

(No Model.)

A. C. EVANS.  
HARROW.

No. 336,906.

Patented Mar. 2, 1886.

Fig. 1.

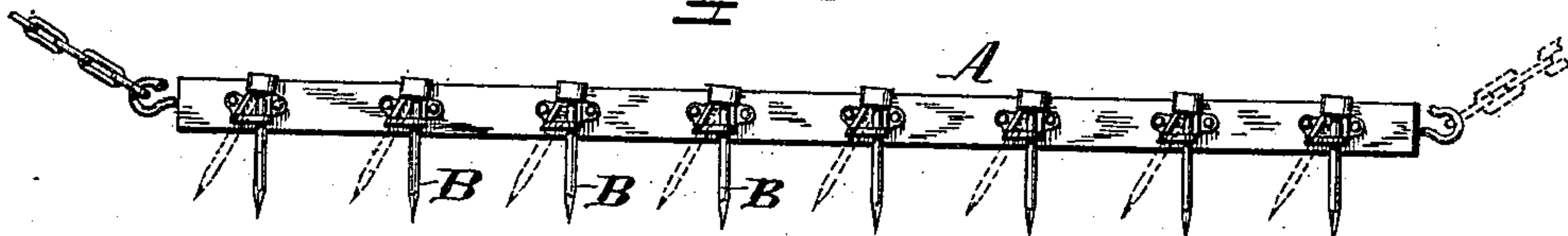


Fig. 2.

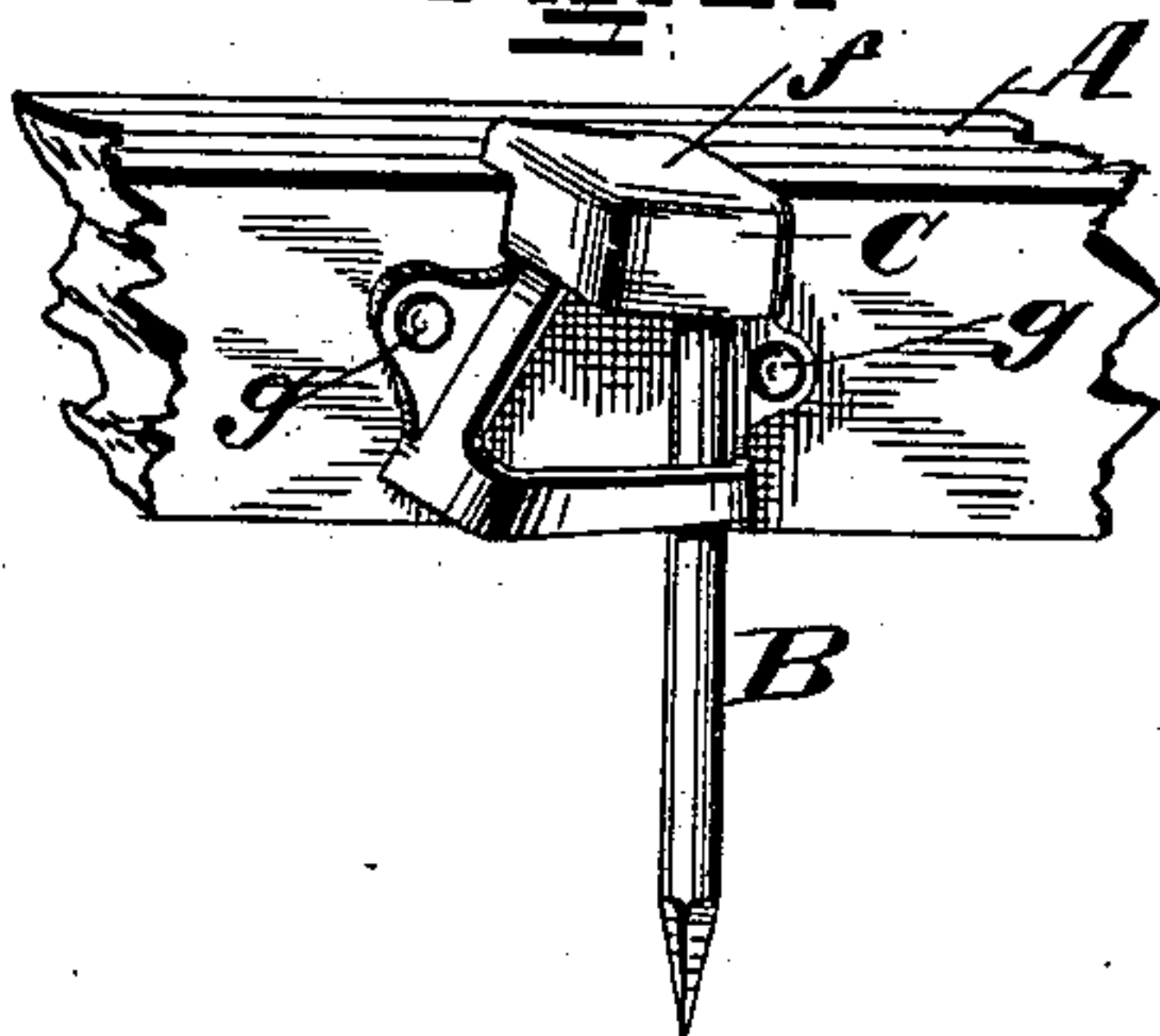


Fig. 3.

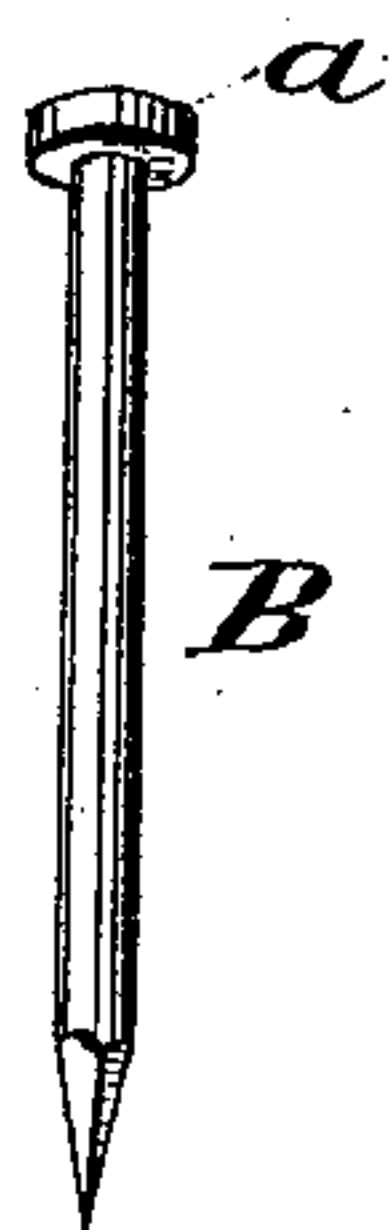
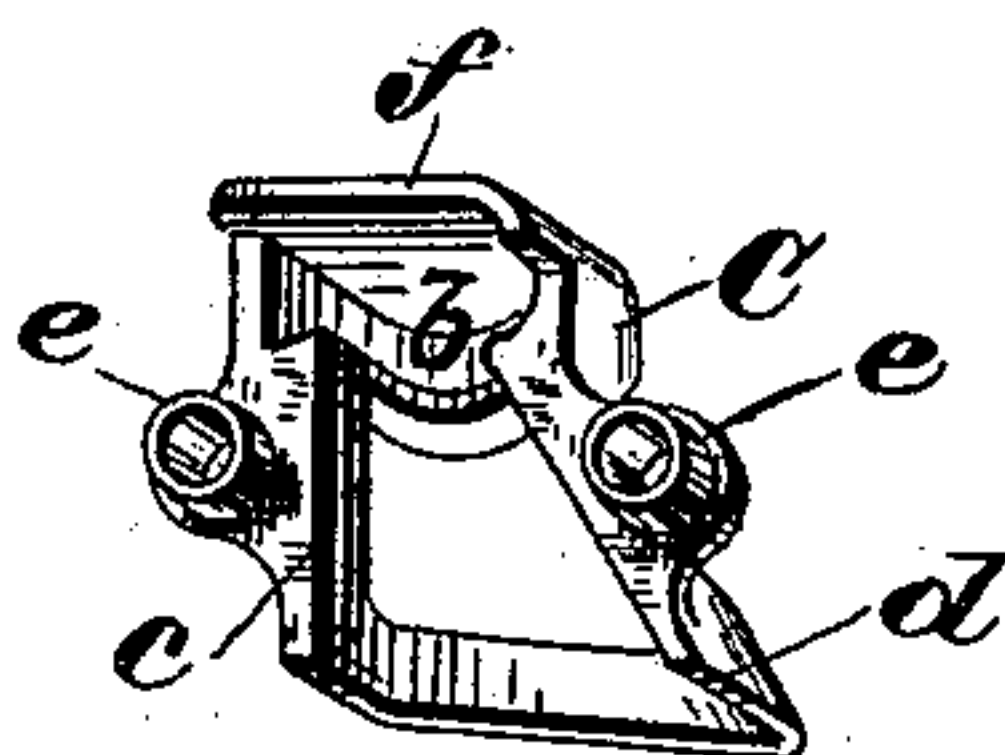


Fig. 4.



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# UNITED STATES PATENT OFFICE.

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## HARROW.

SPECIFICATION forming part of Letters Patent No. 336,906, dated March 2, 1886.

Application filed November 26, 1884. Serial No. 148,889. (No model.)

*To all whom it may concern:*

Be it known that I, AUSTIN C. EVANS, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Harrows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of harrows known as "spike-tooth" harrows, either in single frames or in sections hinged or otherwise suitably connected together, and having swiveled teeth so applied as to be free to turn entirely around, thus insuring the wearing of all sides alike when in use, and further so applied as that when the harrow is drawn from one end the teeth will stand straight or vertical, and when drawn from the other end they will assume a backward slanting position, but in both cases will be free to turn around on their axes.

The novelty of my invention will be herein set forth and specifically pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of an ordinary harrow containing my invention, showing the teeth straight in solid lines, and angling in dotted lines. Fig. 2 is an enlarged perspective view of one of the teeth connected by my improved holder to a portion of one of the beams. Fig. 3 is a perspective view of one of the teeth detached. Fig. 4 is a perspective view showing the inside of the holder.

The same letters of reference are used to indicate identical parts in all the figures.

A represents one of the beams of any suitably-constructed harrow, and B the teeth applied thereto. These teeth are spikes of any desired shape in cross-section, though here shown round, with pyramidal point, and with an enlargement or head, *a*. To attach these teeth to the harrow-beams I employ the holders C, each of which consists of a shell, as seen in

Figs. 2 and 4, with an upper recess, *b*, into which the head of the tooth is slipped and confined, a vertical end wall, *c*, an inclined end wall, *d*, a guide-bar connecting the lower ends of the end walls for relieving the recessed head from lateral strain, perforated bosses *e* on each side, and an upper overlapping lip or shoulder, *f*.

From this construction it will be at once seen that after slipping the tooth into the holder and inserting the bosses *e* into perforations made to receive them in the side of the beam, the lip of the shoulder *f* will overlap and rest upon the top of the beam. A couple of bolts or screws, *g*, inserted through the perforations of the bosses *e* and into or through the beam is all that is necessary to secure the holder absolutely tight to the beam. By means of the bosses *e* and the lip or shoulder *f*, all twisting of the holder upon the beam is prevented and a very secure fastening is secured.

I am aware, however, that a tooth-holder having a recess or seat and a vertical and an inclined wall together with a swiveled tooth having an enlargement or head fitting in the said recess or seat is old, and I do not here broadly claim such a construction or combination; but,

Having thus fully described my invention, I claim—

The combination, with a harrow-beam and harrow-tooth having an enlarged head, of the holder C, with an upper recess, *b*, for receiving and retaining the head of the tooth, bosses *e*, recessed in the beam, an overlapping lip or shoulder, *f*, resting upon the top of the beam, end walls, *c* *d*, the former of which is vertical and the latter inclined, and whose lower ends are connected by a guide-bar for preventing lateral strain, substantially as described.

AUSTIN C. EVANS.

Witnesses:

CHAS. R. WHITE,  
J. WARREN KEIFER.