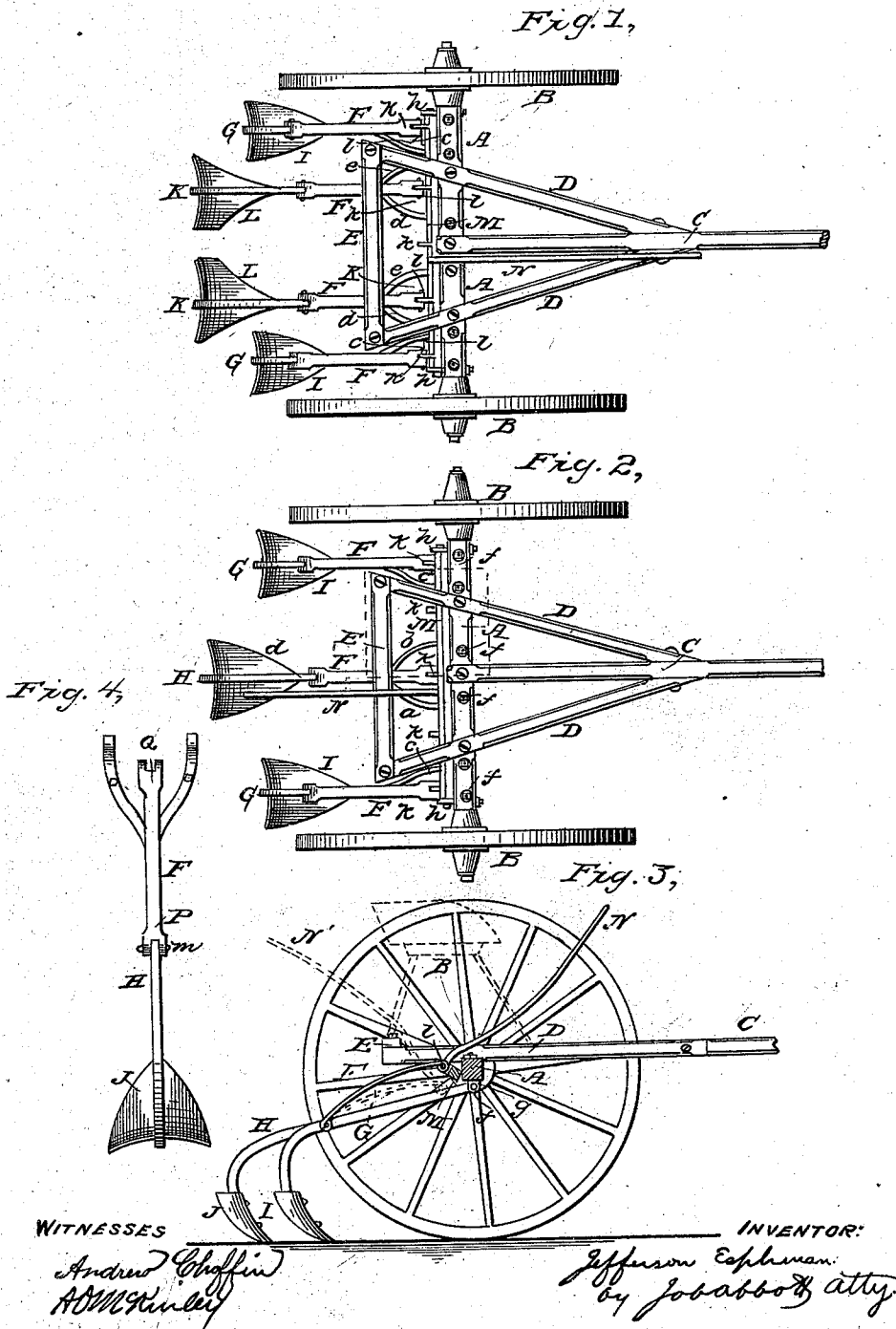


J. ESHLEMAN.
Wheel Cultivator.

No. 106,039.

Patented Aug. 2, 1870.



UNITED STATES PATENT OFFICE.

JEFFERSON ESHLEMAN, OF CANAAN CENTRE, OHIO, ASSIGNOR TO HIMSELF
AND LEVI E. MILLER, OF SAME PLACE.

IMPROVEMENT IN WHEEL-CULTIVATORS.

Specification forming part of Letters Patent No. **106,039**, dated August 2, 1870.

To all whom it may concern:

Be it known that I, JEFFERSON ESHLEMAN, of Canaan Centre, Wayne county, Ohio, have invented certain new and useful Improvements in Wheel-Cultivators; and I do hereby declare that the following is a full, clear, and exact specification thereof.

My invention relates to certain improvements in the construction of wheel-cultivators having the cultivator-teeth attached to independent tooth-arms, which are pivoted under the cultivator-axle; and it consists in the construction of a spring-metal link, which is arranged between the tooth-arm and the arm of a bent lever on the cultivator-axle, the object being to obtain in a single link a means both of raising the tooth when desired and of holding the tooth down under a spring-pressure while at work, thus diminishing the weight and cost of construction and lessening the danger of breaking or injuring the machine in the severe work to which it is subjected in the field.

In the accompanying drawings, Figure 1 is a plan of a machine embodying my invention. Fig. 2 is a plan of same, showing a different arrangement of teeth. Fig. 3 is a side view of the same, with the front wheel cut away. Fig. 4 is a plan of tooth-arm with tooth and spring thereon.

A is a cultivator-axle, which is supported on the wheels B B, and on which is secured the pole C, which is laterally secured by the bracing D E D, arranged as shown. The eyes *ff* are run through the axle A, and are secured by nuts, as shown; and the rock-shaft M, provided with hand-lever N, is pivoted between the eyes *h h* in the rear of the axle.

The outer tooth-arms, G G, have an eye formed at their heads, and have a side brace, *c*, also provided with an eye at its head, by which they are braced against lateral movement, and at their rear and lower ends are secured to the teeth I, as shown in Figs. 1, 2, and 3.

In Fig. 1 the central teeth and arms are two in number, and are arranged so as to adapt the machine to cultivating astride of a row of corn, potatoes, or other article which requires such cultivation, two of the machine-teeth working on one side of the row and two on the other. The central tooth-arms, K K, branch out into the braces *d e* at their front ends, so as to afford

the necessary lateral support to the teeth L, which are secured at their lower ends, and the ends of these braces *d e* are provided with eyes in the same manner as the arms G and braces *c*. These arms G G and K K are pivoted to the axle A by means of the rod *g*, (shown in Fig. 3,) which is passed through holes in the eyes *ff* and holes in the eyes at the ends of the arms G G and braces *c c d e d e* in a manner readily seen.

In order to raise the teeth in moving the machine when not in operation, as well as to hold the teeth down to their work when required, the spring-metal links F are arranged between the arms G K and the arms *k* on the rock-shaft M. These links are made of spring-steel, and are of a slightly-curved form, and are notched and bent over, so as to form two eyes at each end, as shown in Figs. 3 and 4. The lower ends of these links F are placed astride of the tooth-arms G K, to which they are secured by a pin, *m*, which passes through the eyes in the end of the links and a hole in the tooth-arms, and the upper ends of said links set astride the arms *k* on the rock-shaft M, where they are secured by a pin, *l*, which passes through the eyes in the link and a hole in the arm. Said links are of such length that when the lever N is thrown forward so as to rest on the brace-piece D the teeth I L will be raised clear of the ground, so that by holding down the lever N, which can readily be done by the foot of the driver mounted on the seat, indicated by dotted lines in Figs. 2 and 3, the machine can be moved on the road, as desired. When the teeth are to be brought down to their working position the driver grasps the lever N and raises it or simply removes his foot from it, and thus allows the teeth to come to the ground, as shown in Fig. 3. Then, on starting up his team, he gradually draws the lever N back toward the position indicated by dotted lines N' in Fig. 3, and thus brings into play the spring action of the link F by reducing the distance between the pins *l* and *m*, which causes said links to force down the arms G K, and thus gradually brings the teeth I L down into the ground in a working position without straining the machine or the team. If the operator desires to lock the teeth down to their work, he throws the lever N back against the cross-piece E, as shown in Fig. 2 and by dotted

lines in Fig. 3, which brings the pins *l* below a line drawn from the pins *m* to the axis of the rock-shaft *M*, so that the upward pressure on the link *F* tends to cause the lever *N* to press more firmly on the cross-piece *E*, but cannot effect a rotation of said lever in the opposite direction.

It is readily seen that the lever *N* and each of the arms *k* form bent levers, having their fulcrums at the axis of the rock-shaft *M*, and controlling, through the spring-links *F*, the movements of the tooth-arms *G* *K* and their teeth *I* *L*, and that the link *F* forms a steel bow-spring, which holds the teeth down to their work, but which would allow them to rise up in case of meeting any unusual obstruction.

Where the machine is to be used for working down newly-plowed ground or for cultivating astride of two rows at a time, the central arms, *K* *K*, can be removed, and the center arm, *H*, with its tooth *J* and spring-link *F*, can be arranged at the center of the machine, as

shown in Fig. 2, and various other changes in the arrangement of the arms and teeth to suit particular work will readily suggest themselves.

I do not claim, broadly, the working of a pivoted cultivator arm and tooth under a spring-pressure, as this has been before shown.

What I claim herein as new and of my invention, and desire to secure by Letters Patent, is—

The spring-metal link *F*, constructed of a bow shape and used in combination with the pivoted tooth-arm *H*, and bent lever *N* *k* on the cultivator-axle *A*, said link serving as a means both of raising the tooth *J* from the ground and of holding it down to its work under a spring-pressure, substantially as is herein set forth.

As evidence of the foregoing witness my hand this 14th day of May, A. D. 1870.

JEFFERSON ESHLEMAN.

Witnesses:

J. H. WALLACE,
ALVO ZUVER.