(No Model.)

A. P. SPRAGUE.

Spring Harrow-Teeth.

No. 227,593. **Patented May 11, 1880.**

Fig: 1.

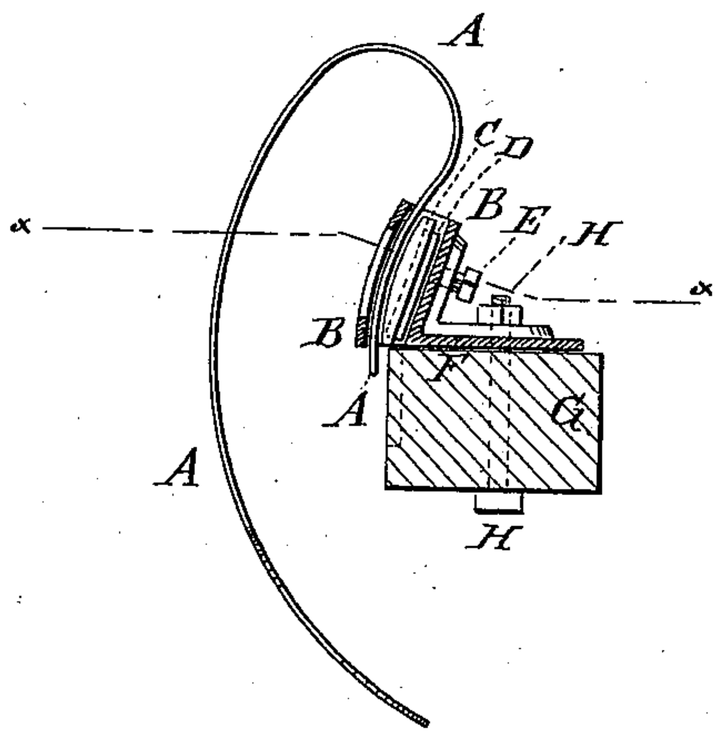


Fig: 2.

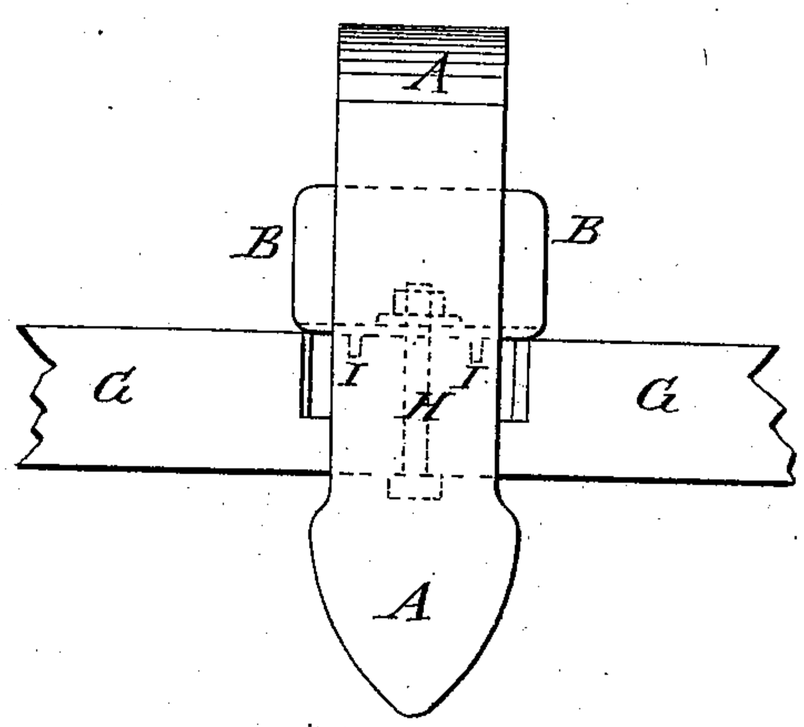


Fig: 3.

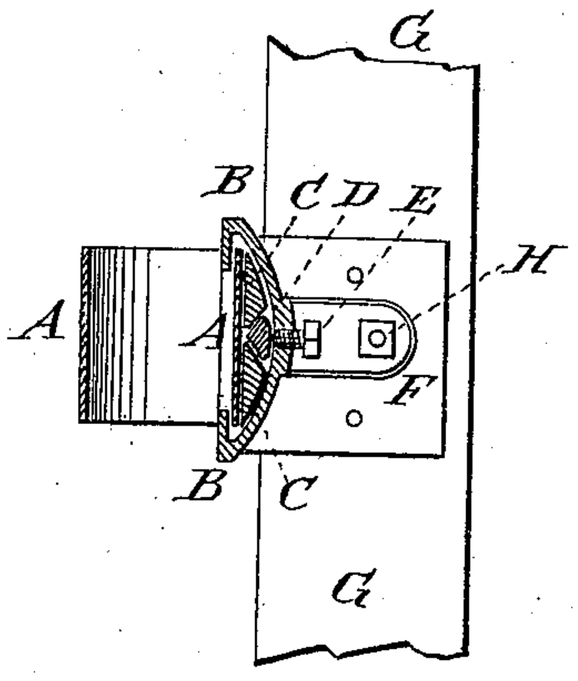
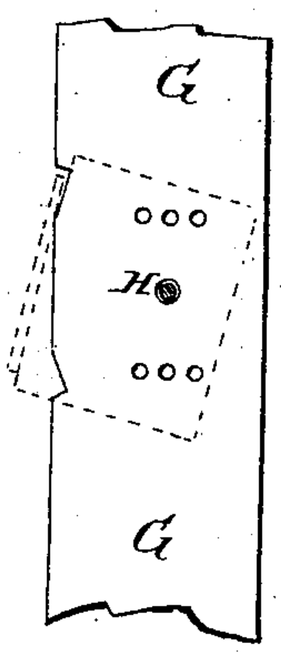


Fig: 4.



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ARTHUR P. SPRAGUE, OF KALAMAZOO, MICHIGAN.

SPRING HARROW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 227,593, dated May 11, 1880.

Application filed March 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR P. SPRAGUE, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and useful Improvement in Spring Harrow-Teeth, of which the following is a specification.

The object of this invention is to furnish spring harrow-teeth so constructed that they may be secured adjustably to the bars of the harrow-frame, will be firmly and securely held, can be readily adjusted, and will economize steel in their manufacture.

Figure 1 is a sectional side elevation of the improvement. Fig. 2 is a front elevation. Fig. 3 is a sectional plan view taken through the line *x x*, Fig. 1. Fig. 4 is a plan view of a part of a harrow-frame bar.

Similar letters of reference indicate corresponding parts.

A represents the harrow-tooth, which is bent into U form, with its forward arm the longer. The arms of the tooth A are curved into the arcs of concentric circles, as shown in Fig. 2. The short arm or shank of the tooth A is inserted in a socket, B, in a holder, where it is secured in place by wedges C D and a set-screw, E. The forward part of the socket B is so formed as to fit upon the short arm or shank of the tooth A. The rear part of the socket B is curved or tapered from its middle part toward its side edges to receive the two wedges C, so that the tooth-shank may be clamped in place by forcing the said wedges apart or toward the side edges of the socket B. The wedges C are beveled along the outer side of their inner edges to receive the third wedge, D, which fits into the space between the wedges C and the rear side of the socket B. The set-screw E passes through the rear side of the socket B and rests against the middle part of the wedge D, so that when the set-screw E is turned forward it will force the wedge D against the wedges C, and press them outward, securely clamping the tooth A in the socket B.

Upon the rear side of the lower end of the socket B is formed a plate, shank, or flange, F, which projects at an angle with the socket B, rests upon the bar G of the harrow-frame, and has a hole through its middle part to receive the bolt H, which passes through it and through the said frame-bar G.

Upon the lower side of the plate or flange F are formed two points, I, which enter holes in the frame-bar G to prevent the holder B F from turning upon the bolt H, so that the said holder can be secured to the frame-bar by a single bolt. Several holes are formed in the frame-bar G to receive the points I, so that the tooth may be adjusted to pass squarely through the ground, or to have a lateral inclination, as the character of the soil may require.

With this construction a slight movement of the short arm of the tooth A in the socket B will give a much longer movement to the point of the tooth, so that it may be adjusted to enter the ground to any desired depth, as the work to be done may require.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A spring harrow-tooth constructed substantially as herein shown and described, consisting of the tooth A, made in U form, with unequal arms, and with its arms curved in the arcs of concentric circles, the socket B, having wedges C C D and set-screw E, the inclined plate or flange F, having points I, and the bolt H, whereby the harrow-tooth can be secured adjustably to the frame-bar, as set forth.

2. In a spring harrow-tooth, the tooth A, made in U form, with unequal arms, and with its arms curved upon the arcs of concentric circles, substantially as herein shown and described, whereby a slight movement in the holder will give a longer movement to the point of the tooth, as set forth.

3. The combination, with the socket B, of the three wedges C C D and screw E, to hold a harrow-tooth, as described.

ARTHUR P. SPRAGUE.

Witnesses:

GEORGE F. GREEN,

W. S. WHITE.