J. McPHERSON.

Harrow.

No. 162,295. Patented April 20, 1875.

Fig 1.

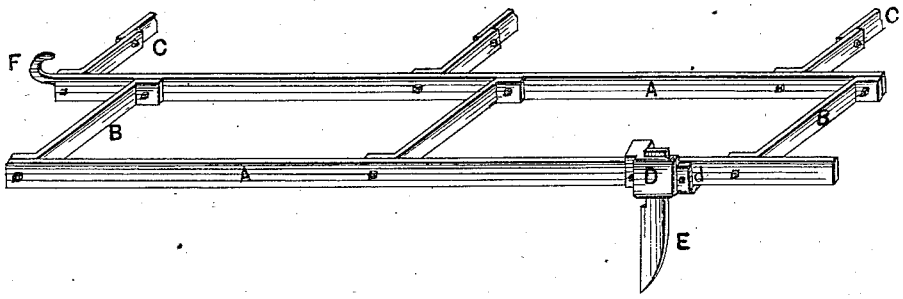


Fig 2.

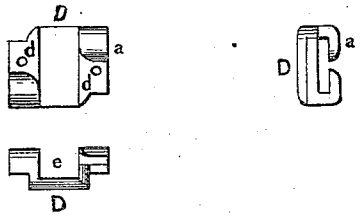
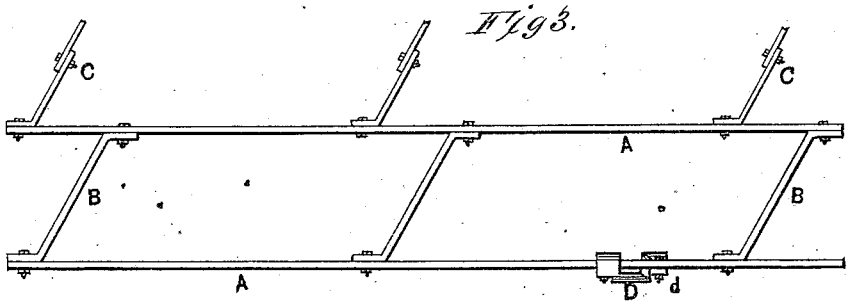


Fig 3.



Witnesses:
H. Bush
Chas. B. Bush

Inventor:
John McPherson

UNITED STATES PATENT OFFICE.

JOHN McPHERSON, OF HOUSEVILLE, NEW YORK, ASSIGNOR TO DEBORAH McPHERSON AND J. MATHER HOUSE, OF SAME PLACE.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. **162,295**, dated April 20, 1875; application filed February 26, 1875.

To all whom it may concern:

Be it known that I, JOHN McPHERSON, of Houseville, Lewis county, New York, have invented a new Sectional and Flexible Harrow and Surface Cultivator, of which the following is a specification:

The objects of my invention are two-fold: First, to so construct the frame of the harrow that one section can be used singly and alone when the work is of that character demanding but one, or in connection with another similar section or sections, as the case may need; second, the construction of, and attaching, the colter in such a manner, and by the use of a peculiar hasp, that the position of said colter or tooth can instantly be changed upon the frame of the harrow without the use of any tool whatever, at the option of the driver.

I herewith present as attached to, and making part of, this specification, the accompanying drawings, in which—

Figure 1 is a perspective view of one section of the harrow with the colter and hasp. Fig. 2 is an enlarged representation of the hasp in three different views. Fig. 3 is a plan, showing the arrangement of the braces between the parallel bars of the frame, and also the jointed braces between the sections.

Similar letters refer to similar parts in all the views.

A A are a pair of rectangular bars of metal or wood, in size to withstand the work demanded of the implement, having their vertical diameters the greatest. These bars are connected together by two or more braces, B B, running diagonally from one to the other, and secured at either end by bolts or screws to the bars A A. To each pair of these parallel bars, thus permanently secured together, are attached some half-braces C C, which allow of a second pair of similar bars being connected to the first by the use of short bolts at the points of intersection, and thus allowing each pair of bars to be raised as by a hinge, independent of its complimentary pair or section. F is a hook upon one of the bars, by which the whiffletrees of the draft animals are connected to the section, and as each section has one of these points of draft, it is manifest that the line of draft, when two or more sections are used in connection, may be changed at pleasure. D is a peculiarly-shaped hasp, by which the tooth is secured in its position upon the bar A, so constructed that, when the point of the tooth is raised and carried forward, the hasp is at once loosened, and both hasp and tooth may be easily removed, or moved to some other position upon the bar, as may be desired. This tightening or loosening upon the bar is effected by making the lips *a a* of the hasp—the one passing over the top of the bar A in front of the shank of the tooth, and down upon the opposite side, and the other underneath the bar, and up behind the tooth—with a slight draw or bevel upon their inner surfaces where they hug the sides of the bar, by which, when the shank of the tooth E is laid in its recess *e* in the hasp, and the two are placed upon the bar, the point of E being carried downward and backward, the two lips *a a* will tighten upon the sides of the bar, and thus snugly hold the tooth in position, and when put to service the resistance of the ground to the point of the tooth will only serve to bind the hasp and tooth in position. When desirable the hasp can be made permanent by use of bolts or screws passing through the bar, as at *d d*. The tooth is formed with its shank rectangular, and a trifle thicker than the depth of its seat in the hasp D, so that the pressure of the gripe of the latter shall cause the same to hug closely to the side of the bar A. The lower part of the tooth is made knife-blade shape, with the cutting-edge straight, as shown. (See Fig. 1, E.) The object is two-fold: First, that it may be used, when drawn over the ground, with the line of draft passing directly through the horizontal section of the tooth from the edge rearward, as a sharp cutting drag, and then, by changing the line of draft, a partially sidewise motion will cause this shaped tooth to form a drill-shaped furrow in the earth; second, when the work is severe, and the soil is stiff, the teeth of this harrow can instantly be changed, thus pre-

senting the rounded point to the soil, crushing and pulverizing instead of cutting and penetrating the earth.

I claim—

1. The hasp or harrow-tooth fastener D, having a tooth-seat, *e*, and hooks *a a* at diagonal corners, the forward one resting upon and embracing the bar A in front of the tooth, and the rear hook clasping the rail beneath and behind the said tooth, as described.

2. The hasp D, in combination with the harrow-frame A, as specified.

JOHN McPHERSON.

Witnesses:

H. BURT,

CHAS. B. BUSH.