C. KROGH & P. G. KROGH.

Cultivators.

No. 133,865. Patented Dec. 10, 1872.

Fig. 1.

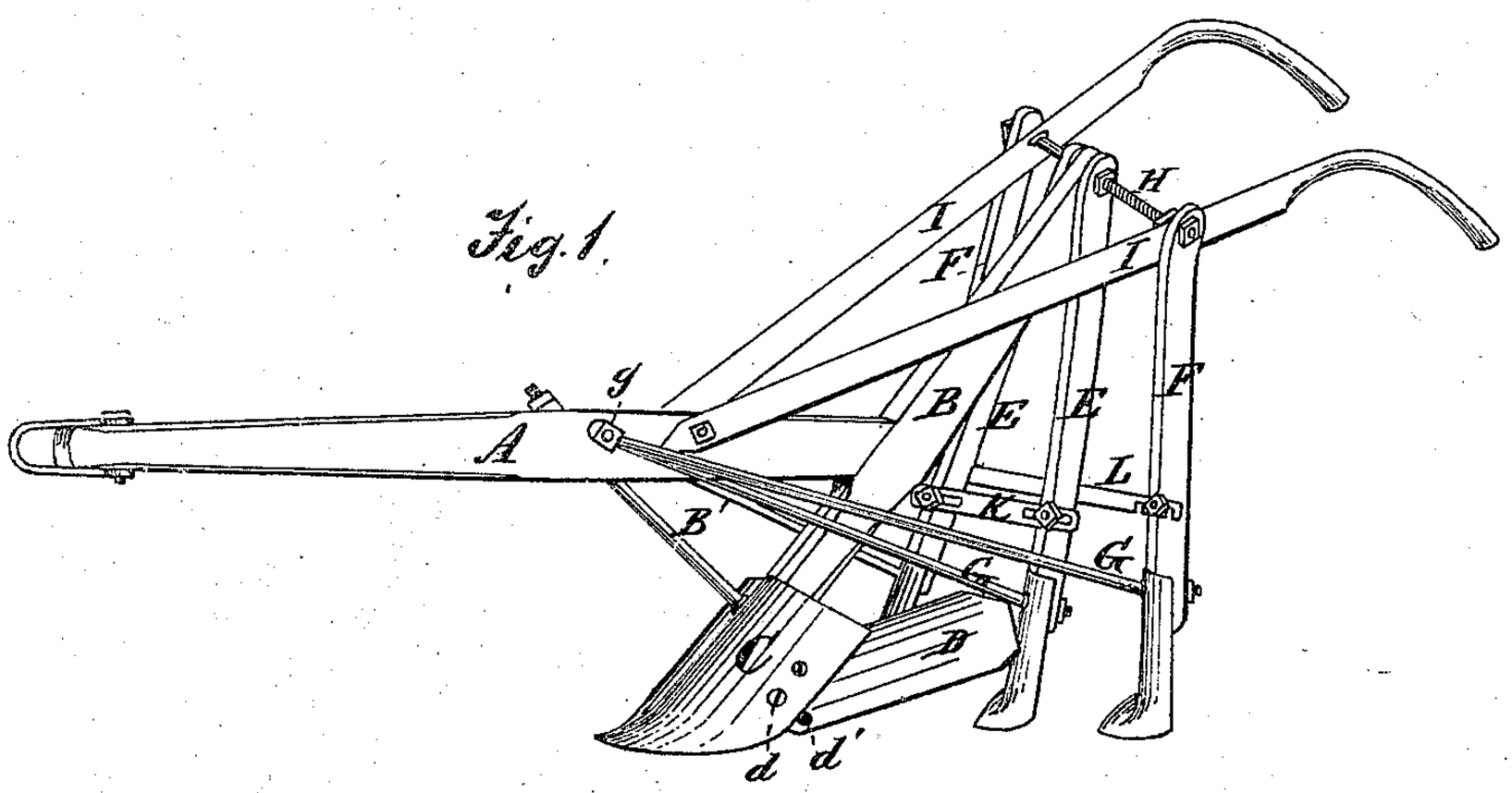


Fig. 2.

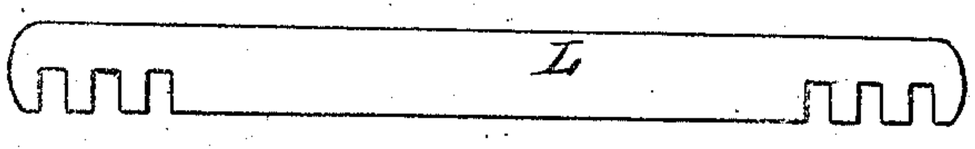


Fig. 3.

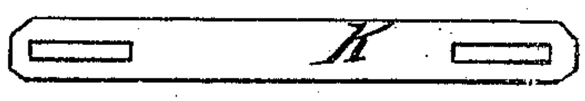


Fig. 4.

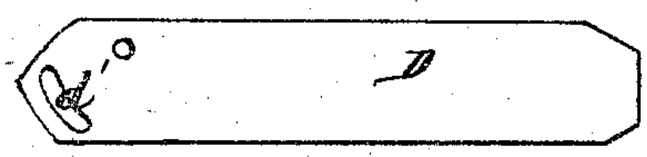


Fig. 5.

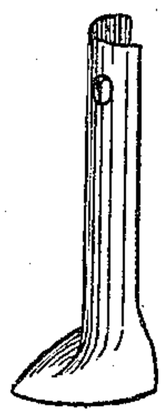
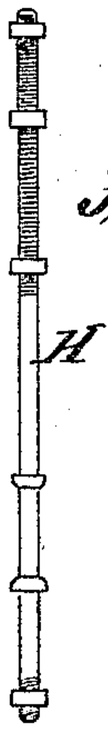


Fig. 6.



Witnesses.
A. Ruppert Jr.
J. Wm. Hister

C. & P. G. Krogh
Inventors
Pierce & Bro
Attys

UNITED STATES PATENT OFFICE.

CASPER KROGH AND PETER G. KROGH, OF KROGHVILLE, WISCONSIN.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **133,865**, dated December 10, 1872.

To all whom it may concern:

Be it known that we, CASPER KROGH and PETER G. KROGH, residing at Kroghville, in the county of Jefferson and State of Wisconsin, have invented a certain Improvement in Cultivators, of which the following is a specification:

This invention relates to that class of cultivators which are adapted to cultivate or loosen the surface of the earth between two rows of growing crops; and our improvement consists in the employment, in combination with a single shovel-plow, of a series of hoes, arranged in rear of the shovel, and adjustably connected to the plow, and in pairs with each other, as will be more generally explained in the ensuing description and specifically pointed out in the claim.

Figure 1 is a perspective view of our improved cultivator. Figs. 2 to 6 are views of detached parts of the machine.

The same letters of reference are used in all the figures in the designation of identical parts.

The standard B, secured to the rear end of the beam A, projects above as well as below the same, its lower end, which carries the shovel C, being tied to the beam by the diagonal tie B′ in the ordinary manner. Upon the back of the shovel, and at each side, is pivoted a wing, D, which is fixed in position by means of a bolt and nut, *d*. This bolt passes through a sectoral slot, *d′*, in the wing, which permits of such an adjustment of the same as to adapt it to operate to the best advantage under varying conditions of soil. We employ four hoes, arranged in rear of the shovel in pairs E E and F F. These hoes are severally fastened to the beam by a corresponding number of tie-rods, G, which are secured in pairs upon opposite sides of the beam by means of a bolt and nuts, *g*, and are at their upper ends hung upon a rod, H, which passes horizontally through the handles I and the upper end of the standard B. The rod H is preferably screw-threaded, and provided with the requisite number of nuts to hold the different parts in their proper relative positions; but one end may be formed with fixed collars, as shown in Fig. 6. The pair of hoes E E is held the required distance apart by the bar K, and the pair F F by a similar but longer bar, L. These bars are clamped to the hoes by bolts and nuts, and are at those points provided either with a series of notches or with longitudinal slots, so that the hoes may be spread apart, more or less, as circumstances may require. The blades of the hoes F F are turned up on one side, so that by changing them from one side of the plow to the other they may be made to throw the earth up to or away from the row of growing plants.

When it is desirable to use the single-shovel plow without the hoes, the latter are disconnected from the tie-rods G, which, together with the hoes F F, are turned up and tied to or hung upon the handles, while the hoes E E are swung over and carried on top of the beam. Either pair of hoes may be thus disconnected, while the other pair remains in operative position.

What we claim as our invention, and desire to secure by Letters Patent, is—

In combination with a single-shovel plow, hoes which are hung in rear of the shovel upon a rod, H, passing through the handles and the standard, adjustably connected in pairs by slotted or notched bars, and fastened to the beam by tie-rods, substantially as specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

C. KROGH.
PETER G. KROGH.

Witnesses:
CARL O. KROGH,
BERNHARD J. KROGH.