

(No Model.)

A. HIRSHHEIMER.

HARROW.

No. 329,040.

Patented Oct. 27, 1885.

Fig. 1.

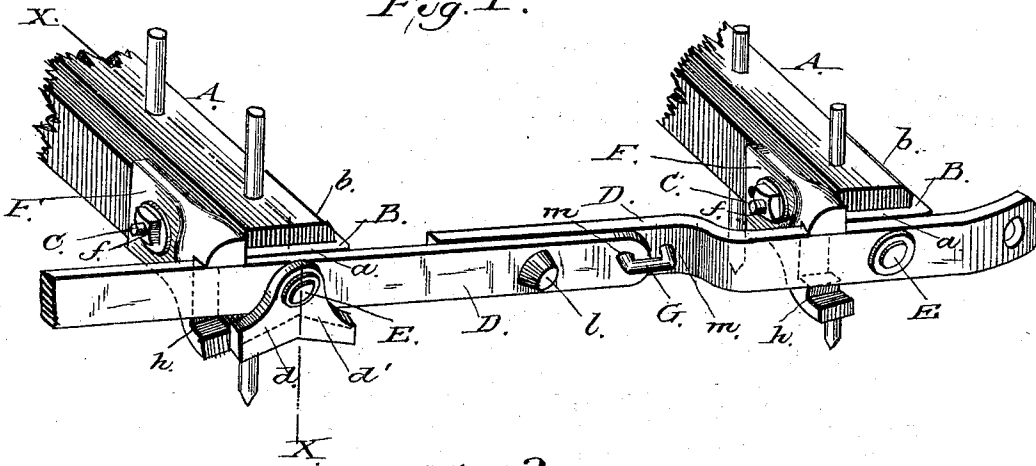


Fig. 2.

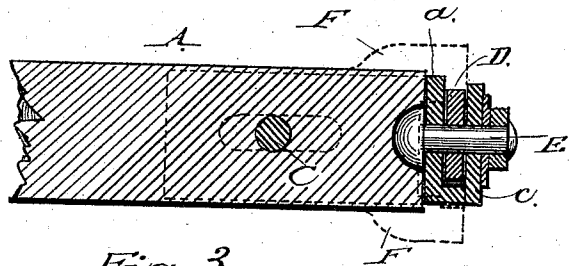


Fig. 3.

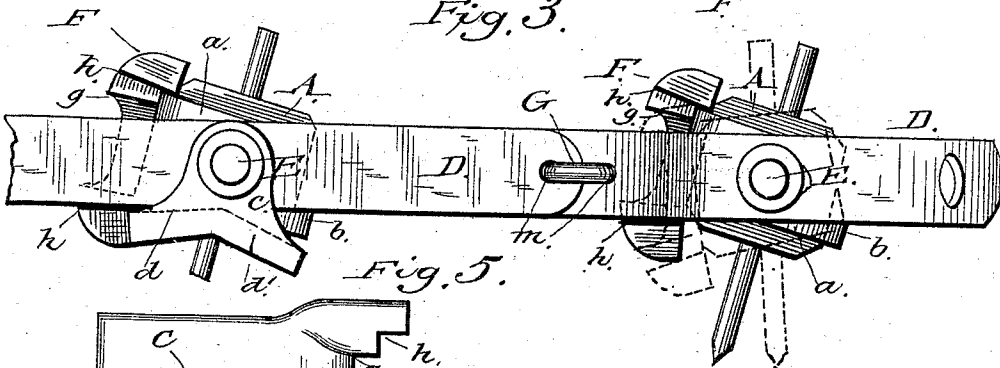


Fig. 4.

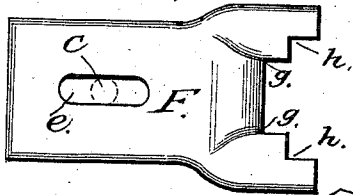
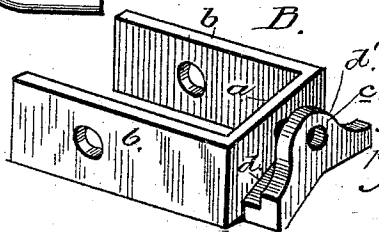


Fig. 5.



WITNESSES

J. W. Fowler
H. B. Applwhait?

INVENTOR

Albert Hirshheimer,
per
A. B. Evans & Co.
Attorneys

UNITED STATES PATENT OFFICE.

ALBERT HIRSHHEIMER, OF LA CROSSE, WISCONSIN.

HARROW.

SPECIFICATION forming part of Letters Patent No. 329,040, dated October 27, 1885.

Application filed July 11, 1885. Serial No. 171,307. (No model.)

To all whom it may concern:

Be it known that I, ALBERT HIRSHHEIMER, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain Improvements in Harrows, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—
Figure 1 represents a perspective showing in detail the ends of two of the harrow-beams with my improvements attached. Fig. 2 is a section on line *xx* of Fig. 1. Fig. 3 is a side elevation showing the parts locked to produce a rigid harrow, and showing the beams and teeth slanting toward the draft. Figs. 4 and 5 represent detached views of the castings B and F.

My invention relates to that class of harrows which may be readily converted from a rigid to a flexible harrow, or vice versa, and it is an improvement on Letters Patent No. 305,592, granted to me September 23, 1884, and my Patent No. 325,541, granted September 1, 1885, for improvements in harrows.

My invention has for its object the production of a harrow whose teeth may be adjusted to slant in a direction toward or from the line of draft or be held in a vertical position; and my invention consists in the combination of devices hereinafter described, and pointed out in the claims.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the said drawings, A represents several of the beams of an ordinary harrow, having secured to their outer ends suitable castings, B, of peculiar construction, as I shall now minutely describe. These castings B are adapted to partially inclose the ends of the harrow-beams, and they consist, essentially, of a main portion, *a*, against which the ends of the beams abut, and flanges *b*, which project inwardly and partially inclose two sides of the beam, as shown, they being secured to the beam by means of a bolt, C, passing through both the flanges and the beam and suitably secured by a nut or equivalent device.

In Fig. 4, it will be noticed, the main portion *a* of the casting B is extended and terminates in an upwardly-projecting flange, *c*, between which and the main portion *a* the side links are pivoted, while the base of this extended portion is provided with the inclined surfaces *d d'*, upon which these side bars or links, D, rest when the teeth of the harrow are slanted either toward or from the draft, as shown by dotted lines in Fig. 3.

In addition to the bolt C, which secures the casting B to the beam A, I employ another bolt, E, which passes through perforations in the main portion *a* of the casting B, the flange *c*, and the link D, the head of the bolt bearing against the end of the harrow-beam, and its outer end being riveted and provided with a washer, as shown in Figs. 1 and 2. This construction makes a secure fastening and makes it impossible for the bolt to work loose—a feature very common in many of the harrows now used.

The bolt C, which passes through the beam, also secures an adjustable casting, F, having an elongated slot, *e*, in which works the bolt C. The outer end of the casting F is cut away or notched to form the shoulders *g* and *h*, the distance between the former being about equal to the width of the side links, D, which are held between these shoulders when the harrow-teeth are arranged in a vertical position. When it is desired to have the teeth slant toward the line of draft, the securing-nut *f* is loosened and the casting F is moved back until the link is disengaged from its notch, when the beam may be turned on its pivot-bolt E until either one or the other of the shoulders *h* comes in contact with and limits the movement of the beam, and thereby determines the angle of the teeth.

The side links, D, are not bent as much as in my former patents, and they are pivoted together at *l*, and perforated at *m* to receive the locking-bolt G.

From the above description it is manifest that no matter which way the harrow is drawn the teeth may be adjusted accordingly. While it may be preferred, it is not absolutely necessary to use the adjustable casting F with the casting B when the latter is provided with

the inclines $d d'$, except when it is required to change the slant of the teeth, so as to make them incline toward the draft of harrow. Without this casting this feature could not be accomplished. The teeth would either be arranged vertically or slanting away from the draft; but by the use of this casting the teeth may be adjusted to three positions—*i. e.*, vertical, toward the draft, and from the draft. The side links are extended beyond the harrow-beams, and may be perforated to engage the hooks or chains of an evener, which may thereby be connected directly to the harrow, and do away with staples and similar devices.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As an improvement in harrows, a casting, F, adjustably secured to the beam, and provided with notches which engage the side

links and secure the teeth in a vertical or in a slanting position toward or from the draft, substantially as described.

2. In a harrow, the beams A and side links, D, in combination with a casting bolted to and partially encircling the end of the harrow-beam, and a notched casting adjustably secured to the beam, whereby the teeth are adjusted to different positions, substantially as described.

3. In a harrow, the beam and the side links, in combination with a casting, B, partially inclosing the end of the beam, and provided with an upwardly-extending flange and double-inclined surfaces $d d'$, and a notched casting adjustably secured to the beam, substantially as herein described.

ALBERT HIRSHHEIMER.

Witnesses:

J. H. A. GUIDER,
MARTIN BERGH.