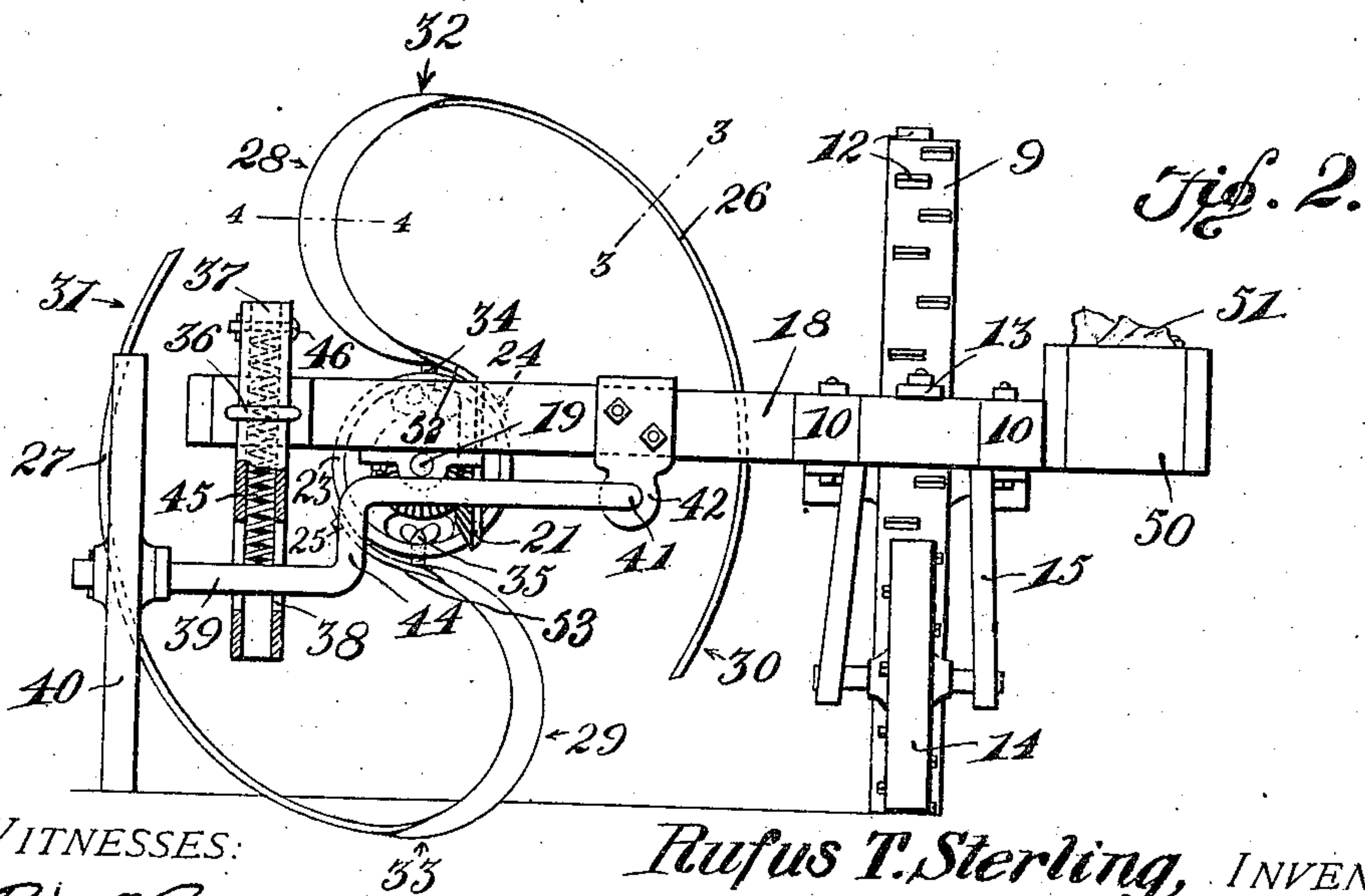
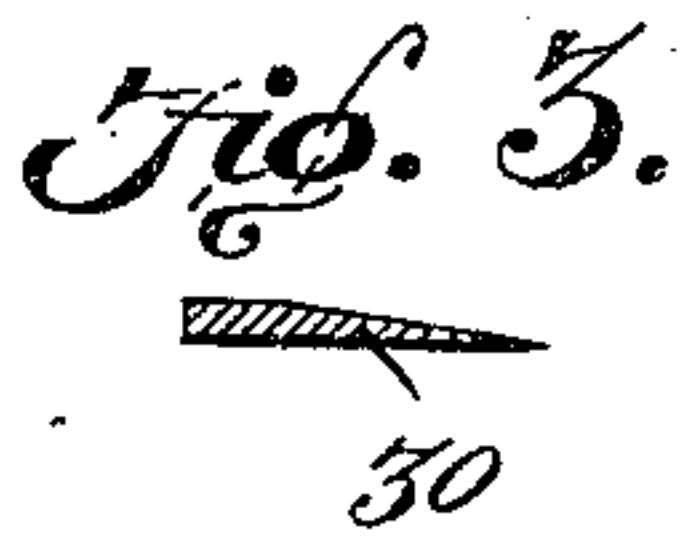
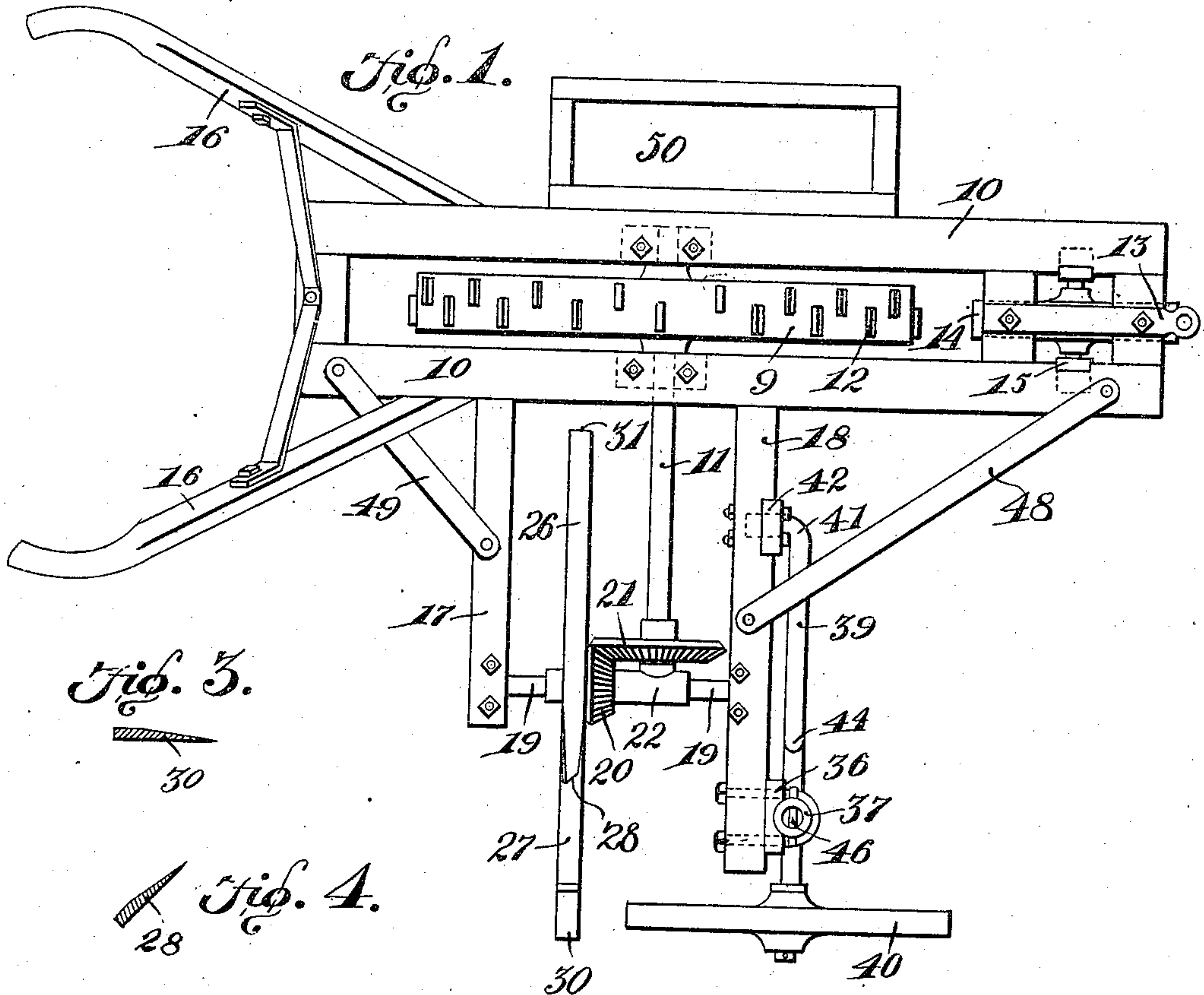


No. 847,380.

PATENTED MAR. 19, 1907.

R. T. STERLING.
COTTON CHOPPER.
APPLICATION FILED MAY 7, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RUFUS TAYLOR STERLING, OF SAN ANTONIO, TEXAS, ASSIGNOR OF ONE-HALF TO ALONZO J. SWEARINGEN, OF SAN ANTONIO, TEXAS.

COTTON-CHOPPER.

No. 847,380.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed May 7, 1906. Serial No. 315,594.

To all whom it may concern:

Be it known that I, RUFUS TAYLOR STERLING, a citizen of the United States, residing at San Antonio, in the county of Bexar 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 similar implements, and has for its object to improve and simplify the construction and increase the efficiency of devices of this character.

With this and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation.

In the drawings, Figure 1 is a plan view of the improved device. Fig. 2 is a front elevation, partly in section. Fig. 3 is a section, enlarged, of one of the spacer-arms on the line 3 3 of Fig. 2. Fig. 4 is a section, enlarged, of one of the spacer-arms on the line 4 4 of Fig. 2.

The improved device comprises a base-frame 10 of any suitable size and of any suitable material and having a drive shaft or axle 11 journaled thereon and extending at one end laterally of the frame and carrying a ground-wheel 9, the ground-wheel fast to the shaft or axle, so as to transmit the motion of the ground-wheel to the axle when the machine is drawn forward.

The ground-wheel 9 is preferably provided with the usual ground-engaging ribs 12, employed upon machines of this character to prevent slipping, and the frame 10 is also provided with a draft-clevis 13 and a carrier-wheel 14 to support the forward end of the frame, the carrier-wheel being supported from the frame 10 by hangers 15. The frame 10 is also provided with guiding-handles 16. Extending from the frame 10 at one side are spaced arms 17 18, having a shaft 19 journaled therein parallel to the frame 10 and spaced therefrom, the shaft 19 having a bevel-

gear 20, engaging a bevel-gear 21 on the axle or shaft 11, whereby the motion of the latter is communicated to the parallel shaft 19. The shaft 19 is provided with a bearing 22 for supporting the outer end of the axle-shaft 12, the bearing being thus utilized to hold the two shafts and the bevel-gears in proper relative position.

Rigidly mounted upon the shaft 19 is a drum 23, and connected at 24 25 to the rim of this drum are two spacer-arms, each formed of a bar of resilient material, preferably steel, and extending from the attaching-points 24 25 in curved lines for a portion of the length slightly eccentric to the drum, as at 52 53, and thence in relatively large reversed curves, as at 28 29, and thence in still larger curves and slightly eccentric to the drum and shaft, as at 26 27, and gradually approaching nearer the same toward the terminals of the bars at 30 31. The curved portions 26 27 of the spacer-arms are presented flatwise to the ground, while the shorter curved portions 28 29 are twisted to bring the surfaces of the arms at an angle to the ground and at an angle to the flatwise portions, the angle being preferably about forty-five degrees. The forward edges of the spacer-arms are knife-edged to present a cutting edge forwardly, as hereafter explained.

The construction of the flatwise portions of the spacer-arm is illustrated in Fig. 3, which is a transverse section of the spacer-arm on the line 3 3 of Fig. 2, while the construction of the inclined portions of the spacer-arms is illustrated in Fig. 4, which represents a transverse section on the line 4 4 of Fig. 2. By this arrangement when the machine is drawn forward and the drum 23 rotated through its connection with the ground-wheel 9 the spacer-arms in revolving with the drum will first alternately engage the ground by their inclined eccentric portions 28 29 and cut out any growth with which they may come in contact, while the concentric portions 30 31, continuing the movement, will operate upon the growth above ground, and thus remove portions of the rows of plants at predetermined intervals. The spacer members are connected at their inner ends only to the drum 23, preferably by a single rivet, and the drum is provided with adjusting-screws 34 35, bearing against the

inner surfaces of the spacer-arms, and thus operating to force the latter outwardly or to permit them to bear closer to the drum, and thus regulate the distances between the projecting portions 32 33 and the shaft 19 to correspondingly regulate the depth to which the spacer-arms will enter the soil when in operation. The depth of cut may thus be controlled as required. The comparatively shorter portions 28 29 of the spacer members are somewhat more rigid or less yielding than the remainder of the spacer-arms, and thus resist the pressure exerted against them when coming in contact with the soil, and thus materially increase the efficiency of the operation. The frame member 18 is extended outwardly from the frame 10 and provided with a clip 36, in which a vertical tubular standard 37 is supported, the standard having transverse slots 38, through which an axle 39 extends, the axle having a ground-wheel 40 upon its outer end and pivoted at 41, its inner end, in a bearing 42, connected to the frame member 18, the axle 39 being bent at 44 to bring the bearing 41 nearer the frame 18. Disposed within the tubular standard 37 is a spring 45, bearing at one end upon the axle 39 and bearing at the upper end against a transverse pin 46, the force of the spring being thus utilized to hold the axle 39 yieldably in position. By this means as the machine is drawn forward the ground-wheel 40 supports the machine at one side and yields sufficiently to prevent undue rigidity. In addition to providing a flexible element for the frame of the implement the wheel 40 and its attachments operate as a shock-absorber and prevent the spacer-arms from being subjected to jarring incidental to passing over rough ground. Furthermore, the coil-spring 45 maintains the axle 39 at such position with relation to the remainder of the frame of the implement that should the wheel 40 enter a depression in the ground the outer end of the axle 39 will fall; but the spring 45 will have a tendency to maintain the outer end of the frame 18 in an elevated position. Consequently the spacer-arms will not enter too deep in the ground and pass below the roots of the plant. By reason of the fact that the said wheel 40 and axle 29 are so mounted they preserve the shape and extend the usefulness of the said spacer-arms. By employing two of the spacer-arms upon the drum 23 and by properly proportioning the sizes of the gears 20 21 relative to the ground-wheel 9 the plants will be "chopped out" at the requisite intervals. A receptacle 50 for a weight 51 is arranged upon the frame 10 at the side opposite from the spacer mechanism to serve as a counterbalance and assist in maintaining the device in position and prevent undue strain upon the portion of the frame carrying the spacer members. The

frame member 18 is preferably supported from the frame 10 by a brace 48, and the frame member 17 is likewise preferably supported from the frame 10 by a brace 49.

The device is simple in construction, can be inexpensively manufactured, and may be employed for thinning plants of various kinds which are planted in rows—such as corn, cotton, and the like—but is more particularly designed for use in chopping out or thinning cotton-plants at an early stage of their growth. The parts may be wholly of metal or partly of metal and partly of wood, as may be preferred.

Having thus described the invention, what is claimed as new is—

1. In a cotton-chopper, spacer members formed of arms of resilient material and with cutting edges and mounted for rotation with the outer portions curved concentrically to the source of movement and thence curved eccentrically to the source of movement and with increasing radii and thence curving inwardly and attached to the source of movement.

2. In a cotton-chopper, spacer members formed of arms of resilient material and with cutting edges and mounted for rotation with the outer portions curved concentrically to the source of movement and thence curved eccentrically to the source of movement and with increasing radii and thence curving inwardly and attached to the source of movement, said inwardly-curving portion being twisted to cause the cutting edges thereof to operate at an angle to the remainder of the arm and to offer increased resistance to the strains.

3. In a cotton-chopper, a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges with outer portions curved concentrically of said drum and thence curved eccentrically of said drum and with increasing radii and thence curved inwardly and attached to said drum.

4. In a cotton-chopper, a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges with the outer portions curved concentrically of said drum and thence curved eccentrically of said drum and with increasing radii and thence curved inwardly toward said drum and with the terminal reversely curved and connected to said drum.

5. In a cotton-chopper, a supporting-

frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges with the outer portions curved concentrically of said drum and thence curved eccentrically of said drum and with increasing radii and thence curved inwardly toward said drum with the terminal reversely curved and connected to said drum and adjusting means between said drums and arms.

6. In a cotton-chopper a supporting-frame, an axle and ground-wheel mounted for rotation upon said frame, a drum mounted for rotation upon said frame, means for transmitting the motion of said axle to said drum, spacer members formed of arms of resilient material and with cutting edges and connected at the inner ends to said drum and curving outwardly therefrom for intermittent engagement with the earth as the drum is rotated, and adjusting-screws operating

in said drum and bearing against said spacers. 25

7. In a cotton-chopper a supporting-frame, a main axle and ground-wheel mounted for rotation upon said frame at one side and retained against vertical movement with relation to the frame spacers formed of curved arms of yielding material and carried by said frame, means for transmitting the motion of said main axle to said spacers, a supplemental axle swinging at the inner end from said frame, a ground-wheel upon the free end of said supplemental axle and adapted to engage the ground in advance of said spacers and yieldable means for supporting the movable end of said supplemental axle. 30 35 40

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

RUFUS TAYLOR STERLING.

Witnesses:

M. COPPARD,

R. M. TARLTON.