(No Model.)

I. H. REINER.

HARROW TOOTH.

No. 282,223. Patented July 31, 1883.

fig 1

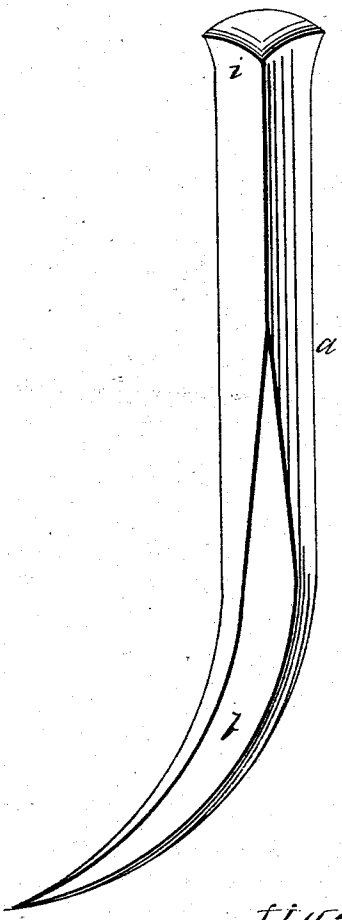


fig 2

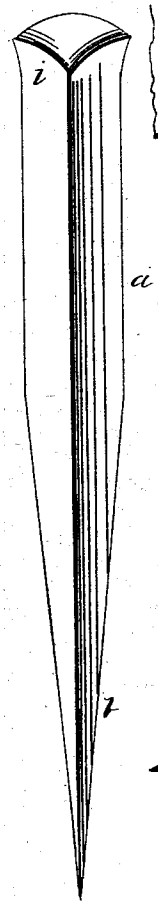


fig 3

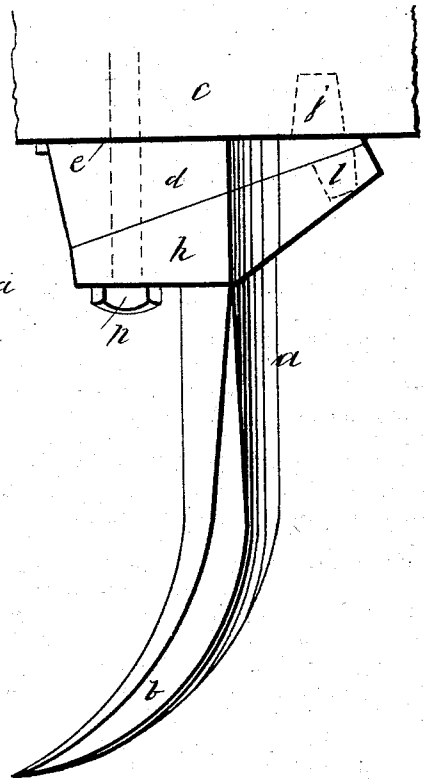


fig 4

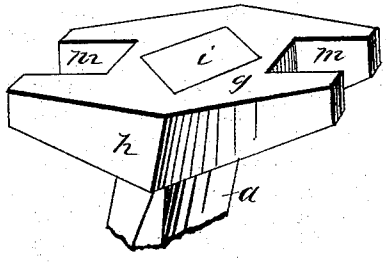
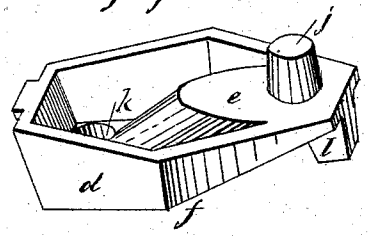


fig 5



WITNESSES:

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UNITED STATES PATENT OFFICE.

ISAIAH H. REINER, OF LINE LEXINGTON, PENNSYLVANIA.

HARROW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 282,223, dated July 31, 1883.

Application filed October 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, ISAIAH H. REINER, of Line Lexington, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Improvement in Harrow-Teeth, of which the following is a full, clear, and exact description.

The invention consists in the particular form of the tooth and its clamping-plates, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved harrow-tooth. Fig. 2 is a front elevation. Fig. 3 is a side elevation of the tooth, together with the head for attaching the tooth to the harrow. Figs. 4 and 5 are details of the head in perspective view.

I make the tooth with a straight shank, *a*, and a bent point, *b*, the bent portion being about one-third of the length of the tooth, more or less, and said bent portion being preferably in one of the diagonal planes of the tooth, with the corners of the other diagonal tapered to a point, as shown in Fig. 2. For cutting and pulverizing the ground, I propose to set the teeth of this form perpendicular to the harrow-frame *c*, as represented in Fig. 3, with the points forward; or, if preferred, the shanks may incline backward for setting the points still more oblique to the ground. Either way the shanks will not clog with weeds, roots, and the like, and the points will draw in and thoroughly cut and pulverize the ground. For attaching such teeth so as to reverse them readily to set them for smoothing the ground, I use an attaching-head, of which *d* is a piece, having a flat top, *e*, to bear against the under side of the harrow-frame *c*, and a bevel lower side, *f*, for the top face, *g*, of another piece, *h*, in which the head *i* of the shank *a* of the tooth is fitted, said shank being fitted obliquely through piece *g*, and so that that when piece *h* is placed against the face *f* of piece *d* with the point of the tooth forward, its shank will be vertical, and the points will draw into the ground; but when the piece *h* is turned the other way to set the points rearward, the shanks will incline that way, and together with the bend of the teeth will make the most favorable form of smoothing-teeth.

To attach the part *d* of the head to the harrow-frame, I make a stud, *j*, near one end to enter a socket in the frame, and a bolt-hole, *k*, near the other end; and to attach part *h* to part *d*, I make a stud, *l*, on the lower face of part *d* at the same end that has stud *j* on its upper face, and make a notch, *m*, in each end of part *h*, and bevel the lower face of said part alike each side of the tooth-hole to make a bearing for the head of bolt *n*, as in Fig. 3, whereby said bolt secures the whole to the harrow-frame, the studs preventing lateral divergence of the parts, and the notches *m* of both ends of part *h* fitting alike on the stud *l* and bolt *n*, so that the said part may be placed either way, at will, for setting the point forward or backward, as desired.

I am aware that a square tooth curved at the lower end and tapered generally to a point is not new; or a head in two parts of which the lower is reversible upon the upper; but

What I claim as new and of my invention is—

1. A square shanked harrow-tooth having its lateral angles cut away increasingly toward the lower end, and said end curved forwardly, as described.

2. In a head for holding a reversible harrow-tooth, the combination, with the fastening-screw and the wedge-shaped piece *d*, having hole *k*, of the bottom reversible piece, *h*, having an open notch at each end, and the lower side formed on an angle adapted to bring either of its sides into a horizontal position under the head of the fastening-screw, whereby the screw-head will always have a full flat bearing, and the end notches will register with hole *k*, so that the screw may go straight through both pieces *d h* into the harrow-frame, for the purpose specified.

ISAIAH H. REINER.

Witnesses:
JACOB K. REINER,
JNO. C. REIGLE.