

# Lynch & Raff, Wheel Cultivator.

No. 94,623.

Patented Sep. 7. 1869.

Fig. 1.

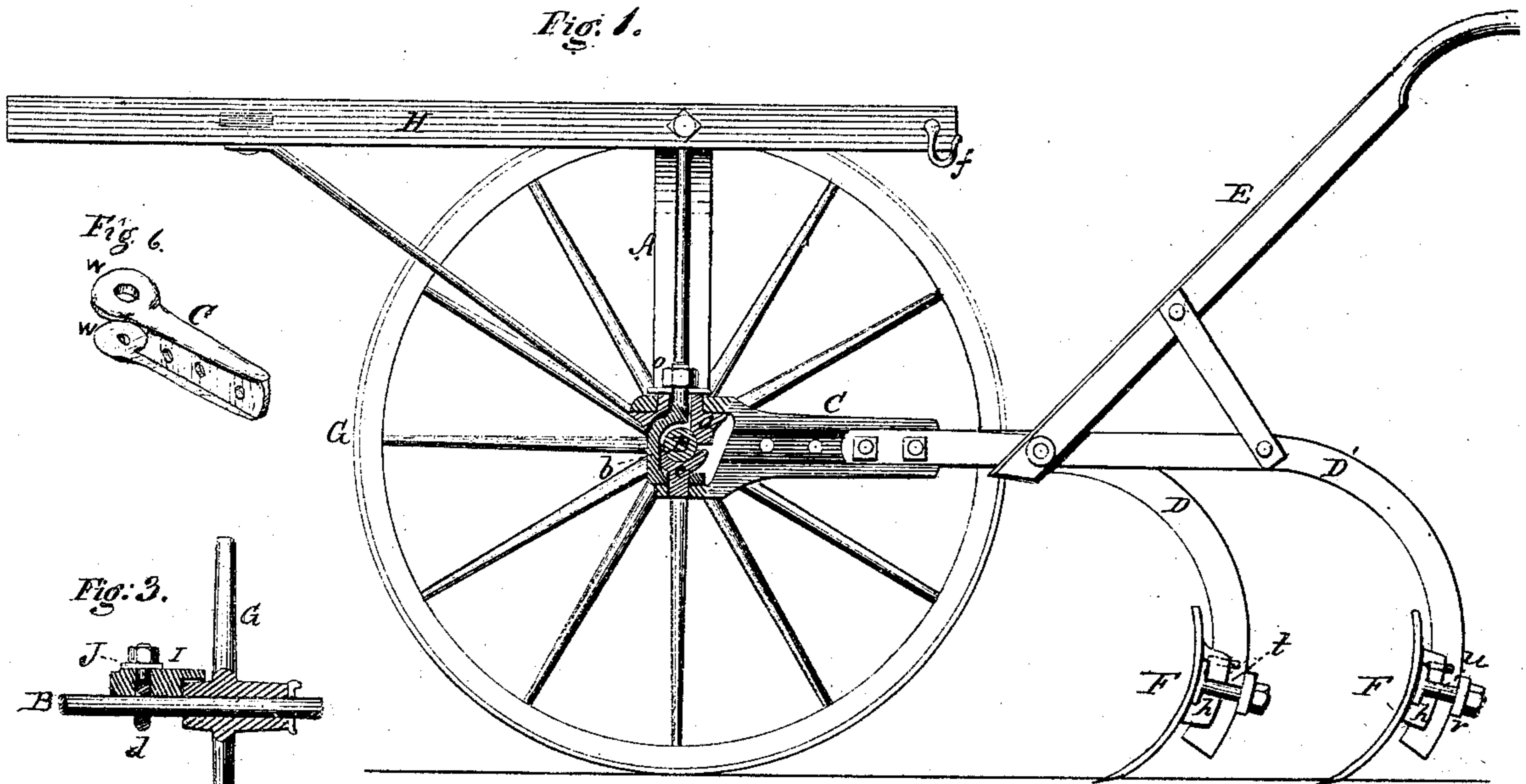


Fig. 6.

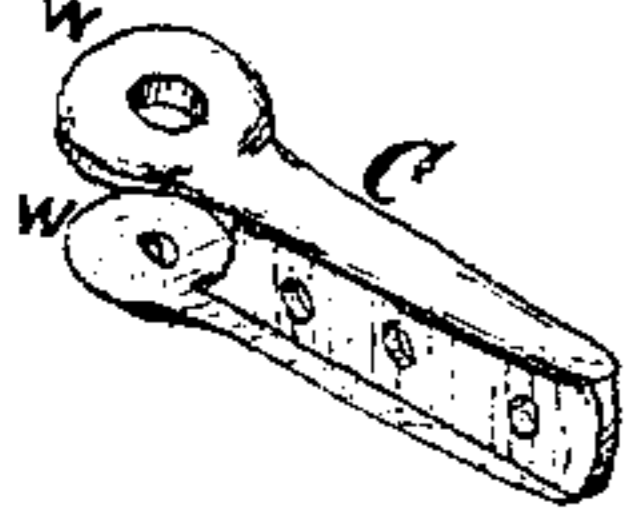


Fig. 3.

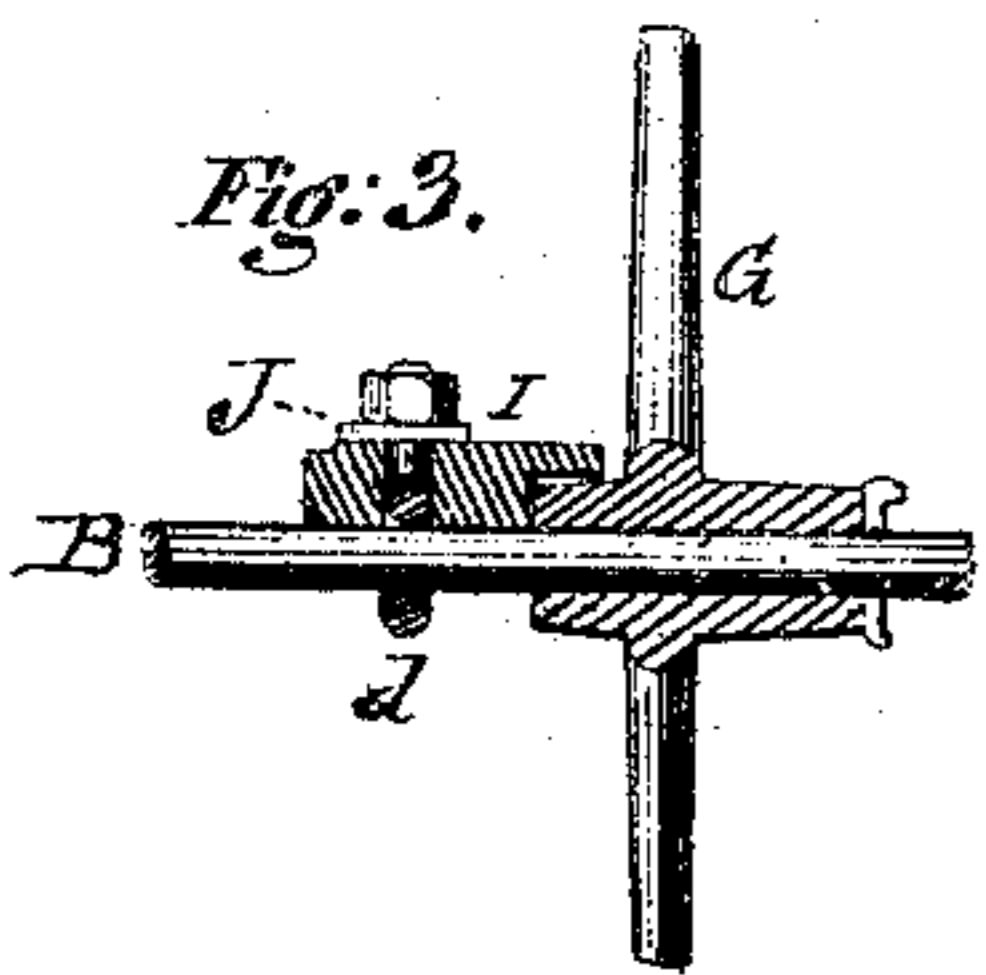


Fig. 4.

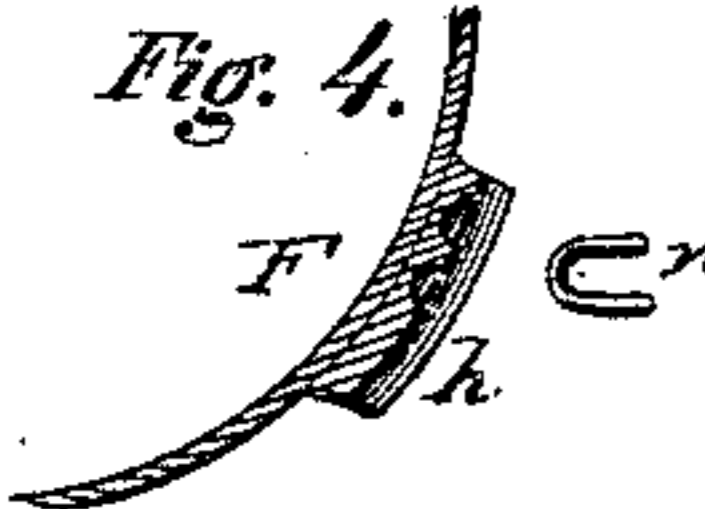


Fig. 2.

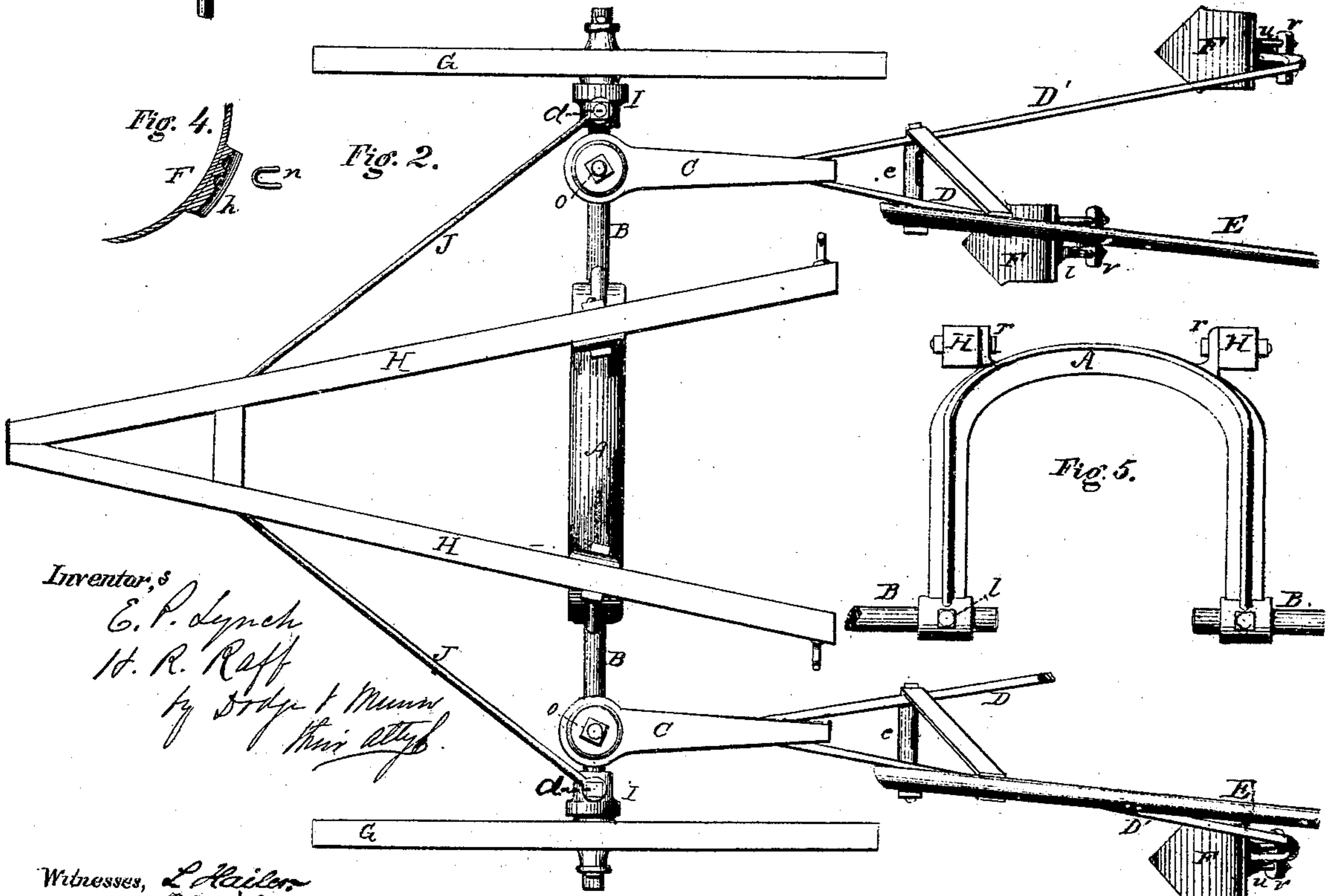
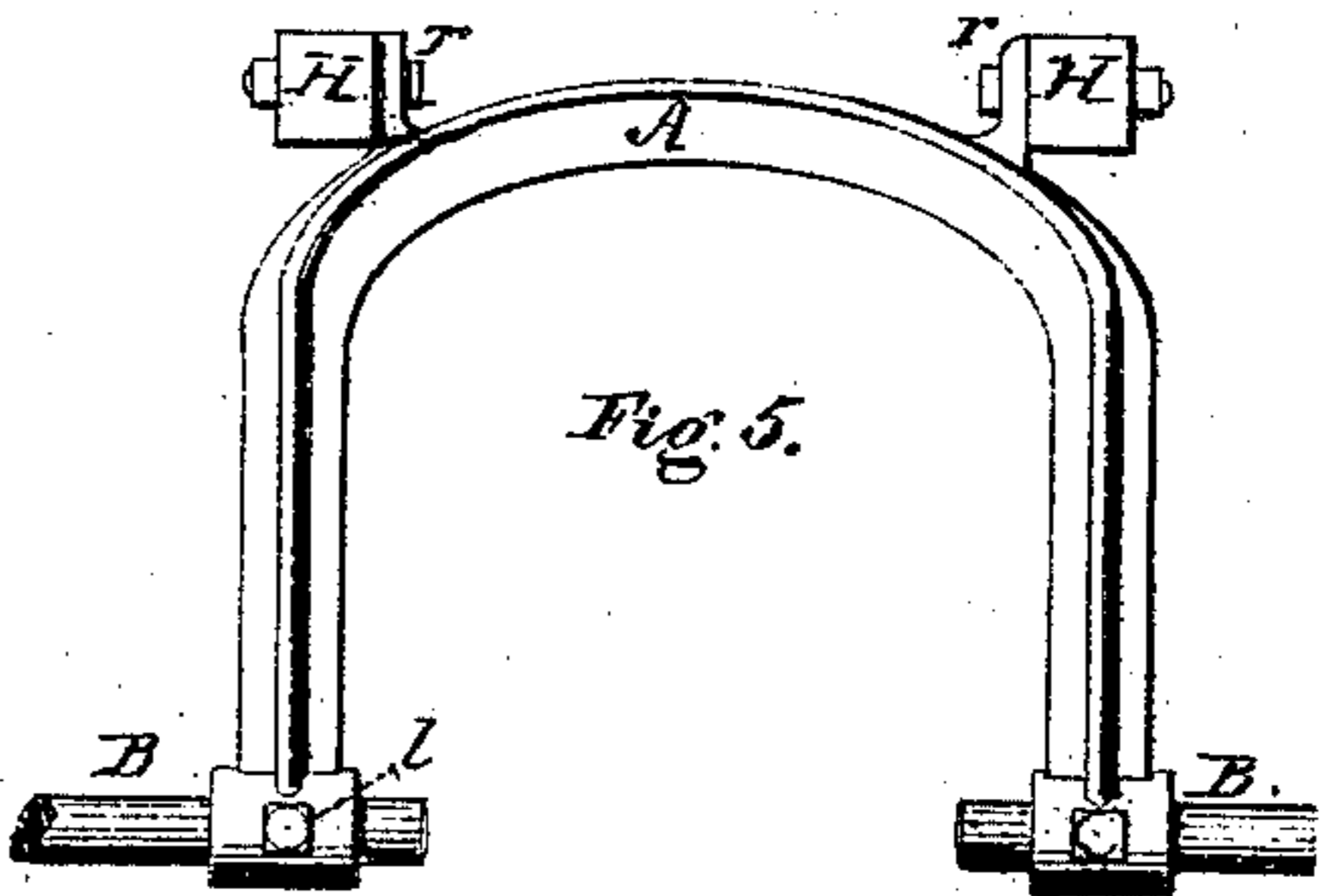


Fig. 5.



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## IMPROVEMENT IN WALKING-CULTIVATORS.

Specification forming part of Letters Patent No. 94,623, dated September 7, 1869.

*To all whom it may concern:*

Be it known that we, EDWARD P. LYNCH and HENRY R. RAFF, of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Cultivators; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use our invention, we will proceed to describe it.

Our invention relates to that class of implements denominated "walking-cultivators;" and the invention consists in certain novelties in the construction of the various parts, as hereinafter more fully explained.

Figure 1 is a side elevation, and Fig. 2 a top-plan view of the same. Figs. 3, 4, 5, and 6 are views of portions shown detached.

In constructing our cultivator, we make a cast-iron frame, A, of the form represented clearly in Fig. 5, with a flange or lug, *r*, at each side, near the top, to which are bolted the bars H, which form the tongue. At its lower ends, on each side, this frame or yoke A has an enlargement or hub, with a hole bored in it, into which is inserted a round wrought-iron bar, B, which forms an axle on each side of for the wheels G, and to which also are attached the curved beams D and D'. These axles B are adjustable lengthwise in the yoke A, and are held therein by set-screws *l*, so as to be set to suit rows of different widths.

The plow-beams consist of flat curved bars of iron, there being two, one long and one short, one on each side. At their front end these bars are bolted to a cast-iron piece, C, which is made with a groove or recess on each side, of proper width to receive the beams D, as shown in Figs. 1 and 2, the beams diverging toward the rear, and being braced by a cross-bolt, *e*.

The piece C is provided with a series of holes, so that the beams may set forward or back, and thus be lengthened or shortened at will. This piece C is enlarged at its front end, and is bifurcated, so as to clasp two half-boxes, *a* and *c*, which are hollowed out on their

inner faces to fit on the axle B, as shown in Fig. 1. Each of these boxes *a* and *c* are provided with a journal that fits in a hole in the head of C, one in the upper and the other in the lower part, and they are clasped together on the axle by a clip-bolt, *b*, which hooks around the lower box, *c*, and is bent to fit in a notch in the front side of box *a*, and extends up through the upper leaf of C, where it is secured by a nut, *o*, as shown in Fig. 1. By this arrangement the boxes turn vertically on the axle B, allowing the plows to be raised or lowered, while the pieces C turn laterally on the journals of the boxes *a* and *c*, thus permitting the plows or shovels to be moved laterally also, the two thus forming a sort of universal joint, which enables the plows to be moved in any desired direction.

The shovels F are made of plate-steel, and have secured to their rear face a cast-iron piece, *h*, which has a groove vertically along its center, on its rear, to receive the front edge of the beam D, and with a recess on each side, next to the shovel, to receive the head of a T-bolt, *u*, there being two of these bolts, one on each side of the beam, with a cross piece or plate, *v*, fitting on the end of these bolts *u* behind the beam, and being secured thereon by a nut on the end of each bolt, as shown in Figs. 1 and 2. By loosening these nuts the shovels F may be adjusted or detached at pleasure. There is also a transverse groove or recess made in the upper part of the block *h*, as shown in Fig. 4, for the purpose of receiving a piece, *n*, which is inserted between it and the beam D when it is desired to change the inclination of the shovel.

A handle, E, is bolted to each of the two sets of beams D, as represented in Figs. 1 and 2, these handles both being inclined to one side, so as to enable the operator to hold them and avoid walking on the row of plants.

The tongue consists of two wooden bars, H, having their rear ends projecting a short distance back of the frame A, and being provided with a hook, *f*, at their rear ends, upon which to hang the plows when raised from the ground. These bars H converge toward the front, thus forming a V-shaped frame, and they are firmly braced by rods J, which have one end bolted to them, and their other ends bolted to the axles B near the outer ends by

a clip-bolt, *d*, which also holds in place a cast-iron block, *I*, on the axle, this block *I* thus serving also as a shoulder for the inner end of the hub of the wheel to bear against, it being made with a projection or lip on its outer end, which fits over the hub, and thus protects it from dirt that may chance to fall from the rim of the wheel above, as shown in Fig. 3.

It will be observed that these bolts *d*, and also the bolts *b*, which fasten the beams to the axles, are clip-bolts, and that by simply loosening the nuts on them and the set-screws *l* the axles *B* can be shoved in or out to any desired extent, thus adjusting the cultivator to rows of various widths with very little labor.

By making the tongue in *V* form, as described, it is braced and made strong, though very light bars be used, and at the same time, by being spread at the rear, it keeps the animals asunder and prevents them from stepping on the plants.

By this method of constructing the various parts we make a very simple, cheap, and efficient implement.

Having thus described our invention, what we claim is—

1. The curved frame *A* and the adjustable axles *B*, constructed and arranged as herein described.

2. The curved cast-iron frame *A*, with the

forked or *V*-shaped tongue *H*, secured thereto by means of the flanges or lugs thereon, substantially as described.

3. The pieces *C*, formed with the grooves in their sides, and the series of holes for receiving, holding, and permitting the adjustment of the beams *D*, substantially as described.

4. The combination of the piece *C*, boxes *a* and *c*, and clip-bolt *b* with the axle *B*, all arranged as described.

5. The shoulder-piece or block *I*, secured to the axle *B*, substantially as described.

6. The shovels *F*, provided with the grooves and recessed block *h*, and secured to the beam by the *T*-headed bolts *u* and strap *v*, as set forth.

7. The pieces *n*, in combination with the grooved block *h*, for the purpose of adjusting the inclination of the shovels, substantially as described.

8. The piece *C*, cast with its arms *w* at the front, said arms having holes therein to receive and hold the journals of the boxes *a* and *c*, as herein described.

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