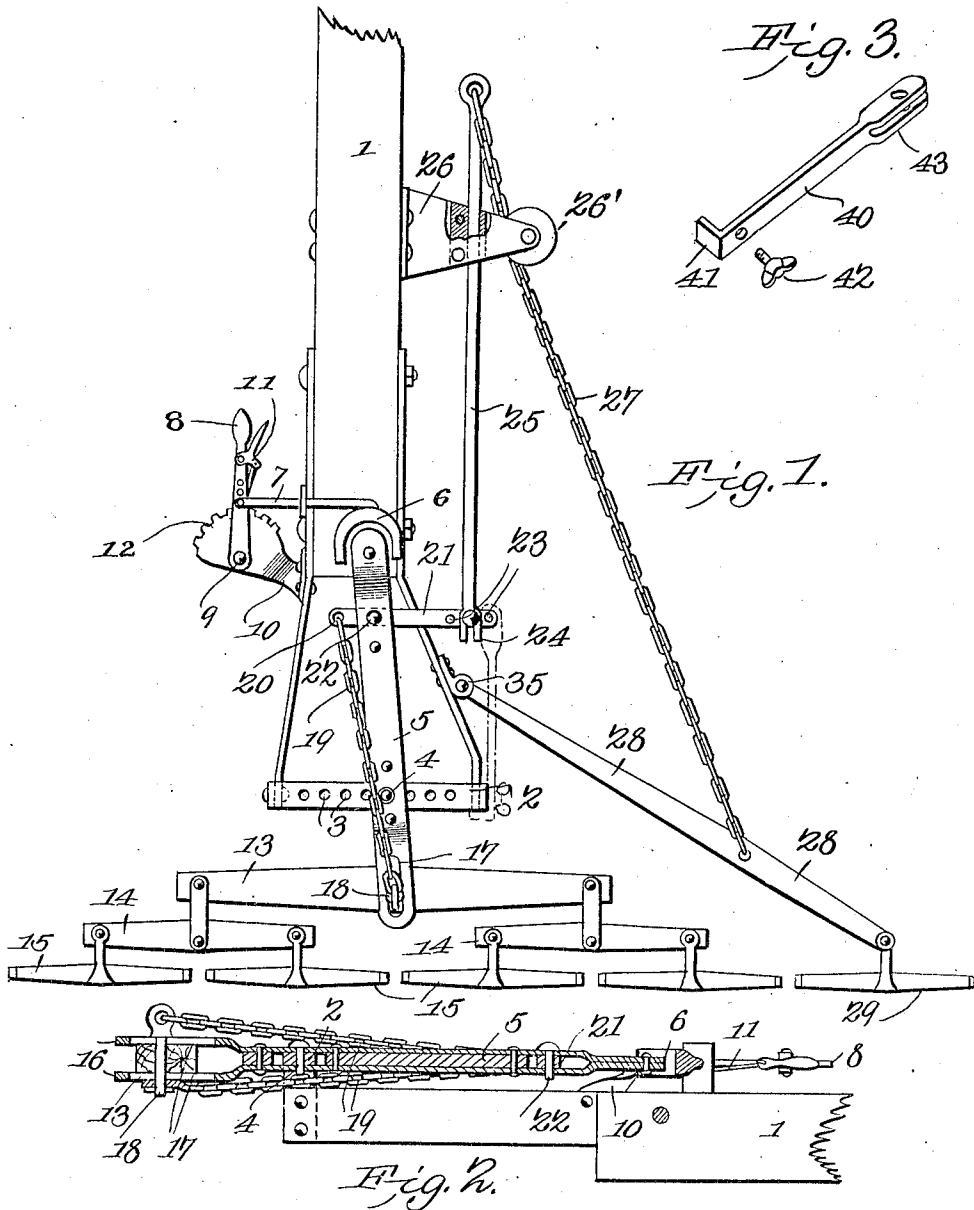


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A. KUDRLE.
DRAFT EQUALIZER.
APPLICATION FILED JUNE 11, 1906.



WITNESSES:

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ALBERT KUDRLE, OF SIBLEY, IOWA.

DRAFT-EQUALIZER.

No. 851,676.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed June 11, 1906. Serial No. 321,223.

To all whom it may concern:

Be it known that I, ALBERT KUDRLE, a citizen of the United States, residing at Sibley, in the county of Osceola and State of Iowa, have invented a new and useful Draft-Equalizer, of which the following is a specification.

This invention relates to draft equalizers such as are intended to be used in connection with plows, harvesting machines, or the like.

The objects of the invention are to improve and simplify the construction of such devices; furthermore, to increase their efficiency in operation.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the accompanying drawings forming a part of this specification: Figure 1 is a plan view of an equalizer constructed in accordance with the present invention. Fig. 2 is a longitudinal sectional view through the draft lever and clevis. Fig. 3 is a detailed perspective view of a locking device for the equalizer.

Like reference numerals indicate corresponding parts in the different figures of the drawing.

While the improved draft equalizer has been herein illustrated in connection with a plow, it is to be understood that it can also be used in connection with harvesting machines and other devices of a similar character.

Referring to the drawing numeral 1 indicates the forward end of a plow beam which is provided with the clevis 2 having the series of perforations 3 adapted to permit the lateral adjustment of the pin 4 which serves as the fulcrum point for the draft lever 5. The rear end of the draft lever 5 projects between the forked arms of a bracket 6 which is adapted to be adjusted laterally upon the plow beam 1 by means of a link 7 connected to a controlling lever 8 which is fulcrumed at 9 upon an arm 10 connected with the plow beam. The lever 8 is provided with a suitable hand operated locking device 11 which is adapted to cooperate with the notches of a segment 12 in an old and well-known manner. The forked bracket 6 is wider than the rear end of the draft lever 5, for which reason said

lever is permitted to have a certain amount of free movement within the bracket 6. By operating the lever 8, however, the lateral position of the bracket 6 can be changed so as to alter the position of the draft lever 5 without depriving it of the free movement within the bracket 6. While the lever 8 and bracket 6 constitute the preferred means for adjusting the position of the draft lever 5, it will be understood, of course, that other equivalent means may be employed for accomplishing the same result.

The evener 13 to which are secured the doubletrees 14 carrying the swingletrees 15, is yieldingly connected in any suitable manner with the forward end of the draft lever 5. The preferred means for effecting the yielding connection between the evener 13 and the draft lever 5 comprises a pair of plates 16 which are suitably secured to the forward end of the draft lever 5 and are formed with longitudinal slots 17. The evener 13 extends between the plates 16 and is provided with a vertically extending bolt 18 which projects through the longitudinal slots 17 of the plates 16. The above construction permits the evener 13 to yield or move back and forth with respect to the forward end of the draft lever 5. Connected with the upper and lower ends of the bolt 18 of the evener 13, is a pair of chains or other flexible elements 19 which extend rearwardly and are suitably connected with the upper and lower portions of one end 20 of the equalizer 21 which is pivoted upon the draft lever 5 in rear of the fulcrum portion 4 thereof as indicated at 22. As shown in the drawing, the chains 19 are connected with the short end of the equalizer 21. Mounted upon the long end of the equalizer 21 is one or more pins or other suitable devices 23 one of which is straddled by the forked forward end 24 of a draft actuated push bar 25 which is mounted for longitudinal sliding movement in suitable guide means 26 connected with the plow beam.

Connected in any suitable manner with the rear end of the push bar 25 is a flexible element or chain 27, the forward end of which is connected with a pivotal member 28 to which is attached a swingletree 29, the member 28 being pivoted on the plow beam as shown at 35. As shown, the chain 27 is connected with the pivotal member 28 intermediate the ends thereof.

It will be observed that the draft lever 5 can be adjusted laterally upon the clevis 2 whenever such change is rendered necessary by an increase or decrease in the number of animals secured to the swingletrees or draft attaching means 15 and 29. While the hand or controlling lever 8 and forked bracket 6 are usually sufficient to effect the necessary adjustment of the draft lever 5, still it is sometimes desirable to move the fulcrum point of the lever with respect to the plow beam or clevis.

From the foregoing description it will be apparent that the draft which is applied through the swingletrees 15 and the evener 13 is communicated through the chains 19 to the equalizer 21 where it is counterbalanced by the draft of the swingletree 29 communicated through the pivotal member 28, chain 27 and push bar 25 to the long end of the equalizer 21. Furthermore, the draft lever 5 by means of its limited pivotal movement with respect to the beam 1, further equalizes the draft and also enables the plow to be easily handled and guided. This result is also greatly facilitated by reason of the fact that the draft is applied to the lever 5 in rear of its fulcrum point 4, for which reason it exercises a pushing action upon the plow beam, as distinguished from a pulling action. The draft equalizer of this invention has been used in practice and has been found to be thoroughly effective in operation.

It will be observed that the pins 23 on the equalizer 21, together with the forked end 24 of the push bar 25, constitute means for adjustably connecting the push bar 25 with the long end of the equalizer 21. Furthermore, it will be observed that by means of the pivotal member 28, the animal secured to the swingletree or draft attaching means 29 can exercise a leverage on the push bar 25 through the chain 27, whereby through the pivotal member 28 and equalizer 21, the single draft animal can secure a double leverage for the purpose of counter-balancing the draft of the animals secured to the evener 13. The chain 27 preferably is guided by means of a roller 26 mounted upon the bracket 26.

If it be desired at any time to dispense with the fifth horse, so that the equalizing means will be no longer necessary, the push bar 25 and pivotal member 28 together with the chain 27 can be detached. In this case a locking device 40, as shown in Fig. 3, will be arranged upon the plow so that its forward angular end 41 will fit around the clevis 2 and be held thereon by a wing bolt 42. The rear end 43, which is forked as shown, will be fitted around the long end of the equalizer 21 and engaged by one of the pins 23 so as to hold the equalizer 21 stationary against the

draft of the four animals attached to the swingletrees 15.

What is claimed is:—

1. A draft equalizer comprising an evener, a pivotal equalizer having one of its ends connected with the evener, and a draft actuated push bar connected with the other end of the equalizer.

2. In a draft equalizer, the combination with a draft lever, of a doubletree evener bar connected thereto, an auxiliary bar forming a carrier for an additional swingletree and detachably secured to the draft means, and a pivotal equalizer having its arms connected respectively with said evener bar and the auxiliary bar.

3. A draft equalizer comprising a draft lever, an evener yieldingly connected with said draft lever and having swingletrees, an equalizer mounted upon said draft lever and connected at one end with said evener, a push bar engaging the opposite end of the equalizer, and a swingletree connected with said push bar.

4. The combination with a plow beam, of a draft lever mounted thereon, an evener yieldingly connected to said draft lever and having swingletrees secured thereto, an equalizer pivoted on said draft lever, means connecting said evener with one end of said equalizer, a push bar connected with the other end of said equalizer, and a swingletree connected with said push bar.

5. The combination with a plow beam having a clevis, a draft lever pivotally mounted on said clevis, a controlling lever mounted on said plow beam and having a bracket loosely engaging the rear end of the draft lever, an evener yieldingly connected with the forward end of the draft lever and having swingletrees connected therewith, an equalizer pivotally mounted on the rear end of the draft lever, a flexible connection between one end of the equalizer and the evener, a push bar connected with the opposite end of the equalizer, and a swingletree connected with the push bar.

6. An equalizer comprising a draft lever, means for adjusting the position of the draft lever, an equalizer mounted on the draft lever, a push bar, means for adjustably connecting the push bar with the equalizer, a pivotal member connected with the push bar, and draft attaching means adapted to act on opposite ends of the equalizer.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses:

ALBERT KUDRLE.

Witnesses:

W. H. ARMIN,
HENRY H. NELSON.