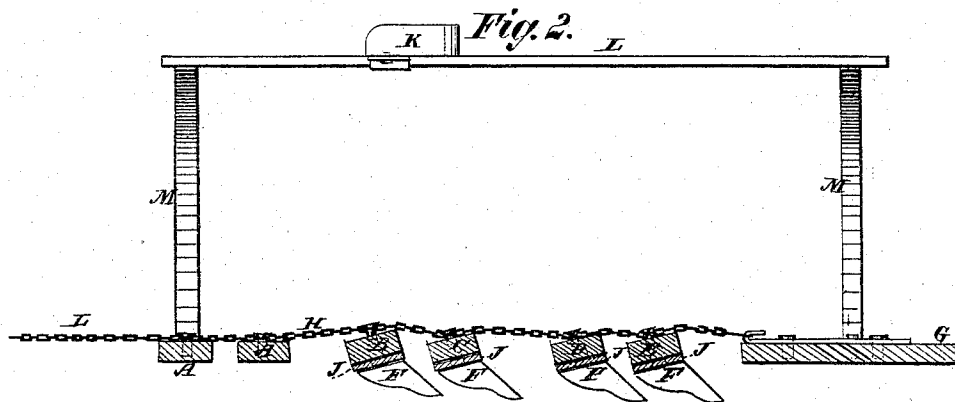
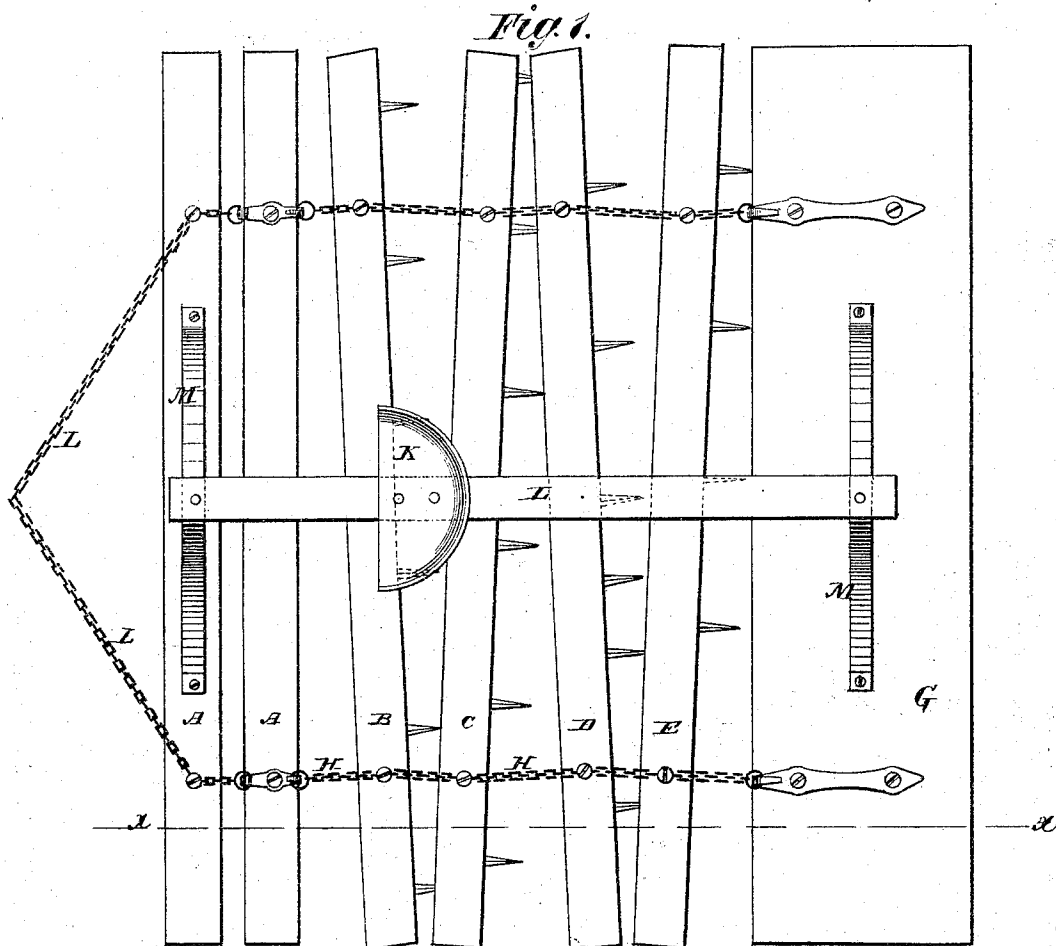


M. K. YOUNG.

Harrows.

No. 144,044.

Patented Oct. 28, 1873.



Witnesses.

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UNITED STATES PATENT OFFICE.

MILAS K. YOUNG, OF GLEN HAVEN, WISCONSIN.

IMPROVEMENT IN HARROWS.

Specification forming part of Letters Patent No. 144,044, dated October 28, 1873; application filed August 23, 1873.

To all whom it may concern:

Be it known that I, MILAS K. YOUNG, of Glen Haven, in the county of Grant and State of Wisconsin, have invented a new and Improved Harrow, of which the following is a specification:

My invention consists of a couple of pulverizing-bars in front, four, more or less, bars with knives or teeth behind them, and a wide pulverizing-bar behind the toothed bars, all connected together a few inches apart by chains, to be drawn sidewise over the surface, and the toothed bars being arranged obliquely to each other to give a side draft to the teeth or cutters, to some extent. The knives incline from the front backward so as to rise upon the clods, &c., and cut them by pressing downward; but they can be made to point forward and downward to be used like a colter by reversing the bars.

Figure 1 is a plan view of my improved harrow, and Fig. 2 is a longitudinal section.

Similar letters of reference indicate corresponding parts.

A represents the two front bars, with plain rubbing or crushing surfaces. B, C, D, and E are four bars, next behind the pulverizing-bars, with cutters or teeth F on the under side for cutting the clods, &c., and G is a wide bar behind, with a smooth surface for breaking the lumps, &c., after the cutters. All these bars are connected together by chains H at suitable distances from each other, and the bars with cutters are hitched so as to range obliquely to the line on which the harrow travels to give them a lateral inclination, some one way and some the other, by which they are rendered more effective. The bars having the cutters are shod on the under side with a metal plate, J, and the others may be, if desired, to render them more durable. In practice these metal bars or plates will be made in short sections of

malleable iron, and the cutters will be cast together with them. A seat, K, is provided for the driver, by a spring bar or board, L, extending from front to rear, and mounted on the standards M, which rise up from the front and rear bars. The two front and rear pulverizing and crushing bars are arranged parallel to each other.

The front bars may be caused to bear with more or less force on the ground by varying the length of the hitching-chains L, so as to change the angle of the draft.

The metal bars carrying the cutters may be cast separate, in such manner as will permit cutters of cast or wrought iron or steel being securely inserted in them. By the pivotal fastening of the frame-pieces under the chain they are allowed to yield in front to a certain extent, to be thrown back by the pressure of the chain on the upper rear corner, thus giving them a constant swinging motion fore and aft, which largely aids in the pulverizing process. This motion can be increased by increasing the width of the frame-pieces, or in any other way that will increase the leverage under the chain. This I regard as one of the most important features of the invention, and propose to claim it.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The pulverizer-bars A G, oblique bars B C D E, cutters F, and draft-chains L, combined as and for the purpose described.

2. The seat K, spring-board L, and the standard M, arranged, in combination with the front bar A and the hind bar G, substantially as specified.

MILAS K. YOUNG.

Witnesses:

L. KAISER,
S. CHANDLER.