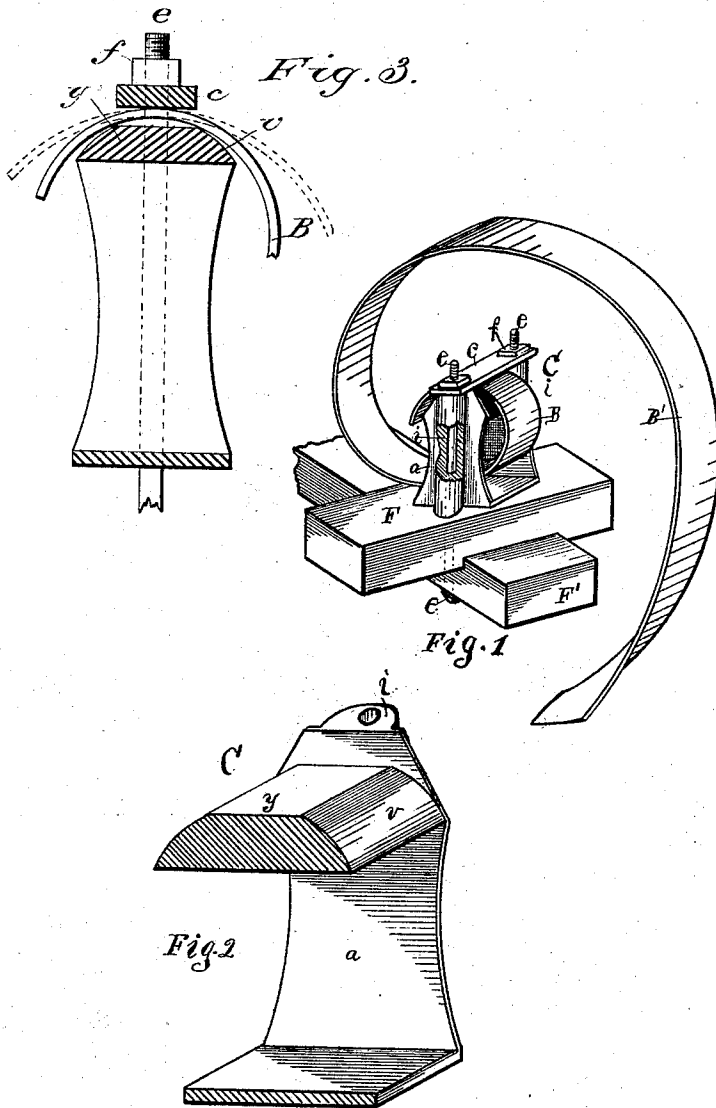


H. COBB.  
Spring Tooth Harrow.

No. 241,528.

Patented May 17, 1881.



Attest.  
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# UNITED STATES PATENT OFFICE.

HIRAM COBB, OF KALAMAZOO, MICHIGAN.

## SPRING-TOOTH HARROW.

SPECIFICATION forming part of Letters Patent No. 241,528, dated May 17, 1881.

Application filed October 16, 1879.

*To all whom it may concern:*

Be it known that I, HIRAM COBB, of Kalamazoo, in the county Kalamazoo and State of Michigan, have invented certain new and useful Improvements in Spring-Tooth Harrows, of which the following is a specification.

My invention relates to that class of spring-tooth holders which are located perpendicularly above the tooth-beam of the harrow-frame.

My invention has for its objects a decrease in the amount of metal used in constructing the holder with no diminution of strength.

It also has for its object certain improvements whereby spring harrow-teeth having curved shanks are rigidly secured in the holder without perforating or serrating said shank and holder where they effect an engagement with each other, and said shank, by my mode of securing it, assists in adjusting the pitch or angle by automatically raising the binding-bar, as hereinafter explained.

The construction of my device consists in a light shell-like casting, having perforated ribs formed on each side, through which wrought-iron bolts are located, which secure the holder to the top side of the holder or tooth-beam. These bolts also secure a small binding-bar, of iron, to the top of the holder, under which bar the curved shank of the tooth is located, securing said tooth in the holder. By my construction of the holder and use of bolts they serve a quadruple office, viz: Being wrought-iron and extending through the beams and through the ribs the whole length of the holder, they so strengthen the same that very light thin castings are used. They secure the holder to the beam, hold the tooth in the holder, and secure the tooth-beams to the frame, thus effecting a great saving in the expense of bolts and casting-metal.

Another novel feature of its construction is the seat for the shank of the tooth, which consists in form of both a flat and curved portion, by which means the shank of the tooth in securing it to the holder is thrown out of its natural curve and made to temporarily conform to the shape of the seat by screwing down the binding-bar, under which it passes, said bar and the portion of the shank under

it registering with the flat portion of the seat. The advantages of this construction over a curved seat proper and over an entire flat seat is that the tendency of the curved shank of the tooth is to regain its curved form, by which means any wear of parts engaging each other does not effect the rigid pressure of the shank up against the binding-bar and down upon the curved edges of the top of the holder. Thus a need of frequently setting down the bolt-burrs is obviated. A further advantage is apparent from the well-understood fact that an entirely straight shank or one all curved will draw out of a holder much easier than a shank both curved and angled, in the latter form of which my shank is when in use. Another point of utility is that, in adjusting the pitch of the tooth in the holder, when the burrs are loosened the return of the shank to its original curve automatically raises the binding-bar, allowing the tooth to be adjusted with great freedom from friction with the parts contiguous to its shank without manual effort in raising said binding-bars.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a construction embodying my improvements, having a portion of one of the ribs cut away, showing the securing and strengthening bolt. Fig. 2 is a detached sectional portion of the holder, illustrating the form of the seat. Fig. 3 shows a cross-section of the seat and binding-bar and edge rim of the curved shank of a spring-tooth in the form it assumes when secured in the holder.

F is the tooth or holder-beam; *a*, the thin sides of the holder C; *ii*, perforated ribs through which bolts *e* pass; *c*, binding-bars; *f*, burrs to bolts *e*. *y* is the flat portion of the seat of the holder *c*, and *v v* the curved portions of the same.

In operating the device the shank B of tooth B' is placed in the holder on the seat *y r*, as illustrated. Binding-bar *c* is then placed over, as shown in Fig. 1, and burrs *f f* screwed down till the shank of the tooth assumes the form illustrated in Fig. 3.

Spring-tooth holders have heretofore been constructed extending perpendicularly above the beam and having flanged sides to intercept

the tooth in preventing lateral displacement of the same, which features are not claimed by me; but

What I do claim, and desire to secure, is—

- 5 1. In a spring-tooth-harrow, holder-beam F, tooth-holder C, having perforated ribs *ii* provided with securing and strengthening bolts *ee*, shank-seat, consisting of flat portion *y* and curved edges *vv*, and binding-bar *c*, securing  
10 curved shank B to said seat, all in combination, substantially as set forth, to effect the objects specified.

2. The combination of a curved shank of a

spring harrow-tooth with a shank-seat constructed with the flat center portion and curved 15 edge portions, and the binding-bar securing said shank to the seat, substantially as specified and shown, for the objects set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 20 presence of two witnesses.

HIRAM COBB.

Witnesses:

WILLIAM F. MONTAGUE,  
AMOS D. ALLEN.