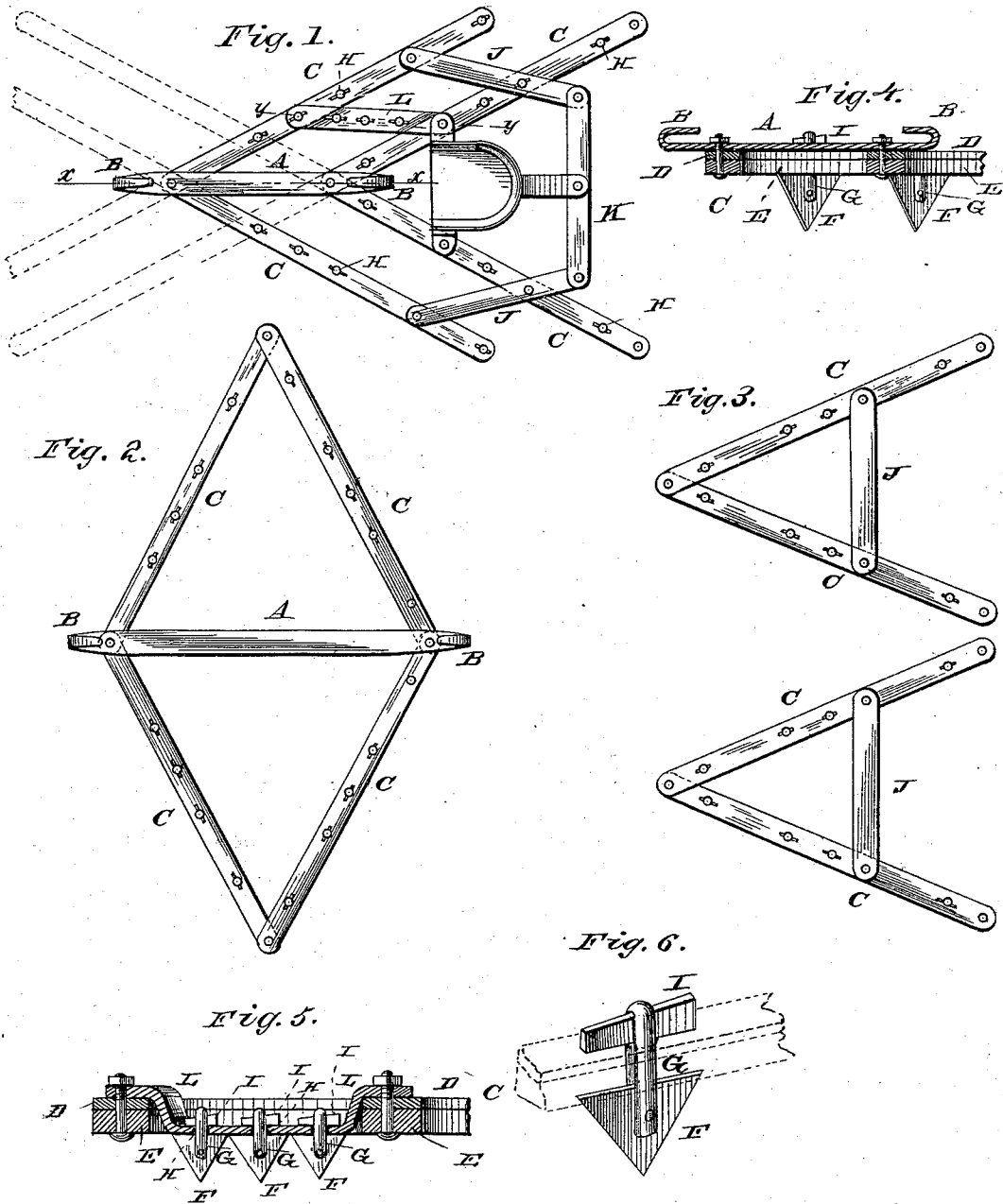


(No Model.)

G. H. JOHNSON.
HARROW.

No. 264,300.

Patented Sept. 12, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE H. JOHNSON, OF FINCASTLE, VIRGINIA.

HARROW.

SPECIFICATION forming part of Letters Patent No. 264,300, dated September 12, 1882.

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

To all whom it may concern:

Be it known that I, GEORGE H. JOHNSON, of Fincastle, in the county of Botetourt and State of Virginia, have invented certain new and useful Improvements in Harrows; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a plan view of my improved harrow. Figs. 2 and 3 are plan views, showing how the frame may be connected into different forms. Fig. 4 is a vertical sectional view on the line *x x*, Fig. 1. Fig. 5 is a vertical sectional view on the line *y y*, Fig. 1; and Fig. 6 is a perspective view of one of the teeth detached.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to harrows; and it consists especially in an improved construction of the frame, by which it is made capable of various adjustments, and by which it is specially adapted to be used in connection with the improved tooth shown and claimed in Letters Patent No. 244,248, issued to myself on the 12th day of July, 1881, all as will be hereinafter more fully described, and particularly pointed out in the claims.

Referring to the drawings hereto annexed, A represents the draft-bar of my improved harrow, which is made preferably of wrought-iron, and provided at each end with a hook, B, for the attachment of the draft.

The frame of the harrow consists essentially of four compound beams or bars, C, each consisting of an iron bar, D, and a wooden bar, E, placed loosely underneath the said iron bar, where it is held in the manner which will be hereinafter described.

F represents one of the teeth of my improved harrow, which consists of a triangular plate, pivoted between the sides of a forked tang or holder, G. The tangs or shanks pass through vertical openings H in the harrow-beams, on the upper sides of which they are secured by wedges I, or in any suitable manner. One side or edge of the tooth is thus caused to bear against the under wooden side of the harrow-beam, which acts as a washer to keep it in position and prevent it from turning. The parts D E of the harrow-beam, it will be observed,

are secured together by the teeth, tangs, and wedges. By loosening the wedges the teeth may be readily turned to any desired angle with the beams, and either side of the teeth may be turned forward.

The beams C are bolted in pairs to the front and rearend of bar A, and the ends of the beams C on either side may, as in Fig. 1, be connected by straps or bars J, the inner ends of which are connected by a brace, K. In this manner a double-V-shaped harrow is produced, the width of which may be regulated by properly adjusting the braces J K. The harrow may be reversed by removing the braces and adjusting the beams and braces in the position shown in dotted lines and attaching the draft to the other end of bar A. When the teeth are provided with a sharp or sod edge either edge may be brought into play by simply reversing the harrow, as described.

In lieu of connecting the teeth direct to the bars C, said bars or beams may be connected by longitudinal beams L, to which the teeth are attached. In this manner I produce what I call a "saw-tooth harrow."

By connecting the outer ends of the beams C a diamond-framed harrow is produced, as shown in Fig. 2.

By detaching the beams C from bar A and connecting them in pairs by the braces J, as in Fig. 3, a pair of V-shaped one-horse harrows or cultivators are produced.

My improved harrow-frame is exceedingly simple, convenient, easily adjusted, and inexpensive.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the compound beam C, consisting of the parts D E, of the triangular tooth F, forked tang or holder G, and wedge or suitable fastening device, I, as set forth.

2. The combination, with the harrow-frame A C J K, constructed, as described, of the longitudinal beams L, bent as shown, connecting the beams C and carrying the teeth, as set forth.

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

GEORGE H. JOHNSON.

Witnesses:

N. L. COLLAMER,
C. K. ALLEN.