

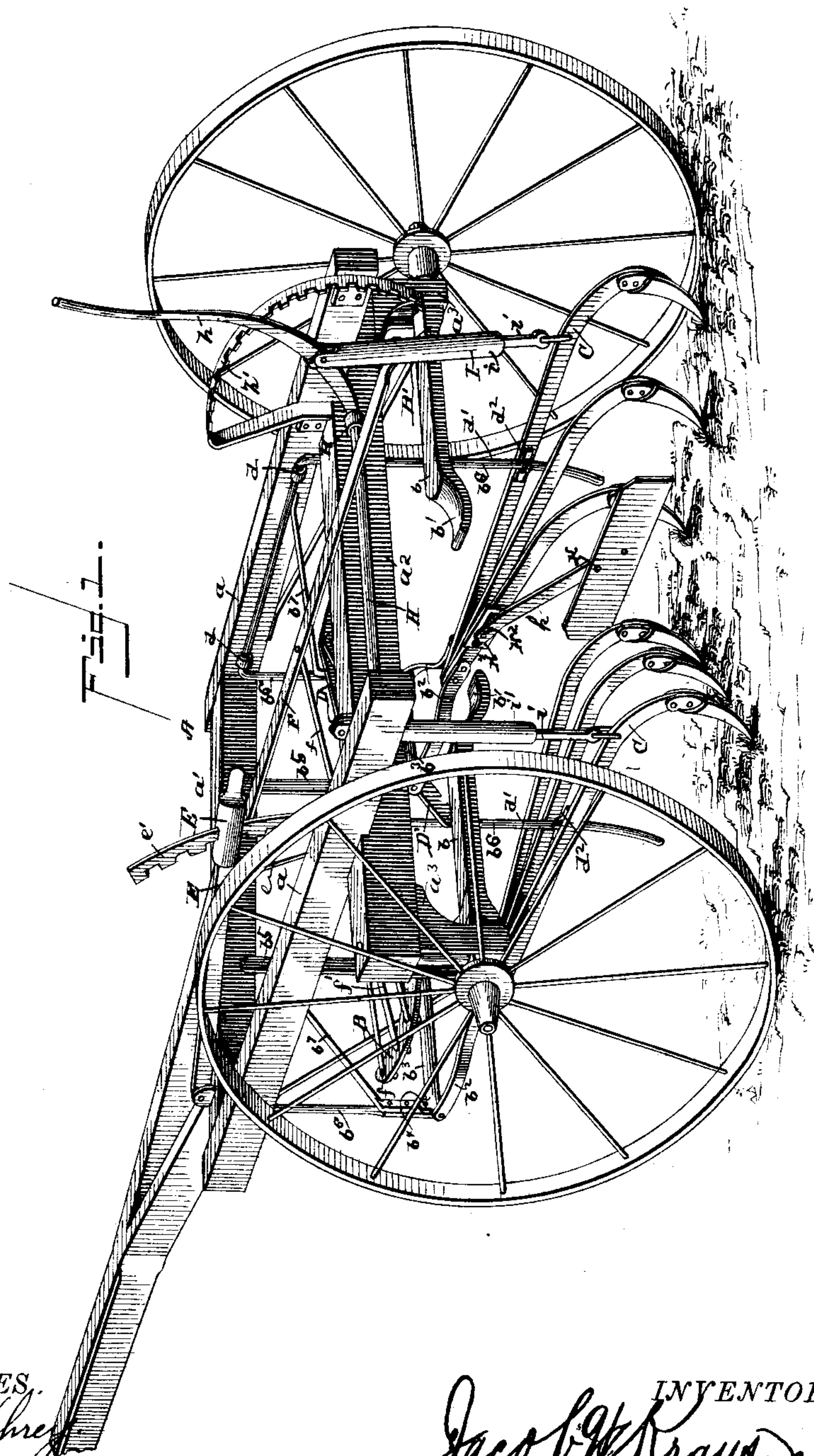
(No Model.)

4 Sheets—Sheet 1.

J. W. KRAUS.
CULTIVATOR.

No. 388,206.

Patented Aug. 21, 1888.



WITNESSES.
M. H. Humphrey
Francis H. Quinlan

INVENTOR:
Jacob W. Kraus
By [Signature]
Attorneys.

(No Model.)

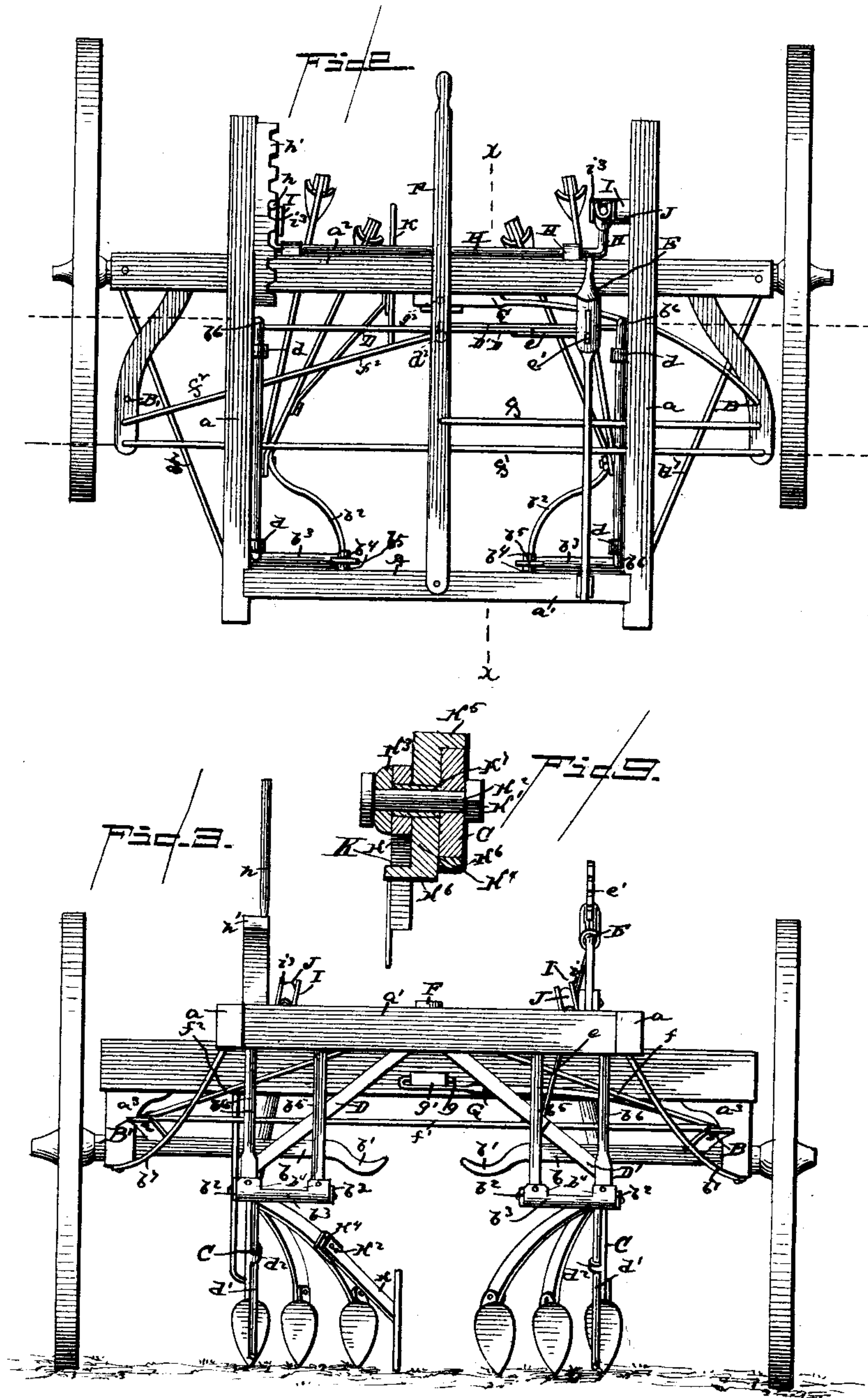
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Witnesses.
Francis X. Sullivan.
Rott. & Co.

Inventor.
Jacob W. Kraus.
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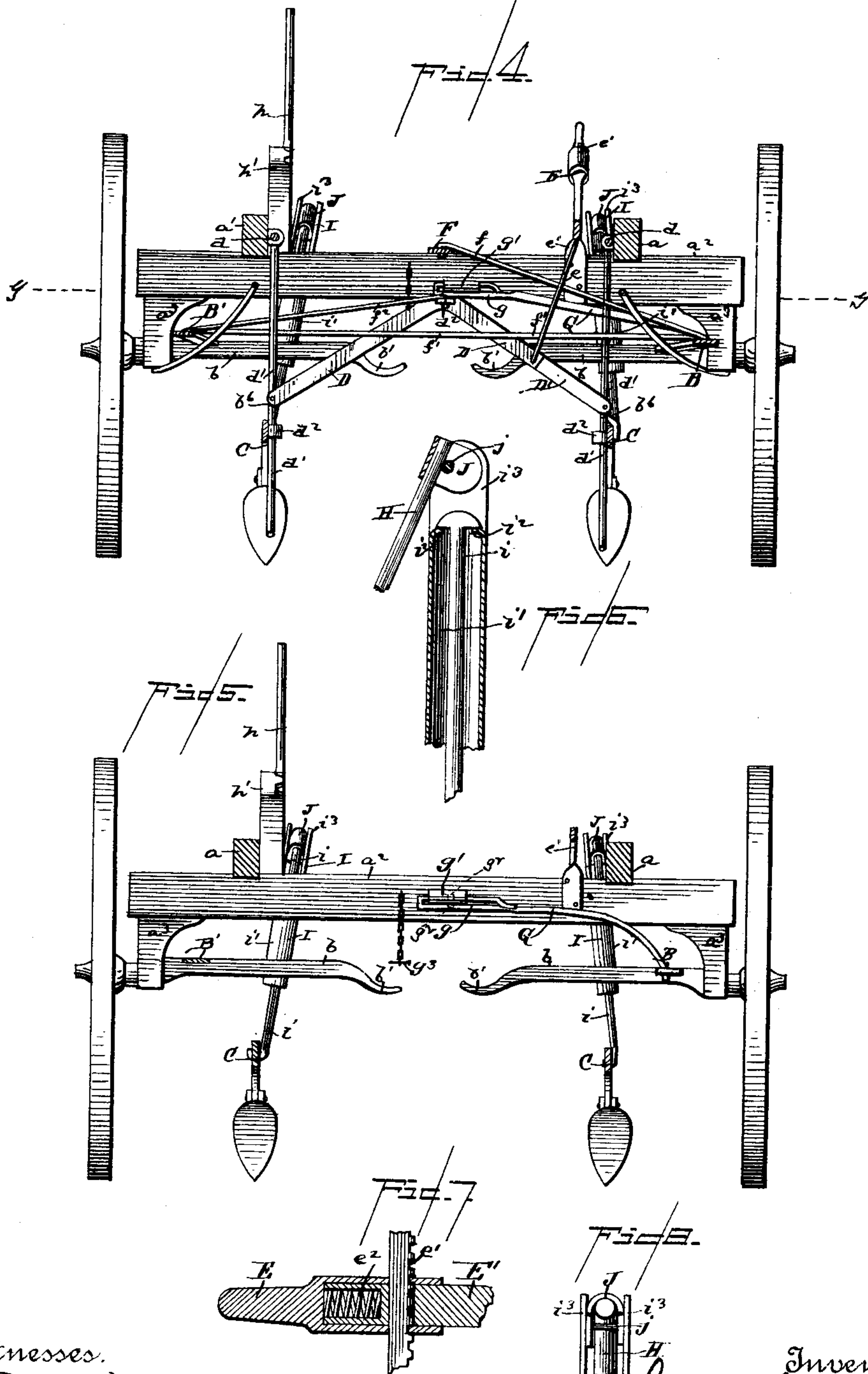
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Francis X. Quinlan.
Rott. & Foy.

Inventor,
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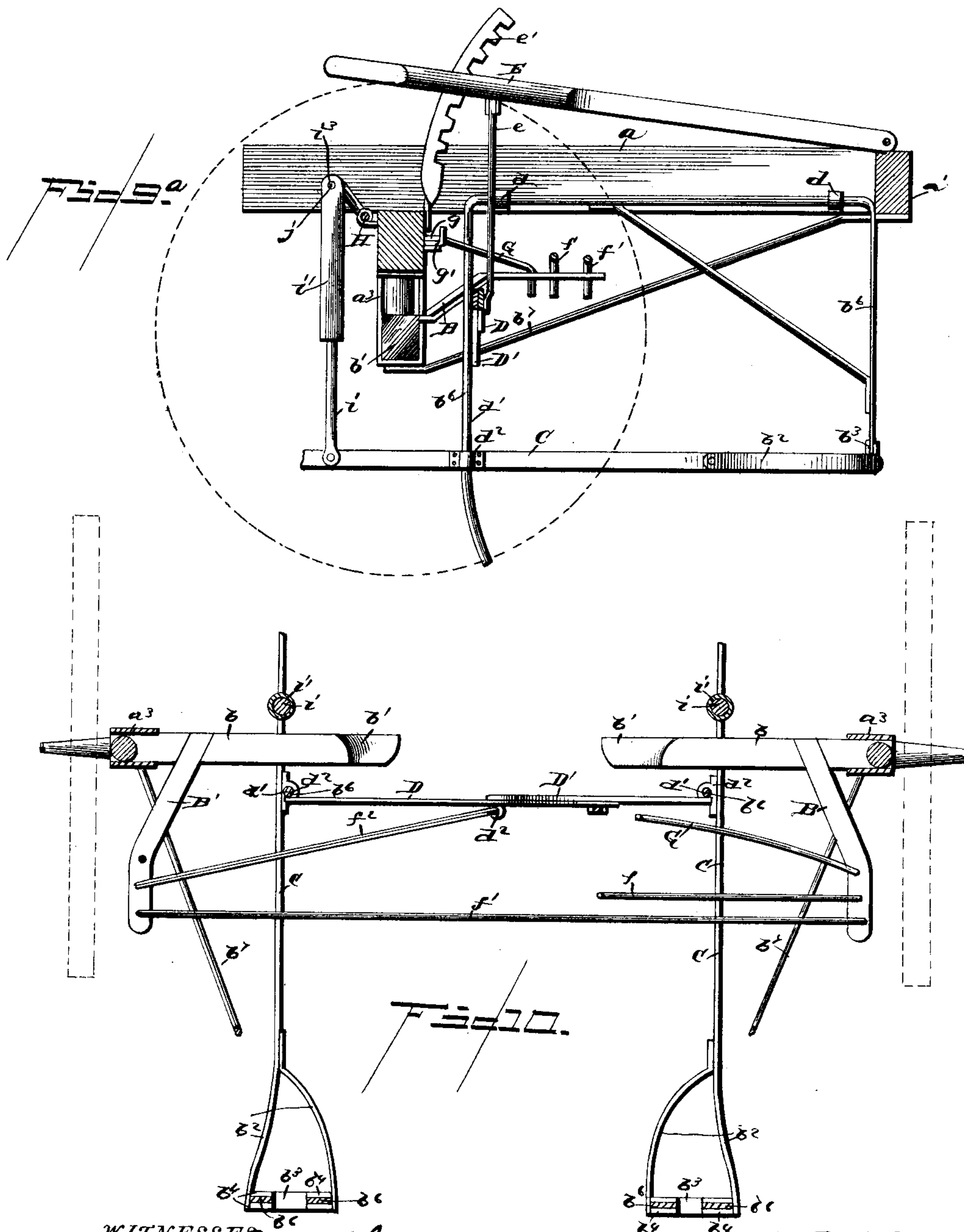
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Patented Aug. 21, 1888.



WITNESSES.
M. H. Humphrey.
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INVENTOR.
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UNITED STATES PATENT OFFICE.

JACOB W. KRAUS, OF STERLING, OHIO.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 388,206, dated August 21, 1888.

Application filed May 9, 1888. Serial No. 273,372. (No model.)

To all whom it may concern:

Be it known that I, JACOB W. KRAUS, a citizen of the United States of America, residing at Sterling, in the county of Wayne and State of Ohio, have invented certain new and useful Improvements in Cultivators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention pertains to certain new and useful improvements in cultivators, having for its object the provision of simple and highly-efficient means for readily and easily operating drag-bars in the desired manner and for holding the same securely in position.

The invention therefore comprises the details of construction, combination, and arrangement of parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of my invention. Fig. 2 is a plan view thereof. Fig. 3 is a front end view. Figs. 4 and 5 are cross-sectional views on the lines *x x* and *y y*, respectively, Fig. 2. Figs. 6, 7, and 8 are detail views. Fig. 9 is a detail sectional view of the fender-bar and its connection. Fig. 9^a is a longitudinal sectional view on the line *x x*, Fig. 2. Fig. 10 is a horizontal sectional view on the line *y y*, Fig. 4.

Referring to the drawings, A designates the cultivator-frame, composed, preferably, of two side bars, *a a*, and front and rear cross-bars, *a' a'*.

To the under side of the rear cross-bar, *a'*, are connected hanger-plates *a'' a''*, wherein are pivotally secured short axles *b b*, upon the outer ends of which are secured the carrying-wheels. The inner opposite ends of these pivoted axles are grooved, as at *b'*, in which grooves the operator or driver places his feet. To each of these pivoted axles are secured the rear ends of outwardly-projecting arms B B', which, in connection with said axles, constitute levers for changing the direction of the movement of the carrying-wheels.

C C designate the outer drag-bars of each series thereof, and the forward forked ends, *b''*, of each of said drag bars C have a cross-bar, around which is placed a collar, *b'''*, to upwardly-projecting ears *b' b'* of which are loosely connected the lower ends of hanger-bars *b⁵ b⁶*,

said hanger-bar *b⁵* being pivotally connected at its upper end to the frame A.

The outer hanger-bars, *b⁵ b⁶*, are of approximately inverted-U shape, and are secured to the frame A by staples or eyes *d d*. The forward vertical arm of each hanger-bar *b⁶* is connected by a brace-bar, *b'*, with the central horizontal portion thereof. The rear vertical arm, *d'*, of each U-shaped bar *b⁶* is passed through a staple or eye, *d''*, secured to each drag-bar C for guiding the vertical movements of the drag-bars.

To the vertical arm *d'* of one of the U-shaped bars *b⁶* is loosely secured one end of a bent or angular lever, D, to the bend of which is secured by an eyebolt, *d''*, the upper inner end of an inclined arm, D', connected at its other end to the vertical arm of the other bar, *b⁶*.

E is a lever fulcrumed at its forward end to the frame A, and is connected by an arm, *e*, with the free end of the lever D. This lever E is held at the desired point on a rack-bar, *e'*, by means of a spring-pressed arm, E', fitting over the end of said lever, said rack-bar being projected through coincident slots in said lever and sleeve. This rack-bar is secured to the rear cross-bar, *a''*, of frame A. A spring, *e''*, is inclosed in the end of said lever and presses against said sleeve, so as to hold the same tightly in contact with the rack-bar. By operating this lever E the drag-bars can be drawn toward or forced from each other and held at the desired point, said lever being connected by the rod *e* to the free end of the angular lever D, to which is loosely connected one end of the arm D'. By moving the lever E the lever D and arm D' will be drawn toward or moved away from each other.

F is a second lever, also fulcrumed to the front of the frame A, and to about the center of this lever is connected one end of an inclined rod, *f*, secured at its outer end to the outwardly-projecting arm B. To the outer end of this arm is connected one end of a horizontal connecting-rod, *f'*, secured at its other end to the other arm, B'. A second inclined rod, *f''*, is connected to the arm B', and has its hooked end passed through the eyebolt *d''*, before referred to.

G is a sliding arm connected at its outer end to the arm B, and the same is provided with a

loop, g , on its inner end, designed to hug a short projecting plate or lug, g' , of the frame A. The sides of this loop are provided with coincident apertures g^2 , through which and an aperture in said plate or lug g' is passed a securing-pin, g^3 , for holding the parts rigid when desired, and the shovel-beams can then be moved from side to side and the axle held rigid. Ordinarily this pin g^3 is not inserted in place.

It will be seen that by moving the lever F the same will, through the agency of the connecting-rods and the projecting arms B B', effect the turning of the short axles in the direction in which it is desired the carrying-wheels should move, and by means of the connecting-rod f^2 the drag-bars will be shifted accordingly.

H is a rocking bar secured to the rear cross-bar of the frame A, and one side arm thereof is formed into a lever, h , which engages a curved rack-bar, h' , attached to the cultivator-frame.

I I are two rear hanger-bars connected at their upper ends to the side arms of the rocking bar H. Each of these rear hanger-bars consists of a rod, i , having a circular portion and T-shaped end, and an upper sleeve, i' , through which the upper portion of said rod i is passed, and is held by being turned so that its upper shoulders shall bear against inwardly-projecting flanges i^2 i^2 of said sleeve. Two parallel apertured cheeks, i^3 i^3 , project from this sleeve, and between their upper ends is secured a U-shaped collar, J, which hugs the side arms of the U shaped bar H, the same being held by a cross-pin, j , passed through a groove in each of said arms. By operating the lever-arm h of the rocking bar H the rear ends of the drag-bars can be raised or lowered, as desired.

K is a fender, which is secured on an incline on the rear end of its bar k , which in its forward end has a circular opening, k' , through which is passed a nutted bolt, k^2 , and the circular portion of a collar, k^3 , held in position by the nut screwed on said bolt.

Between the inner drag-bar and the fender-bar k is placed an adjusting-plate, k^4 , having upper and lower oppositely-projecting right-angular flanges, k^5 k^6 , the former being designed to rest on the upper edge of said drag-bar. This plate k^4 is provided with a longitudinal slot, k^7 , through which the bolt k^2 is passed.

The fender-bar k is designed to have an inclined position and rest upon the lower flange, k^6 , whereby by moving the plate k^4 said fender can be raised or lowered and held at the desired point.

I claim as my invention—

1. As an improvement in cultivators, the lever having a spring inclosed in its upper end, the sleeve fitted on and inclosing said end of the lever and having coincident apertures, in combination with the rack-bar, substantially as shown and described.

2. In a cultivator, the combination, with the cultivator-frame, the short axles, the arms projecting forwardly therefrom, and the connecting-rods, of the curved arm G, having a looped end, and the plate or lug secured to said frame and around which said loop is passed, substantially as shown and described.

3. The combination, with the frame and the drag-bars, of the U-shaped hanger-bars b^6 , the collars b^3 , passed around connecting-bars of said drag-bars, the eyes or staples d , the curved lever D, the arm D', and the lever E, connected to said former lever, substantially as shown and described.

4. In a cultivator, the combination, with the frame and the rocking bar, of the rear hanger-bars having the bars provided with T-shaped ends, the spring encircling said bars, the sleeves having apertured cheeks, the U-shaped collars, and the cross-pins, substantially as shown and described.

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

JACOB W. KRAUS.

Witnesses:

JOHN LEE, Jr.,
G. W. ROSS.