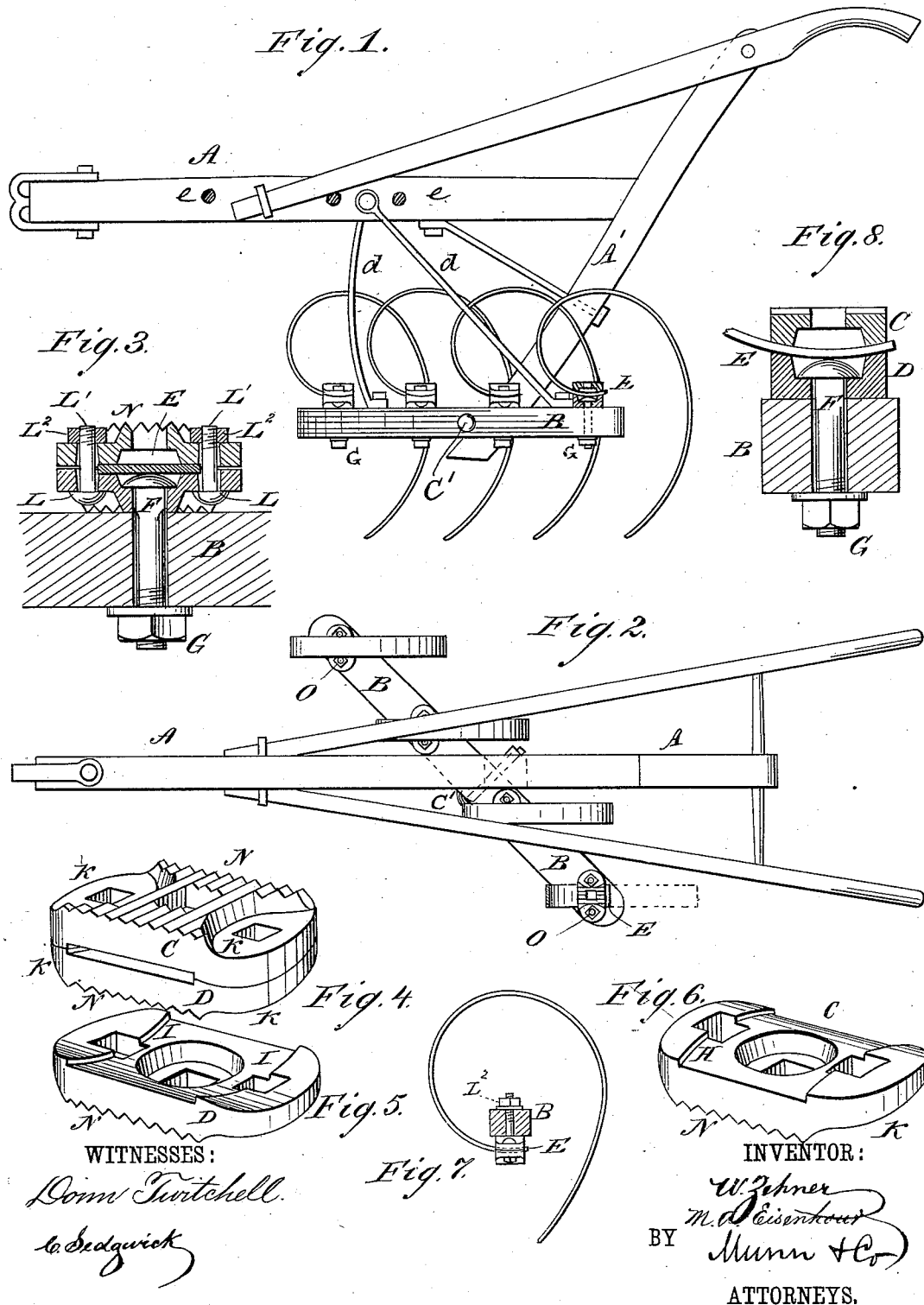


(No Model.)

W. ZEHNER & M. A. EISENHOUR.
CULTIVATOR BAR AND CULTIVATOR CLIP.

No. 347,756.

Patented Aug. 17, 1886.



UNITED STATES PATENT OFFICE.

WILLIAM ZEHNER AND MARTIN A. EISENHOUR, OF PLYMOUTH, INDIANA.

CULTIVATOR-BAR AND CULTIVATOR-CLIP.

SPECIFICATION forming part of Letters Patent No. 347,756, dated August 17, 1886.

Application filed October 21, 1885. Serial No. 180,522. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM ZEHNER and MARTIN A. EISENHOUR, both of Plymouth, in the county of Marshall and State of Indiana, have invented certain new and useful Improvements Cultivator-Bars and Cultivator-Clips, of which the following is a full, clear, and exact description.

The invention relates to improvements in tooth-bars for cultivators; and it consists in the peculiar construction and arrangement of parts, as hereinafter fully described, and pointed out the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a side view of a cultivator-frame having our improved attachable and adjustable bar and clip applied thereto, the adjustable bar being secured to the frame at an angle to the line of draft, and the universal clips holding the spring cultivator-teeth bolted to the upper surface of the bar, so that they set at right angles with the line of draft, the same as if the bar were placed squarely across the frame. Fig. 2 represents a plan or top view of the frame, showing the diagonal position of the detachable bar across the frame and the teeth set in the line of draft. Fig. 3 is a vertical longitudinal section of a universal clip bolted to a fragment of an adjustable cultivator-bar on its upper surface. Fig. 4 represents a perspective view of a reversible and adjustable clip detached from the bar; Fig. 5, a perspective view of one side of the clip, showing the concave inner surface to receive the end of a tooth and the bolt-holes at the center and ends. Fig. 6 is a perspective view of the opposite and corresponding side to Fig. 5, showing the convex inner surface; Fig. 7, a sectional view of the clip and spring-tooth clamped therein and bolted to the lower surface of a detachable bar; Fig. 8, a sectional view of a clip and spring-tooth secured to the upper side of a detachable bar.

A in the accompanying drawings represents an ordinary cultivator-frame having our attachable and adjustable bar B applied thereto, with the clips holding the cultivator-teeth bolted to the upper side of the bar and in the

line of draft. The attachable and adjustable bar B is secured to the upright A' of the frame by a central bolt, C', and maintained at any required angle across the frame A by means of the braces d, bolted at their upper ends to the draft-beam of the frame. A series of bolt-holes, e, through the beam serves to change the position of the bar B, when required, to any desired angle across the frame. By this construction and arrangement the bar B is rendered attachable and adjustable, and is adapted to be used on any frame to support it, and the reversible and adjustable clips enable the users to employ any of the approved spring-teeth, spike-teeth, or cultivator-teeth therewith, and to set them in the line of draft as required. The bar B may be made of any desired dimensions to receive any required number of clips to carry the teeth, and when provided with braces d is adapted to be attached to any suitable frame in cultivating.

The clip for holding a cultivator-tooth or spring-tooth, as may be required, is composed of two parts—an upper part, C, and lower part, D—between which the end E of a tooth is to be clamped, as represented in Figs. 1, 3, 7, and 8. The clip, with its tooth, is secured to the bar B by a central bolt, F, and nut G. The inner surfaces, H I, of these two parts are convex and concave, respectively, and correspond with each other, and are intended to conform to the curve in a spring-tooth, so as to clamp and hold the end of the tooth between them without disturbing the original curve.

To prevent the end of the tooth turning sideways in the clip, the curved inner surfaces are notched or depressed, the depressions being of the same width of the tooth which it is intended to fit, as shown in Fig. 3. The ends of these two parts C D are depressed on their outer surfaces, so that the heads L of the clamping-bolts L' and nuts L' may be below the notched or serrated surfaces N, as shown in Figs. 3, 4, 5, 6. By this construction the clip is rendered reversible, to be bolted either to the upper or lower side of the detachable bar B, or may be placed on either side of the bar B without being reversed, or may be reversed on the same side of the bar.

In order to prevent the clip shifting or turning sidewise upon the bar B, the outer surfaces,

N, are notched or serrated, as shown in Figs. 3, 4, 5, and 6, so that when the clip is firmly bolted to the bar the edges of the notches will embed themselves therein and remain in a fixed position to hold the tooth. The inner surface of each side of the clip is countersunk centrally to receive the head of a bolt, F, below the surface of the tooth, as shown in Figs. 3, 5, 6, 8. By this construction a tooth is clamped between the convex and concave surfaces H I by means of the bolts L, and the clip and tooth secured to the bar B by the central bolt, F. With this construction and arrangement of the several parts it will be seen that a universal clip is produced adapted to suit the various forms of spring-teeth, spike-teeth, and cultivator-teeth, and may be secured to either side of a bar, and adjusted to set the teeth in the line of draft when the bar B is at an angle thereto.

By forming the clip of two pieces and the inner surfaces between which the end of a tooth is to be clamped convex and concave, respectively, as represented in Fig. 8, a bent spring-tooth may be clamped and firmly held in position without injury, or disturbing the original bend of the tooth.

By countersinking the inner surfaces of the two parts centrally, so as to depress the head of the bolt F below the surface of the tooth, and notching or serrating the outer surfaces, N, and bolting the clip so as to embed its notched surface into the surface of the bar B, the bar may be secured to the frame A at any angle, and the clip adjusted so that the tooth

may be properly set with reference to the line of draft, as shown in Figs. 1 and 2. Both of the inner surfaces, H I, are countersunk, so that the clip may be used either side up on the same side of the bar, as represented.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. An improved tooth-clip, consisting of two parts, one part having an inner notched and convex surface, H, and the other having inner notched and concave surface I, the inner surfaces of the said parts being countersunk and their ends depressed, substantially as herein shown and described.

2. The herein-described tooth-clip, consisting of the parts C, having an upper serrated surface, N, and lower notched and convex surface, H, the part D, having a lower serrated surface, N N, and an upper notched and concave surface, I, the inner surfaces of the said parts being countersunk and their ends depressed, and the fastening-bolts L L' F, as herein shown and described.

3. The toothed bar B, provided with the tooth-securing clips C D and the brace-rods d, the said bar being adapted to be detachably and adjustably secured to a cultivator-standard, substantially as herein shown and described.

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Witnesses:

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SAMUEL PARKER.