No. 626,816. Patented June 13, 1899.

R. L. PARKER.

COMBINED COTTON CHOPPER AND CULTIVATOR.

(Application filed Apr. 28, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

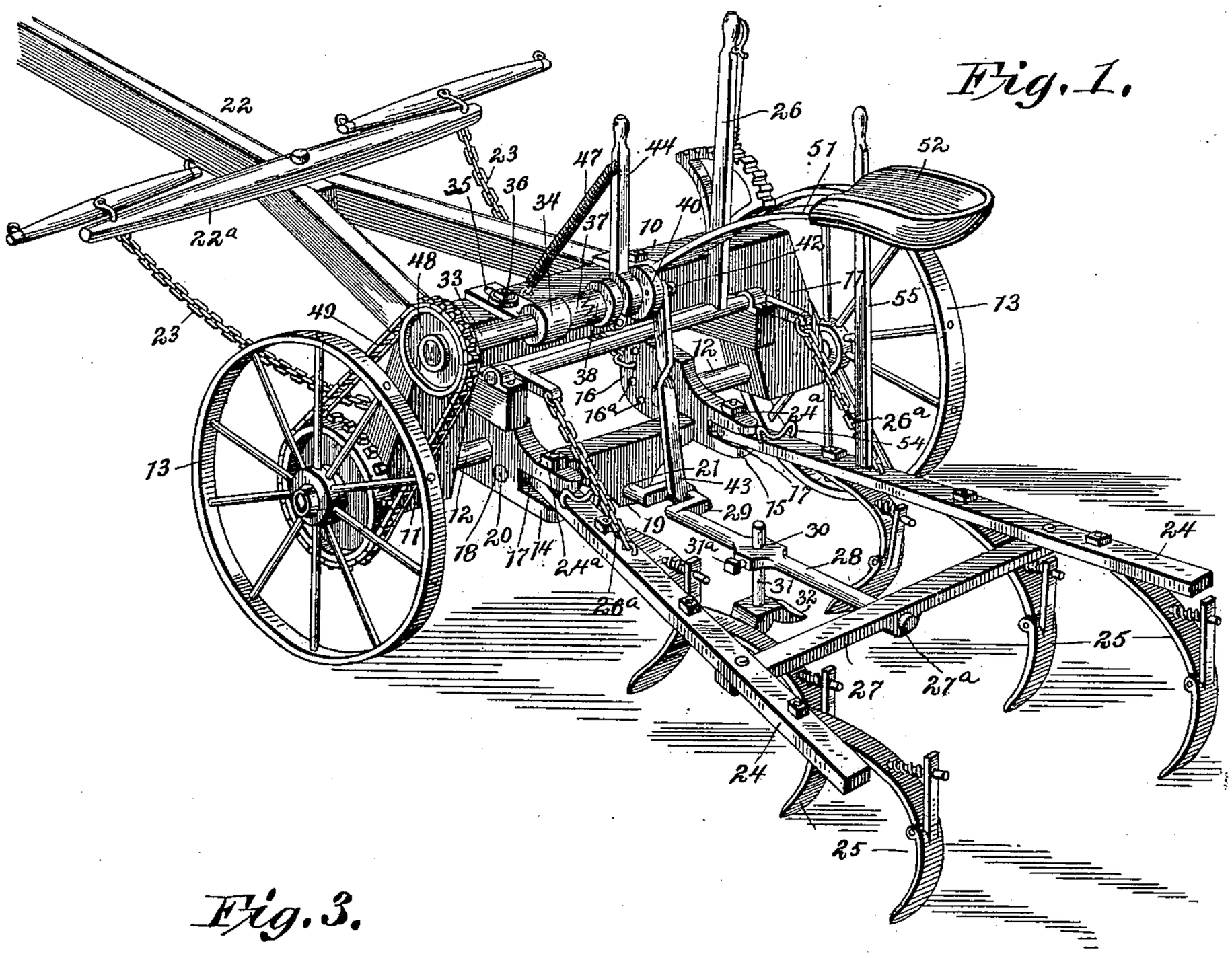


Fig. 3.

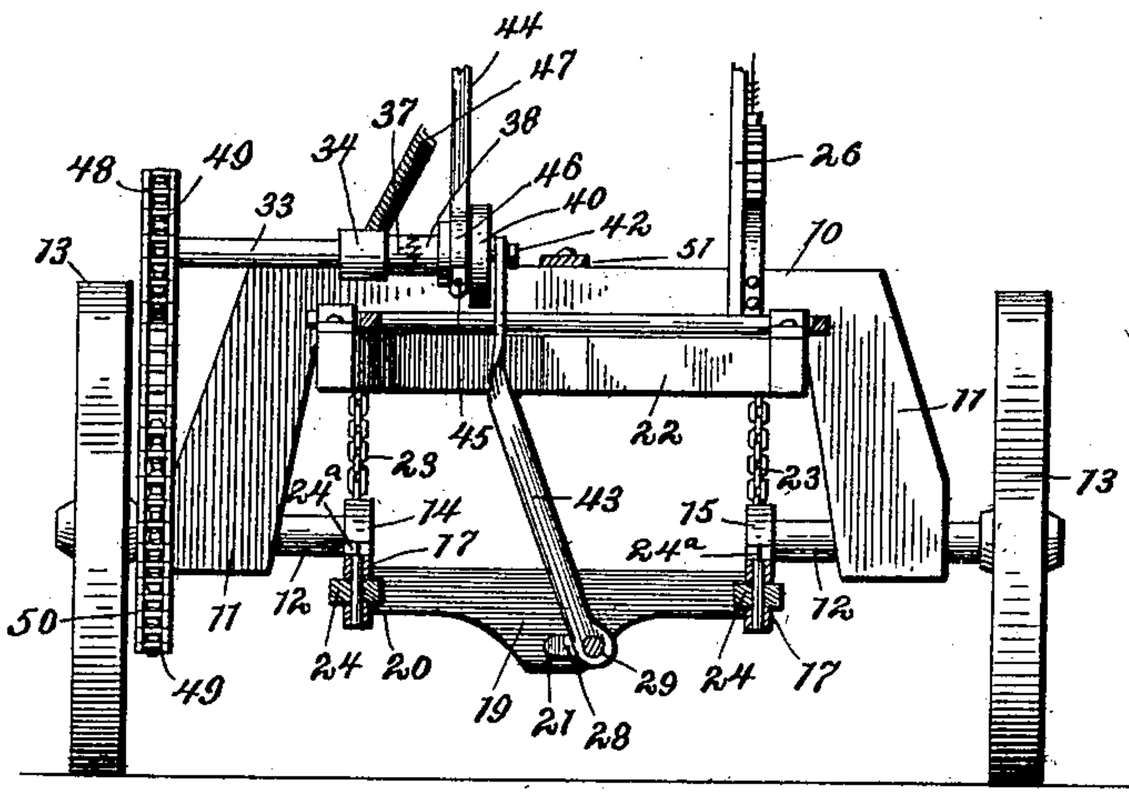
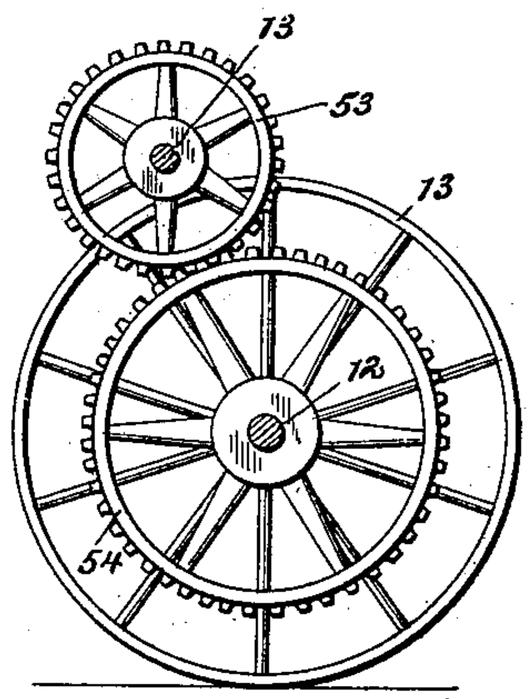


Fig. 6.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

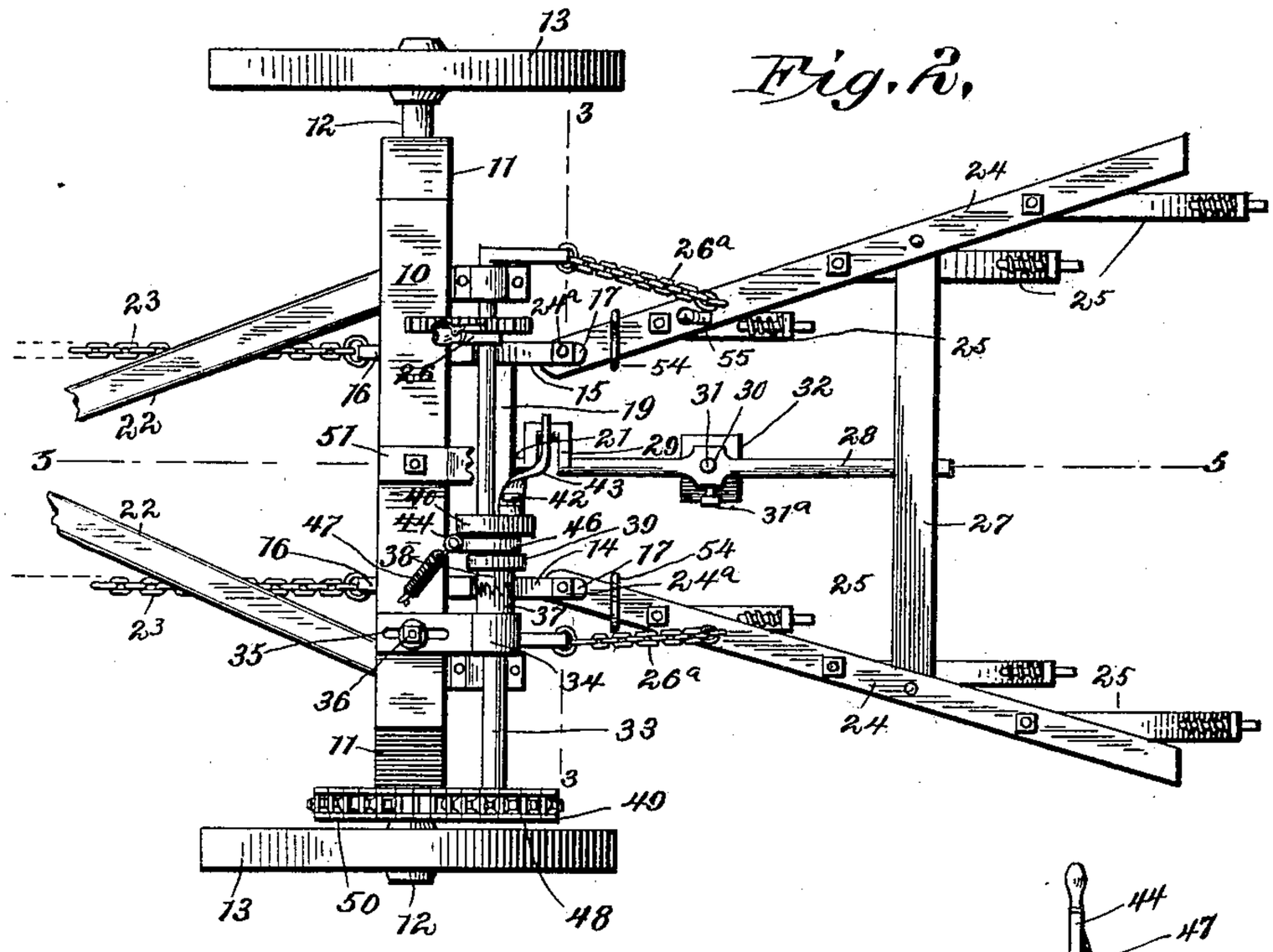


Fig. 5.

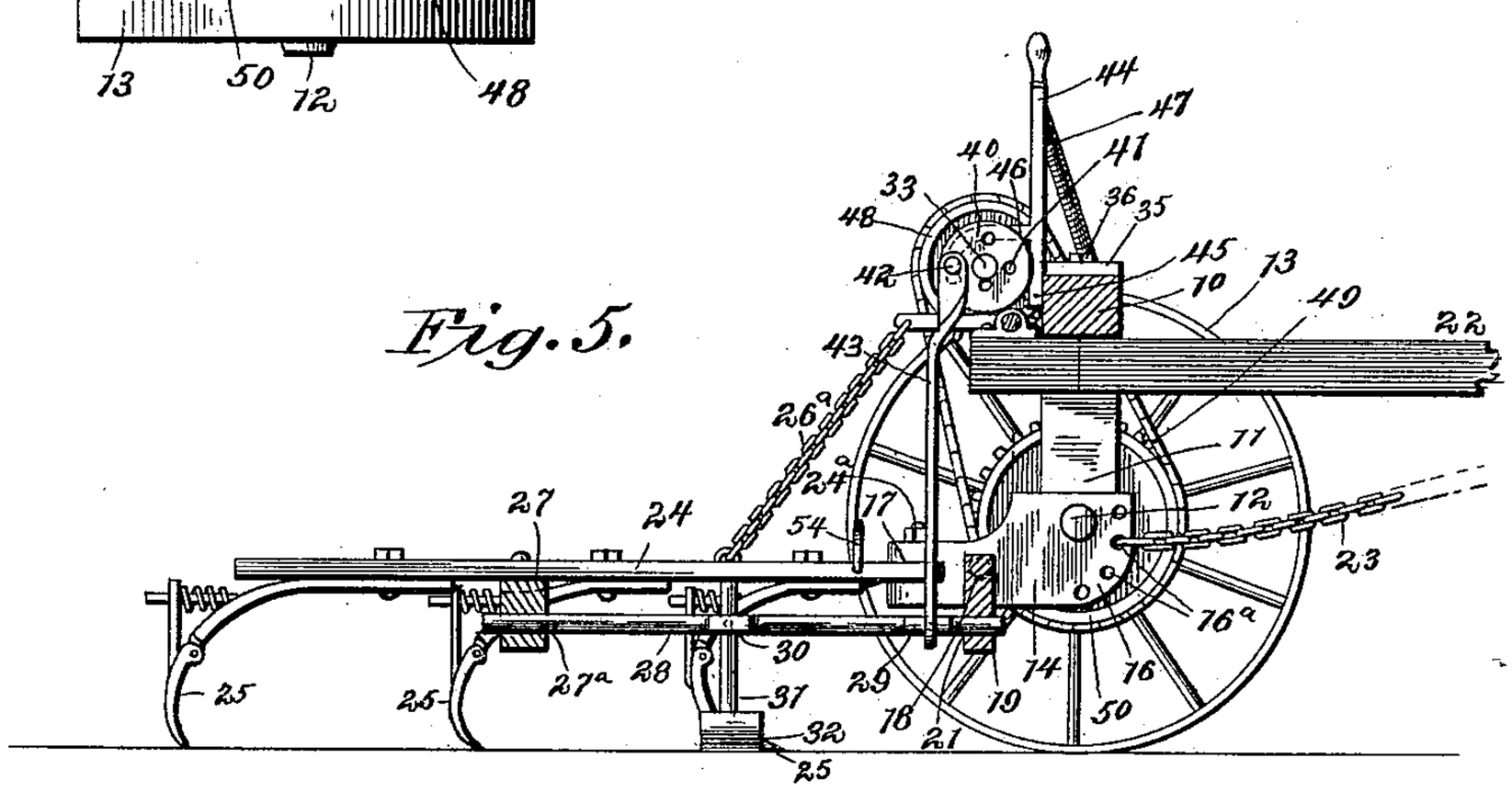
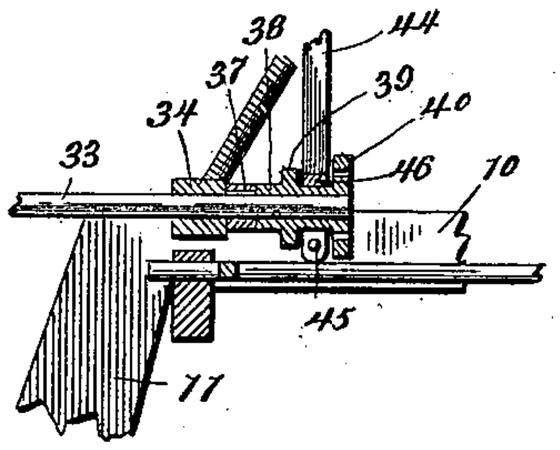


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT L. PARKER, OF MERKEL, TEXAS, ASSIGNOR OF ONE-HALF TO C. W. HARRES, OF SAME PLACE.

COMBINED COTTON-CHOPPER AND CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 626,816, dated June 13, 1899.

Application filed April 28, 1899. Serial No. 714,799. (No model.)

To all whom it may concern:

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

My invention relates to improvements in combined cotton-choppers and cultivators; and the object in view is to provide a simple and durable construction adapted for cultivating the growing cotton or to thin out the row of plants, provision being made for throwing the chopping devices out of gear when the implement is to be used for cultivating purposes.

With these ends in view the invention consists in the novel combination of elements and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a perspective view of a combined cultivator and cotton-chopper constructed in accordance with my invention. Fig. 2 is a plan view thereof. Fig. 3 is a vertical transverse sectional elevation on the plane indicated by the dotted line 3 3 of Fig. 2. Fig. 4 is a detail sectional elevation illustrating the chopper-driving shaft and the clutch mechanism by which the chopper devices may be thrown into or out of gear with one of the carrying-wheels. Fig. 5 is a longitudinal sectional elevation on the plane indicated by the dotted line 5 5 of Fig. 3. Fig. 6 is a detail view illustrating a modified type of driving mechanism which may be used between one of the machine-carrying wheels and the chopper-driving shaft.

The same reference-numerals indicate like and corresponding parts in each of the several figures of the drawings.

In carrying my invention into practice I employ a supporting-frame 10, which is in the form of an arch furnished with extensions which constitute the hangers 11, adapted to carry the short axles 12, said axles supporting the machine-carrying wheels and the movable cross-heads, by which the cultivator-beams are connected operatively with the framework. The axles 12 are fitted in the hangers 11 of the frame, so as to protrude at both ends from said hangers, and thus each axle has one end prolonged beyond the outer side of the frame and beyond the inner part of the hanger 11, in which it is mounted. The carrying-wheels 13 may be of any suitable construction, and they are fitted loosely on the axles 12.

14 15 designate the cross-heads, fitted loosely on the inner ends of the axles, and each cross-head is supported individually by one axle, so as to be adjustable jointly with the other cross-head. Each of the cross-heads is cast in a single piece of metal to provide the flat curved plate 16 at its front end and the bifurcated jaw 17 at the rear end, said curved plate 16 of each cross-head being provided with a series of apertures 16^a. The cross-heads 14 15 are furthermore provided with transverse openings 18 at points between the jaws 17 and the attachment of said cross-heads to the axles, and between the cross-heads is disposed a transverse bearing-block 19, which is furnished at its ends with trunnions or studs 20, adapted to fit in the openings 18 of the cross-heads, whereby the bearing-block is supported by and between the cross-heads for adjustment therewith. This bearing-block is provided at a point intermediate its length with a shaft-bearing 21, adapted to receive the front end of the chopper-shaft.

A suitable draft-tongue 22 is connected to the frame or arch 10, and on this tongue is mounted a doubletree 22^a, to the ends of which are connected stay-chains 23, that are fastened adjustably to the perforated plates 16 of the two cross-heads, thus transmitting a part of the draft from the doubletree to the cross-heads, which are mounted on the arch or framework.

The cultivator-beams 24 have their front ends fitted in the jaws 17 of the cross-head, and said beams and cross-heads are pivoted directly together by the vertical bolts 24^a. Said beams carry series of spring-teeth 25, and the beam may be raised or lowered by the provision of suitable adjusting-levers 26, which are mounted upon the frame or arch 10 within convenient reach of the driver, said

adjusting-levers having chains 26ª, connected operatively to the cultivator-beams 24.

A cross-rail 27 is secured at its ends to the cultivator-beams 24, said rail lying a suitable distance in rear of and parallel to the bearing-block 19, which is supported by the cross-heads 14 15, and said bearing-rail is provided with a shaft-opening 27ª, which is disposed in alinement with the shaft-opening 21 of the bearing-block. A rocking chopper-shaft 28 is arranged in a substantially horizontal position between the pair of cultivator-beams, and the ends of this shaft are fitted loosely in the opening 21 of the bearing-block and the opening 27ª of the cross-rail, whereby the chopper-shaft is supported in proper position by devices which are carried by the cross-heads and the cultivator-beams, respectively. Near its front end this chopper-shaft is provided with a crank 29, and at a point intermediate of its length said shaft 28 is formed with a transverse opening 30. In this opening is fitted a blade-carrying bar 31, which is adapted to be held firmly in place on the chopper-shaft by a suitable clamping device—such, for example, as a binding-screw 31ª—and at its lower end this bar 31 is provided with a chopping blade or hoe 32, which may be of any preferred construction.

The chopper-shaft is adapted to be positively rocked or vibrated by operative connections with one of the carrying-wheels 13 of the machine, and one element of the chopper-driving mechanism is a horizontal shaft 33, disposed transversely to the line of draft and supported on the arch or frame 10 of the machine. The chopper-driving shaft is journaled in one or more bearings 34, and said bearing or bearings may be provided with slots 35, adapted to receive bolts 36, by which the bearings may be fastened securely and adjustably on the arch or frame 10 for the purpose of adjusting the bearing to take up slack in the driving-gear presently described. This driving-shaft 33 is provided, at a point on one side of its bearing, with a clutch-face 37, which is in the form of a sleeve fixed securely to said shaft 33, and mounted loosely on the shaft, adjacent to the clutch-face 37, is a shiftable driving-clutch 38, which has operative connections with the rocking chopper-shaft. The driving-clutch 38 is mounted loosely on the inner part of the shaft which is disposed over the chopper-shaft 28, and said driving-clutch has a sleeve cast in a single piece with a head 39 and a crank-disk 40, said head and disk being properly spaced apart and near the respective ends of the clutch-sleeve to accommodate a shipping-lever by which the clutch may be moved into and out of engagement with the clutch-face 37, which is fast with the driving-shaft 33. The crank-disk 40 at the inner end of the driving-clutch is provided with a series of apertures 41, in either of which may be secured the wrist-pin 42, thus making the wrist-pin occupy shiftable engagement with the driving-clutch. To this wrist-pin is loosely connected the upper end of a pitman 43, which is disposed in a vertical position at one side of the arch or frame 10, and the lower end of this pitman is connected loosely with the crank 29 of the chopper-shaft. The clutch-shipping lever 44 is arranged in an upright position on the frame or arch 10 and within convenient reach of the driver, and said shipping-lever is shown as being fulcrumed at 45 on the arch. This shipping-lever is fashioned or constructed to provide a fork 46, which is adapted to engage with the driving-clutch 38 between its head 39 and the crank-disk 40, and the lever is thus loosely connected to the driving-clutch in a manner to permit said clutch to rotate with the shaft 33, and at the same time the lever may be operated to retract the clutch 38 from engagement with the clutch-face 37, fast with the shaft 33. The shipping-lever is normally held by a spring 47 in a position to move the driving-clutch 38 into engagement with the clutch-face 37 of the shaft 33, so that the chopper will be propelled from the shaft 33 through the crank-disk and the pitman; but it is evident that the operator may move the lever 44 against the tension of its spring 47 in order to disengage the clutch from the shaft, thus permitting the shaft to rotate idly in the clutch 38.

As one means for driving the shaft 33 I have shown a sprocket-gear 48, attached to the end of said shaft 33, which is adjacent to one of the carrier-wheels 13, and with said sprocket-gear 48 engages an endless driving-chain 49, which is propelled by a driving-sprocket 50, that is fastened securely in a suitable way to one carrying-wheel 13. In lieu of the sprocket-driving gear I may employ spur-gearing, and in Fig. 6 I have represented one end of the shaft 33 as having the spur gear-pinion 53, which meshes directly with a driving spur gear-wheel 54, which is clamped or fastened to one carrying-wheel 13. It is evident that the shaft-bearing 34 for the chopper-driving shaft 33 may be adjusted on the arch or frame 10 to take up slack in the driving-gear between the shaft 33 and the gear on the carrying-wheel 13. The machine is equipped with an ordinary seat-standard 51, bolted to the arch or frame 10, and said standard carries the driver's seat 52, of any suitable construction.

It is thought that the operation of the machine will be readily understood from the foregoing description taken in connection with the drawings; but it is desired to remark that the chopping devices may easily be thrown out of service when the machine is to be used for cultivating purposes only by adjusting the lever 44 to disengage the driving-clutch from the chopper-driving shaft 33. It is also evident that the vibration of the rocking chopper-shaft may be varied by shifting the wrist-pin 42 into one or the other of the apertures 41 in the crank-disk 40, said apertures being located at variable distances from the axis of the chopper-driving shaft 33.

The cultivator-teeth may be of any suitable construction; but, as shown, they may be pivoted and held in place by coiled springs. The plow-beams may be provided with foot-stirrups 54 or with a handle-bar 55 to guide the plows by hand or the feet in case the row is not straight. Of course the teeth should be arranged on the beams to provide ample spaces for the chopper-hoe to work on the rows of plants.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what I claim is—

1. In a combined cultivator and cotton-chopper, the combination of cross-heads, a bearing arranged between and supported by said cross-heads, cultivator-beams joined to said cross-heads, a chopper-shaft carrying a hoe or blade and supported by said bearing and the cultivator-beams, and means for positively actuating said chopper-shaft, substantially as described.

2. In a combined cultivator and cotton-chopper, the combination with a frame or arch, and carrying-wheels thereon, of a chopper-shaft, a driving-shaft driven by one of said wheels and having a clutch fast therewith, a shiftable driving-clutch fitted loosely on said shaft and adapted to engage with the clutch thereon, and operative connections between the driving-clutch and the chopper-shaft, substantially as described.

3. In a combined cultivator and cotton-chopper, the combination with an arch or frame and suitable carrying-wheels, of a chopper-shaft, a driving-shaft journaled on the arch and driven from one of said wheels through intermediate gearing, said shaft provided with a fast clutch-face, a driving-clutch provided at one end with a head and at its opposite end with a crank-disk, a shipping-lever engaging loosely with said driving-clutch, and a pitman connected with the crank-disk of said clutch and with the chopper-shaft to positively actuate the latter, substantially as described.

4. In a combined cultivator and cotton-chopper, the combination with an arch or frame, the axles supported thereby and carrying-wheels on said axles, of cross-heads mounted loosely on the axles, a bearing-block spanning the cross-heads and supported thereby, shovel-beams pivoted to the cross-heads and connected by a transverse rail, a chopper-shaft mounted in the bearing-block and the transverse rail to lie between the shovel-beams, and a driving mechanism connected operatively with the chopper-shaft and propelled from one of the carrying-wheels, substantially as described.

5. In a combined cultivator and cotton-chopper, the combination of a chopper-shaft having a crank, a driving-shaft, a crank-disk revoluble with said driving-shaft and carrying a shiftable wrist-pin, and a pitman connected to said wrist-pin and the crank of the chopper-shaft, substantially as described.

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

ROBT. L. PARKER.

Witnesses:
C. V. BIGHAM,
J. A. HARRIS.