

C. E. STELLER.

HARROW.

74626

PATENTED  
FEB 18 1868

Fig. 1.

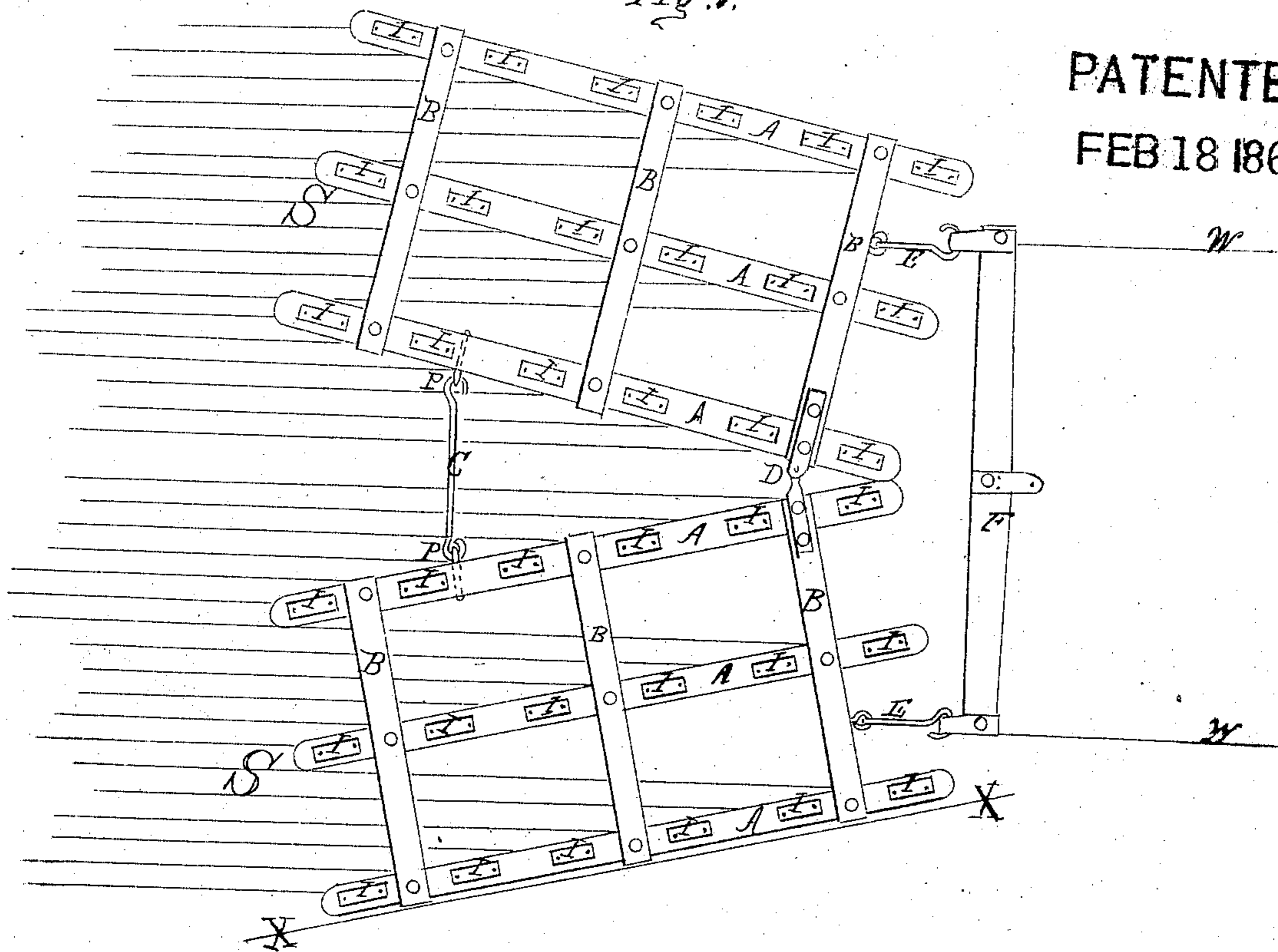


Fig. 2.

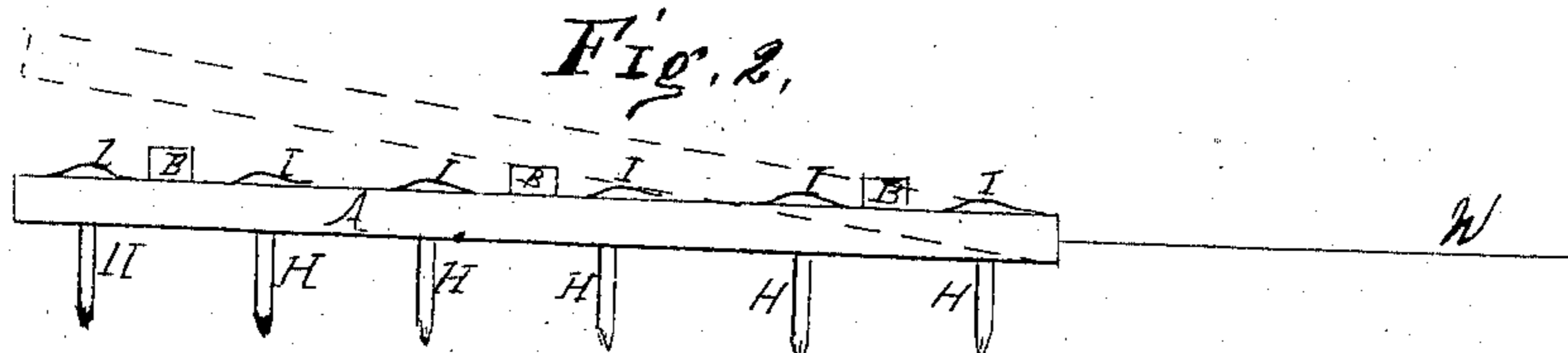


Fig. 3.

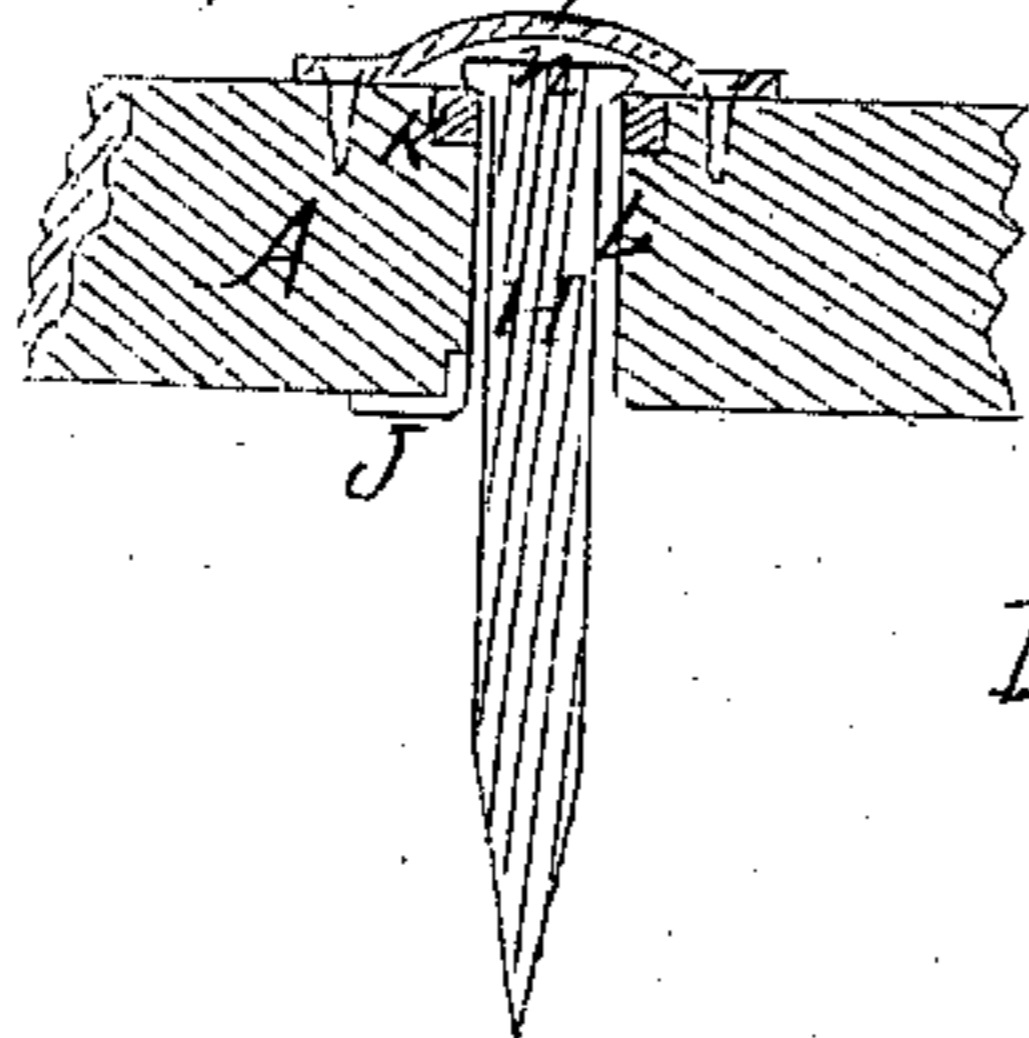


Fig. 4.

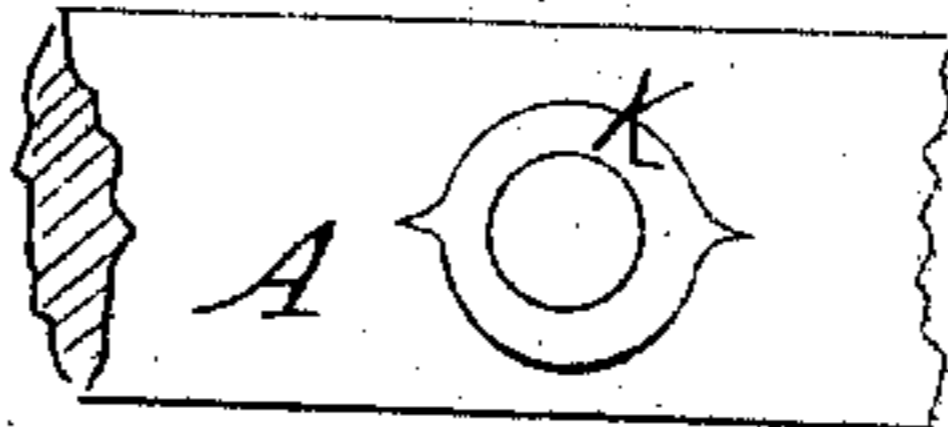
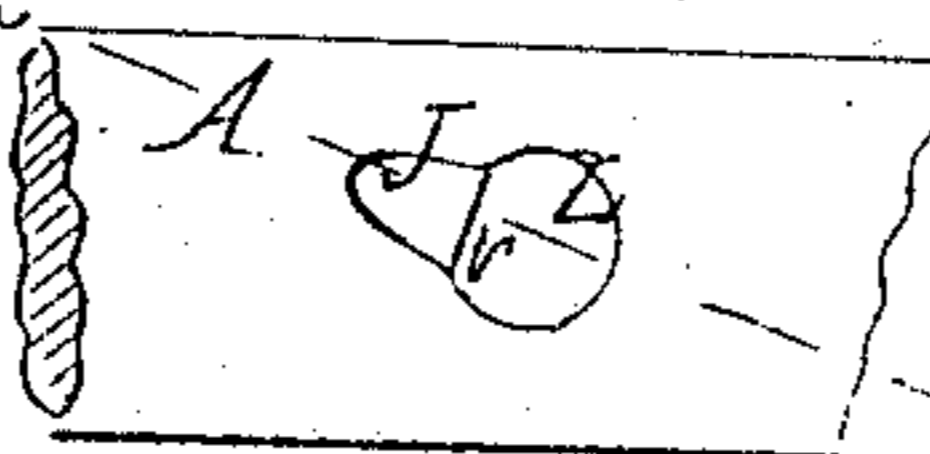


Fig. 5.



WITNESSES.

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C. E. STELLER, OF CHICAGO, ILLINOIS.

Letters Patent No. 74,626, dated February 18, 1868.

## IMPROVEMENT IN HARROW.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. E. STELLER, of Chicago, in the county of Cook, in the State of Illinois, have invented a new and useful Improvement in Harrows; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a plan view of my invention.

Figure 2, an elevation, taken parallel with a line, X X.

Figure 3, a broken sectional elevation of one of the frame-pieces, showing a tooth and the arrangement for holding it in position.

Figure 4, a plan view of the collar which supports the head of the tooth.

Figure 5, an inverted view of a part of the frame, showing the support for the tooth at the under side.

The nature of my invention consists in equalizing a double line of draught, and coupling the rear ends of a two-winged harrow with a rod and staples of such length as will set the rails for the teeth to track equal distances apart, and also permit the wings to have independent motions relative to the line of draught, whereby they will work on the surface of uneven ground; and in making enlarged openings through the rails, whereby round teeth may have a rotary and lateral motion to readily relieve them from sods and other obstructions, which usually clog the common harrow; and, further, in attaching metal supports, for the teeth, at the bottom of the harrow, in such manner as to have the face of the supports at right angles with the line of draught, for the purpose of giving the teeth an easy lateral motion, and not wear the rails; also, in the use of metal collars for supporting the heads of the teeth, and caps for holding them in the rails.

In order to give a correct understanding of my invention, I have marked corresponding parts with similar letters, and will now give a detailed description.

S S represent the two wings of the harrow, made with rails A, cross-pieces B, and hung by a joint, D, in the usual manner. The rear ends of the wings are set at such an acute angle as will cause the teeth, H, &c., to track equal distances apart, and are held in position by a rod, C, fig. 1, and staple-joints P P, so as to permit them to work independently of each other, as when passing over uneven ground. The opening, in which a tooth is made to work, is clearly shown at the enlarged figs. 3, 4, and 5, as is also the other parts used in connection therewith. J represents a support for tooth H, figs. 3 and 5, whose face, v, is set at right angles with the draught-line W, and may be sunk in the under side of rail A, or be held in place by screws, as most convenient, the object being to provide a smooth surface for the tooth to move on, and protect the wood from wear. A collar, J, figs. 3 and 4, is sunk in the top of rail A, and used to support the head of tooth H. An iron ring, however, may be secured by screws to the top of A, and thus secure all of the strength possible. The head of tooth H is made large, as seen at n, to prevent falling out, and is held in position, below rail A, by a cap, I, secured to it by screws or bolts, as desirable. The cap shown is made of thin wrought iron, but may be cast, and fit closely on the head of the tooth. I am not particular as to this, only so that the tooth is prevented from coming out at the top of the rail.

In this last description, I have only referred to one tooth and its fastenings, but as all of the teeth are secured in the same manner, a harrow may be made with any required number; nor in this respect is it necessary to have the harrow the same shape. It will be seen at fig. 1 that the hooks for attaching the evener F are secured to the cross-pieces B B at such points as will cause draught-lines, indicated at W W, to divide the two wings in equal parts, thereby preventing undue strain on the rod C, and leaving it free to work on staples P P.

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

1. The combination of supports J and teeth H, substantially as and for the purpose herein specified.
2. The combination of teeth H, collars K, and caps I, substantially as and for the purpose set forth.
3. The round teeth H, arranged to operate in enlarged holes, L, substantially as described.
4. The rod C, secured by staples P P, in combination with joint D, arranged substantially as and for the purpose set forth.
5. The rods E E, in combination with rod C and joint D, arranged to operate as and for the purpose described.

C. E. STELLER.

Witnesses:

G. L. CHAPIN,  
A. HAYWARD.