

(No Model.)

2 Sheets—Sheet 1.

H. KROMER.
DRAFT EQUALIZER.

No. 425,514.

Patented Apr. 15, 1890.

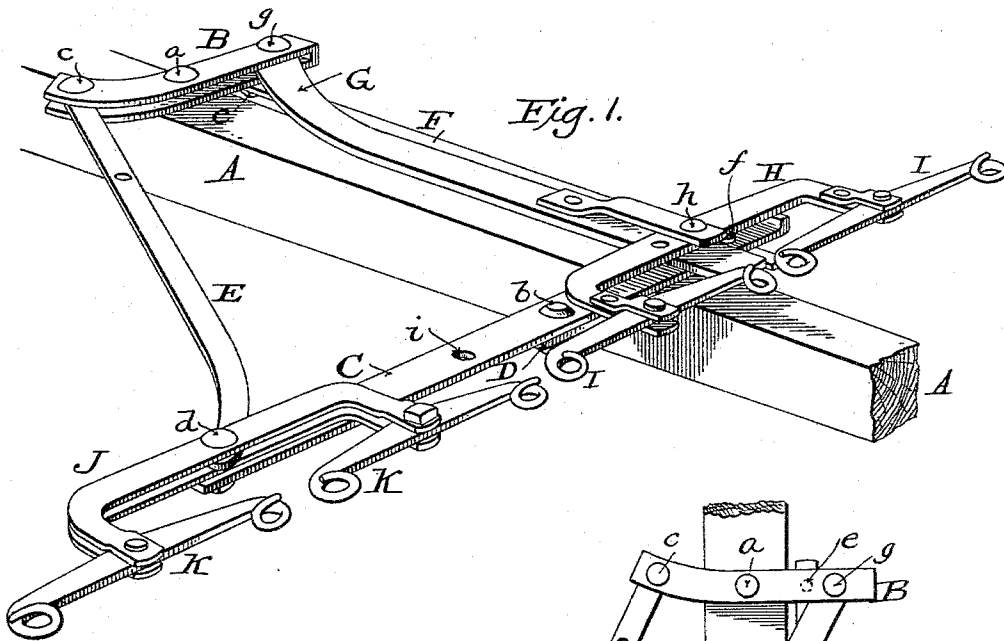
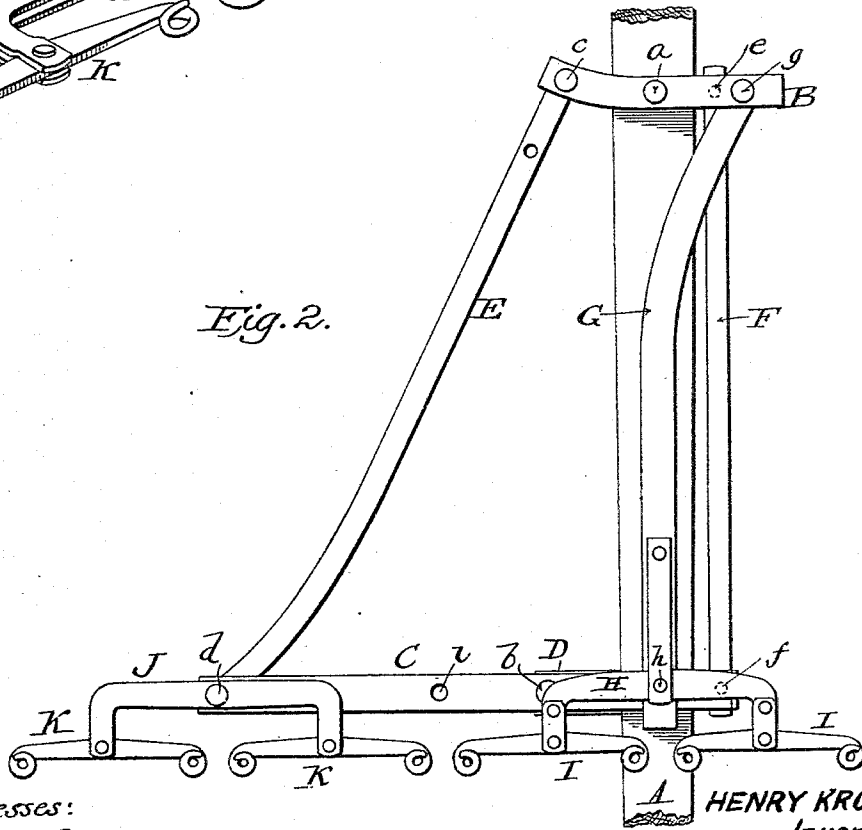


Fig. 2.



Witnesses:

James D. Duhamel
Horace A. Dodge

HENRY KROMER
Inventor

By *Dodger Sons*
Attys

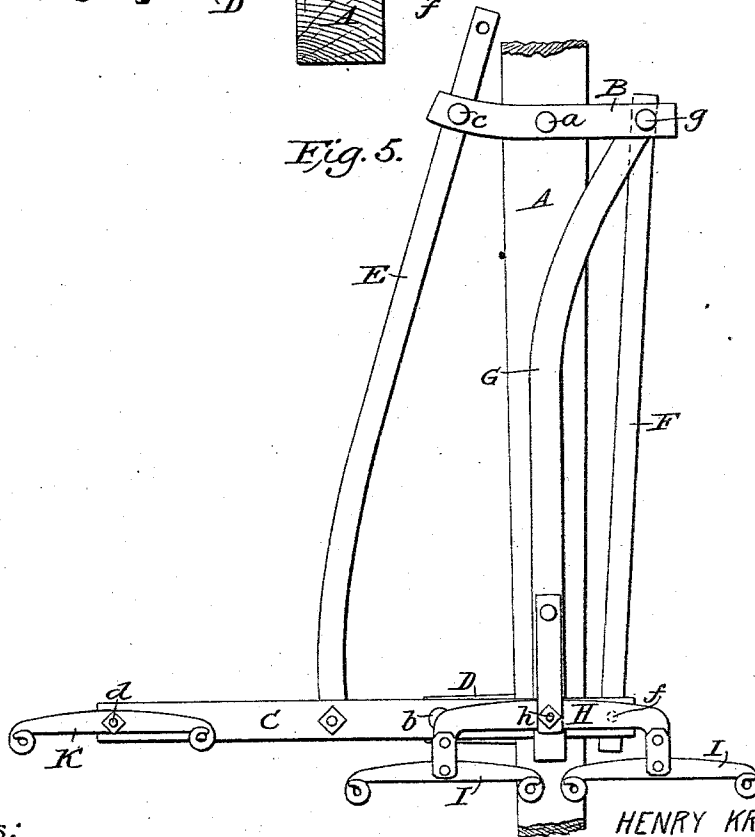
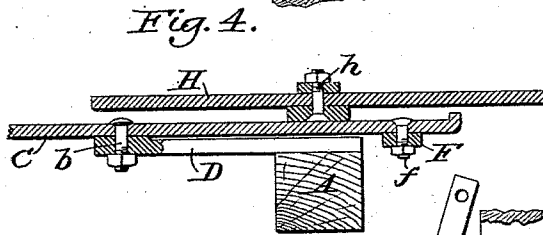
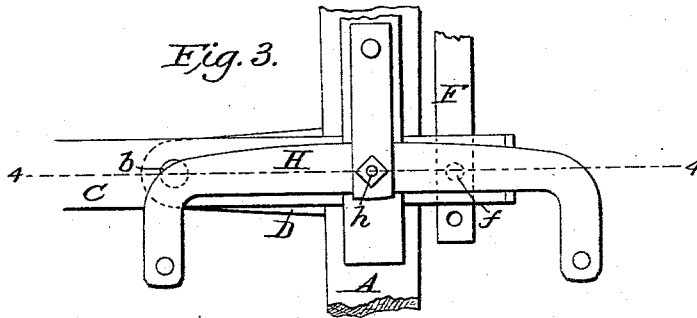
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UNITED STATES PATENT OFFICE.

HENRY KROMER, OF LAKEVILLE, MINNESOTA.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 425,514, dated April 15, 1890.

Application filed February 13, 1890. Serial No. 340,330. (No model.)

To all whom it may concern:

Be it known that I, HENRY KROMER, a citizen of the United States, residing at Lakeville, in the county of Dakota and State of Minnesota, have invented certain new and useful Improvements in Draft-Equalizers, of which the following is a specification.

My invention relates to draft-equalizers; and it consists in various features and details hereinafter set forth and claimed.

In the drawings, Figure 1 is a perspective view of my improved equalizer; Fig. 2, a plan view; Fig. 3, a detail view; Fig. 4, a sectional view of the same on the line 4 4, and Fig. 5 a plan view illustrating the equalizer adapted for use with three horses.

A indicates the pole or tongue, B a short lever pivoted at *a* near the inner end of the pole, and C a longer lever pivoted at *b* to an arm or bracket D, secured to the pole near its forward end.

E indicates a rod or link pivoted at *c* to one end of lever B and at *d* to the corresponding end of lever C, while F indicates a bar or link connected by pivots or bolts *e* and *f* with the opposite ends of levers B C.

Pivoted to the lever B at *g* and beyond the pivot or bolt *e* is a draw-bar G, which extends forwardly in line with the pole or tongue and carries at its forward free end the doubletree H, which latter is in turn provided with the whiffletrees I I, as shown in Figs. 1, 2, and 5.

Lever C is provided at the point of attachment of link E with a similar doubletree J, carrying whiffletrees K, both of the doubletrees H and J being free to oscillate or swing upon their pivots *d* and *h*. In this arrangement, designed for use with four horses, three horses will be on one side of the pole or tongue, while only one horse will be on the opposite side, this apparent difference in power being overcome or counteracted by the difference in leverage, as it is plain that the distance from *a* to *c* and *b* to *d* is greater than the distance from *a* to *e* and *g* and from *b* to *f*.

When it is desired to use only three horses, the doubletree J is removed and one of its whiffletrees K is substituted. The link or rod E is at the same time connected with the lever C at a point *i*, nearer the fulcrum or pivot *b* of the latter, as shown in Fig. 5, and the bolt or pivot *c* moved inward a distance from the end of link E, the lever C and link E being provided with holes for this purpose.

By moving the lever C endwise and connecting the link E with the bracket D at the point *b* by a single bolt the single horse at the outer end of the lever C may be brought closer to the tongue.

Having thus described my invention, what I claim is—

1. In combination with a pole or tongue A, levers B and C, pivoted thereto, links E and F, connecting the levers B C on opposite sides of their pivots, a draw-bar G, provided with a doubletree H and whiffletrees I, and connected with one end of lever B, and a doubletree J, provided with whiffletrees K and secured to that end of lever C to which the link E is connected, all substantially as shown and described.

2. In combination with a pole or tongue A, levers B and C, pivoted thereto, link E, connecting the long arms of the levers, link F, connecting the short arm of the levers, a draw-bar G, connected to the short arm of lever B, a doubletree H, carried by the draw-bar and having a whiffletree I on each side of the pole or tongue, and a whiffletree carried by the long arm of lever C.

3. In combination with a pole or tongue A, levers B and C, pivoted thereto, an adjustable link E, connecting the long arms of the levers, a link F, connecting their short arms, and a draw-bar G, connected with the short arm of lever B.

In witness whereof I hereunto set my hand in the presence of two witnesses.

HENRY KROMER.

Witnesses:

FRANK SNYDER,
CHAS. BORNARTH.