(No Model.)

A. HUNT.

DRAFT EQUALIZER.

No. 421,279. Patented Feb. 11, 1890.

Fig. 1.

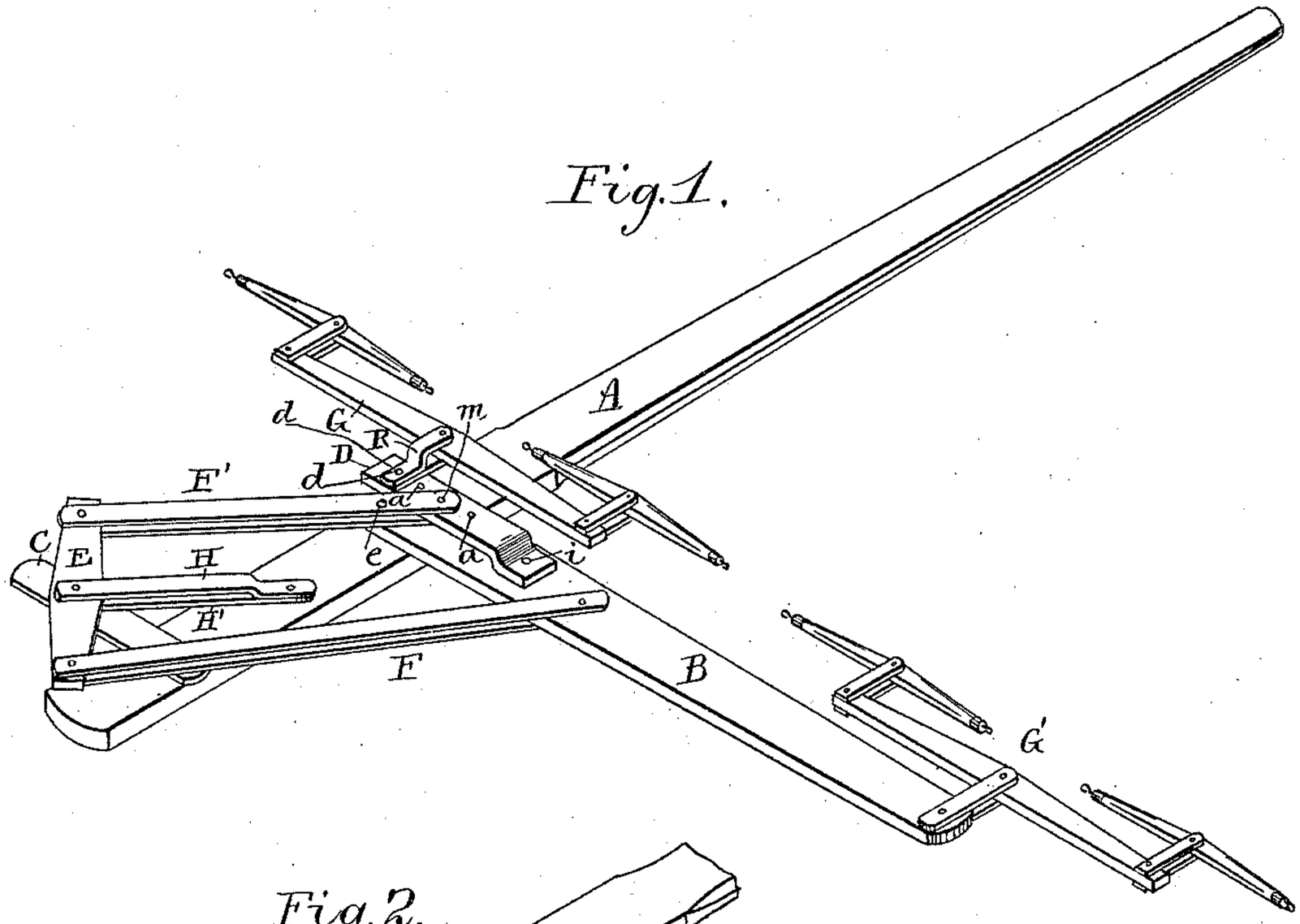


Fig. 2.

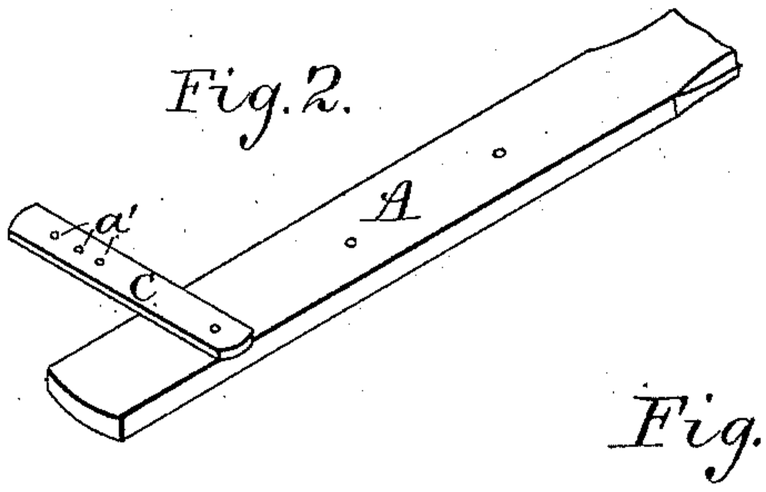
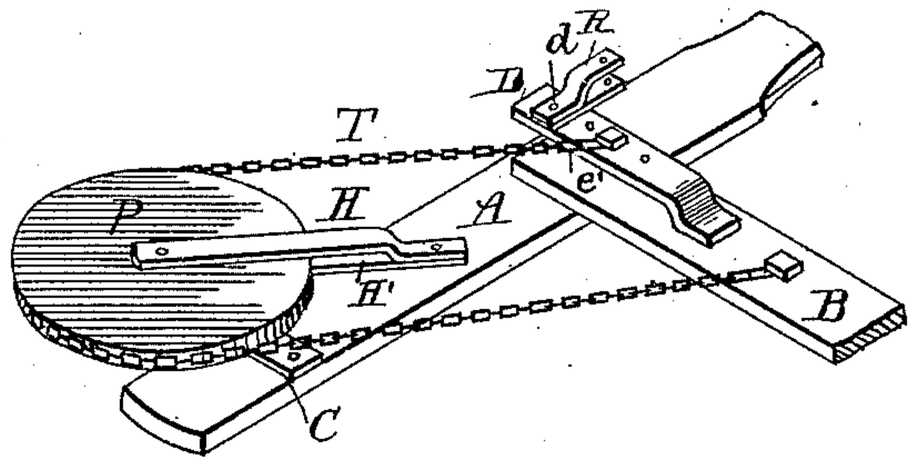


Fig. 3.



Witnesses:

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ALMON HUNT, OF ATLANTIC, IOWA.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 421,279, dated February 11, 1890.

Application filed April 4, 1889. Serial No. 305,986. (No model.)

To all whom it may concern:

Be it known that I, ALMON HUNT, a citizen of the United States, residing at the city of Atlantic, in the county of Cass and State of Iowa, have invented a new and useful Draft-Equalizer, of which the following is a specification.

My invention relates to certain new and useful improvements in draft-equalizers; and the objects of my improvements are to provide a draft-equalizer to be used in connection with self-binding harvesters and reapers, which will overcome the side draft of the harvesters and reapers, and which is so constructed that the draft of the horses will be equalized when one horse is used on one side of the pole and three on the other, and which can be readily converted, when desired, from a four-horse to a three-horse equalizer. I attain these objects by the device illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the draft-equalizer. Fig. 2 is a detail perspective view of the rear lever or pulley support and a portion of the pole, and Fig. 3 shows a modified construction of a portion of the draft-equalizer by substituting a pulley and chain for the rear lever and bars pivoted thereto.

Similar letters refer to similar parts throughout the several views.

A represents a pole or tongue of ordinary construction, which may be attached to a self-binding harvester or reaper in the ordinary manner.

B is a lever, which is pivoted at one end to the pole.

C is a support, which is pivoted at one end to the pole. It can be, if desired, rigidly secured to the pole; but I prefer to pivotally connect it to the pole and hold it in proper position by means of a pivoted brace.

E is a lever, which is pivoted at its center to the support C. The braces H and H′ are pivoted at one end to the pole and at the other to the support C. Instead of using the braces H and H′, a single brace can be used, having its end next to the support bifurcated.

D is a bent lever, pivoted at one end by means of the bolt *i* to the lever B. It has several apertures *a*.

The bars F are pivotally connected at their rear ends to the lever E, and at their forward ends to the lever B, at a point distant from the pivot which connects the lever B to the pole equal to about one-third the whole length of the lever B. Instead of employing the bars F, a single chain can be used in their place, if desired. The bars F′ are pivotally connected at their rear ends to the lever E, and at their forward ends to the lever D at a point about midway between the ends of the lever D, but by means of the apertures *a*, which are adapted to receive the bolt or pivot *m*, the bars can be connected with any part of the lever D that may be desired.

The doubletree G′ is attached to the end of the lever B and the doubletree G is attached to the end of the lever D. Both of the doubletrees are provided at their ends with clevises, to which are attached singletrees.

In the modified construction of the draft-equalizer shown in Fig. 3 I substitute a wheel or pulley P for the lever E and use a chain T instead of the bars F and F′. The pulley is pivoted to the support C at the same point as the lever E, and if the pulley is made the same diameter as the lever is long it will have the same motion as the lever E. It is equivalent to the lever E. The chain T encircles the pulley and is secured at one end to the lever B and at the other to the lever D at the same points of connection as the bars F are connected to the lever B and the bars F′ to the lever D.

By the construction shown in the drawings one of the horses will be located on that side of the pole next to the standing grain that is being cut, while the other three will be abreast of each other and on the opposite side of the pole.

In the drawings I have illustrated my invention as adapted for use as a four-horse equalizer; but by removing the doubletree G′ and placing a singletree in its place, and also by moving the forward ends of the bars F′, as shown by the broken lines in Fig. 1, and pivotally connecting them to the end of the lever D by inserting the pivot or bolt *d* through the aperture *e*, or in the modified construction by moving the end of the chain and attaching it to the end of the lever D by inserting the pivot *d* through the link *e′*, I provide

an improved three-horse equalizer. As the cutting apparatus of a self-binding harvester or reaper is situated entirely upon that side of the pole nearest to the grain, the resistance that the cutting apparatus receives from the grain when the machine is in operation causes a strong side draft toward the standing grain, which is still further augmented when three or more horses are used abreast by attaching one or more of them to the end of a lever which projects from the pole in a direction away from the standing grain. Attempts have been made by inventors to overcome the side draft by pivoting the doubletree G as far as practicable from the longitudinal center of the pole toward the standing grain; but as it is not feasible to pivot it only a short distance from the center of the pole this means of avoiding the side draft has been found to be inadequate. I employ the above-described means, and in addition thereto, as a means of overcoming the side draft, I pivot the lever E or its equivalent, the pulley P, to the support C, which projects from the pole toward the standing grain. The support can be made of any length desired. It has several apertures a', adapted to receive the pivot of the lever E or pulley P, and by inserting the pivot of the lever E or pulley into one of the apertures a' the lever or pulley can be adjusted a suitable distance from the pole to entirely overcome the side draft. The support can be made of any form or shape desired, provided it forms a bearing or support to which the lever E or pulley can be pivoted at a suitable distance from the pole toward the standing grain.

Ordinarily the lever E of draft-equalizers is pivoted to the center of the pole, thus making the line of draft of the horses at the center of the pole; but by my construction the lever E or its equivalent being pivoted at a point between the pole and standing grain, the line of draft is between the pole and standing grain, which overcomes entirely the side draft.

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

1. The lever B, having one end pivoted to the pole, the lever D, which is pivoted to the lever B at a point between the pivot that hinges the lever B to the pole and that end of the lever B to which the doubletree is attached, the lever E, pivoted to a support, the bars F, pivoted at their forward ends to the lever B and at their rear ends to the lever E, and the bars F′, which are pivoted at their rear ends to the lever E and at their forward ends to the lever D at a point between the pivot that hinges the lever D to the lever B, and the bolt or pivot that secures the doubletree G to the lever D, all combined substantially as described.

2. The lever B, having one end pivoted to the pole, the lever D, which is pivoted to the lever B at a point between the pivot that hinges the lever B to the pole and that end of the lever B to which the doubletree is attached, the support C, which is pivoted at one end to the pole, the braces H H′, which are pivoted at their forward ends to the pole and at their rear ends to the support C, the lever E, which is pivoted to the support C, the bars F, pivoted at their forward ends to the lever B and at their rear ends to the lever E, and the bars F′, which are pivoted at their rear ends to the lever E and at their forward ends to the lever D at a point between the pivot that hinges the lever D to the lever B, and the bolt or pivot that secures the doubletree G to the lever D, all combined substantially as described.

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