

W. TAYLOR.

HARROW.

No. 176,564.

Patented April 25, 1876.

Fig. 1.

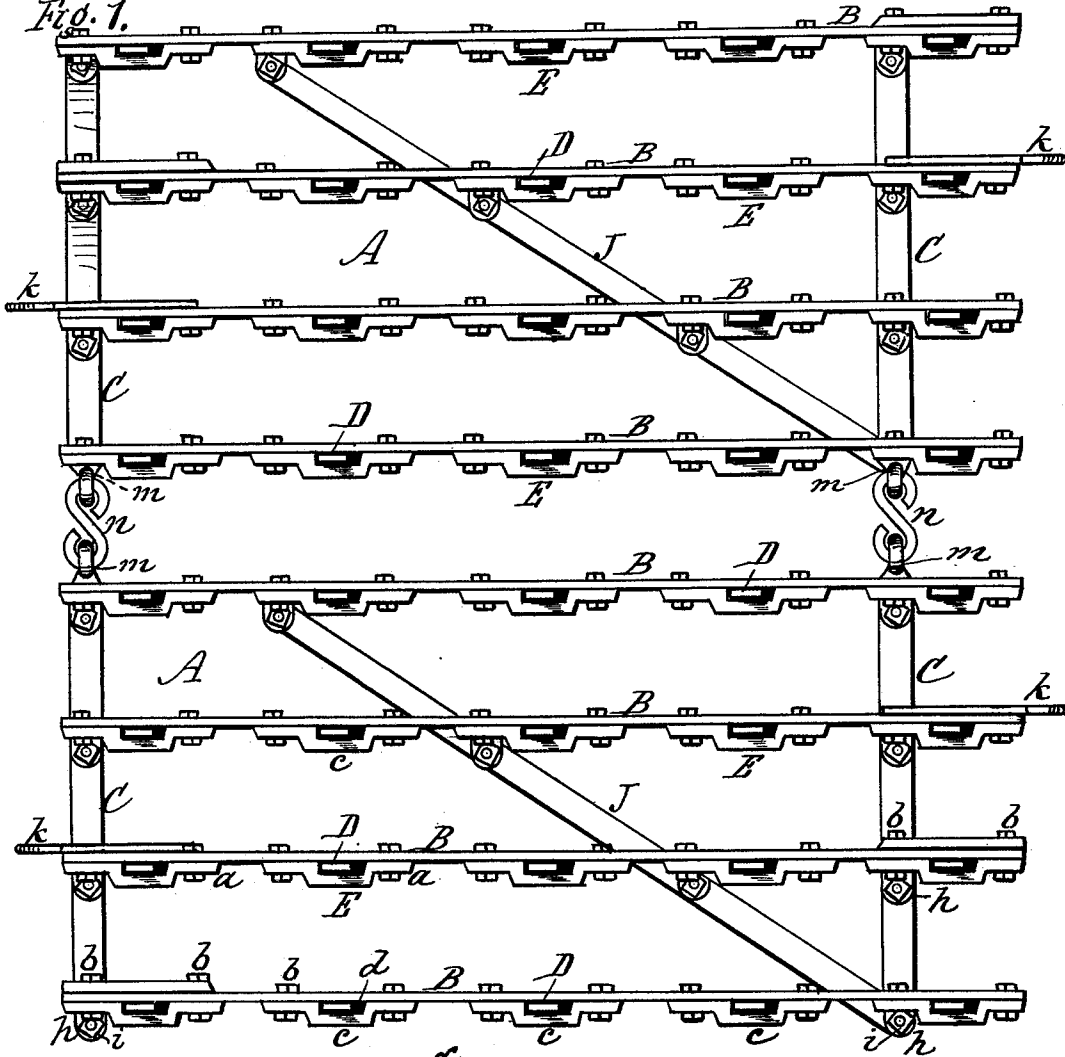


Fig. 2.

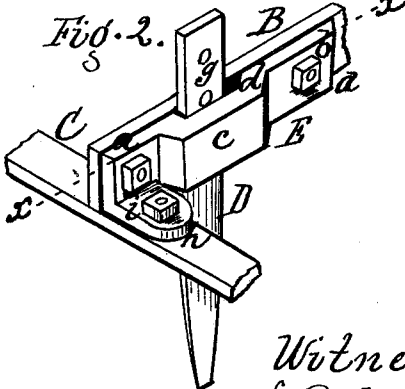
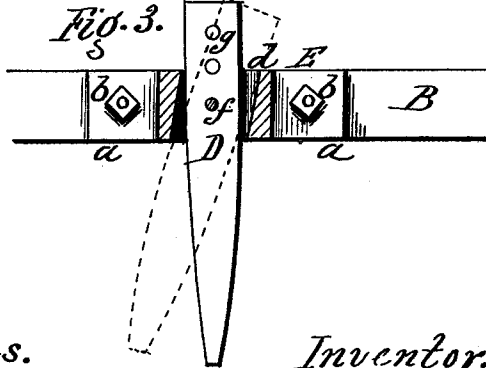


Fig. 3.



Witnesses.
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WILLIAM TAYLOR, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. 176,564, dated April 25, 1876; application filed April 19, 1875.

To all whom it may concern:

Be it known that I, WILLIAM TAYLOR, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Harrows; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan of the harrow. Fig. 2 is a perspective view of one of the teeth and its connecting parts. Fig. 3 is a section in line *xx* of Fig. 2.

My invention consists of bearings constructed with right-angled lugs for bolting the longitudinal bars to the cross-bars of the frame, and with offsets and inclined sockets for receiving the flat swinging teeth, as herein-after more fully described.

A A are the sections of the harrow, of which two or more may be used, suitably connected together. Each section is composed of longitudinal bars B B, set up edgewise on flat cross-bars C C. They are connected to angular bars J J.

D D are the teeth, which are made of flat strips of steel, tapering to a point at the bottom and sharp edged at both sides. The lower cutting portions of these teeth are twisted or set at an angle, so as to follow in line with the draft, which is applied on one side of the center.

E E are the bearings, which are made preferably of malleable or cast iron. The body *a* is made plain or flat, to fit the flat surface of the bars B B, to which it is secured by bolts *b b*. It is also constructed with an offset, *c*, within which is formed a socket, *d*, to receive the flat tooth D. The socket is of the angular or inclined form shown in Fig. 3, and is wider than the tooth, by which means the latter can turn on its axis and incline in one direction or stand upright in the other direction. By this means the teeth are adapted to cut vertical or inclined, according as the draft is applied at one end or the other of the harrow. This is shown in the black and dotted lines, Fig. 3. The pivots *f f* of the

tooth are solid points, cast on the socket, which fit in any of the adjusting-holes *g g*, by which means the teeth may be adjusted higher or lower.

The bearings E are also constructed with flanges *h h*, which rest in the angle between the longitudinal bars B and the cross-bars C, and are secured to said parts by screw-bolts *i i*, as clearly shown in Fig. 2.

The bearings E E, constructed as above described, serve the double purpose of attaching the longitudinal bars to the cross-bars, thus saving the cost and trouble of extra bolting and riveting, and of forming the sockets to the flat swinging teeth. By this means the use of double bars, with the teeth resting between them, or of double socket-pieces, is avoided, materially reducing the cost and producing a strong and substantial connection; also, making the harrow lighter than would otherwise be the case. The bars B B may be either of iron or wood.

m m are eyes formed on the ends of the braces C C. In these rest S-shaped connections *n n*, which form the joints between the sections of the harrow. The ends of the connections are made sufficiently open to allow them to be readily hooked or unhooked. They form flexible hinges which allow perfect play to the sections of the harrow, both forward and backward and vertically, being more effective in these respects than ordinary links and chains which have heretofore been in use. They also serve to keep the sections of the harrow apart. They allow the sections to rise and fall independently, thereby working perfectly over all irregularities of the ground. By setting the eyes *m m* close up to the sides of the harrow, as shown, greater strength of the joint is secured, as the leverage is avoided which would occur if the eyes were carried in near the center.

I do not claim a swinging tooth; neither do I claim a clamp with an inclined socket; neither do I claim an angle-iron for uniting the bars of the harrow; but

I claim—

The bearings E E, constructed with the right-angled lugs *h h* for bolting the longitudinal bars to the cross-bars of the harrow without rivets, and with offsets *c c* and inclined sockets *d d* for receiving the flat swinging teeth D D, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM TAYLOR.

Witnesses:

R. F. OSGOOD,
EDWIN B. SCOTT.