(No Model.)

G. NEWTON.

HARROW.

No. 302,276. Patented July 22, 1884.

Fig. 1.

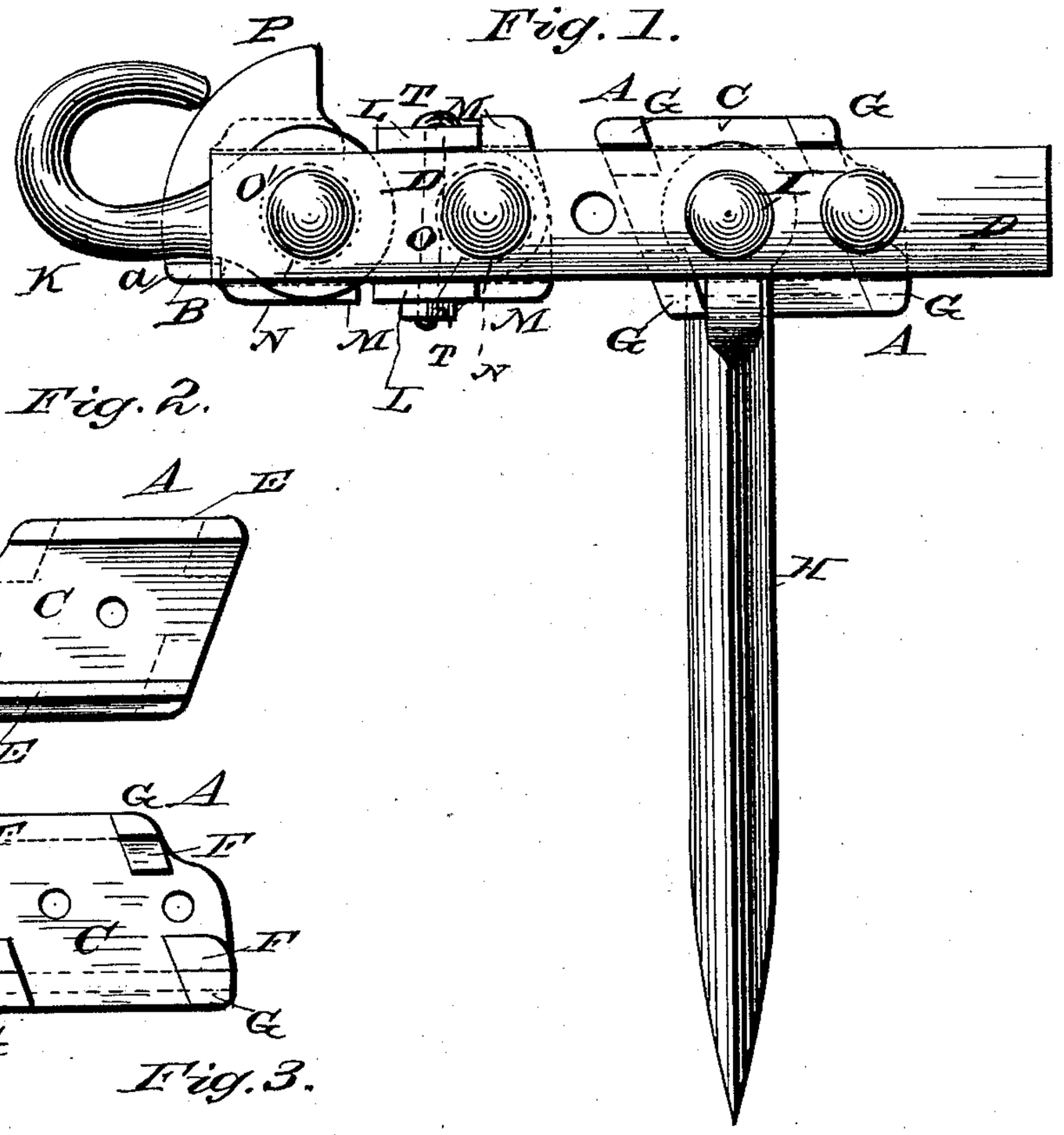
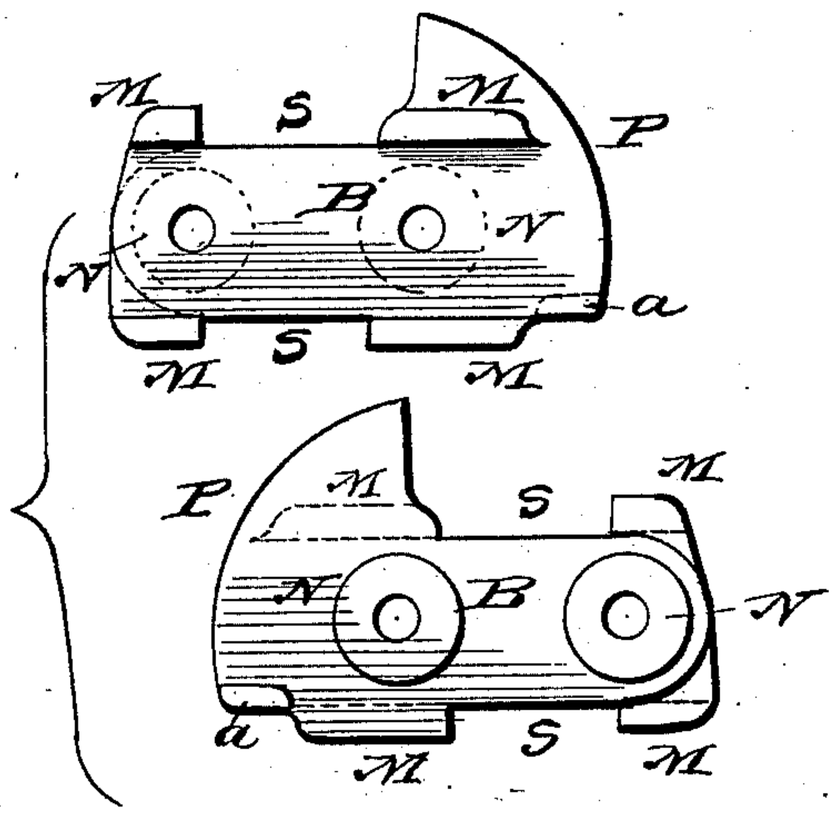


Fig. 2.

Fig. 3.



WITNESSES

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GEORGE NEWTON, OF STERLING, ILLINOIS.

HARROW.

SPECIFICATION forming part of Letters Patent No. 302,276, dated July 22, 1884.

Application filed April 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE NEWTON, a citizen of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Harrows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

My invention pertains to that class of harrows the frame-work of which is constructed of iron bars intersecting each other at or near right angles; and my invention consists in certain improvements in the mode of accomplishing such intersections. Each harrow-beam and each cross-tie consists of two flat parallel iron bars. The harrow-teeth are seated between the bars constituting the beam, and in each pair of cross ties or braces one of such pair is placed above the beam-bars and one below.

I deem it necessary to show and describe only so much of the harrow as will clearly exhibit my improvements and their mode of application.

In the drawings, Figure 1 is a view of a portion of the section of a harrow involving my invention. Fig. 2 is a detached view of each side of the tooth-box and beam-block A. Fig. 3 is a detached view of each side of the hook-seat and brace-block B.

A is a three-sided iron box, its ends C C being of the width desired between the parallel bars D D constituting the harrow-beam.

On the rear of the box A are formed the horizontal parallel flanges E E, between which is placed one of the bars D.

On the front of the box A and in the edges of the ends C C are formed the recesses F F F F, which furnish a seat for the other bar D.

In forming the recesses F there are necessarily produced the four flanges G at the open corners of the ends C C, two of which flanges project above and two below the bar D placed between them, and, with the flanges E E on the rear of the box A, serve to support the latter, and thereby the tooth H, the upper end of which is pivoted against the inside wall of the box A by means of a bolt, I, passed through the bars D D, box A, and tooth H, as shown. The box A is further utilized as a head-block between the bars D D, it having been discovered that more strength in proportion to the amount of material would be secured by placing the bars D D slightly apart. It will be noticed that the ends C C of the box A have a slight angle to the perpendicular, and therefore the lower extremity of the respective ends C are at variant distances from a vertical line drawn through the bolt I. The lower edge of the ends C are in such relation to the bolt I or pivotal point of the tooth H that when such tooth is perpendicular it rests against one of such ends, and when oblique against the other, thus automatically changing the implement from a smoothing to a stirring harrow, and vice versa, by alternating the point of attaching the draft from one end of the harrow to the other.

B is the seat of the hook K, and also serves as an end block for the bars D D and a filling between and seat for the cross-braces L L. The hook-seat B is placed at each end of the harrow between each pair of bars D D; but only two at each end of the harrow are provided with hooks.

On one side of the block or hook-seat B are formed the four flanges, M M M M, between the upper and lower pairs of which is placed one of the bars D. On the opposite side of the block B are formed the two bosses N N, to fill the interval between the bars D D, and against the outer ends of which the other bar D is fastened by means of a bolt, O, passing transversely through both bars D D, the inner boss N and the block B. The outer boss N serves also as a pivotal seat for the hook K, and at this point a second bolt, O′, passes through the bars D and block B.

On the hook side of the block B a stop, *a*, is provided, to sustain the hook K in the horizontal. The block B is also furnished with the convex vertical flange P, which, when the hook K is horizontal—the position for draft—prevents such hook from becoming detached. Recesses S S are formed in the upper and lower edges of the block B for the reception of the

cross ties or braces L L, which are rigidly held therein by means of the vertical bolt T clamping the braces L L respectively in the upper and lower recesses S. Intermediate cross-braces may be placed in the same manner, if desired.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

In a harrow, the combination of the bars D D, braces L L, bolt T, and block B, the latter being provided with the flanges M, bosses N, and recesses S, the bolt O, and bolt O′, whereby such block B forms a support and seat for such bars and braces at the point of the intersection of the same, substantially as shown, and for the purpose described.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE NEWTON.

Witnesses:
F. E. ANDREWS,
WILLIAM MANAHAN.