

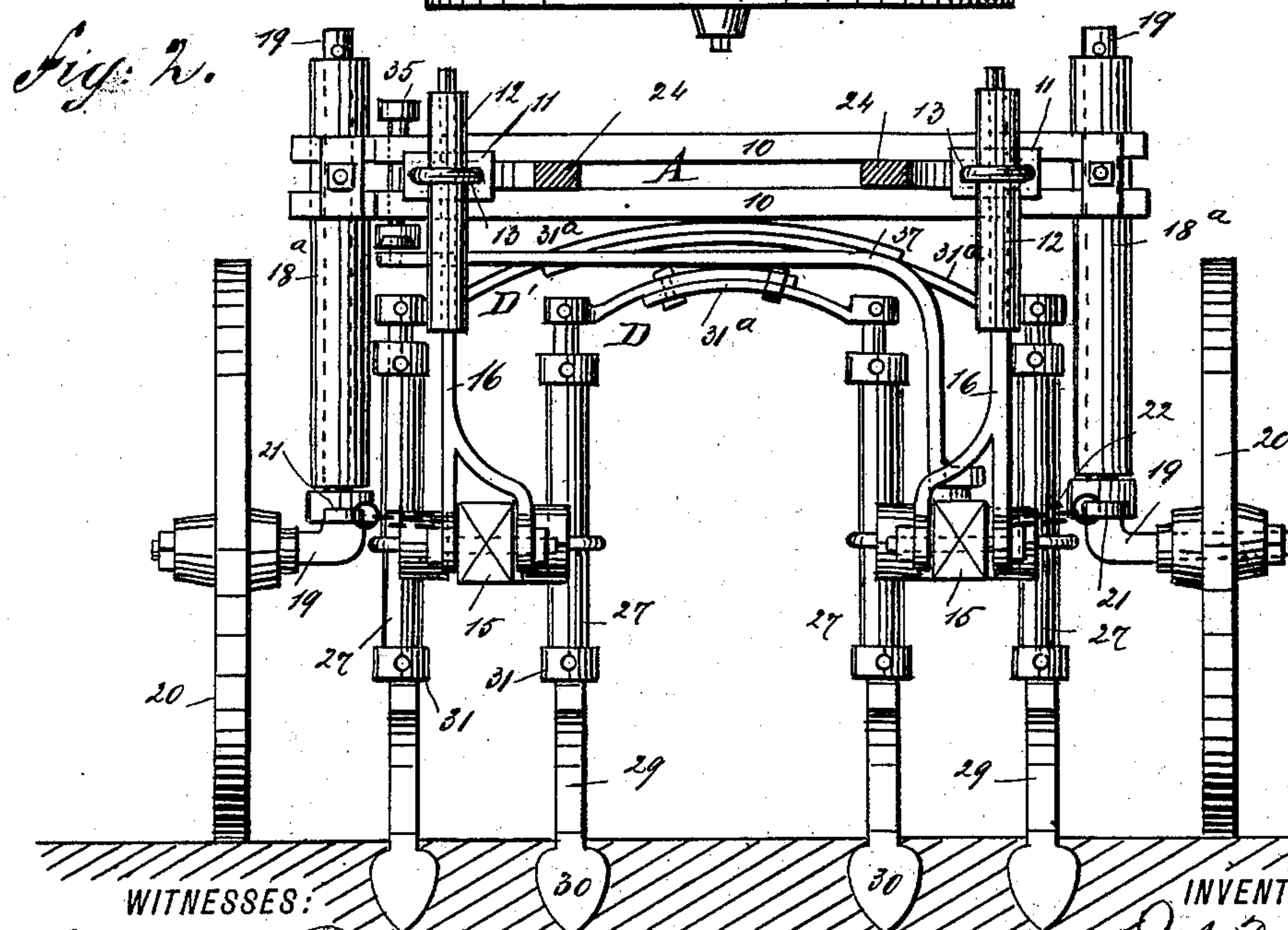
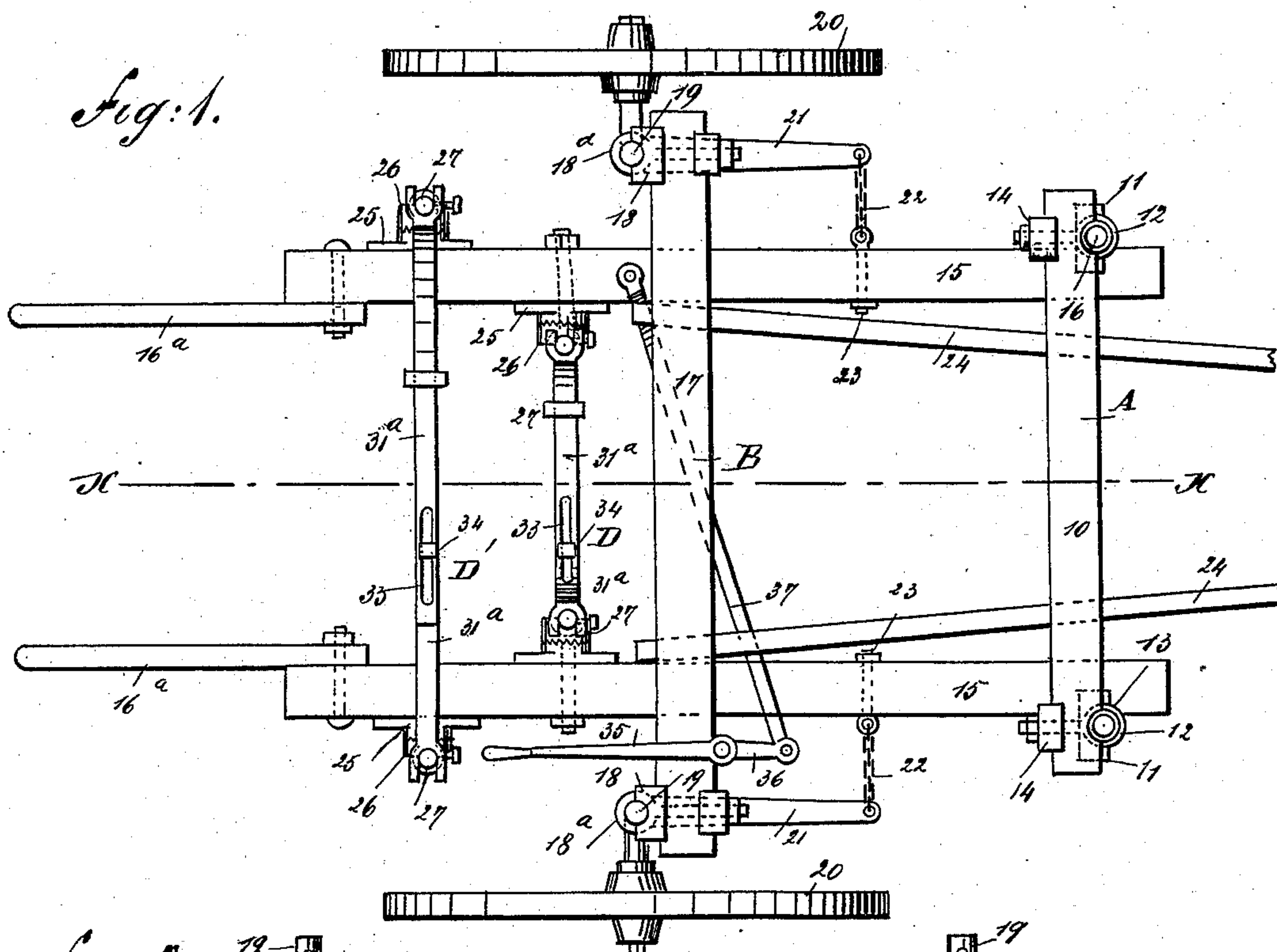
(No Model.)

2 Sheets—Sheet 1.

J. C. BENTHALL.
CULTIVATOR.

No. 406,619.

Patented July 9, 1889.



WITNESSES:

Chas. Nida
C. Sedgwick

INVENTOR:

J. C. Benhall
BY *Munn & Co*
ATTORNEYS.

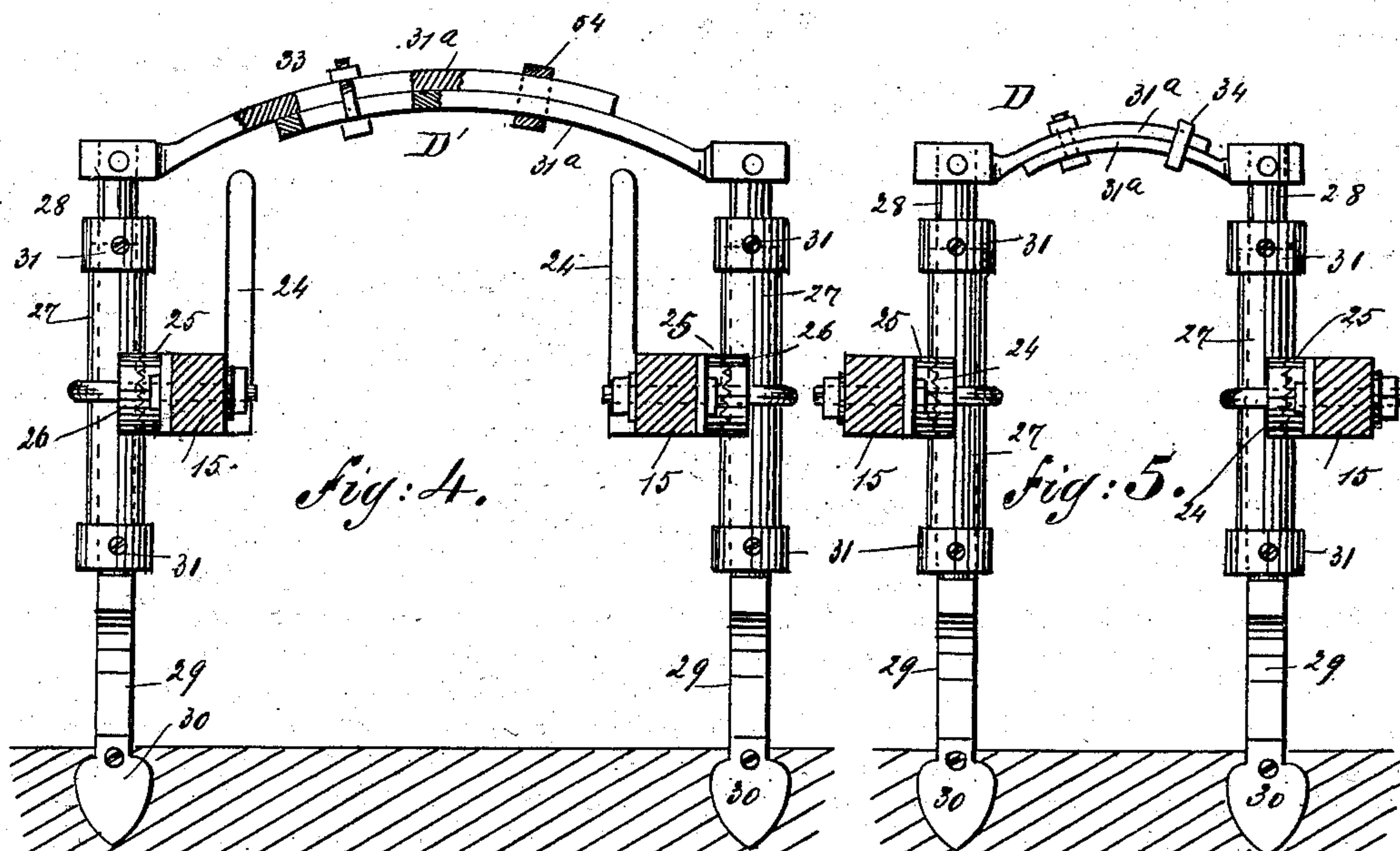
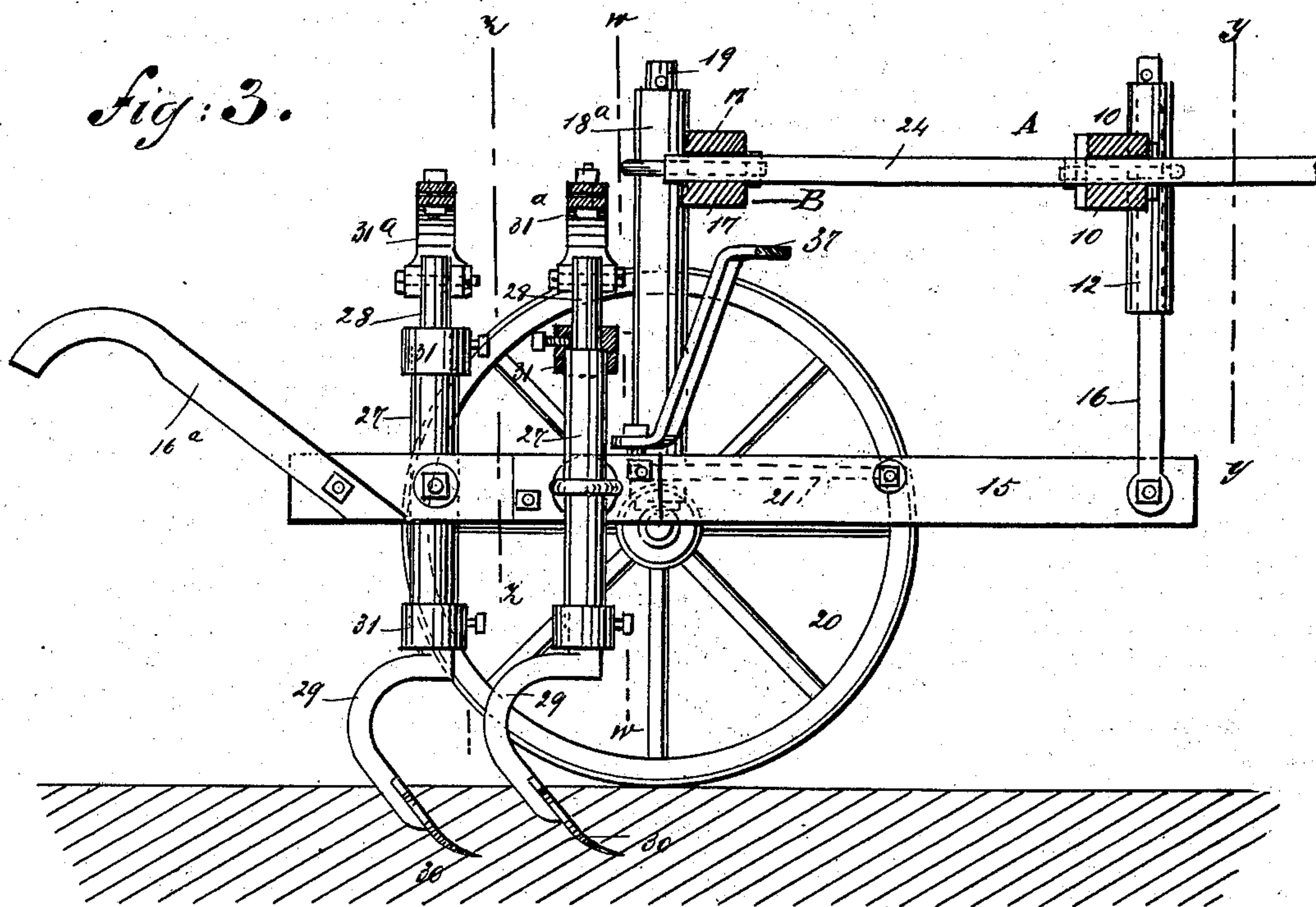
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UNITED STATES PATENT OFFICE.

JOHN C. BENTHALL, OF SCHULENBURG, TEXAS.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 406,619, dated July 9, 1889.

Application filed April 23, 1889. Serial No. 308,274. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BENTHALL, of Schulenburg, in the county of Fayette and State of Texas, have invented a new and Improved Cultivator, of which the following is a full, clear, and exact description.

My invention relates to an improvement in cultivators, and has for its object to provide a cultivator of simple and durable construction, capable of being adjusted laterally to any width and vertically to any desired height.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the cultivator. Fig. 2 is a section on line *y y* of Fig. 3. Fig. 3 is a section on line *x x* of Fig. 1; and Figs. 4 and 5 are vertical sections taken respectively upon lines *w* and *z* of Fig. 3.

In carrying out the invention the frame of the machine consists, first, of two spaced beams 10, bolted or otherwise secured together to form the front cross-bar A, upon the front of which two metal blocks or boxes 11 are secured, one near each end, having a vertical semicircular groove in their front face, and in the groove of each block a tube 12 is perpendicularly held by an eyebolt 13, passing over the tubes through the block, which eyebolts also pass between the beams 10 through a stay-plate 14 upon the opposite side of the beams, the projecting ends of the eyebolts being threaded and provided with a lock-nut. By means of this construction it will be readily observed that the position of the tubes with respect to the length of the beams may be changed at will by loosening the nuts and sliding the blocks toward or away from the center.

The second portion of the frame consists of two spaced longitudinal beams 15, having attached to the forward end of each a supporting-rod 16, the upper ends of which rods are carried perpendicularly upward through and beyond the respective tubes 12. The lower

extremities of the rods are preferably bifurcated, and through their upper extremities a spring key or bolt is passed in contact with the upper face of the tubes. This arrangement gives both vertical and lateral movement to the said longitudinal beams. To the rear end of the beams 15 the handles 16^a are secured.

The third portion of the frame consists of the axle B, which is arched, comprising two transverse beams 17, longer than the forward beam 10, and arranged in similar manner upon the rear face of the axle cross-bar thus formed two blocks or boxes 18 are secured, one near each end, which blocks or boxes are essentially similar in construction to the boxes 11 of the forward cross-bar, and in contact with each block or box a vertical tube 18^a is held secured in like manner to the forward tubes 12.

The vertical member of an angled spindle 19 is inserted in each of the tubes 18^a, having a key or bolt passed through its upper projecting end, and upon the horizontal member of the said spindle the drive-wheels 20 are loosely mounted.

From the lower end of the vertical member of each spindle a horizontal arm 21 is forwardly projected, each arm being connected by a chain 22 with a bolt 23, secured in each of the longitudinal beams 15, which beams are preferably provided with a series of bolt-apertures, whereby the position of the bolts may be changed to accommodate the adjustments of the machine. The shafts or thills 24 are secured to the beams 15 and pass forward through the axle cross-bar.

Slightly to the rear of the axle, upon the inner face of each longitudinal beam, a disk 25 is secured, which disks are in transverse alignment and provided upon their opposed faces with a series of radial teeth. The teeth of each disk 25 are adapted to engage with the radial teeth of a second disk 26, having a semicircular groove in its inner face to receive and accommodate a vertical tube 27. Through each tube 27 the rod or standard 28 of the share-carrier is upwardly passed, the lower end whereof is curved, as shown at 29 in Fig. 3, to receive the various shares or blades usually employed in cultivators. Above each tube 27 a thimble-shaped casting or ring 31 is

entered upon the upper projecting end of the standards 28, as shown in Fig. 3, and secured thereto by a suitable set-screw, which thimble is of two interior diameters, to rest upon the upper end of the tube and overlap the same. A similar thimble is employed at the lower end of the tubes. By this construction the entire strength of the tubes and standards is combined. The top of each standard is provided with an arched or curved iron 31^a, rigidly attached thereto, by means of which irons the two opposed standards are connected. One iron overlaps the other, forming a complete arch, and in order that when the other portions of the machine are adjusted laterally the arch may be adjusted to correspond each member of the arch is provided with a registering-slot 33, as shown in Fig. 1, and a suitable bolt is passed through the slots. A sleeve or band 34 is also employed to clamp the two members together.

A second set of arched share or blade standard-irons D are located to the rear of the set D', above described, being attached to the outer face of the longitudinal beams 15, and as the two sets are identical in construction I apply the same figures of reference to both.

When the machine is used as a walking-cultivator, it is guided by carrying the handles either to the right or left. When employed as a riding-cultivator, a lever 35 is utilized for this purpose fulcrumed upon the axle-arch near one end and connected by a link and rod 36 and 37 or equivalent device with the opposite longitudinal beam 15, as shown in Fig. 1.

In working crops of considerable height the axle-arch may be readily raised to any desired height by slacking up the nuts upon the eye-bolts and lowering the tubes upon the forward cross-bar, thus keeping the longitudinal beams at the same height.

The boxes seating the tubes of the axle may be placed either before or behind the latter, as it is preferable to have them in front when walking and behind when riding.

The tubes and grooved or contacting disks of the arches D and D' are secured to the longitudinal beams, preferably by eyebolts, as illustrated.

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

1. In a cultivator, the combination, with a forward cross-bar, tubes laterally and vertically adjustable upon the same, a rod held in each of said tubes, and spaced longitudinal body-beams having one end secured to said rods, of an axle cross-bar, tubes vertically and laterally adjustable upon said axle-bar, an angled spin-

dle held in each tube carrying a drive-wheel, and a link-connection between the spindles and body-beams, substantially as shown and described.

2. In a cultivator, the combination, with a forward cross-bar, tubes laterally and vertically adjustable upon the same, a rod held in each tube, and spaced longitudinal body-beams secured at one end to said rods, of an axle cross-bar, tubes vertically and laterally adjustable thereon, an angled spindle held in each tube carrying a drive-wheel, a link-connection between the spindles and body-beams, and laterally and vertically adjustable arched blade or share carriers secured to the body-beams, substantially as shown and described.

3. In a cultivator, the combination, with a forward cross-bar, tubes laterally and vertically adjustable upon the same, a rod held in each tube, and spaced longitudinal body-beams secured to the said rods, of an axle cross-bar, tubes vertically and laterally adjustable thereon, an angled spindle held in each tube carrying a drive-wheel, a link-connection between the spindle and body-beams, laterally and vertically adjustable arched blade or share carriers secured to the body-beams, a lever fulcrumed upon the axle cross-bar, and a pitman-connection between the lever and opposite body-beam, substantially as shown and described.

4. In a cultivator, the combination, with a swinging frame, of transversely-aligning tubes secured to the side beams of the frame, a standard passed upward through each tube curved at the lower end to receive a share or blade, a thimble provided with two interior diameters, a set-screw uniting the tubes and standards, and curved bars secured to the upper end of each standard, united to form a laterally-adjustable arch-connection, substantially as shown and described.

5. In a cultivator, the combination, with a swinging frame and disks having one radially-toothed face secured to the side beams of the frame, a second grooved and toothed disk contacting with the frame-disk, a tube detachably clamped to the grooved disks and frame, a share-carrying standard passed upward through each tube, a thimble provided with two interior diameters, a set-screw clamping the tubes to the standards, and a curved bar rigidly secured to the upper end of each standard, said bars being united by a laterally-adjustable connection, substantially as shown and described.

JOHN C. BENTHALL.

Witnesses:

G. BOHNER,
E. CH. BAUMGARTEN.