J. C. RICH.

Cultivator.

No. 60,422. Patented Dec. 11, 1866.

Fig. 3.

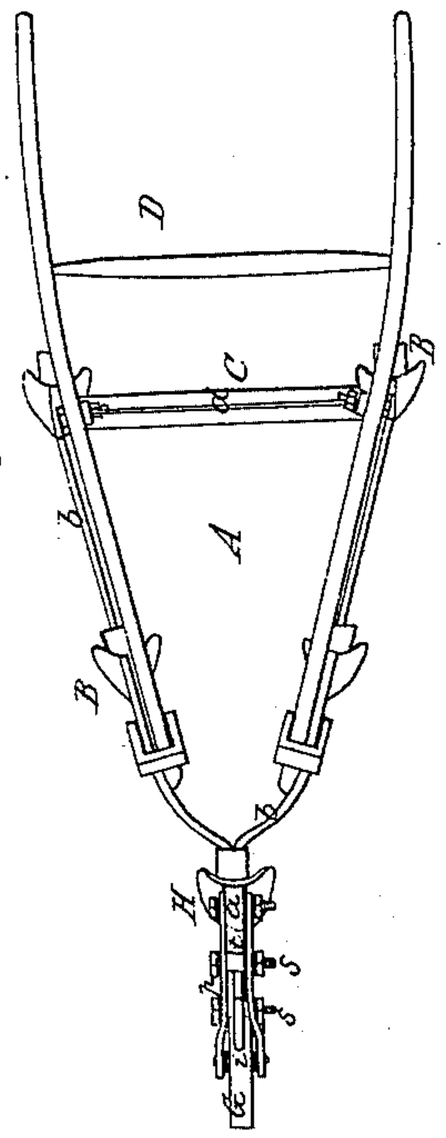


Fig. 1.

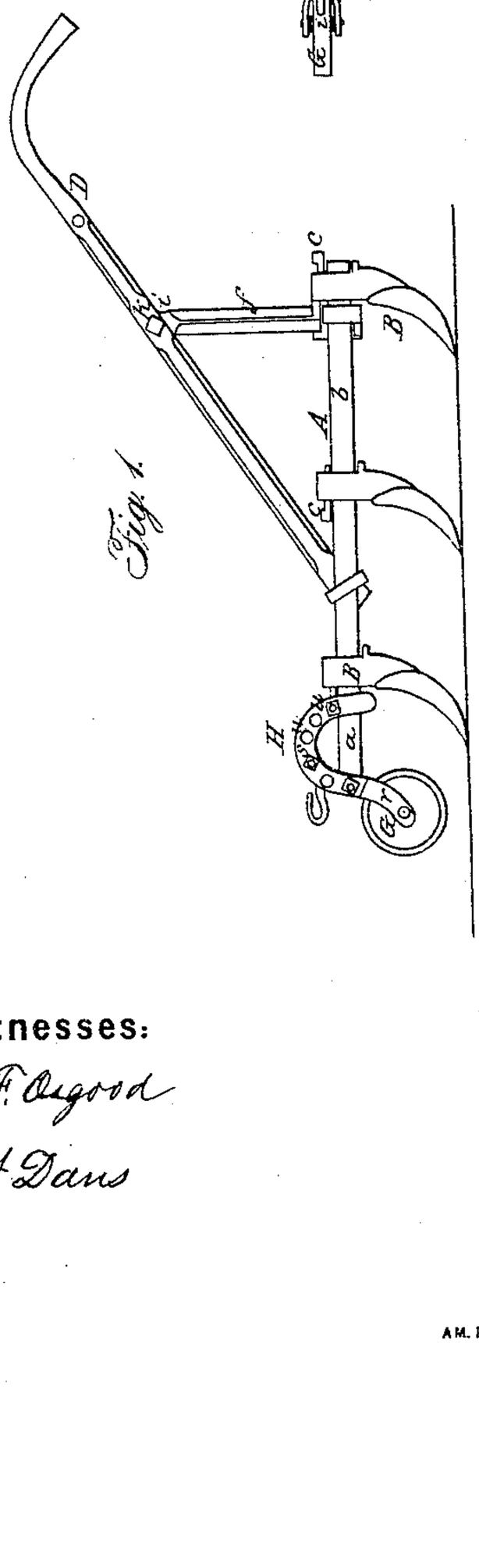


Fig. 5.

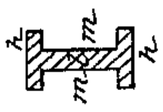


Fig. 6.

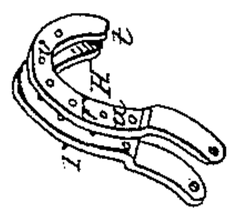


Fig. 4.

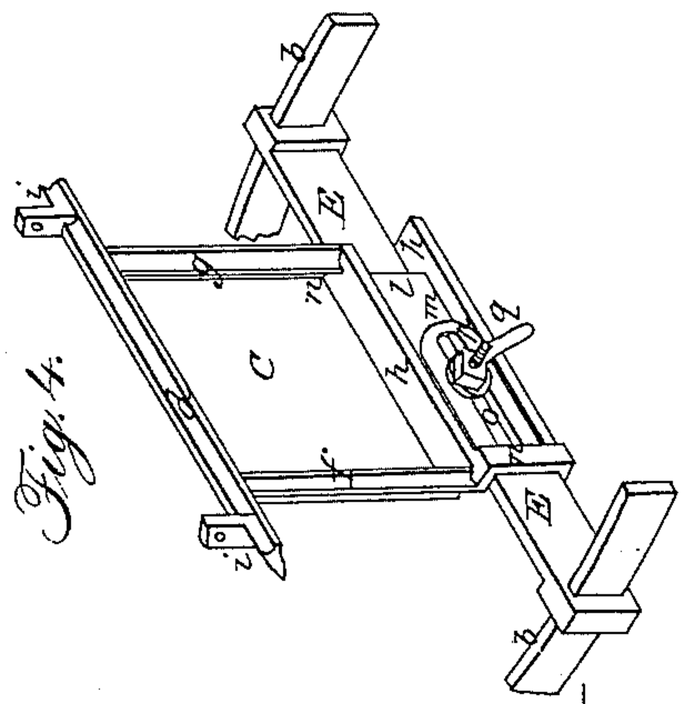
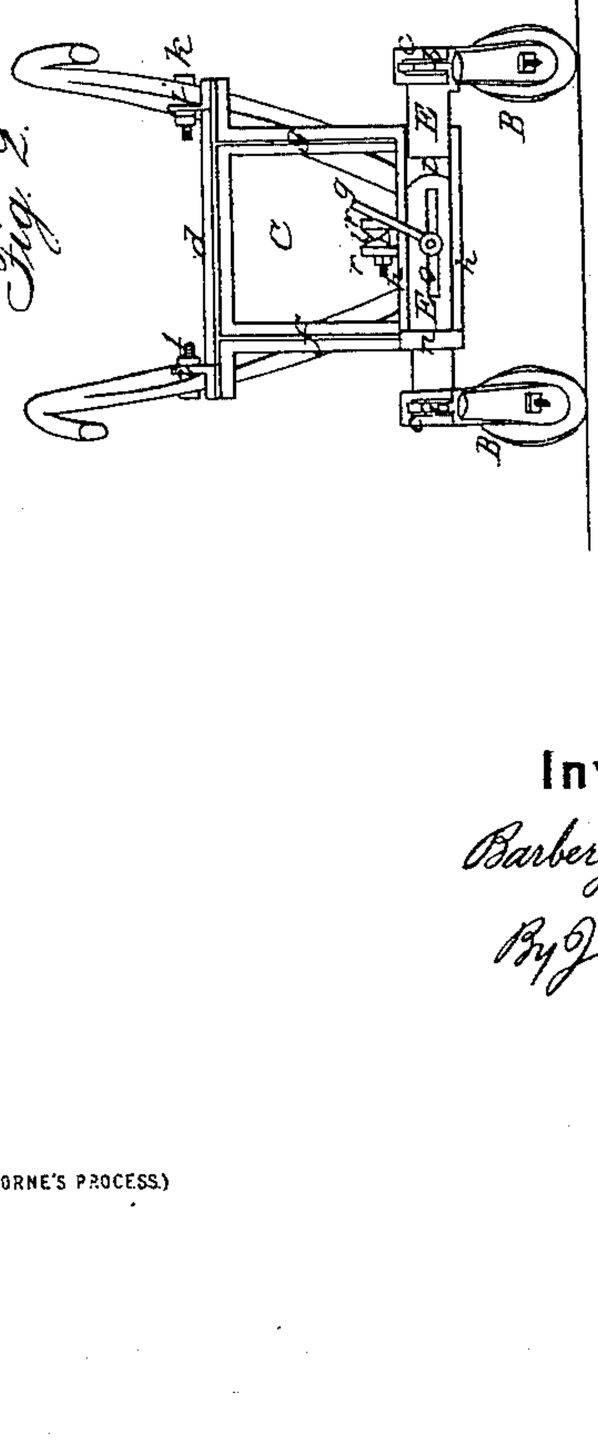


Fig. 2.



Witnesses:

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IMPROVEMENT IN CULTIVATORS.

BARBERY S. RICH, OF PENFIELD, NEW YORK, ADMINISTRATRIX OF THE ESTATE OF J. C. RICH, DECEASED.

Letters Patent No. 60,422, *dated December* 11, 1866.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that J. C. RICH, of Penfield, in the county of Monroe, and State of New York, now deceased, did invent a certain new and useful improvement in Iron Cultivators; and I, BARBERY S. RICH, administratrix of said J. C. RICH, do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a side elevation of the improved cultivator.

Figure 2, a rear elevation.

Figure 3, a plan

Figure 4, a perspective view of the cast-iron standard frame, and the expanding arms.

Figure 5, a diagram showing a cross section of the bottom of the standard frame.

Figure 6, a perspective view of the gauge-wheel stirrup.

Like letters of reference indicate corresponding parts in all the figures.

This invention consists, first, in the combination of a cast-iron standard frame of peculiar form and construction, with expanding arms holding a cultivator frame, made of light bar iron; and, second, the combination of a gauge-wheel stirrup, made of two parts with the flat end of the cultivation frame, the whole operating substantially as hereinafter set forth.

As represented in the drawings, A is the cultivator frame, which is made of tire iron, or from a slender bar that will allow the necessary flexibility. This bar is doubled at the front end, as shown at *a*, so that the two sides will be flat together for the attachment of the gauge-wheel stirrup, while, in the rear, the two sides are expanded or spread apart, as shown at *b b*, to form the body of the cultivator. The teeth B B may be secured to these sides in any convenient manner, but in the drawings the connection is made by forming mortises in their upper ends, and simply slipping them endwise over the parts *b b*, and then securing them by keys or wedges, *c c*. In the rear is situated a cast-iron standard frame, C, composed preferably of four sides, *d f g h*, in the form of a square. The upper side *d* projects somewhat beyond the sides *f g*, and has at the extremities right angled bearings or lugs, *i i*, in which the handles D D are secured by bolts *k*. The bottom of the frame consists of two horizontal webs, *h h*, with a vertical division, *l*, between, thus forming grooves, *m m*, at the sides for the reception of the expanding arms E. At opposite ends, and on opposite sides, the part *h* is also provided with eyes, *n n*, to guide and hold the expanding arms passing through them. The expanding arms are simply iron bars fitting closely in the grooves *m* on opposite sides of the division *l*, and having the sides *b b* of the cultivator frame passing through their outer ends. They are provided with longitudinal slots, *o o*, passing over a screw-bolt, *p*, fixed rigidly in the centre of the division *l*, and on this screw-bolt rests a hand-nut, *q*, by which the arms are tightened in any desired position. Iron cultivators have long been in use, and are esteemed for their lightness and the freedom of the sides *b b* from clogging like thick wooden ones. But it has been difficult to render the sides expansible, and properly connect the handles, and still preserve that rigidity and stiffness in the rear which is necessary in controlling and guiding the apparatus. In raising or depressing the rear, the parts have been so loose and disconnected as to cause much trouble. In the arrangement of the standard frame C, as above described, this difficulty is obviated, for while the sides are allowed to expand or contract at pleasure, a firm attachment is made for the handles, and the whole rear portion of the cultivator forms a stiff connection throughout. It will be seen that the close fitting of the expanding arms E in the grooves *m*, with the flanges *h* above and below, will effectually prevent any racking or sagging in the centre, and therefore the cultivator may be raised or depressed in the rear, or otherwise actuated without difficulty. In this manner the expanding arms brace in the grooves their whole length so effectually that, under ordinary circumstances, they cannot become loose if properly held by the screw and nut *p q*. Being cast, the standard frame is very easily and cheaply formed. The division *l* serves as a permanent guide to separate the expanding arms, and also as a stationary attachment for the screw-bolt *p*, over which the slots of the said arms slide. The webs *h h* not only serve to hold the arms in place, and brace with them against vertical strain, but their right angled form, in connection with the division *l*, insures the maximum of strength at that point where the greatest action comes. The gauge-wheel G is of ordinary form, but its stirrup or support, H, is of peculiar construction, to

adapt it to the flat portion, *a*, of the cultivator frame, which it fits. To this end it is made of two parts, *r r*, of the goose-neck form, shown, which fit on opposite sides of the flat portion *a*, and are clamped to it by screws and nuts, *s s*. In order to keep the sides at a proper distance apart when clamped, they are provided on the inside with projections, *t t*, which strike together, those at the bottom of the rear end passing under the part, *a*, to retain the parts in place. The stirrup is provided with a series of gauge holes, *u u*, by which it is adjusted higher or lower on the part *a*. It is also provided with a clevis, *v*. resting between the sides *r r* upon one of the screws, *s*. This arrangement of the divided stirrup renders it easy to apply to the cultivator, and it is also very convenient and effective in practice.

What I claim as the invention of the aforesaid J. C. RICH, is—

1. The standard frame C, provided with the lugs *i* at the top, and the parts *h h l n* at the bottom, when combined with expanding arms E E of a flexible metallic cultivator, the whole operating substantially as and for the purpose specified.

2. The guage-wheel stirrup, composed of two counterparts, *r r*, and provided with the projections *t t*, when combined with the flat side of *a* of the cultivator frame as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

BARBERY. S. RICH.

Witnesses:

ORRIN M. CLARK,

WILLIAM P. CRANE.