

(No Model.)

D. M. HARKRADER.

DRAFT EQUALIZER.

No. 264,691.

Patented Sept. 19, 1882.

Fig. 1.

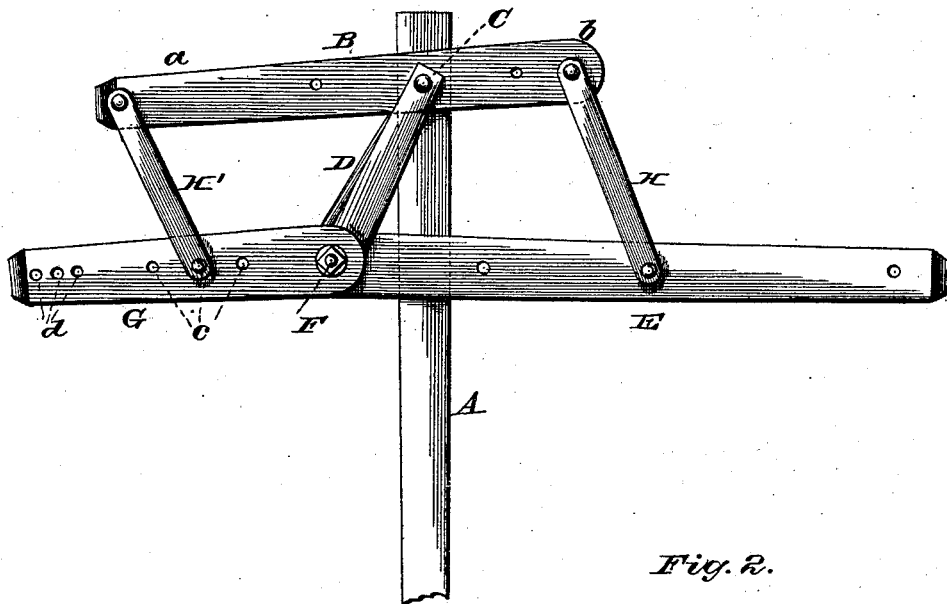
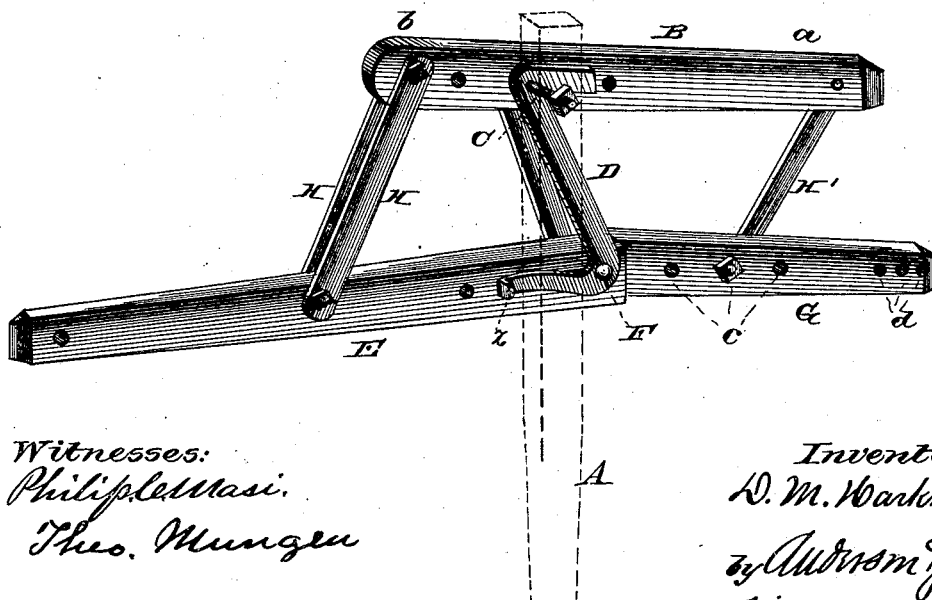


Fig. 2.



Witnesses:
Philip Lettmasi.
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UNITED STATES PATENT OFFICE.

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DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 264,691, dated September 19, 1882.

Application filed July 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. HARKRADER, a citizen of the United States, and a resident of Pittsfield, in the county of Pike and State of Illinois, have invented a new and valuable Improvement in Equalizers; 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 annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a top plan view. Fig. 2 is a bottom view in perspective.

This invention has relation to draft-equalizing devices especially adapted for three horses; and it consists in the construction and novel arrangement of the Z shaped tongue-plate pivoted to the tongue and to the evenner-bar, the long and short lever-arms pivoted by their inner ends to each other and to the front portion of the tongue-plate, and the draft-straps connecting the lever-arms to the evenner-bar, all as hereinafter set forth.

In the accompanying drawings, the letter A designates the draft pole or tongue of a vehicle, reaper, or cultivator, and B an evenner-bar extending across the same and pivoted thereto by the bolt C.

D indicates the tongue-plate, which is made in the shape of the letter Z. The rear portion of this plate is pivoted to the tongue by the bolt C, which also passes through the evenner-bar.

E represents the long lever-arm, the inner end of which is pivoted to the front portion of the tongue-plate at the bend or angle, as indicated at F; and G is the short lever-arm, also pivoted to the tongue-plate by its inner end at the same point, the bolt F serving to connect both lever-arms to the tongue-plate.

H H' are adjustable draft-straps, which connect the lever-arms E and G respectively to the arms of the evenner-bar, the long arm *a* of the evenner-bar being connected to the short lever-arm G, and the short end *b* of the evenner-bar being connected to the long lever-arm E. Perforations *c* are provided in the short arm G, in order that the draft-strap H' can be adjusted nearer to or farther from the tongue-bolt F. Perforations *d* are made in series at the end of the short arm G, in order that the

single-tree connection may be adjusted. The end *z* of the forward portion of the tongue-plate D is turned or bent downward and forms a stop. The evenner-bar is so arranged that its long arm *a* is connected to the short lever and its short arm *b* to the long lever, and the short lever carries the single-tree for the single horse, while at the end of the long lever the double-tree for the two horses is connected.

When the equalizer is in use the lever-arms E and G will have some lateral play, but the stop *z* of the tongue-plate will prevent the device from moving over toward the single horse attached to the short arm, when it engages the side of the tongue. As there is no stop for this purpose on the other side of the tongue, the equalizing device can move freely in the opposite direction or toward the two horses, which are connected to the longer arm E. By this arrangement the single horse is enabled to pull off the side draft. The relation of the long arm of the evenner-bar to the short lever-arm G can be changed by adjusting the forward end of the strap H', connecting it by means of its bolt to one or another of the perforated bearings *c*, according to requirement. If the reaper have a heavy side draft, the adjustment can be made so as to cause it to move forward in the proper direction.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

The draft-equalizer consisting of the evenner-bar B, the Z-shaped tongue-plate D, pivoted to the tongue and to the evenner-bar, the long and short lever-arms E and G, pivoted by their inner ends to each other and to the front part of the tongue-plate, and the draft-straps connecting the lever-arms to the evenner-bar, whereby the arms E and G, will have some lateral play, but will be prevented by the stop *z* of the tongue-plate from moving toward the single horse when the stop engages the side of the tongue, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID M. HARKRADER.

Witnesses:

J. I. DOSS,

LEWIS A. MCKIBBEN.