

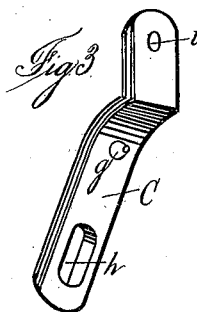
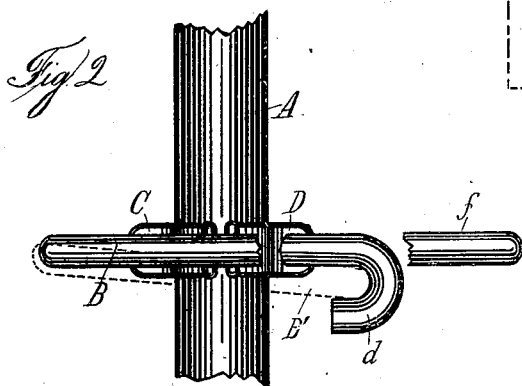
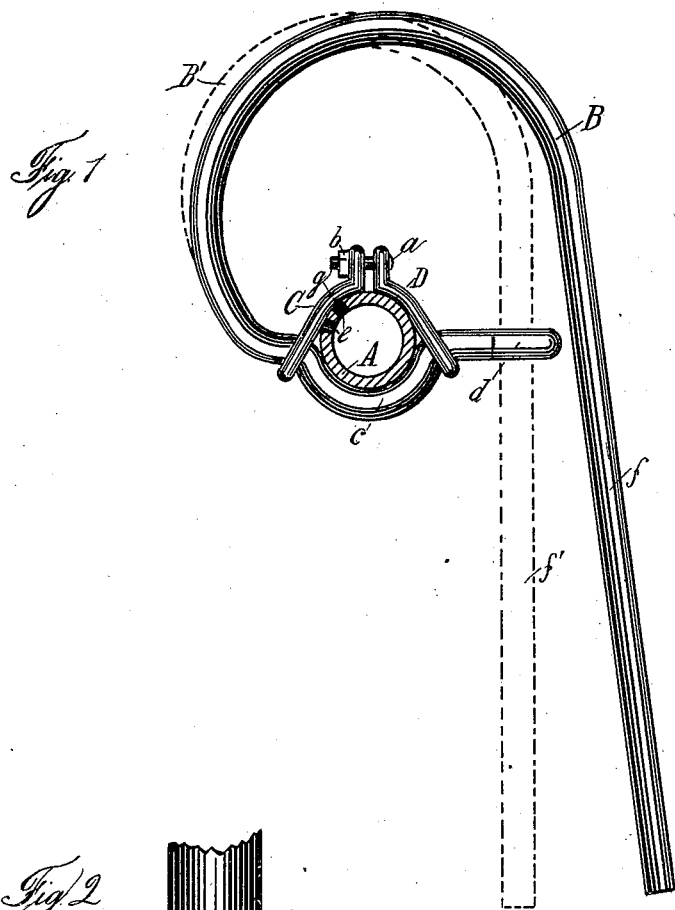
No. 649,124.

Patented May 8, 1900.

H. W. CAMPBELL.
HARROW TOOTH.

(Application filed Aug. 28, 1899.)

(No Model.)



WITNESSES
C. F. Patterson.
M. A. Dodsworth

INVENTOR
Hardy W. Campbell.
PER *Geo. W. Lusk.*
ATTORNEY.

UNITED STATES PATENT OFFICE.

HARDY W. CAMPBELL, OF HOLDREGE, NEBRASKA.

HARROW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 649,124, dated May 8, 1900.

Application filed August 28, 1899. Serial No. 728,715. (No model.)

To all whom it may concern:

Be it known that I, HARDY W. CAMPBELL, residing at Holdrege, in the county of Phelps and State of Nebraska, have invented certain
5 useful Improvements in Harrow-Teeth; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and
10 use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention has relation to a new and novel improvement in harrow-teeth.

15 The object of my invention is to provide a harrow-tooth the range and character of movement of which can be instantly lengthened or shortened and made either stiff or yielding.

20 In the accompanying drawings I show in Figure 1 a side elevation of one of my harrow-teeth as secured to a suitable support. Fig. 2 shows a top view with portions broken away of the tooth as disclosed in Fig. 1, while
25 Fig. 3 shows a perspective detail of one of the clamps I use when my harrow-tooth is secured to a cylindrical receiver.

My invention embodies, essentially, a harrow-tooth adapted to be latched or locked, so
30 that the same may be changed into a tooth having a wide and yielding sweep or into a stiff short sweeping tooth.

In my present invention *f* represents the main portion of my harrow-tooth, from which
35 extends the recurving portion *B*, which continues to form the seating *c*, adapted to receive the bar, tube, or holder to which the tooth is secured, and from this seating the tooth continues in the recurved end termination
40 *d*, forming a latch or hook, into which the tooth *f* is removably locked when the tooth is stiffened.

In the drawings I have shown my tooth secured to the simplest form of holder—to wit,
45 an ordinary tube *A*, provided with a series of openings *e*, which are supposed to be placed in alinement, and into which openings *e* fits the projecting pin *g*, secured to one of the clamps *C*, which clamp *C* has an opening *h*
50 and a second opening *i*, through the first of which passes the harrow-tooth, while an ordinary bolt *a* passes through the opening *i*.

In having the projecting pin *g* lock in one of the openings *e* the holder *C* is securely locked to the tubing. A second similar keeper *D* is
55 identical with that shown in Fig. 3, with the exception that the pin *g* has been eliminated, as but one of the keepers need be locked to the tube. These keepers *C* and *D*, it will be noted, are secured to the harrow-tooth adja-
60 cent to the seating *c* and then extend partially around the holder to which the tooth is to be secured and are securely held and locked upon the holder by means of the bolt *a*. From
65 this it will be noted that I have a one-piece harrow-tooth one end of which is recurved and provided with a hook, so that the tooth proper may be locked and removably held within this hook to stiffen the same.

When the tooth is unlatched, it has a long
70 yielding sweep, which will readily pass around well-rooted plants, but will thoroughly pulverize the soil through which it drags. Further, by means of the curve *B* should one of the teeth strike a fixed obstruction, such as
75 a heavy stone or root, instead of breaking it will rise upward to pass over the same, the curve of the hook permitting this upward movement. In use there is a pulsation or continuous jumping of the tooth in a vertical
80 plane, which is of value in that it tends to release any rubbish that may have been gathered in front of the teeth, so that the same is not collected, but is released by the jumping movement of the tooth. Even when the tooth
85 proper, *f*, is latched there is a certain yielding spring movement within the tooth, as the hook *d* acts as a fulcrum upon which the tooth *f* rocks in that the hook *d* permits the lower
90 end of the tooth *f* to rock backward and forward. This harrow-tooth can be used in connection with any suitable framework, and, if desired, it is of course understood that the tooth could be secured to a suitable support,
95 while the hook *d* could be independently secured, so that the tooth would be independent of the latch.

Now, having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is— 100

1. The combination with a harrow-tooth, of a latch adapted to removably hold said tooth to shorten and stiffen the sweep of the same.

2. As a new article of manufacture, a harrow-tooth provided at one end with a recurved portion terminating in a hook, said hook being adapted to latch upon said tooth, intermediate of its ends.

5 3. The combination with a latch, of a spring-tooth adapted to be adjustably secured to said latch to shorten the sweep of said tooth.

4. The combination with a spring-tooth, of a latch, said tooth being adapted to be yieldingly held with said latch to shorten the sweep of said tooth.

HARDY W. CAMPBELL.

In presence of—

MABEL A. DODSWORTH,
CLEMENT F. PATTERSON.