E. F. PRYOR.

Harrows.

No. 150,976. Patented May 19, 1874.

Fig 1

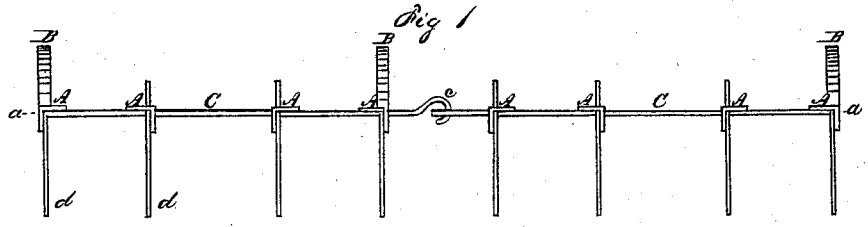


Fig 2

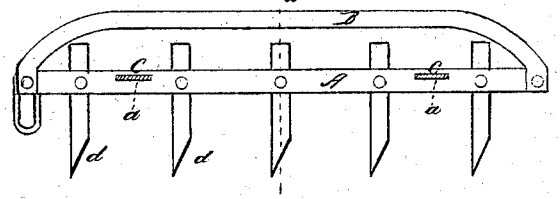
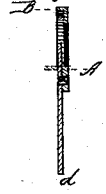


Fig 3



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD F. PRYOR, OF DAYTON, OHIO.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **150,976**, dated May 19, 1874; application filed April 23, 1874.

To all whom it may concern:

Be it known that I, EDWARD F. PRYOR, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in the Construction of 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

The object of my invention is to introduce the use of angle-iron into the construction of harrows.

I am aware that flat bar-iron and gas-pipe have been used heretofore in the construction of harrow-frames; but in order to secure the requisite stiffness to withstand the shocks to which a harrow at times is subjected, a greater weight is attained than is desirable or necessary to the successful use of the implement.

In order to obtain a stiff, strong, and durable harrow, as well as one that is light in proportion to its size, I have conceived the use of angle-iron in the construction of the frame of the implement. My improvement consists in making the longitudinal bars (that the teeth are attached to) of angle-iron of small cross-section. In the vertical section of these bars, and at a convenient distance from each end, I cut mortises. Through these mortises a bar of flat iron of suitable section and length is passed. To these lateral flat bars I rivet the longitudinal bars. Through the horizontal section of the angle-iron bar I cut a series of mortises, to receive the upper ends of the teeth. The teeth are attached to the vertical section of the bar by bolts or rivets. This method of fastening the teeth admits of renewing a broken tooth at will. To the outer longitudinal bar on each side of the frame, and projecting vertically upward therefrom, I attach, by bolts or rivets, an angle-iron arch. This arch is designed to give increased stiffness to the harrow-frame, and at the same time they act as convenient handles for lifting either side or leaf of the implement over any obstruction that may be met with in the use of the harrow.

In the annexed drawing, Figure 1 is an end elevation of a harrow embodying my improvements. Fig. 2 is a side view, and Fig. 3 is a cross-section on the dotted line in Fig. 2.

The same letters of reference are used in the several figures in the designation of like parts.

The longitudinal angle-iron bars A A A, together with the lateral flat bars C C, passing through the mortises *a a*, with rivets or bolts uniting the bars A and C at the points of intersection, constitute the frame of the harrow. The lateral bars C C may be projected a convenient distance from the sides of the frame, and hinged together, as shown at *c'*. The teeth *d d d* are thrust through mortises in the horizontal sections of the bars A A A, and riveted or bolted to the side of the bar. The arch B, of angle-iron, is riveted or bolted to the ends of the outer bars A.

Although I prefer a hinged or jointed harrow, as shown, still I do not wish to confine myself to that style, as my improvements relate equally to triangular, square, single, or sectional harrows.

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

1. The frame of a harrow, constructed of angle-iron bars and flat bars, as shown and described.

2. The mortised longitudinal angle-iron bar A, with the harrow-teeth *d d* attached thereto, substantially as specified.

3. The combination, in a harrow, of the longitudinal bars of angle-iron A, flat bars C, and arch B, substantially as shown and specified.

EDWARD F. PRYOR.

Witnesses:

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