

(No Model.)

J. L. McCAUL.
COTTON CHOPPER.

No. 464,179.

Patented Dec. 1, 1891

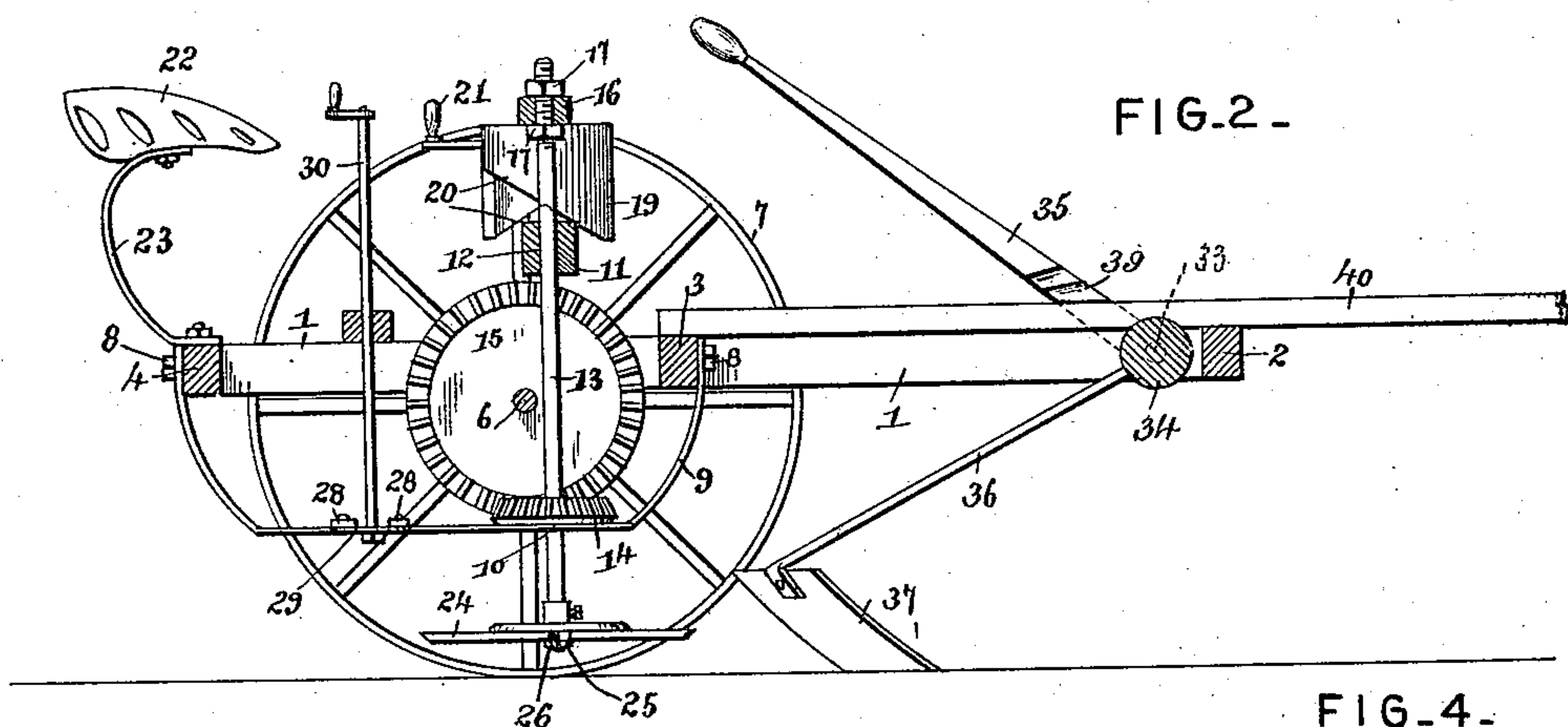
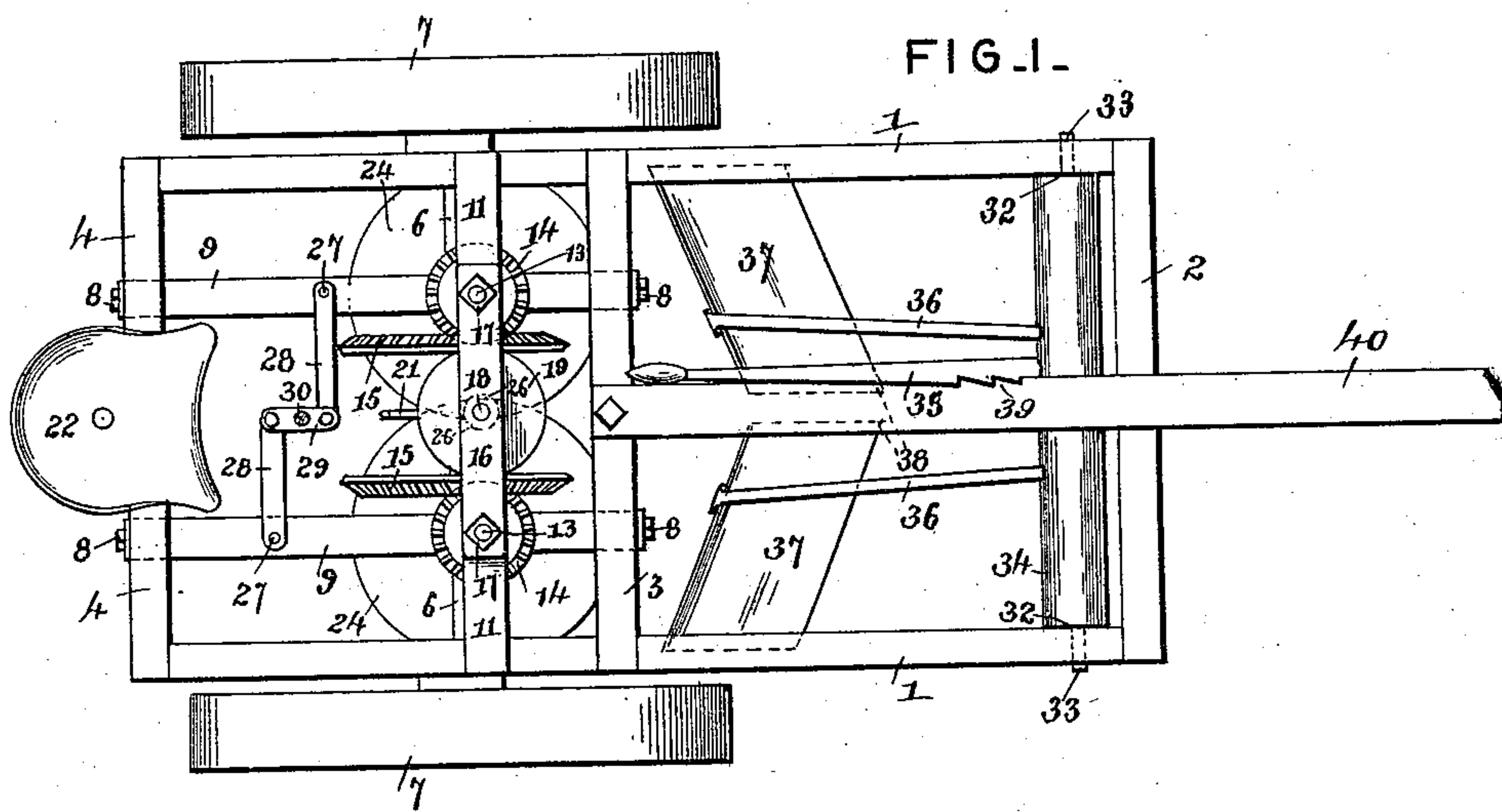


FIG. 3.

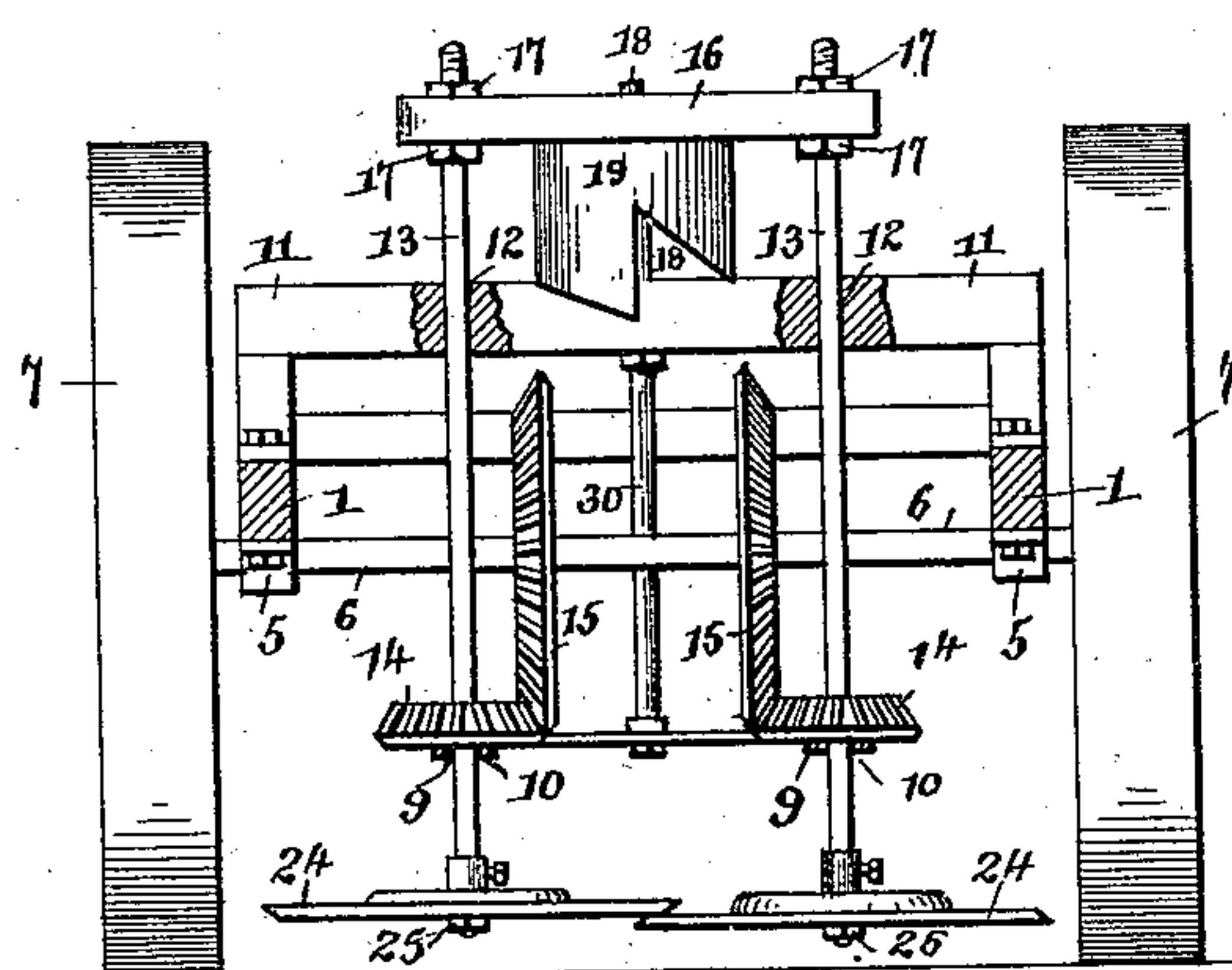
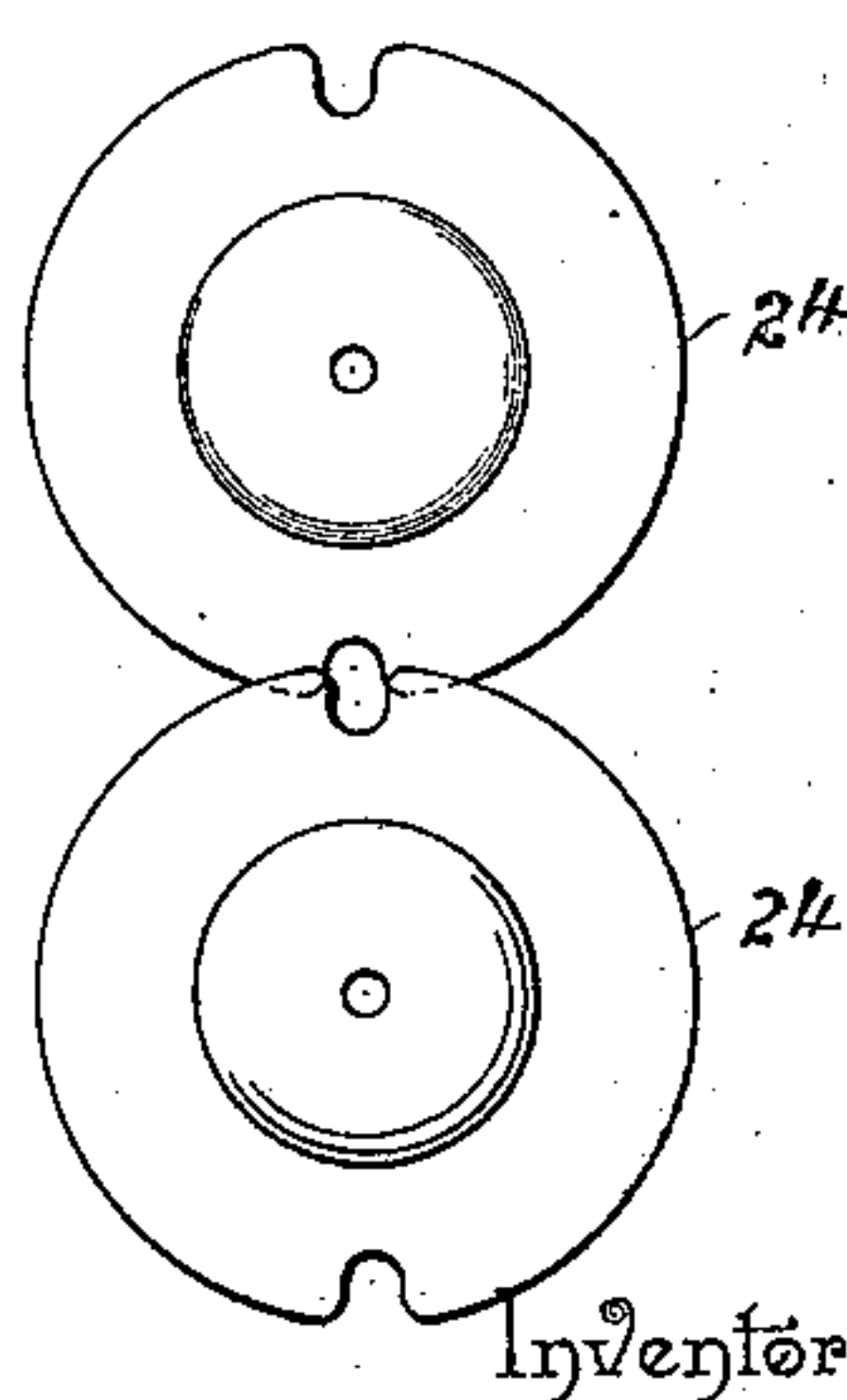


FIG. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES L. McCAUL, OF ABILENE, TEXAS.

COTTON-CHOPPER.

SPECIFICATION forming part of Letters Patent No. 464,179, dated December 1, 1891.

Application filed July 10, 1891. Serial No. 399,040. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. McCAUL, a citizen of the United States, residing at Abilene, in the county of Taylor and State of Texas, have invented a new and useful Cotton-Chopper, of which the following is a specification.

This invention relates to improvements in cotton choppers and thinners; and the objects in view are to provide a cheaply and simply constructed machine for efficiently chopping and thinning cotton, to provide means for easily adjusting the knives or cutters, and for regulating the distance between the stands of cotton.

Other objects and advantages of the invention will appear in the following description; and the invention consists in certain novel features of construction and combinations of parts hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of a cotton-chopper constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a transverse section. Fig. 4 is a plan in detail of the two cutting-disks.

Like numerals of reference indicate like parts in all the figures of the drawings.

In constructing the frame for the machine I employ a pair of opposite longitudinal side bars 1, connecting the same at their front ends by cross-bar 2, at their centers by cross-bar 3, and at their rear ends by a cross-bar 4. Bearings 5 in the side bars 1 have journaled therein for rotation an axle 6, which beyond its bearings has mounted thereon ground-wheels 7. The center and rear cross-bars 3 and 4 have pivotally connected therewith, as at 8, a pair of stirrups 9, longitudinally disposed and located at opposite sides of the center of the frame-work, below which frame-work the stirrups depend, and near their centers are provided with bearings 10. Upon the side bars above the axle is mounted a transverse arch 11, having openings 12 at each side of its center, through which depend vertical shafts 13, which are stepped in the bearings 10 of the stirrups 9. Upon each of the shafts 13 is mounted a beveled gear 14, the same being preferably located adjacent to the stirrups, which gears are engaged and,

together with the shafts, are driven by a pair of beveled gears 15. The upper ends of the vertical shafts are connected by a yoke 16, adjusting-nuts 17 being located upon the shafts above and below said yoke.

Interposed between the yoke and the arch and loosely swiveled upon a short shaft 18, depending from the yoke loosely through an opening in the arch, is a rotatable cam 19, bifurcated upon its under side to embrace the arch and having the diagonally-opposite edges of its bifurcations inclined to form opposite cam-faces 20. The cam is provided with an operating-handle 21, which extends rearwardly in close proximity and within easy reach of the operator, who during the operation of the machine occupies the seat 22, which is supported by a standard 23, extending upwardly from the rear bar 4 of the frame-work. By grasping the lever 21 and rotating the same the cam-faces 20 ride up the opposite edges of the arch, thus elevating the yoke and vertical shafts and the beveled pinions 14. By this means the operator is enabled to raise and lower the vertical shafts with the pinions, so that the latter are thrown out of and into mesh with the large gears of the axle.

Below the stirrups upon the lower ends of the vertical shafts are mounted rotary cutting-disks 24, said disks being provided at their centers with square openings for the reception of the square portions of the shafts, below which said shafts are nuted, as at 25, whereby the disks may be removed. These disks have their peripheries provided at intervals with notches or recesses 26, and the number of the same may be increased or diminished over those shown. The disks running in contact will cut or chop out those portions of the plant occurring between the notches in the peripheries of the disks, while those portions passing within the notches are left standing, so that it will be apparent that by increasing the number of notches the plants or stands will be closer together, while by decreasing them they will be farther separated. For this reason the disks are removable, so that disks having suitable numbers of notches may be substituted when desired.

The stirrups have pivoted thereto in rear of the cutters, as at 27, straps or levers 28, the inner ends of which are connected by a

short pivotal link 29, from which rises a cranked rod 30 within reach of the driver. By operating the cranked rod the driver is enabled to spread or contract the stirrups in accordance with the direction of rotation of said rod, as will be obvious. In the opposite side bars 1, near the front ends thereof, there are journaled, as at 32, the reduced ends 33 of a rock-shaft 34. From the rock-shaft rearwardly extends a handle 35, the same terminating within reaching distance of the driver when mounted upon the seat. Scraper-standards 36, a pair of which are employed, also extend rearwardly from the rock-shaft, and at their rear curved ends have secured a pair of converging shovels or scrapers 37, the inner edges or points of which are forwardly disposed, as at 38. The lever 35 is provided at its inner side with a series of notches 39, designed to engage a bar 40.

This being the construction, the operation is as follows: The machine being set in motion, the cam is operated, so as to adjust the cutters to the proper height, and the crank-rod rotated, so as to swing the stirrups inwardly until the pinions 14 are in engagement with the driving-gears 15. The scrapers are now lowered until they penetrate the desired depth. It will be seen that the scrapers remove all cotton, except that portion thereof that is permitted to pass between them, and that the cutters chop at intervals sections of the cotton or row, thus leaving stands of cotton at predetermined and uniform distances apart. By this it will be seen that the machine is adapted to chop in both directions simultaneously, and it is a great advantage over the ordinary manner of hand-chopping by hoe, thus causing a great saving of time and labor and performing the chopping in a more uniform and efficient manner. It will be seen that the small cogs 14 may be located at the upper sides of the driving-gears 15 in lieu of the position shown, the operation being the same. It will also be seen that as the two vertical cutter-shafts are raised and lowered the small cogs 14, being slidingly mounted thereon, though adapted to rotate therewith, will remain stationary and in mesh with the driving-gears. When the chopping has been completed and it is desired to transport the machine from the field of operation, the lever 35 is elevated, so as to raise the scrapers from the ground, and is thrown into

locked engagement with the locking-bar. The cam is now rotated, so as to elevate the cutters from the ground, and the crank-rod operated to spread the stirrups, thus swinging them outwardly and removing the gears or pinions 14 from engagement with the drive-gears, whereby the latter may rotate with the axle of the machine without transmitting motion to the vertical cutter-shafts.

Having described my invention, what I claim is—

1. In a cotton-chopper, the combination, with the frame-work, a pair of pivoted stirrups, vertical shafts mounted for rotation in the stirrups, cutters mounted upon the lower ends of the shafts, and cogs upon the shafts above the cutters, of means for spreading the stirrups, an axle, and driving-gears mounted on the axle and located in the path of the cogs, substantially as specified.

2. In a cotton-chopper, the combination, with the frame-work, the transverse axle, and the driving-gears thereon, of the depending pivoted stirrups, the vertical shafts journaled in the stirrups, the cog-wheels mounted on the shafts and intermeshing with the drive-gears, the disk cutters located upon the lower ends of the shafts, the opposite levers pivoted to the stirrups, the intermediate connecting-link, and the vertical crank-shaft secured to the link, substantially as specified.

3. In a cotton-chopper, the combination, with the rectangular frame having the transverse arch, the axle having the ground-wheels, and the drive-gears mounted on the axle, of the opposite pivoted depending stirrups, shafts journaled in the arch and stirrups and adapted for vertical reciprocation, cogs mounted on the shafts and engaging the gears of the axle, the rotary cutters fixed to the lower ends of the shafts, the transverse yoke connecting the upper ends of the shafts above the arch, and the bifurcated cam pivoted to the yoke and straddling the arch and provided with a lever for operating the same, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES L. McCAUL.

Witnesses:

E. S. KEAN,

E. H. SINTENIS.