley, n, near the middle part of the axle, and thence down to a treadle, K, which is pivoted forward to the hound C, and operated by the driver's foot from his seat D D. H H represent the rear shovel-stems, each being pivoted to one end of the respective beams E E to permit at once lateral and backward motion, when required. Lateral or dodging motion is effected by means of respective levers r q s r q s, one arm, r, of each being attached to a cord or chain, p p, which runs from the forward stems G G to the pulleys m m, said

arm extending from the cord or chain vertically to a pivot, *o*, fixed to the beam *E*, to rear of the staple *b*, and thence, bent horizontally, passes through a second pivot, *o*, similarly attached; then, turning downward, passes, with a horizontal elbow, into a vertical staple in the shovel-stem *H H*.

From this arrangement it will be seen that the passage of the cords or chains *p p* in either direction will move the levers *r q s r q s* and their connected stems *H H* simultaneously with the forward stems *G G* to right or left, as managed by pressure on the treadles *K K*.

I I I I are the shovels, one on each stem, and, all being alike, one description will suffice, viz: *7'* is a pivot-plate for the shovel, which plate is attached to the front of the stem. (See Figs. 5 and 6.) To this is pivoted, by a horizontal pin, the casting *8'*, which embraces the lower end of the stem on all sides. This part of the casting terminates below in a semicircular or half-cylindrical block, *8''*, which receives the concave part of the shovel-block *9'*, to which the shovel is fastened. An adjusting-bolt, passing through a horizontal slot in the block *9'*, and into a hole in the opposite casting, is the means by which the shovel is adjusted at any angle to right or left. The point of the shovel is elevated to required angles by means of a screw-crank or equivalent device, which passes through a thread in the upper arm of the casting *8'*, and having a bearing against the shovel-stem, by which the arm *8'* is forced outward to raise the lower part with the attached shovel *I*. *M* is a cross-bar, to which is pivoted the clevis *x x* for draft. On the latter is erected a vertical bar, *z*, which may be adjustable at different heights to a second bar, *y*, attached to the hounds *C C*. The bar *M* is laterally adjusted for draft by said lever *z*, the bar *M* being connected at each end with a brace, *2' 2'*, each attached to the beams *E E*, respectively.

The operation of this cultivator is as follows: The draft is attached to the clevis *x x*, which can be raised or lowered by means of

the bar *z*. The shovels are thrown simultaneously to right or left of the corn-row, which lies between them under the center of the machine, by pressure upon either of the treadles *K K* by lowering the respective connected cords *p p*, passing over the pulleys *m m*, and attached to the respective arms *r r* of the levers *r q s r q s*, which operates the rear shovel-stems, and, continuing thence, is fastened to the lower part of one of the stems *G G* to operate the latter and their attached shovels. The forward stems *G G* are turned on their axes to right or left by raising the catches *u u* and adjusting them in the proper hole. The catches are retained therein by the upward pressure of the spring *x* beneath the handle.

The depth of cultivation is adjusted by means of the levers *F F*, upon which the beams are, respectively, suspended and held by the engagement of the pawl *h* in the ratchet *d*.

What I claim as my invention is—

1. The beams *E E*, carrying the shovels or plows, and adjustable by means of the slotted plates *b b*, provided with ratchets *d d*, and attached to the axle, in combination with retractile levers *F F*, arms *e f*, and brace-rods *10' 10'*, substantially as set forth.

2. The adjustable shoes *8'*, provided with screw-cranks or their equivalents, in combination with the shovels *I*, having a casting, *9'*, on the back provided with a cross-slot to receive the pin of the shoe, substantially as and for the purpose set forth.

3. The clevis *x x*, having a pivotal connection with cross-bar *M* attached to the beams *E E* by braces *2' 2'*, in combination with the adjustable bar *z* and cross-bar *y*, substantially as and for the purpose set forth.

In testimony that I claim the foregoing cultivator, I have hereunto set my hand this 14th day of September, A. D. 1872.

HAZEN H. PERKINS.

Witnesses:

HENRY WALLACE,
JOHN MARION.