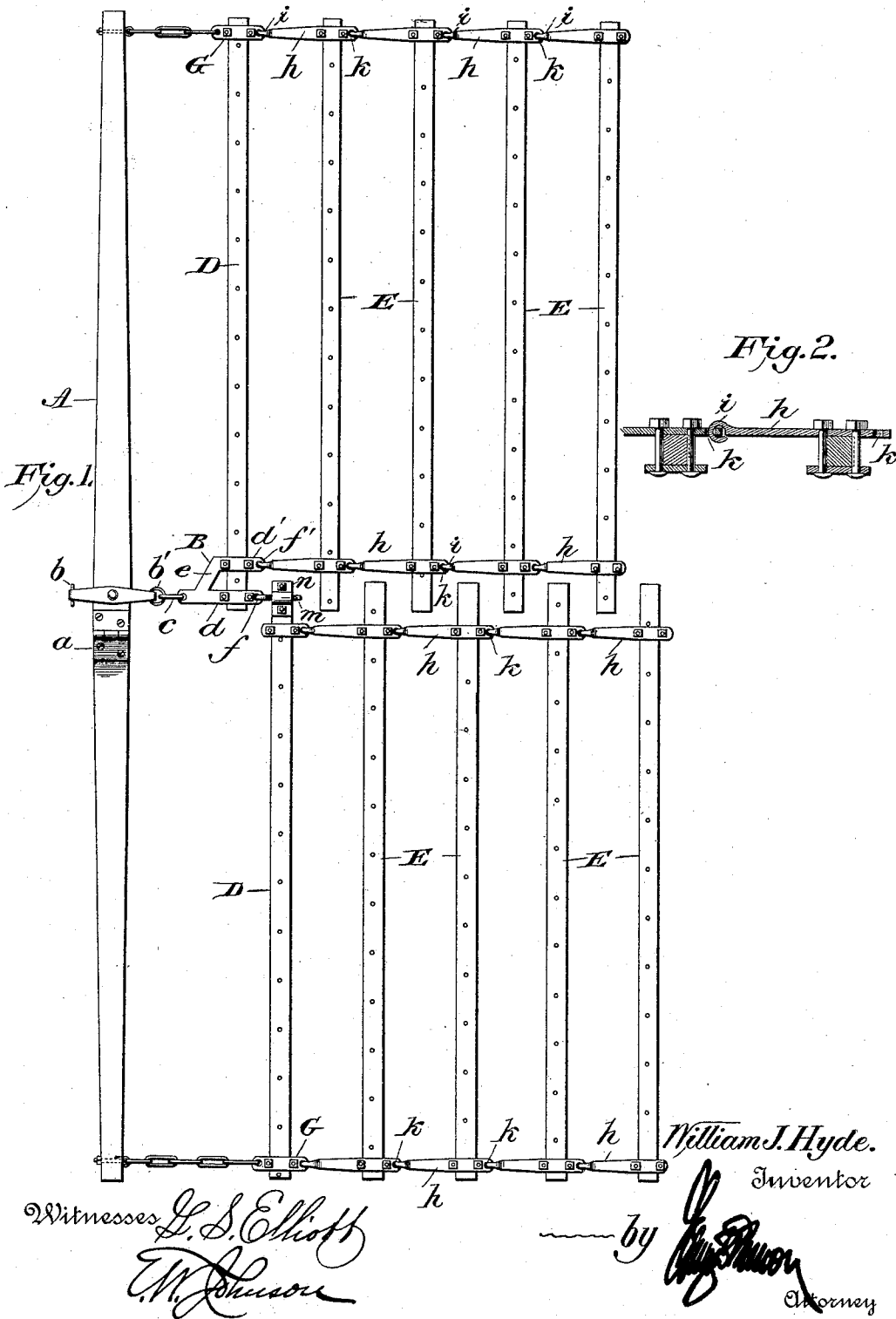


(No Model.)

W. J. HYDE.
HARROW.

No. 473,754.

Patented Apr. 26, 1892.



Witnesses *G. S. Elliott*
W. Johnson

William J. Hyde.
Inventor
by *[Signature]*
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM J. HYDE, OF TRAEER, IOWA.

HARROW.

SPECIFICATION forming part of Letters Patent No. 473,754, dated April 26, 1892.

Application filed October 24, 1891. Serial No. 409,731. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. HYDE, a citizen of the United States of America, residing at Traer, in the county of Tama and State of Iowa, 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 of reference marked thereon, which form a part of this specification.

This invention relates to improvements in harrows.

The object of the invention is to provide a harrow which is made up of two sections adapted to be used either independently or connected to each other and used together, said sections being connected to a draft-bar, the construction of the harrow being such that it will adapt itself to the unevenness of the ground; and the invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a harrow constructed in accordance with my invention. Fig. 2 is a sectional view taken on the line xx of Fig. 1.

A refers to the draft-bar, which is preferably made up of two sections connected to each other by a hinge-joint a , adjacent to which is secured a clevis, the loops b and b' of which extend in front and rear of the draft-bar, as shown. To the ring which passes through the loop b' of the clevis is attached a hook c , which engages with an eye in a coupling-plate B, said coupling-plate being carried by one of the harrow-sections. This plate is preferably made of a single piece, and consists of two parallel members d and d' , which are connected to each other by a bar e . The members d and d' have eyes f and f' , through which pass means for connecting the adjacent harrow-bars thereto, as will be hereinafter set forth.

D refers to the front harrow-bar of one of the sections, to which the coupling-plate B is secured by means of yokes and bolts, as shown, and the opposite end of said bar is provided with clamping-plates $g g$, the upper one of

which has perforations at each end for engaging, respectively, with the link secured to the draft-bar and with the plate secured to the adjacent harrow-bar. The bars E of the harrow-sections have each attached at their ends a plate h , the front end of which is formed into an eye i , which passes through a perforation in the plate attached to the harrow-bar in front of the same. These plates are attached to the harrow-bars by yokes and bolts, and the rear end of each is provided with a perforation k to receive the eye of the next plate.

With the perforation in the end of the member d of the plate B a pin m engages, said pin being adapted to pass into a socket formed on a plate n and be retained therein by a key, as shown.

A harrow constructed as herein described when drawn across a field will conform itself to any unevenness of the ground and the teeth will be caused to enter the ground, as they are slightly inclined by the draft. It will be noted that the bars of the harrow-sections are not on a line with each other and that the sections are only connected to each other by the draft-bar and coupling-pin m . It will also be noted that as the draft-bar has adjustable connections at its ends for connecting the harrow-sections thereto it will serve as a draft-equalizer. When it is desired to use but one of the sections, the other may be folded on top or detached by removing the key.

I am aware that prior to my invention it has been proposed to provide a harrow made up of toothed bars which are flexibly connected to each other, the forward toothed bars being connected to a draft-bar, and that in some instances said draft-bar has been jointed. My invention will be distinguished from such construction in that the means for connecting the harrow-sections to the jointed draft-bar is of different construction and that the parts are differently organized.

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

1. The combination, in a harrow constructed substantially as shown, of a jointed draft-bar and a plate B, having two rearwardly-extending members, said plate being connected rigidly to one of the harrow-sections and flexibly to the draft-bar to one side of the hinge, one

member *d* of the plate carrying a pin which engages with the front bar of a harrow-section, the parts being organized substantially as shown, and for the purpose set forth.

5 2. The combination, in a harrow, of a jointed draft-bar A, having a draft attachment to one side of the joint, a plate B, having eyes *f* and *f'*, said plate being rigidly secured to the first bar of a harrow-section, connecting means engaging with the eye *f'*, and a swivel connection engaging with the first bar of the adjacent har-

row-section on a line with the clevis, the ends of the harrow-bars being connected to each other, as shown, and to the ends of the draft-bar, for the purpose set forth. 15

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

WILLIAM J. HYDE.

Witnesses:

WM. MERTZ,

WILLIAM H. BOWEN.