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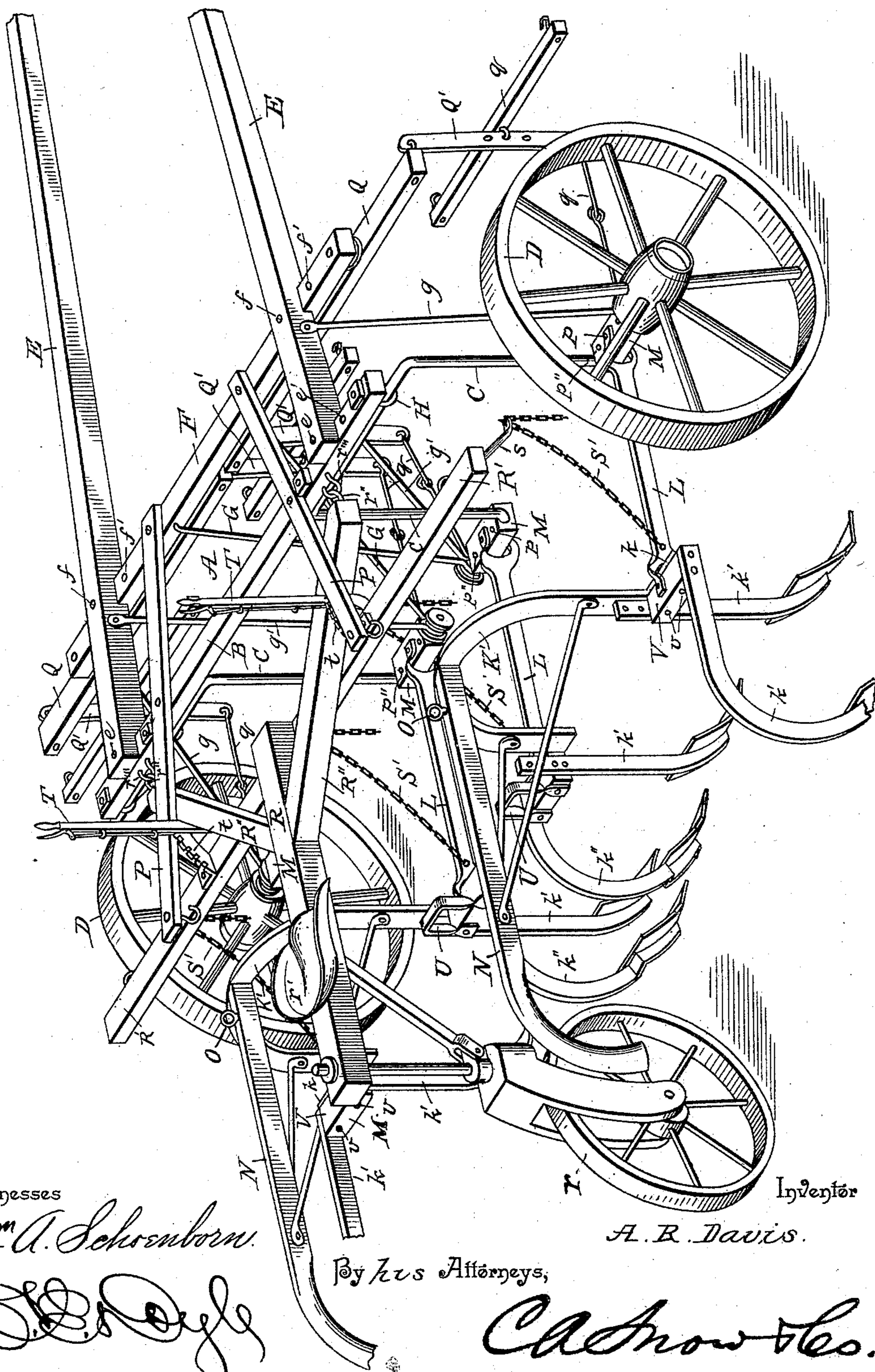
3 Sheets—Sheet 1.

A. R. DAVIS.
CULTIVATOR.

No. 492,509.

Patented Feb. 28, 1893.

Fig. 1.



Witnesses

Wm. A. Schenborn.

[Signature]

By *his* Attorneys,

Chas. Snow & Co.

Inventor

A. R. Davis.

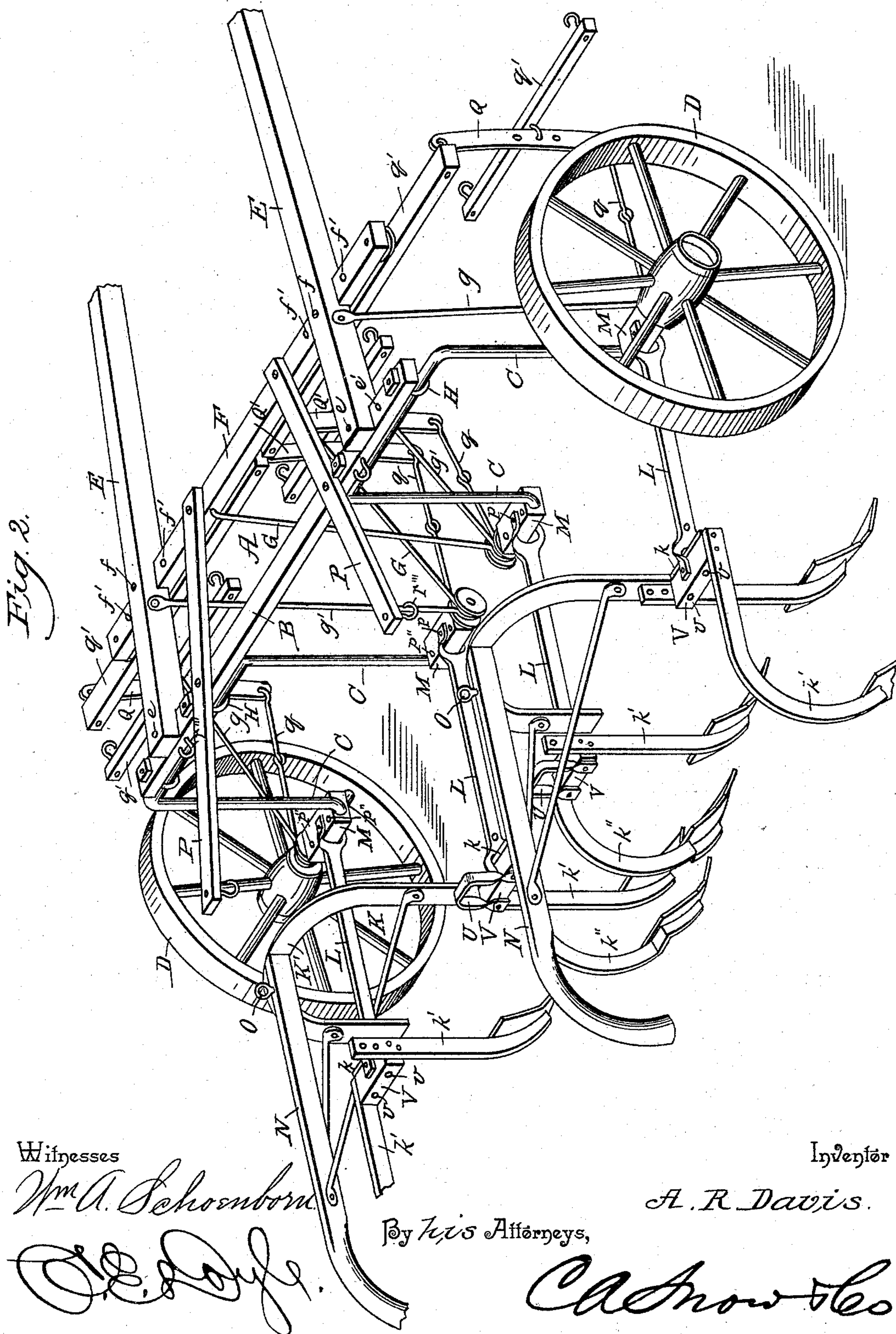
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(No Model.)

3 Sheets—Sheet 3.

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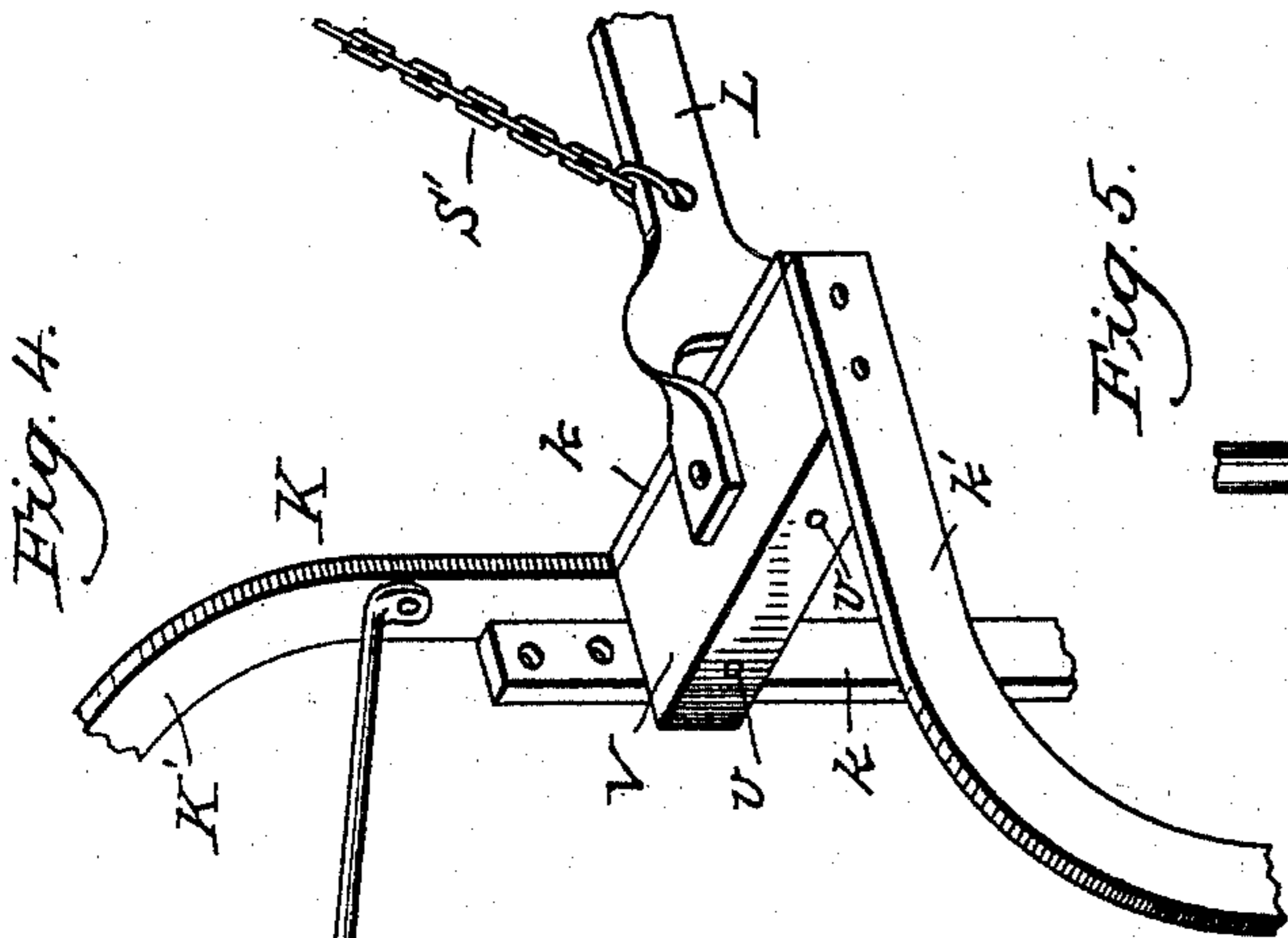
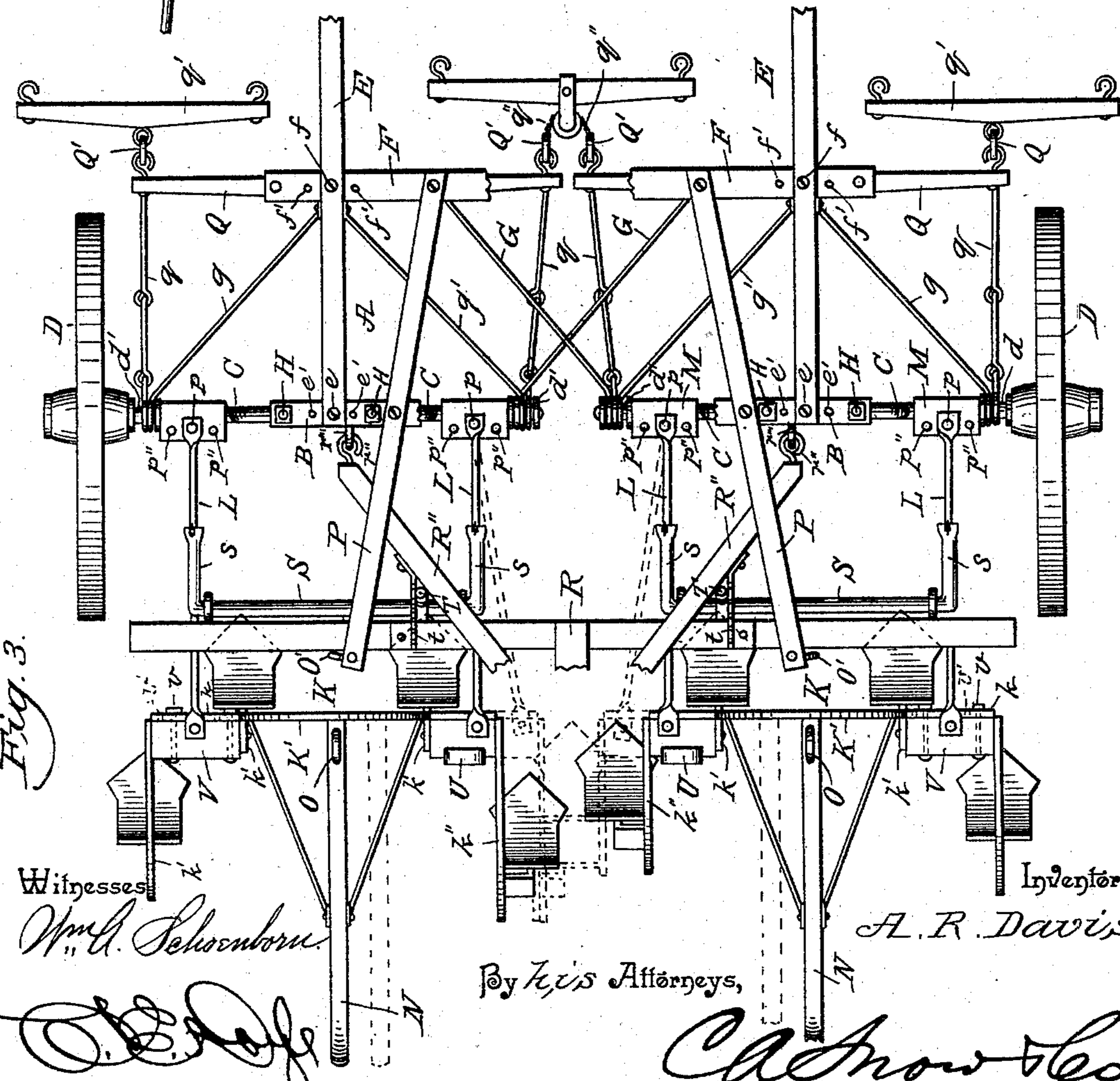
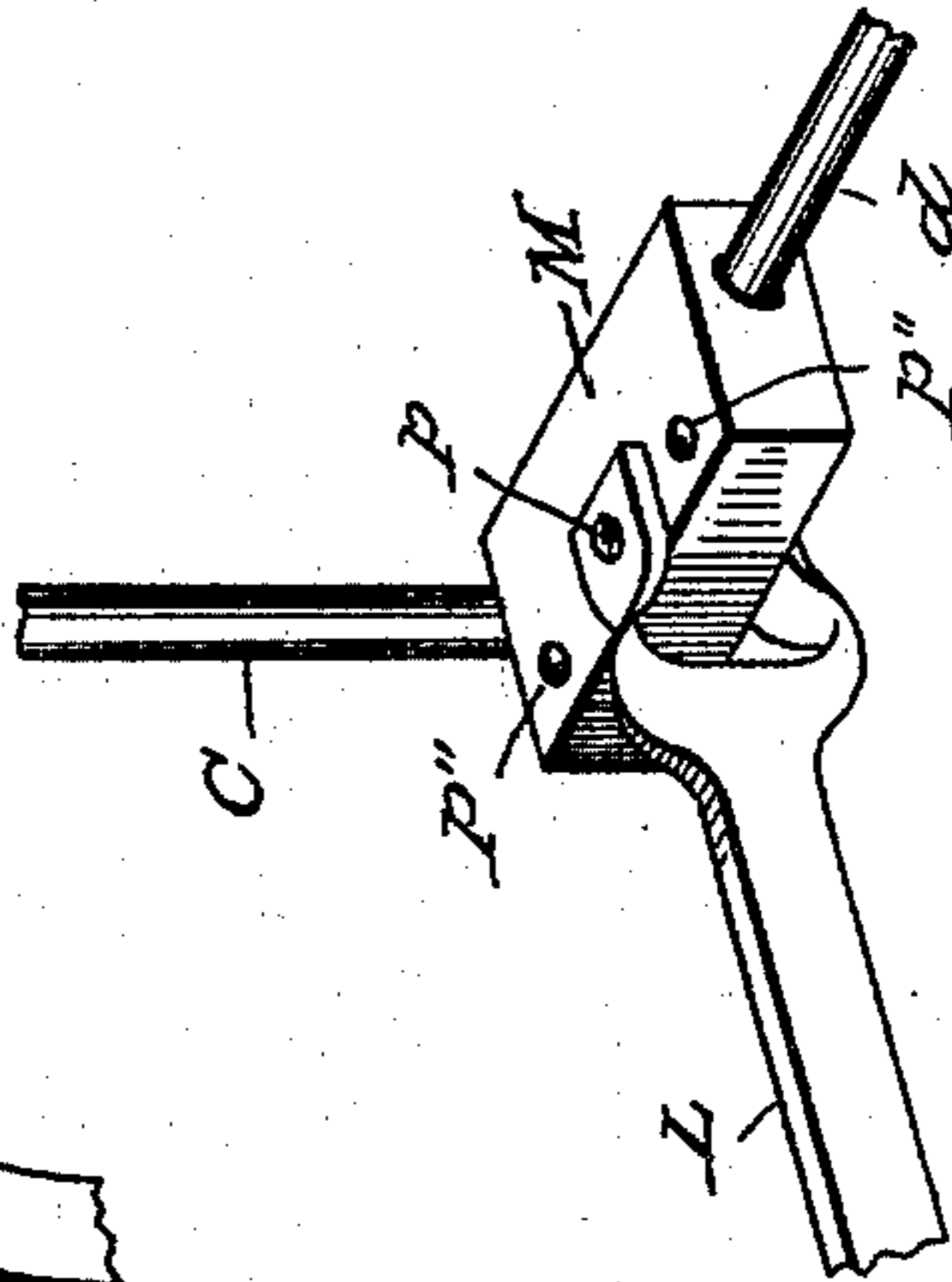


Fig. 5.



Witnesses

Wm. A. Schoenborn.

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Inventor

A. R. Davis.

By his Attorneys,

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UNITED STATES PATENT OFFICE.

APPLETON R. DAVIS, OF VALLEY, NEBRASKA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 492,509, dated February 28, 1893.

Application filed July 16, 1892. Serial No. 440,229. (No model.)

To all whom it may concern:

Be it known that I, APPLETON R. DAVIS, a citizen of the United States, residing at Valley, in the county of Douglas and State of Nebraska, have invented a new and useful Cultivator, of which the following is a specification.

My invention relates to improvements in cultivators, and refers particularly to that class known as two-row cultivators, the object of the improvement being to provide a device of this kind which may be operated either riding or walking.

A further object of my improvement is to provide simple and direct means for moving the shovels laterally to suit irregularities in the rows.

A further object of the improvement is to provide means for adjusting the various parts of the machine to accommodate different widths of rows and different distances between rows.

Further object of my improvement will appear hereinafter in the description, wherein the detail construction and arrangement of parts is explained in connection with the drawings, and the novelty of my invention will be particularly pointed out in the claims hereto appended.

In the drawings: Figure 1 is a perspective view of a cultivator embodying my invention. Fig. 2 is a similar view with the riding-attachment removed. Fig. 3 is a plan view of the latter, partly broken away, and showing in dotted lines the extreme inner positions of the shovel-frames. Figs. 4 and 5 are detail views.

A designates the main-frame of the cultivator, having the cross-beam, B, bearing the loop-shaped hangers, C C. The free ends of the hangers, C, are bent laterally to form spindles; the supporting wheels D D being mounted upon the outer spindles, *d d*. The tongues, E, E are attached at their rear ends to the cross-beam by means of adjusting-bolts, *e e*, which take in either of the series of perforations, *e' e'*, in said beam, whereby the rear ends of the tongues may be laterally adjusted. The main-frame also carries a

transverse bar, F, provided at its extremities with series of perforations *f' f'* and secured to the tongues by adjusting bolts, *f f*, which take in said perforations. This transverse bar is connected, by means of rearwardly convergent and inclined braces, G G, to the inner ends of the inner spindles, *d' d'*, said braces intersecting a short distance in front of their connection with the spindles. Rearwardly divergent braces, *g g* and *g' g'*, extend from the tongues to the outer and inner spindles, respectively, thus bracing the lower ends of the hangers and binding the parts of the main-frame together. The hangers are secured to the underside of the cross-beam by means of keepers, H H, which enable the hangers to be laterally adjusted.

The shovel-frames, K K, consist of the arches, K', having the horizontal off-sets, *k k*, to which are secured the shovel stocks, *k' k'*, and *k''*, bearing the ordinary shovels, *k'''*. The inner shovel-stock, designated by the letter, *k''*, in each frame, is provided with an off-set, to which the shovel is attached, the object of such off-set being to bring the shovel closer to the center of the machine. One of the stocks, *k''*, is longer than the other to enable them to overlap when the shovel frames are swung inward, as indicated by the dotted lines in Fig. 3.

The shovel frames are connected, by means of connecting bars, L L, to swivel-blocks, M M, which are mounted on the above mentioned spindles upon the lower ends of the hangers, said connecting bar being pivoted to the shovel frames and also to the swivel blocks, whereby said frames are capable of free lateral swing. Handles, N N, are secured to the rear sides of the arches for the use of the operator when walking and eyes, O O, are provided at the tops of the arches to engage hooks, O' O', carried by the rearwardly projecting supports, P P, carried by the main-frame and secured to the cross beam and transverse bar. The swivel-blocks allow the shovel frames, or either of them, to be elevated temporarily or permanently.

My cultivator is designed for three horses, one to be arranged between the tongues to

walk between the rows, and the others to be attached outside the tongues to walk outside the rows.

To equalize the draft of the horses I employ the whiffle-trees, *Q Q*, pivoted at points one third of their lengths from their outer ends to the main-frame, vertical draft bars, *Q' Q'*, attached at their upper ends, respectively, to the extremities of the whiffle-trees, and having their lower ends connected to the spindles, above described, by the links, *q q*, and single-trees, *q' q'* attached to the centers of the draft-bars. The two inner draft-bars are connected to the single-tree, shown, by the short chain, *q''*, passing around a pulley on the single-tree.

The riding-frame consists of a center beam, *R*, carrying, at its rear end a supporting wheel, *r*, and at an intermediate point the seat, *r'*, the transverse beam, *R'*, attached at its center to the front end of the center beam, and the forwardly divergent bars, *R'' R''*, provided at their front ends with eyes, *r'' r''*, to engage hooks, *r''' r'''*, on the rear side of the cross-beam of the main-frame. Rock-shafts, *S S*, mounted upon the transverse beam are provided with arms, *s s* which are connected by chains, *S' S'*, to the ends of the arched shovel-frames, whereby, by operating said rock-shafts the shovel frames may be elevated or lowered. Operating levers, *T T*, are attached to the rock-shafts and co-act with toothed arcs, *t t*, whereby the shovel frames may be locked in their elevated position.

From the above description it will be apparent that the riding-frame may be detached from the main-frame when it is desired to operate the cultivator by hand, or walking.

Stirrups, *U U*, are attached to the inner ends of the shovel-frames to receive the feet of the operator, and if necessary the latter may raise the frames by means of said stirrups.

The joints between the front ends of the connecting-bars and the swivel-blocks are formed by the vertical bolts *p p*, which take in any one of a series of perforations, *p' p'*, in said blocks. Thus, the shovel frames, in addition to being capable of vertical and lateral movement, by the universal connections provided therefor, are capable of lateral adjustment with relation to the main-frame. Also, blocks *V V* which are attached to the off-sets of the arched frames, are laterally adjustable by means of the adjusting-bolts, *v v* taking in perforations *v' v'* in said off-sets, whereby the shovel stocks which are carried by the said blocks, *V*, are capable of lateral adjustment, independent of the arched frames. Furthermore, the entire width of the machine is adjustable by means of the laterally adjustable hangers, and the tongues are laterally adjustable with relation to the main-frame. It will be noted, furthermore, that when the shovel-frames are swung laterally, for instance to accommodate an irregularity

in the alignment of the rows, or one of them, the shovels maintain their positions with their faces squarely to the front. They are not turned at an angle by their lateral movement. It will be noted, furthermore, that the looped-hangers, above described, raise the main-frame well up out of the way of corn or other produce growing in the rows, and the arched shovel-frames and hangers span the rows, respectively, and thus allow short shovel-stocks to be employed and also bring a horizontal draft upon the shovel frames from the main-frame. The lower ends of the draft bars are connected to the spindles through which the draft upon the shovel-frames is conveyed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is--

1. In a cultivator, the combination with the main-frame, of the shovel-frames, swivel-blocks carried by the main-frame, and connecting bars pivoted at their opposite ends to the shovel-frames and said swivel-blocks, substantially as specified.

2. In a cultivator, the combination with the main-frame having a cross-beam, as described, of the laterally adjustable hangers secured to said cross-beam, swivel-blocks mounted upon spindles at the lower extremities of said hangers, and shovel-frames connected by pivoted connecting-bars with said swivel-blocks, substantially as specified.

3. In a cultivator, the combination with the main-frame, of the shovel-frames, secured by pivotal connecting-bars to the main frame, and comprising the arches having off-sets *k*, and the laterally adjustable blocks *V* secured to said off-sets and carrying the shovel-stocks, substantially as specified.

4. In a cultivator, the combination with the main-frame, the loop-shaped hangers *C* depending therefrom and carrying the supporting wheels, and swivel blocks *M* mounted upon spindles at the free ends of said hangers, of the arched shovel-frames arranged in rear of said hangers, and adapted to be aligned therewith, and the pivoted connecting bars *L* attached at their opposite ends to the shovel-frames and the said swivel-blocks, substantially as specified.

5. In a cultivator, the combination with the main-frame, of the twin opposite shovel-frames, the swivel-blocks mounted upon the main-frame, the connecting bars to connect the shovel-frames to said swivel-blocks, and the riding-attachment arranged between the shovel frames and provided with a seat the shovel-frames being provided with stirrups, *U U*, to receive the feet of the occupant of said seat, substantially as specified.

6. In a cultivator, the combination with the main-frame having spindles, *d d* and *d' d'*, the swivel-blocks, and the shovel-frames connected by connecting bars with said swivel-

5 blocks, of the whiffle-trees, pivoted near their outer ends to the main-frame, the vertical draft-bars connected at their upper ends to the extremities of said whiffle-trees and connected at their lower ends to the said spindles by the links, *q q*, and the single trees connected to intermediate points of said draft-bars, substantially as specified.

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

A. R. DAVIS.

Witnesses:

E. C. NELSON,
M. B. PARR.