No. 629,875. Patented Aug. 1, 1899.

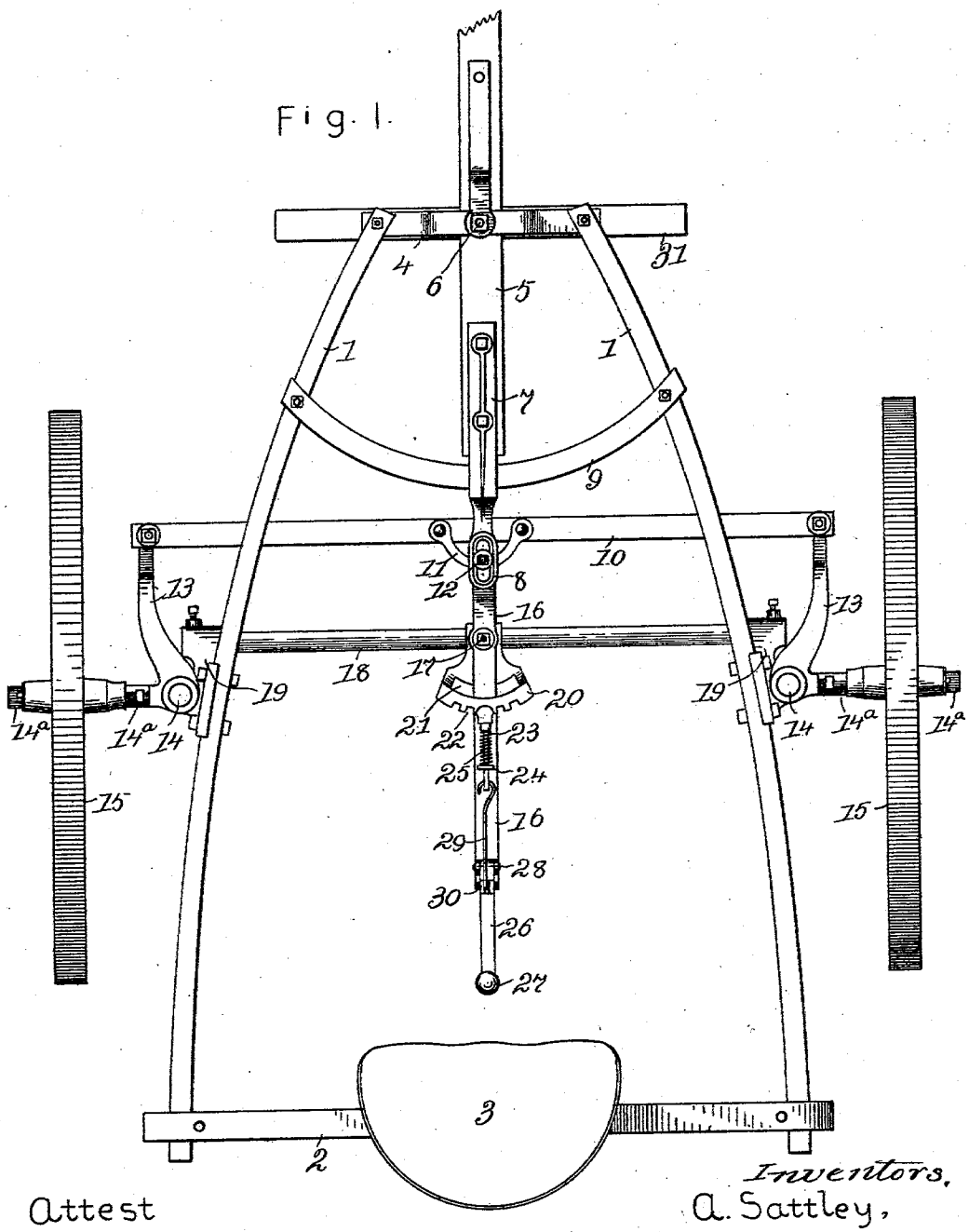
A. & M. SATTLEY.

CULTIVATOR.

(Application filed Apr. 1, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



Attest

Nora Graham.

Ira Graham.

Inventors,

A. Sattley,

M. Sattley.

by L. P. Graham

their attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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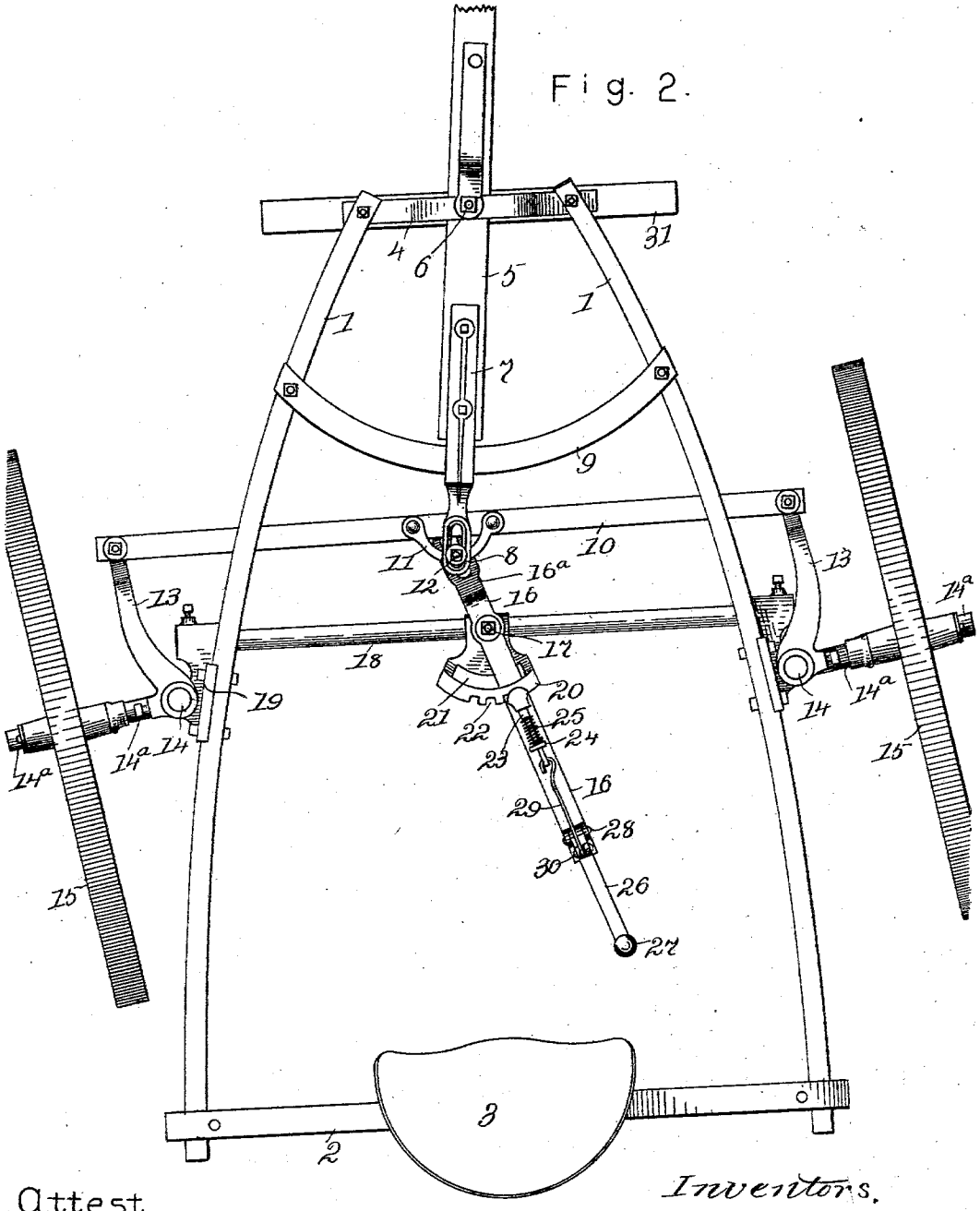
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Fig. 2.



Attest

Nora Graham

Ina Graham.

Inventors.

A. Sattley

M. Sattley

by L. P. Graham

their attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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(No Model.) 3 Sheets—Sheet 3.

Fig. 3.

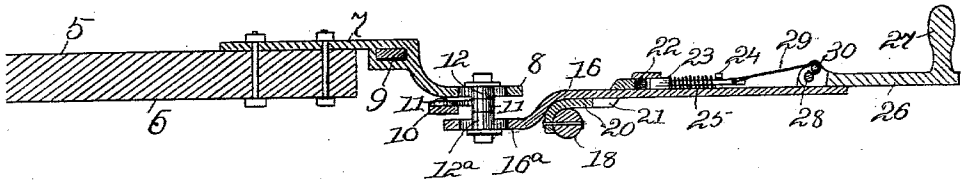
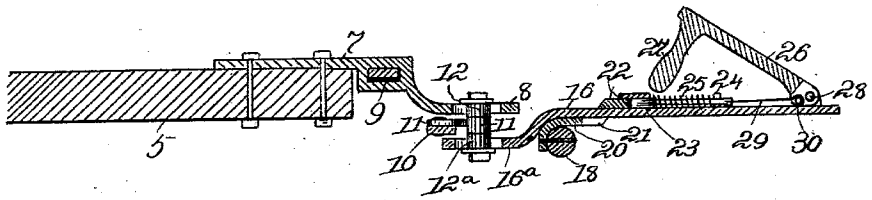


Fig. 4.



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Nora Graham.

Ina Graham.

Inventors

A. Sattley

M. Sattley

by L. P. Graham

their attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARCHIBALD SATTLEY AND MARSHALL SATTLEY, OF SPRINGFIELD, ILLINOIS, ASSIGNORS TO THE SATTLEY MANUFACTURING COMPANY.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 629,875, dated August 1, 1899.

Application filed April 1, 1899. Serial No. 711,460. (No model.)

To all whom it may concern:

Be it known that we, ARCHIBALD SATTLEY and MARSHALL SATTLEY, of the city of Springfield, county of Sangamon, and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

This invention relates to riding-cultivators. It provides increased facility for following crooked rows and for cultivating hillsides. It is embodied in the structure hereinafter described, and it is particularly pointed out in the appended claims.

In the drawings forming part of this specification, Figure 1 is a plan of so much of a riding-cultivator as is needed to explain our invention, the wheels and the frame being set to follow the tongue. Fig. 2 is a similar representation with the wheels and frame set to travel abruptly to one side of the line of draft. Figs. 3 and 4 are vertical sections lengthwise of the guiding-lever.

The side bars of the frame are shown at 1, the seat-bar at 2, the seat at 3, and the front cross-bar at 4, though these members are merely typical or representative of a frame that may be made in any desired form and manner without affecting the essential features of our invention. The tongue 5 is pivoted at 6 to swing horizontally in the front end of the frame, and it has a rearward-extending casting 7, provided on its rear end with a head 8, which has a lengthwise-extending vertical slot. The casting 7 is slotted from side to side to receive the arc-formed cross-bar 9, the curvature of which is concentric with the pivot of the tongue, and such cross-bar forms a support on which the rear end of the tongue may swing horizontally. The axles 14^a of carrying-wheels 15 have upward extensions 14, which journal in brackets 19, fastened to frame-bars 1. Forward-extending arms 13 are fixed one on the upper end of the vertical extension of each wheel-axle, and cross-bar 10 is connected pivotally with the front end of each arm. A bracket 11 is fastened to the cross-bar 10 at the longitudinal center thereof. It extends rearward therefrom, and it carries an upward-extending roller 12 and a downward-extending roller 12^a, as shown in the sectional views.

A shaft 18 extends from one side bar of the frame to the other, connecting fixedly at its ends with brackets 19. To the center of the shaft 18 is fastened an arc-formed rack 20, which is slotted at 21 and notched or toothed at 22. A lever 16 is pivoted to the rack at 17 above the shaft 18. It extends through the slot of the rack. It has a bolt 23 to engage the notches thereof, and its forward end is curved downward and slotted to receive the downward-extended roller 12^a of bracket 11. The lock-bolt 23 has a sliding bearing in a lug 24, which rises from lever 16, and a spring 25 bears against the lug and against a shoulder on the bolt and tends to hold the bolt in engagement with a notch in the rack. A handle-bar 26 is pivoted at 28 to lever 16 in a manner to swing upward. It has an upward-extended handle 27, and it connects with the lock-bolt 23 by means of rod 29. The pin 30, through which rod 29 connects with the handle-bar, is located in the rear of the pivot 28 of the handle-bar when the bar is in operative position, as shown in Figs. 1, 2, and 3; but by swinging the handle-bar forward, as shown in Fig. 4, the pin 30 is moved in front of the pivot of the bar. So when the handle-bar is swung back in position to be manipulated by the driver the lock-bolt is held out of engagement with the notches of the rack; but when the bar is swung forward the lock may be made to engage either of the notches.

One of the notches of the rack is in line with the center of the frame, and when the lock-bolt is in engagement with such notch or when the lever is held in the position shown in Fig. 1 the cultivator will travel forward and follow the line of draft the same as if the frame were fixed with relation to the tongue and the wheel-axles were fixed with relation to the frame. When it is desired to make a turn to one side or the other of the line of draft, the handle 27 is swung in the opposite direction, the bar 10 is shifted endwise by the slotted head 16^a acting on roller 12^a, thus turning the wheels in the required direction, and at the same time the front end of the frame is swung in the same direction as the wheels by roller 12 engaging the slotted head 8 and forcing the rear end of the tongue

to one side. The wheels turn on vertical pivots 14, while the tongue swings with the bearing in the neck-yoke for a pivot, and the front end of the frame is set over bodily in the desired direction at the time the wheels are turned to run that way. This compound action gives a quicker and more decisive side swing than can be obtained by either action alone, and it is obtained by comparatively slight side motion in the handle.

When the cultivator is used along a side of a hill, the lever may be locked with the wheels and the frame inclined slightly uphill, and the downward creep or slide will thus be entirely neutralized.

As the simultaneous swing of the frame and the wheels is independent of other operations of the cultivator, no cultivating mechanism is shown. Bar 31 provides a hitch for the cultivator-beams, however, and cross-bar 18 may be used to carry the mechanism by means of which the beams are raised and lowered. We prefer to swing the beams at their front ends and provide them with stirrups for foot guidance, so that the operator may employ either his feet or his hands, or all together, according as his judgment or inclination may prompt or circumstances may dictate; but this is a matter that is not essentially connected with the invention under consideration.

As the rearward extension of the tongue, the forward extension of the lever, and the center of cross-bar 10 each travel in a slightly-different direction in making the side shifts, the slots in heads 8 and 16ª are provided to accommodate such diversity of motion.

What we claim is—

1. In a cultivator, the combination of a frame, carrying-wheels the axles of which have vertical pivots in the frame, a tongue swung on a vertical pivot in the front end of the frame and extended rearward therefrom, and a connection between the rearward extension of the tongue and the vertical pivots of the wheel-axles, substantially as described, whereby the front sides of the wheels and the rear end of the tongue may be swung simultaneously in the same direction.

2. In a cultivator, the combination of a frame, carrying-wheels the axles of which have vertical pivots in the frame, a tongue swung on a vertical pivot in the front end of the frame and extended rearward therefrom, arms fixed on the vertical pivots of the wheel-axles and extended forward therefrom and a connection between the rearward extension of the tongue and the arms whereby all may be swung sidewise simultaneously.

3. In a cultivator, the combination of a frame, carrying-wheels the axles of which have vertical pivots in the frame, a tongue swung on a vertical pivot in the front end of the frame and extended rearward therefrom, arms fixed onto the vertical pivots of the wheel-axles and extended forward therefrom, a bar connecting the arms, a lever for shifting the bar and a connection between the bar and the rearward extension of the tongue.

4. In a cultivator, the combination of a frame, carrying-wheels the axles of which have vertical pivots in the frame, a tongue swung on a vertical pivot in the front end of the frame and having a vertically-slotted rearward extension, arms fixed onto the vertical pivots of the wheel-axles, a cross-bar connecting the arms, a pin on the cross-bar engaging the slotted extension of the tongue, and a lever in the rear of the cross-bar having a slotted end engaging a pin on the bar.

5. In a cultivator, the combination of a frame, carrying-wheels the axles of which have vertical pivots in the frame, a tongue swung on a vertical pivot in the front end of the frame and having a vertically-slotted rearward extension, arms fixed onto the pivots of the wheel-axles, a cross-bar connecting the arms, a pin on the cross-bar engaging the slotted extension of the tongue, a lever in the rear of the cross-bar having a slotted end engaging a pin on the bar, a notched rack for the lever and a lock-bolt on the lever to engage the notches of the rack.

6. In a cultivator, the combination of a frame, carrying-wheels the axles of which have vertical pivots in the frame, a tongue swung on a vertical pivot in the front end of the frame and having a vertically-slotted rearward extension, arms fixed onto the pivots of the wheel-axles, a cross-bar connecting the arms, a pin on the cross-bar engaging the slotted extension of the tongue, a lever, a lock-bolt on the lever to engage the notches of the rack, a handle-bar swingable on the lever, and a connection between the handle-bar and the bolt whereby the bolt is held out of the notches while the handle-bar is in operative position.

In testimony whereof we sign our names in the presence of two subscribing witnesses.

ARCHIBALD SATTLEY.
MARSHALL SATTLEY.

Witnesses:
MARTIN HEINRICH,
GEO. E. AYRES.