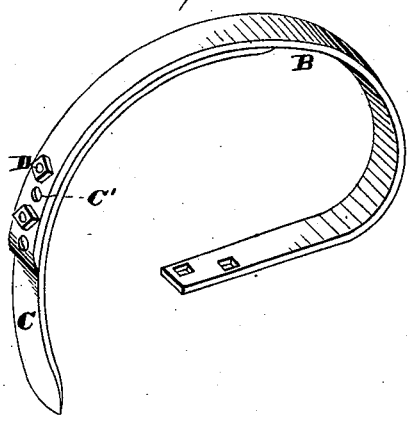
M. HILL.

Harrow-Tooth.

No. 197,515. Patented Nov. 27, 1877.

Fig. 1.



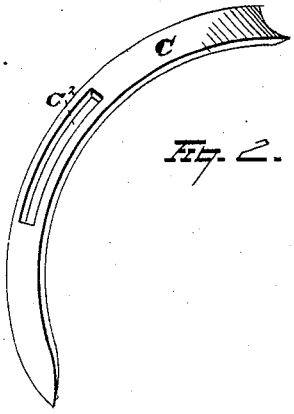
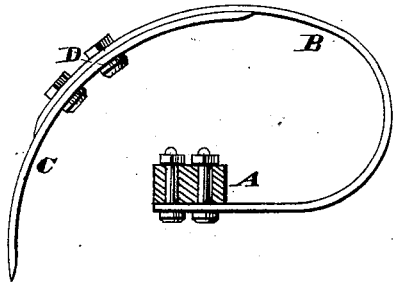


Fig. 2.

Fig. 3.



WITNESSES

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IMPROVEMENT IN HARROW-TEETH.

Specification forming part of Letters Patent No. **197,515**, dated November 27, 1877; application filed August 31, 1877.

To all whom it may concern:

Be it known that I, MOSES HILL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Harrows; 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 it, reference being had to the accompanying drawing, which forms part of this specification.

My invention relates to a new and useful improvement in harrows, and more especially to a peculiarly-constructed harrow-tooth.

In the drawing, Figure 1 is an enlarged view of one of my improved harrow-teeth, showing my removable point. Fig. 2 is a separate view of the removable point. Fig. 3 is a view of a harrow-frame, showing how my teeth may be secured thereto.

It will be understood at the outset that my invention contemplates no particular form of harrow-frame, nor any particular style of fastening, nor is it necessary that the teeth should be secured to the lower surface of the frame, as shown; but they may be secured beneath, or upon the sides or vertical faces of the frame.

A is a harrow-frame. B is one of my improved harrow-teeth, formed of a curved or bowed piece of spring metal, as, for instance, a stiff band of steel. C is a detachable point designed to receive and sustain the wear upon the tooth. The point C is also, preferably, though not necessarily, made adjustable by the bolts D and bolt-holes C^1, or instead of the bolt-holes there may be slots C^2 in both the tooth and the removable point, or one may be provided with a slot and the other with bolt-holes, as shown, and I generally prefer the latter construction, though it is apparent that either construction would answer the purpose. This removable or detachable tooth may be made with a single point, serving the purpose simply of forming a ready means of confining the wear to a short length at the point, which length or point may, as it becomes too much worn, be removed and replaced by another without the expense of renewing the entire tooth; or this detachable tooth or point C may be made with a single working end, and be made adjustable, as above explained, so as to be adjusted downward, as desired, to compensate for wear upon it, or for the purpose of giving deeper or more shallow furrow, as the operator may desire. So, also, this detachable tooth or point C may be made double—that is, provided with a a working point at both of its ends, and when one point has been worn so as to be unfit for longer use the bolts may be loosened and the tooth reversed, so as to bring the other end into service; and this double tooth or point may likewise be either adjustable or not at the point of fastening to the main tooth.

I propose, also, at times, to make the point C with a different style of finish at its opposite ends; thus one end may be finished to a point, as shown, while the other end may be finished to a broad, flat, or straight edge, or to a curved edge, also shown. The sharp points might be employed where the ground is comparatively free from grass or weeds, &c.; and where weeds or grass, &c., exist in considerable quantity the broad edges might be employed and serve to cut and tear them out.

The tooth-point C may be made separately as an article of manufacture, designed as an attachment to the spring teeth or bows B, in the same manner as cultivator and drill teeth are made separately to be sold as attachments. In like manner the harrow teeth or bows B, constructed at their free ends to receive the detachable points, may be made as an article of manufacture.

It will be observed that in the construction shown, the resistance against the teeth acts in a direction to open the spring, which opening action serves to lift the tooth. Moreover, the spring-section B takes a direction from its point of attachment upward, thence backward, and then directly downward to the ground.

By this construction the only part of the tooth, or its standard that projects below the lower surface of the frame is the point of the tooth, and consequently there are no other portions of the tooth or its standard that might strike against clods or stones, &c., and thus lift the tooth or impair its action before its time.

It will also be observed that in the con-

struction shown the point of attachment of the removable point and its point of adjustment are above the lower surface of the harrow-frame, and consequently are removed from all possibility of gathering dirt or weeds, &c., since nothing but the end of the scratching tooth or point projects below the frame, as shown in Fig. 3.

Having thus described my invention, what I claim is—

1. A harrow-tooth consisting of a metal section, B, curved upward from its attachment to the frame, thence backward over the same, and having its free end in a horizontal plane above the lower surface of the frame, in combination with a detachable point, C, substantially as described.

2. A harrow-tooth consisting of a metal section, B, curved as described, and a double detachable point, C, of corresponding width and curve, the latter made reversible, and also vertically adjustable, substantially as described.

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

MOSES HILL.

Witnesses:
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W. E. DONNELLY.