No. 685,897. Patented Nov. 5, 1901.

W. J. WISWALL.

CULTIVATOR.

(Application filed July 18, 1901.)

(No Model.) 2 Sheets—Sheet 1.

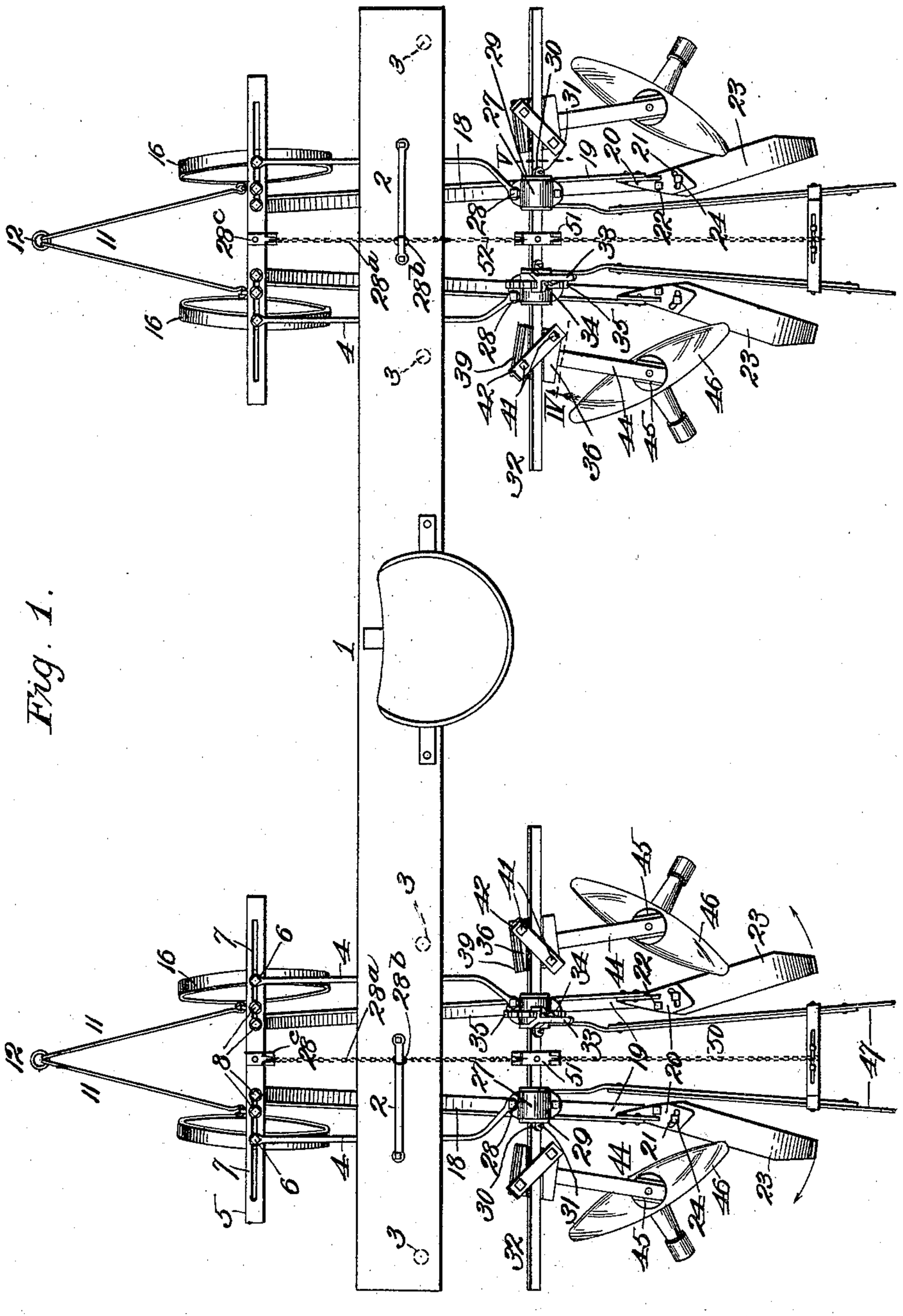

Fig. 1.

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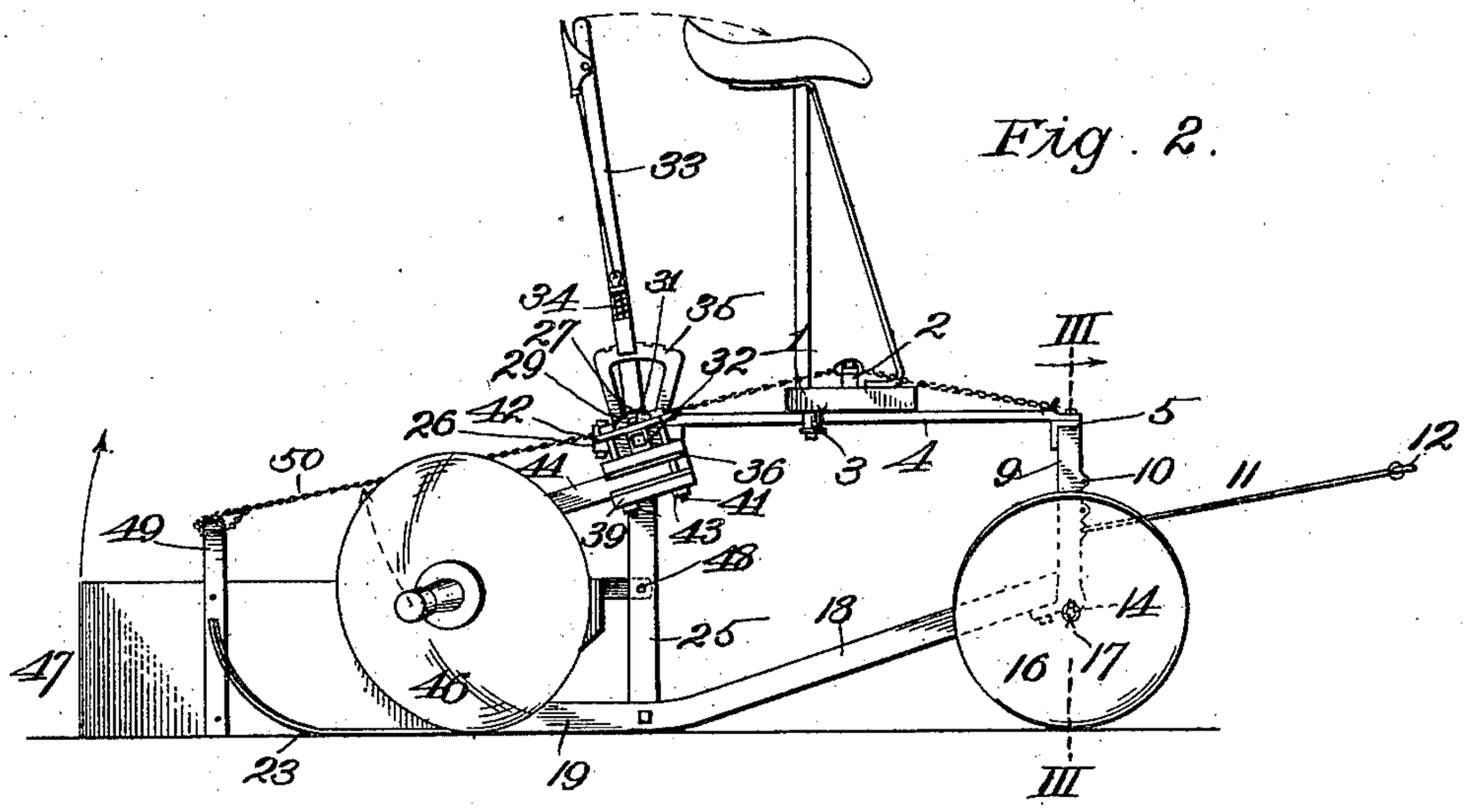


Fig. 2.

Fig. 3.

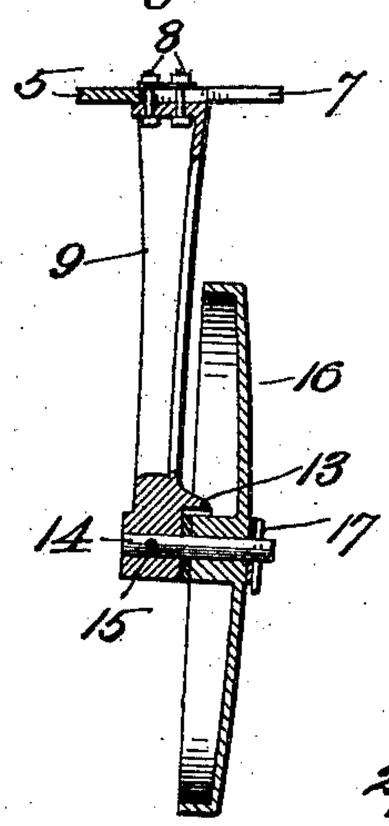


Fig. 4.

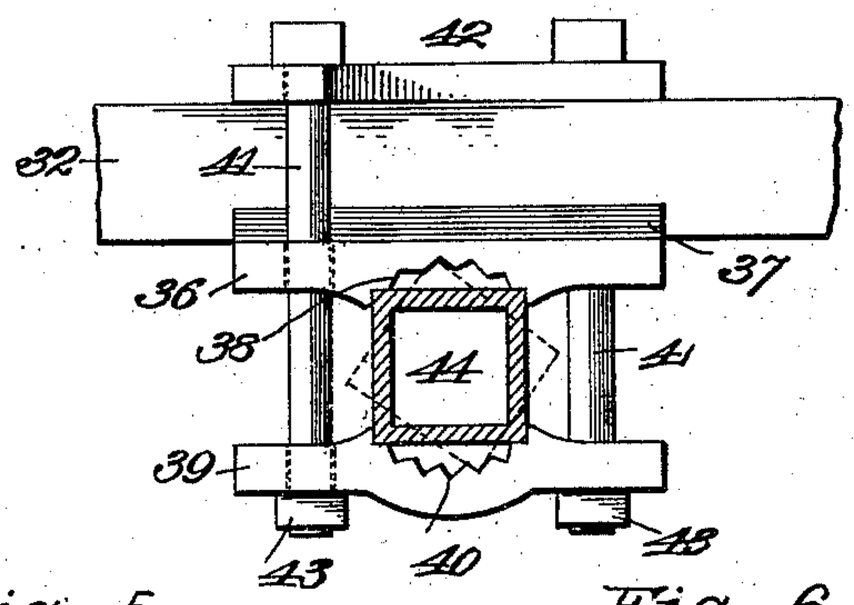


Fig. 5.

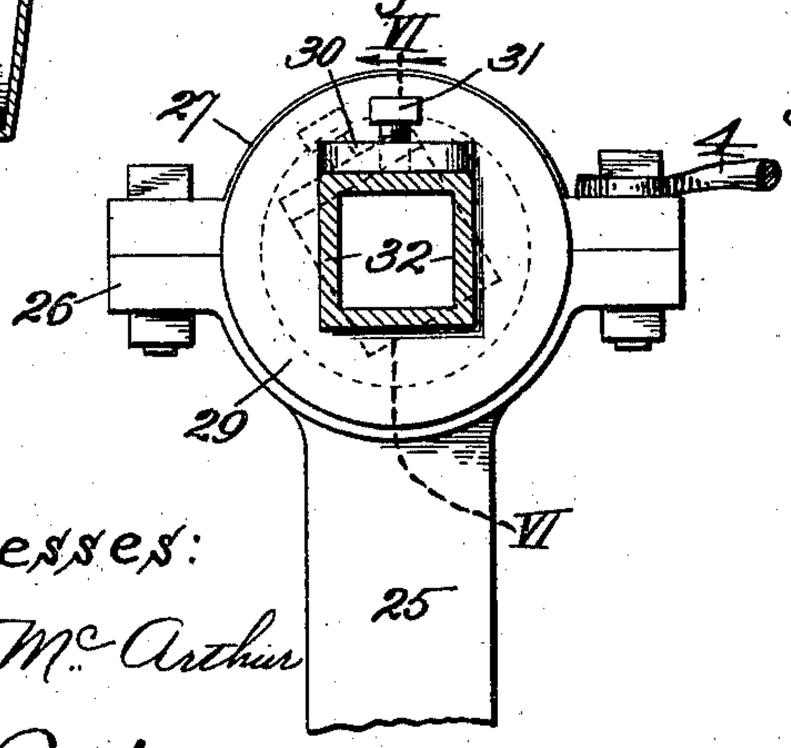
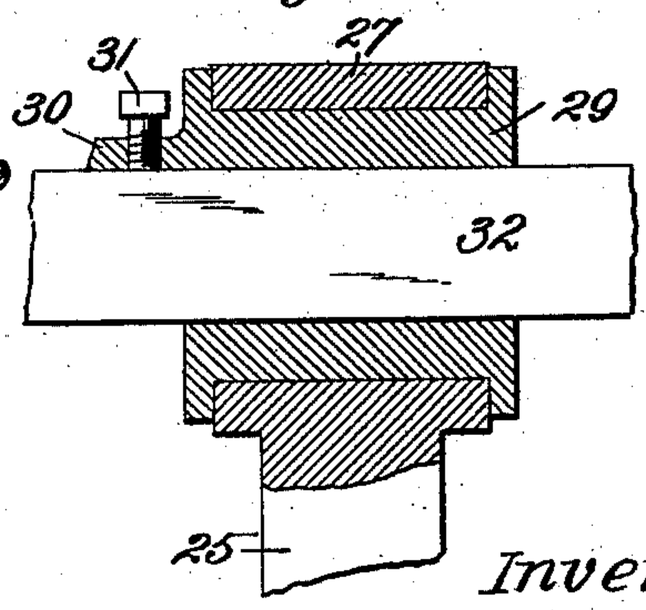


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM J. WISWALL, OF KANSAS CITY, MISSOURI, ASSIGNOR TO THE OHIO CULTIVATOR COMPANY, OF BELLEVUE, OHIO.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 685,897, dated November 5, 1901.

Application filed July 18, 1901. Serial No. 68,776. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. WISWALL, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

My invention relates to cultivators, and more particularly to that type of two-row cultivators adjustable to accommodate the distance between the rows and embracing cutting-disks, weed-cutting knives, and a central shield to protect the plants from the earth turned by the disks, my object being to generally improve this type of machine.

With this object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a top plan view of a two-row cultivator embodying my invention. Fig. 2 is an end view of the same. Fig. 3 is an enlarged section taken on the dotted line III III of Fig. 2, but not through the wheel intersected by such line. Fig. 4 is an enlarged section taken on the dotted line IV of Fig. 1. Fig. 5 is a section taken on the dotted line V of Fig. 1. Fig. 6 is a longitudinal section taken on the dotted line VI VI of Fig. 5.

In the said drawings, 1 designates the usual plank platform connecting the two similar cultivating devices and supporting the seat in the usual manner. These cultivating appliances being of similar construction, a description of the parts of or relating to one will suffice for both.

2 designates a bar extending longitudinally of and secured at its ends to the platform, and 3 stop-pins depending from the platform at opposite ends of said bar and a suitable distance apart.

4 designates parallel bars extending at right angles to and at the under side of platform 1 and connected at their front ends to an angle-bar 5, clamping-bolts 6, engaging longitudinal slots 7 of said angle-bar, serving to secure bars 4 at the requisite distance apart and at the desired point on the angle-bar.

8 designates a pair of clamping-bolts engaging said slots inward of bolts 6 and securing rigidly to angle-bar 5 the vertically-depending arms 9, provided with a vertical series of holes 10, certain of which are pivotally connected to draft-links 11, united at their front end by a ring or loop 12, to which the horses are hitched. The degree of elevation at which the draft-links 11 are attached to arms 9 largely determines the amount and distribution of the draft—that is, the higher said links are connected to arms 9 the greater the volume of draft imposed on the wheels hereinafter referred to, and as a result the draft on the cultivating appliances and the animals is proportionately diminished. The points of connection of the links and said arms also serve to determine in a measure the depth of cut of the cultivating appliances. At the lower ends of each arm 9 an outwardly-projecting shield-flange 13 is provided, and below the same are stub-shafts 14, secured rigidly to said arms by means of bolts 15 or similar devices. Journaled on said stub-shafts are wheels 16, preferably of metal, with their hubs largely protected from dirt by the shield-flanges 13, spring-cotters or equivalent devices 17 holding the wheels in place on said shaft.

The lower portion of the framework, of which bars 4 and arms 9 constitute the upper and front portion, consists of angle-irons bent to form the upwardly-extending portions 18 to avoid or ride over obstructions, and the horizontal portions or runners 19, to the rear ends of which are rigidly secured plates 20, provided with curved slots 21, and vertical bolts 22 concentric of said slots and forming pivots for the rearwardly-diverging weed-cutting knives 23, bolts 24 extending through said slots and engaging said knives to clamp them reliably at the desired angle, the angle at which they extend being determined by the width of space to be cleared of weeds.

25 designates vertical bars erected on the front end of the runners 19 and having their front ends of semicircular form, as at 26, and forming the lower or stationary members of bearings the upper or movable members of which are caps 27, and the upper ends of said bars are bolted, as at 28, to the rear ends of

bars 4, this arrangement completing a strong and rigid frame which may move laterally between pins 3, a chain 28ª connecting ring 28ᵇ to a bracket 28ᶜ on cross-bar 5 for the purpose of preventing longitudinal movement without interfering with the lateral adjustment, as will be readily understood.

29 designates spools journaled in the bearings above described (see Figs. 5 and 6) and provided with outwardly-projecting flanges 30, carrying set-screws 31, the latter being adapted to engage a square shaft 32, extending non-rotatably through said spools, so as to prevent accidental movement of the latter thereon, but permitting lateral adjustment to accommodate rows of different widths, and in order that the shaft may be rotatably operated for a purpose which hereinafter appears it carries a lever 33, provided with the usual spring-actuated dog 34, engaging a sector 35, secured to one of the bearing-caps 27. Mounted upon said shaft outward of said spools are disk supporting and adjusting devices, as follows: 36 designates a plate underlying the rectangular shaft 32 and held from movement longitudinally of the machine by means of ribs 37 at the front and rear sides of the shaft, and said plate is provided at its under side with a cavity having a serrated base 38. Below said plate 36 is a companion plate 39, provided in its upper side with a corresponding cavity having a serrated base, as at 40, a pair of vertical bolts 41 at opposite sides of said cavities and said shaft extending through both plates and also through the opposite ends of an oblique bar 42, resting upon the shaft, clamping-nuts 43 engaging the lower ends of the bolts and the under side of said plate 39, serving to clamp plate 36 and bar 42 rigidly upon the shaft and a rectangular arm 44 rigidly between plates 36 and 39, this arrangement permitting said arm to be rotatably adjusted and clamped reliably at the desired point of adjustment, as shown by full and dotted lines, Fig. 4. The rear end of each arm 44 is secured rigidly between the parallel ribs of a casting 45, from which is suspended in the usual or any preferred manner the cultivating-disks 46, so that the rotatable adjustment of arms 44 shall result in disposing the disks at different angles, and therefore in position to vary their depth of cut. This action also obviously changes the distance between their cutting edges, though to adjust them to accommodate rows of different widths this rotative action of arms 44 is not depended upon, this adjustment being accomplished by adjusting the clamping mechanism shown in Fig. 4 farther outward or inward upon shaft 32, as will be readily understood.

A shield or fender 47, of any preferred construction, is pivoted, as at 48, to vertical bars 25, and in order that it may be raised and lowered with the disks to avoid obstructions and eliminate draft, as when driving to or from the field, it is provided with an arch 49, connected by a chain 50 to a collar 51 upon shaft 32. Said collar is connected by chain 52 to slide-ring 28ᵇ, and thereby insures the proper play of said ring on bar 2 as the machine moves inward or outward in following the rows.

This machine operates in precisely the same manner as others of the same general type, over which this is believed and intended to be a structural improvement, for the purpose of facilitating and rendering the work less laborious on both the driver and the draft-animals, this result being of course followed by more economic operation.

From the above description it will be apparent that I have produced a machine which is of simple, strong, durable, and comparatively inexpensive construction, wherein the operator to avoid obstructions raises only the cutting-disks and fender, instead of the entire rear portion of the machine, as in some types of cultivators.

I am aware that the idea of a rock-shaft for the purpose of raising the cultivating appliances is not broadly new, and therefore restrict myself to the structure and combination of parts embraced in the claims.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cultivator, a rigid frame, wheels supporting its front end, a rock-shaft journaled in the frame near its rear end, clamping-plates secured to said shaft and provided with opposing recesses having their bases serrated, an angular arm clamped between said plates with corners engaging certain of said serrations, and a cultivating-disk suspended from and movable with said arm, substantially as described.

2. In a cultivator, a rigid frame, wheels supporting its front end, a rock-shaft journaled in said frame, an oblique bar resting upon the rock-shaft, bolts extending through said bar at opposite sides of the rock-shaft, a clamping-plate upon said bolts at the under side of the shaft and provided with ribs engaging the front and rear sides of the shaft, a companion clamping-plate mounted on said bolts, said clamping-plates having recesses in their opposing faces whose bases are serrated, an arm having corners engaging certain of said serrations and carrying a cultivating-disk at its rear end, and clamping-nuts engaging said bolts and clamping said bar and plates tightly against the interposed objects, substantially as described.

3. In a cultivator, a frame mounted upon wheels at its front end, and provided with bearings near its rear end, spools journaled in said bearings, an angular shaft secured rigidly in said spools, clamping devices secured to said shaft at opposite sides of the frame, rotatably-adjustable arms secured to said clamping devices, cultivating-disks carried by said arms, and means for operating the rock-shaft and securing it at the desired

point of adjustment, substantially as described.

4. In a cultivator, a frame mounted upon wheels at its front end, and provided with bearings near its rear end, spools journaled in said bearings, an angular shaft secured rigidly in said spools, clamping devices secured to said shaft at opposite sides of the frame, rotatably-adjustable arms secured to said clamping devices, cultivating-disks carried by said arms, means for operating the rock-shaft and securing it at the desired point of adjustment, and draft-links adjustably connected to the front end of the frame above the axis of the wheels, substantially as described.

5. In a cultivator, a frame mounted upon wheels at its front end, and provided with bearings near its rear end, spools journaled in said bearings, an angular shaft secured rigidly in said spools, clamping devices secured to said shaft at opposite sides of the frame, rotatably-adjustable arms secured to said clamping devices, cultivating-disks carried by said arms, a fender pivoted to said frame and connected to said rock-shaft, and means for operating the rock-shaft and securing it at the desired point of adjustment, substantially as described.

6. In a cultivator, the combination of a platform, bars extending longitudinally thereof, a pair of frames supporting the same and adjustable laterally, wheels supporting the front ends of said frames, shafts journaled in said frames near their rear corners, cultivating-disks supported from said shafts and movable therewith, means for operating said shafts, fenders between said disks and pivoted to said frames at their front ends, collars mounted centrally on said shafts, chains connecting said collars with said fenders and with said platform-bars, and chains connecting said platform-bars with the front ends of the frames, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM J. WISWALL.

Witnesses:

H. C. RODGERS,

G. Y. THORPE.