

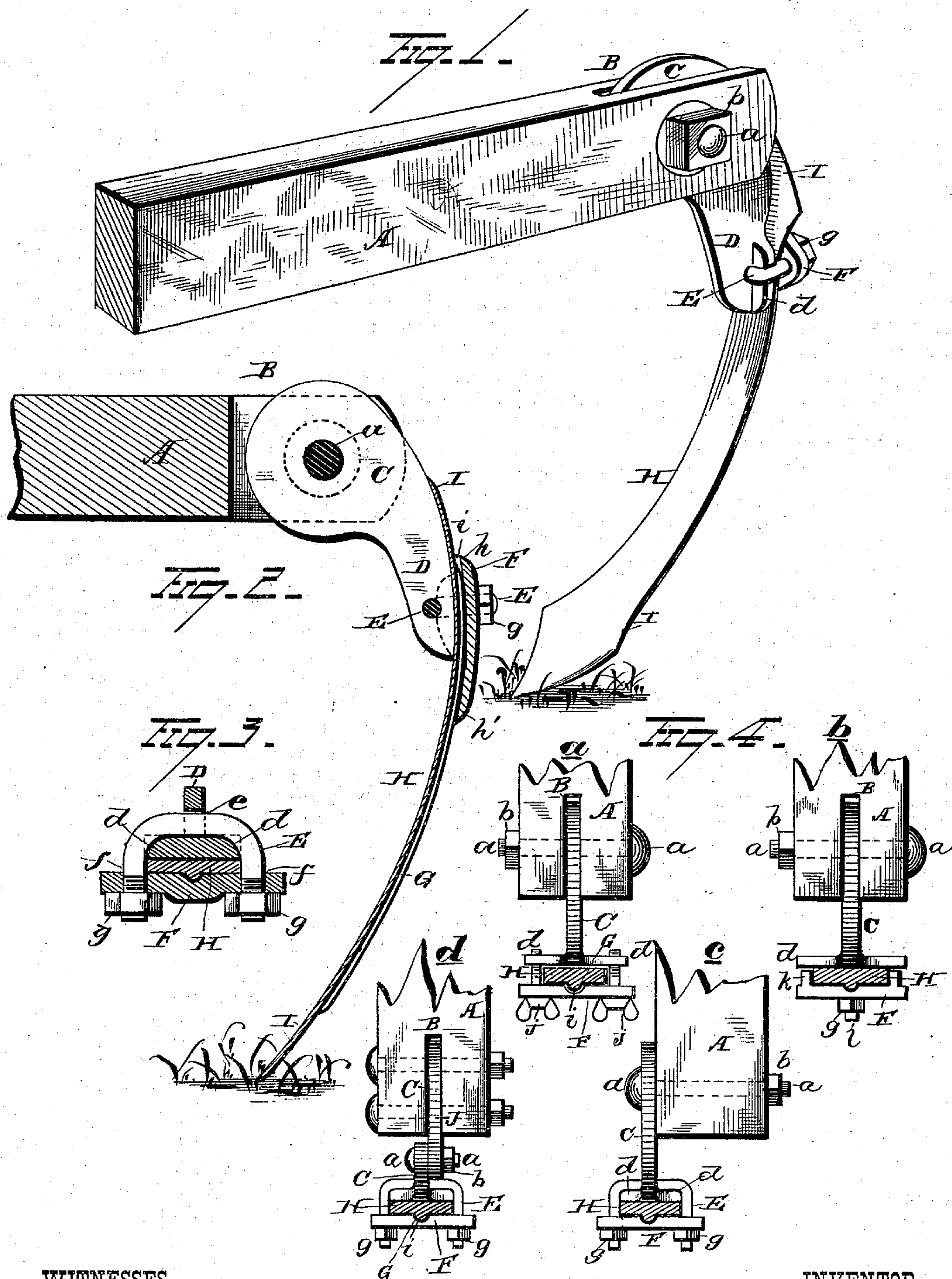
(Model.)

W. A. VAN BRUNT.

CULTIVATOR TOOTH.

No. 252,279.

Patented Jan. 10, 1882.



WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLARD A. VAN BRUNT, OF HORICON, WISCONSIN.

## CULTIVATOR-TOOTH.

SPECIFICATION forming part of Letters Patent No. 252,279, dated January 10, 1882.

Application filed September 3, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, WILLARD A. VAN BRUNT, of Horicon, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Reversible Spring-Teeth for Cultivators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in reversible spring-teeth for cultivators, the object of the same being to provide means for fastening the tooth to the drag-bar at any desired angle and in such a manner as to insure a thorough cultivation of the soil, while at the same time it is allowed to yield and ride over any obstructions encountered, which saves the parts from being injured or broken.

With these ends in view my invention consists in certain details in construction and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a drag-bar with my improvement attached thereto. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a horizontal section, showing the manner of attaching the tooth to the slip-plate; and Fig. 4, *a*, *b*, *c*, and *d*, represent modifications.

*A* represents a wooden cultivator-beam or drag-bar, provided with the open oblong slot *B* at its rear end, into which the friction or slip plate *C* is adapted to fit and be securely clamped therein by the bolt *a* and nut *b*. This slip-plate *C* is provided with the bolt-hole in its body portion, through which the bolt *a* passes, and with a shank, *D*, to which the tooth is attached. This shank *D*, when the plate *C* is in position, extends downwardly and rearwardly from the body, and is provided with a convex outer surface or edge, against which the concave face of the tooth fits snugly, and is also provided with two ears, *d*, on opposite sides thereof, adapted to afford increased bearing-surface for the tooth. This shank *D* is also provided with a hole, *e*, situated immediately in front of the ears *d*, for the passage of the clip *E*, which, together with the clip-plate *F*, firmly holds the tooth on the shank of the slip-plate. I have shown the clip *E* passing around the ears *d* and up through the clip-plate

*F*; but it can, if desired, pass up through holes in the ears *d*, which latter can be extended out farther for that purpose. The clip-plate *F* is adapted to be secured to the shank *D* by the clip *E* and hold the reversible spring-tooth between it and the shank, and for this purpose is provided with two holes, *f*, through which the ends of the clip pass, and are secured by nuts *g*, which, when tightened, firmly hold the tooth in position and prevent it from sliding up, the upper point of the tooth preventing it from slipping down if the nuts should by any means become loosened. This clip-plate *F* is also provided with an upper and lower extension, *h* and *h'*, the lower extension, *h'*, being longer than the upper one, and reaching below the extreme end of the shank, and forming an upper bearing for the tooth. This plate *F* is also provided with a longitudinal groove, *i*, running centrally through its under surface, and adapted to fit over the rib *G*, running longitudinally over the convex surface of the tooth, and prevent the tooth from moving laterally between the shank *D* and the clip-plate *F*.

The tooth *H* is constructed of spring metal, of the shape shown, and is provided with the rib *G* on its convex side, which materially strengthens the tooth and allows it to be made lighter in structure, and at the same time withstand the strain and shock of a heavier tooth. This tooth is provided on its opposite ends with the points *I*, which latter can be of the same shape, or of different shapes to suit different kinds of work and soil. By this means the cultivator is made changeable, at a slight increase of cost, from one kind of work to another with but little trouble to the operator.

The friction-plate *C* is confined wholly in position at any desired angle by the friction due to the binding action of the bolt *a* and nut *b*, and it is evident that if the tooth *H* should come in contact with an obstruction of a rigid nature which could not be displaced by the tooth the friction or slip plate would yield and allow the tooth to ride over the obstruction, thereby preventing any fracture to the tooth, slip-plate, or connecting parts. In the modification, Fig. 4<sup>a</sup>, I have represented the ears *d* of the shank extended out sufficiently to allow two set-screws, *j*, to be used instead of the clip *E*, already described.

Fig. 4<sup>b</sup> represents the clip-plate *F*, provided



with projecting fingers *k*, adapted by means of one bolt, *l*, passing through the clip-plate *F*, tooth *H*, and shank *D*, to hold the tooth firmly in position and prevent it from moving laterally. Fig. 4<sup>c</sup> represents the friction or slip plate *C* secured at the side of the bar, instead of in the open slot; and Fig. 4<sup>d</sup> represents a plate, *J*, rigidly bolted in an open slot in the drag-bar, and the friction or slip plate *C* bolted on the rear end of the said rigid plate and adapted to operate substantially as those already described.

My improvement possesses advantages over those machines wherein a slip-plate is used in combination with a rigid tooth. In the above case; when the rigid tooth meets an obstruction held sufficiently tight in the ground to prevent its being disturbed by the tooth, the tooth immediately rides over the obstruction, and has to be adjusted every time an obstacle is encountered. In my case, however, the spring-tooth bends sufficiently in many cases, where the obstruction is deep, to enable it to be drawn over the obstruction without the necessity of the plate slipping. If, however, the point of the tooth should become engaged with the obstruction and the latter refused to yield after the spring had been bent to a given limit, the friction-plate would slip between the jaws of the bar and allow the tooth to ride over without injury thereto.

It is evident that numerous changes, both in the construction of the friction-plate and the manner of fastening the tooth thereto, could be resorted to without departing from the spirit of my invention, and I would have it understood that I do not limit myself to the precise construction shown and described, but consider myself at liberty to make such changes as come within the spirit and scope of my invention.

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

1. The combination, with the slotted bar, of a slipping plate pivoted thereto and having the perforated shank, a spring-tooth secured to the latter, a clip-plate adapted to brace the tooth, and a clip for holding the tooth and clip-plate in position, substantially as set forth.

2. The combination, with the bar having an open slot at one end, and a slipping plate consisting of a body and shank, the body of the said plate adapted to be secured in the slot, while the shank extends outward in a rearwardly-inclined direction, and a pivotal bolt for retaining the plate in any desired adjustment, of a double-pointed reversible spring-tooth secured to the said shank, substantially as set forth.

3. The combination, with the bar, of the slipping plate pivoted thereto, a double-pointed reversible spring-tooth having a longitudinal rib, a clip-plate having a longitudinal groove corresponding to said rib, and devices for securing the slipping plate, clip-plate, and tooth together, substantially as set forth.

4. The combination, with the pivoted slipping plate having a perforated seat or bearing on its shank portion, of a spring-tooth provided with a strengthening-rib, a clip extending through the perforated seat or bearing, and a clip-plate provided with a longitudinal groove, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLARD A. VAN BRUNT.

Witnesses:

D. D. FRENCH,  
WM. J. MITER.