No. 692,939. Patented Feb. 11, 1902.

L. J. STANTON.

SPRING TOOTH FOR HARROWS.

(Application filed June 17, 1901.)

(No Model.)

Fig. 1.

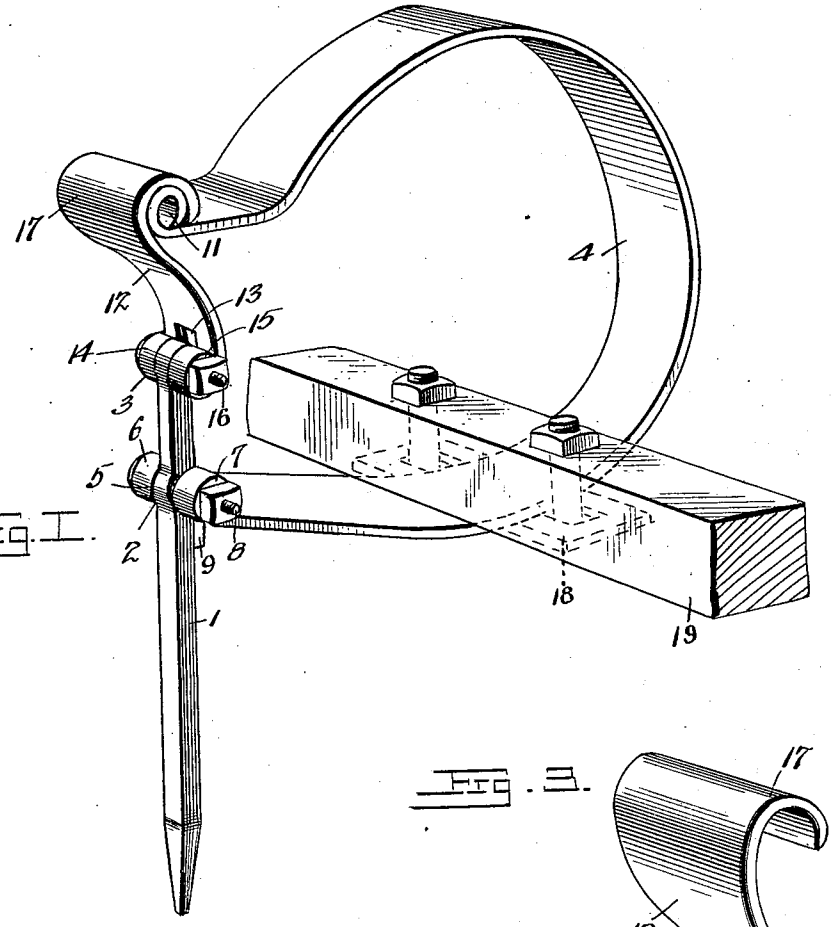


Fig. 3.

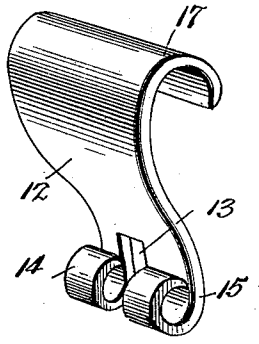


Fig. 2.

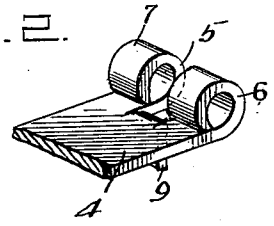
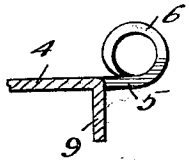


Fig. 4.



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

LAFFAYETTE J. STANTON, OF MILLBROOK, MICHIGAN.

SPRING-TOOTH FOR HARROWS.

SPECIFICATION forming part of Letters Patent No. 692,939, dated February 11, 1902.

Application filed June 17, 1901. Serial No. 64,905. (No model.)

To all whom it may concern:

Be it known that I, LAFFAYETTE J. STANTON, a citizen of the United States, residing at Millbrook, in the county of Mecosta and State of Michigan, have invented a new and useful Spring-Tooth for Harrows, of which the following is a specification.

This invention relates to spring-teeth for harrows; and it consists in the construction, combination, and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view of one of my improved spring-supported teeth connected to a section of a tooth-bar. Fig. 2 is a detail perspective view of the lower end of the spring. Fig. 3 is a detail perspective view of the link. Fig. 4 is a sectional detail of the lower end of the spring.

This device may be employed to support harrow-teeth of any form of "point;" but for the purpose of illustration I have shown an ordinary square-pointed tooth 1, with two transverse perforations 2 and 3, one at the upper end and one a short distance down from the upper end.

4 is a curved or C-shaped spring bifurcated at one end at 5 and with eyes 6 and 7 turned into the ends at the sides of the bifurcation and adapted to inclose the upper part of the tooth and be secured thereto by a transverse pin 8 passing through the eyes and perforation, as shown. In cutting the bifurcation a portion of the metal is left connected to the body of the spring at one end and bent downward at 9, as shown in Figs. 2 and 4, to form a stop to limit the forward movement of the teeth. The spring 4 is curved upward and around nearly into a complete circle and formed with a "roll" 11, as shown, at the upper end.

12 is a link, preferably of sheet-steel and formed with a bifurcation 13 and eyes 14 and 15 at its lower end and adapted to inclasp the upper end of the harrow-tooth and be secured thereto by a transverse pin 16 passing through the eyes 14 and 15, and with a hook-shaped upper end 17, adapted to engage the roll 11 on the spring 4, as shown in Fig. 1.

The spring 4 will be attached in any suitable manner to the tooth-bars of the harrow, and for the purpose of illustration I have shown it connected by a clip 18 to the tooth-bar 19 in the ordinary manner, the clip being indicated in dotted lines. By this simple means the tooth is supported yieldably in one direction and unyieldably in the opposite direction, so that no other means than the enlargement 11 on the spring 4 and the hook-shaped end of the link 12 will be required to retain the spring in engagement with the upper end of the tooth. This is a very important feature of my invention and greatly simplifies the construction.

The spring 4 will be strong enough to resist the rearward pressure exerted by the soil in its ordinary condition; but should any obstruction be met with which would have a tendency to break the tooth or unduly retard the forward motion of the machine the flexible connection at the upper end of the tooth will permit the tooth to yield and pass over the obstruction, and thus prevent the breakage of the tooth.

This is a very cheap and durable device and very simple in construction, the whole device comprising only three pieces, exclusive of the bolts and their nuts. The bifurcations of the spring 4 and of the link 12, whereby they are enabled to be clamped upon the tooth, effectually support the tooth and prevent all lateral movement of either the spring 4 or link 12. Consequently I am enabled to dispense with any transverse pin for securing the upper end of the link to the spring, but depend wholly upon the enlargement 17 to form the joint between the spring and link. The pressure of the spring is exerted to hold the tooth normally and firmly against the stop 9, so that it is at all times ready for work and does not hang loose when not in use. There is therefore but one strain on the spring, and by the coaction of the link and spring the movement is limited, so that no danger exists of drawing the spring to the utmost limit of its strength or to the limit of the safety strain. The spring will therefore be protected from injury by overstraining, as there is no possibility of exerting a force upon the spring beyond the limited amount embraced within the movement of the action of the link 12.

The enlargement 17 may be formed by any means other than by rolling the end of the spring over upon itself, as shown; but the

means shown of forming the enlargement is the preferable one.

What I claim as new is—

1. In a device of the class described, a C-shaped spring having a transverse enlargement on its upper end, a harrow-tooth, means whereby said tooth is pivotally engaged by the lower end of said spring, a link having a transverse hook engaging said transverse enlargement, and means whereby said link may be pivotally engaged by the upper end of said tooth, substantially as shown and described.

2. In a device of the class described, a C-shaped spring having a transverse enlargement on its upper end, and bifurcated at its lower end and with eyes at opposite sides of the bifurcation, a harrow-tooth having a transverse perforation below the upper end and disposed in said bifurcation, a transverse bolt passing through said eyes and said perforation, a link having a transverse hook on one end engaging said transverse enlargement, and means whereby said link may be pivotally engaged by the upper end of said tooth.

3. In a device of the class described, a C-shaped spring bifurcated at one end and with transverse eyes at opposite sides of said bifurcation, a stop depending from the inner end of said bifurcation, a harrow-tooth having a transverse perforation below the upper end and disposed between said eyes, and engaging said stop, a transverse bolt engaging said eyes and the perforation in said tooth, and a link flexibly connecting the upper end of said bolt and the other end of said spring, whereby said tooth is yieldable vertically but rigid laterally, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LAFFAYETTE J. STANTON.

Witnesses:

H. COULSON,

W. CONLEY.