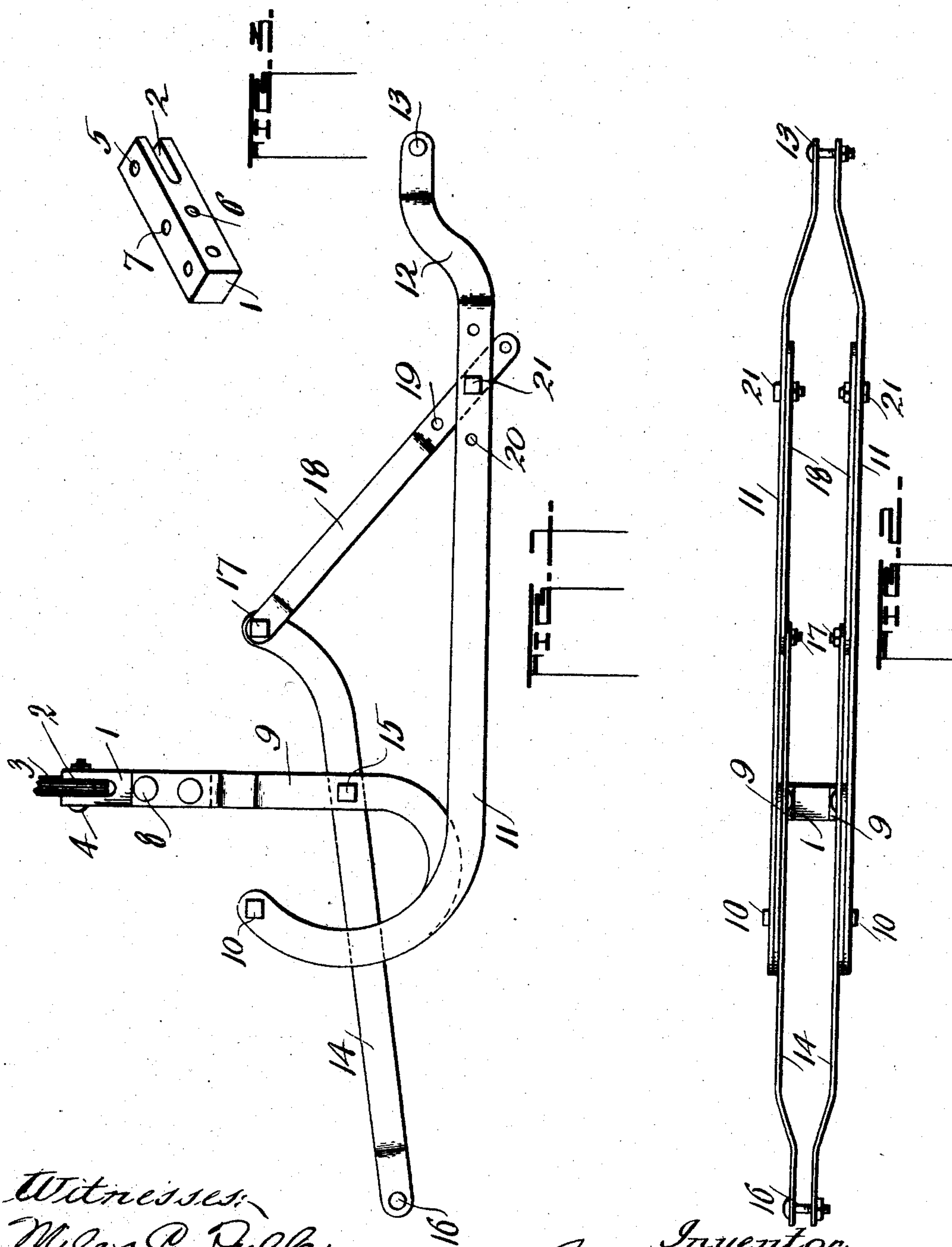


No. 864,322.

PATENTED AUG. 27, 1907.

J. MILLER.
DRAFT EQUALIZER.
APPLICATION FILED OCT. 2, 1906.



Witnesses:
Miles P. Fuller
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UNITED STATES PATENT OFFICE.

JOSEPH MILLER, OF MORTON, ILLINOIS.

DRAFT-EQUALIZER.

No. 864,322.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed October 2, 1906. Serial No. 337,120.

To all whom it may concern:

Be it known that I, JOSEPH MILLER, a citizen of the United States, residing at Morton, in the county of Tazewell and State of Illinois, have invented certain new and useful Improvements in Equalizers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

10 This invention has reference to new and useful improvements in an apparatus for equalizing the draft on plows, binders, and other similar machines.

One of the objects of the present invention is arranging the opposing levers of the equalizer in such a manner that the apparatus may be reversed so as to connect with different machines where the unequalness of the draft is upon opposite sides.

A further object of the invention is connecting the levers of the equalizer with a block or clevis which is adapted to be connected with a pole or other similar part of a plow or similar machine where the connecting end of the pole has what will be termed a vertical or horizontal connection with the clevis or block of the equalizer, in other words, the block or clevis of the equalizer has an interchangeable connection with the levers aforesaid.

That the invention may be more fully understood, reference is had to the accompanying drawings, in which:—

30 Figure 1 illustrates in plan my improved draft equalizer; Fig. 2 is a front elevation of the same, Fig. 3 is a perspective view of the block or clevis to which the levers are connected.

Reference being had to the drawings, 1 denotes a block or clevis, preferably rectangular in form and of suitable length, as shown in Fig. 3. This clevis as shown in Fig. 3, is provided with the slotted end 2, in which the pole 3, see Fig. 1, or similar part of a plow or other machine may be inserted and retained in such position by means of the bolt 4, see Fig. 1, which is adapted to be passed through the perforations 5 in the block or clevis 1 and a similar perforation in the part 3. Extending at right angles through the block or clevis 1 are arranged two pairs of perforations 6 and 7 through which it is adapted to pass bolts 8 securing to said block or clevis 1, levers of an equalizer, to be described. It will be seen from the construction of the block or clevis 1, that the slotted end of the same may be disposed vertically as in Fig. 1, to adapt the connecting therewith of a pole or similar part of a plow or other machine with which it is necessary to have such connection, or the same may be disposed horizontally as shown in Fig. 3, to adapt the connecting therewith of the pole or similar part of a plow or similar machine where such a connection is necessary. This obviates the necessity of pro-

viding different blocks or clevises for connection with different styles of poles or clevises on plows or similar machines, as will be understood.

Connected with the block or clevis 1, by means of the bolt 8, and extending forwardly therefrom, are a pair of reach-bars 9. The said reach-bars are connected with the block or clevis 1 upon opposite sides and they preferably overlie each other as shown in Figs. 1 and 2, and at a suitable point in advance of the block or clevis 1, the reach-bars 9 are arched or curved rearwardly, as shown in Fig. 1. Pivotally connected at 10, being the free ends of the reach-bars 9 and overlying the upper and underlying the lower of said reach-bars, are seen a pair of corresponding levers 11; such levers 11 extend forwardly and follow somewhat the contour of the reach-bars 9, then extend laterally at right angles to the position of the body of the reach-bars 9, substantially as seen in Fig. 1. Said levers 11 are of considerable length and have their outer ends preferably partially bent as seen at 12, in Fig. 1, for the purpose of properly alining the outer free ends of the said levers 11, relative to the outer free ends of opposing levers, to be described, and at 13, a double tree is adapted to be pivotally connected with the levers 11.

14 denotes a pair of corresponding and overlying levers which extend between the matching faces of the reaches 9 and are pivotally connected thereto as at 15. 15, being a point suitably disposed in advance of the connection of the reaches 9 with the block or clevis 1. Said levers 14 extend lateral from the reaches 9 on one side and between the curved ends of the reach-bars 9 and also between the curved ends of the levers 11, which overlie said curved ends of the reach-bars 9, as seen in Fig. 1. And to the outer free ends of the levers 14 and at a point 16, it is adapted to pivotally connect a double-tree therewith. The opposite ends of the levers 14 extend a suitable distance from the reach-bars 9 and are preferably curved slightly rearwardly as shown in Fig. 1 and to their free ends at 17, will pivotally connect reach-bars 18; said reach-bars 18 overlying each other and being connected with the upper and lower faces respectively of the ends of said levers 14 and the opposite ends of said reach-bars 18 are adapted to be pivotally connected at suitable points with the levers 11 near their upper ends as shown in Fig. 1. The reach-bars 18 are adapted to have an adjustable connection with said levers 11 through the provision of a series of perforations 19 in the reach-bars 18 and a series of perforations 20 in the levers 11, and by means of a bolt 21 serving to pivotally connect the reach-bars with said levers. The adjustable connection of said reach-bars with the levers 11, serving to increase or decrease the draft on that side of the equalizer. The fulcrum point of the levers 11 is at 10, being the inner free ends of the reach-bars 9 and the fulcrum

point of the levers 14 is at 15 of said reach bars 9, which it is believed is understood and any movement of the levers 11 or 14, as will be seen, would be transmitted to the reach-bars 18, serving as an evener to properly
5 equalize the draft, the pull being directly upon the reach-bars 9.

With the construction such as I have shown, a single-hitch between the equalizer and the machine with which it is to be connected is made possible, something
10 very desirable in an apparatus of this character. It is well understood that where the equalizer must have a double-hitch with a machine, that any side movement or unequal pull of the horses upon the side of the machine, the machine will naturally follow such movement, but
15 with a single-hitch, the horses may move from side to side but the movement of the machine is obviated. With the application of a single-hitch equalizer in overcoming the side motion of the machine it is naturally understood that the side draft has been greatly reduced.

20 Through the arrangement of the lever, such as I have shown and the positioning of the pivotal points thereof, has greatly facilitated in making a single-hitch equalizer possible, which has also made it possible to arrange the double-tree supporting levers so as to place the
25 horses much closer to the machine which they are pulling.

It will be seen from the construction of the equalizer, as was intimated in the forepart of the specification, that it is adapted to reverse the opposite ends therefore
30 for suitable connection with plows or other means where the draft may be upon the opposite side thereof; as the overlying parts of the equalizer correspond and the same may be reversed with perfect ease, producing an equalizer capable of accomplishing the purpose for
35 which it is intended, being simple and cheap at first cost.

It is further believed that the function and operation of the device are readily apparent from the drawings, together with the description of the same, and, while
40 the drawings illustrate the preferred form in which I wish to embody the device, it is obvious that various changes may be made in the detail construction and arrangement, and I do not wish to be confined to the details thereof.

45 Having thus fully described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

1. In an apparatus of the class specified, the combination of a clevis, reach-bars adapted to have an interchangeable connection with said clevis, oppositely disposed double-tree supporting levers pivotally connected with said reach-bars, and reach-bars connected with one end of one of said levers and adjustably connected with the opposite lever.
50

2. In an apparatus of the class specified, the combination of a clevis, a pair of overlying reach-bars adapted to have an interchangeable connection with said clevis, two pairs of oppositely disposed and overlying double-tree supporting levers pivotally connected with said reach-bars, and reach connections between one end of one pair of said levers and with the body of the opposite pair of levers.
60

3. In an apparatus of the class specified, the combination of a clevis, a pair of overlying reach-bars connected to and extending forwardly from said clevis, two pairs
65 of oppositely disposed and overlying double-tree supporting

levers pivotally connected with said reach-bars, and overlying reach-bar connections between the said levers.

4. In an apparatus of the class specified, the combination of a clevis, a pair of overlying reach-bars connected to and extending forwardly from said clevis, two pairs
70 of oppositely disposed and overlying double-tree supporting levers pivotally connected with said reach-bars, and a pair of reach-bars connecting the two pairs of levers upon one side of the reach-bars to which said levers are pivoted.

5. In an apparatus of the class specified, the combination of a clevis, a pair of overlying reach-bars connected with and extending forwardly from said clevis and the forward end of said reach-bars turned rearwardly, a pair of overlying double-tree supporting levers pivotally connected with the free ends of the said reach-bars and extending in an opposite direction therefrom, a pair of overlying double-tree supporting levers pivotally connected between their ends to the reach-bars intermediate the ends of said reach-bars, and reach connections between the inner ends of the said last mentioned levers and the opposite
85 levers.

6. In an apparatus of the class specified, the combination of a clevis, a pair of overlying reach-bars adapted to have an interchangeable connection with and extending forwardly from said clevis, and the forward end of said
90 reach-bars turned rearwardly, a pair of overlying double-tree supporting levers pivotally connected with the free ends of the said reach-bars and extending in an opposite direction therefrom, a pair of overlying double-tree supporting levers pivotally connected between their ends to the reach-bars intermediate the ends of said reach-bars, and reach connections between the inner ends of the said last mentioned levers and the opposite levers.

7. In an apparatus of the class specified, the combination of a reach-bar adapted to have a single connection with a suitable machine, a pair of opposing levers pivotally connected with said reach-bar, the pivotal connection of said levers being at different points on said reach-bar, and an evener connected with the free end of one of said levers and with the body of the opposite lever.
105

8. In an apparatus of the class specified, the combination of a reach-bar adapted to have a single connection with a suitable machine, a pair of opposing levers pivotally connected with said reach-bar, the pivotal connection of said levers being at different points on said reach-bar, and an evener pivotally connected at one end with one of said levers and adjustably connected with the body of the opposite lever.
110

9. In an apparatus of the class specified, the combination of a reach-bar adapted to have a single connection with a suitable machine, a pair of opposing levers, one of said levers crossing and being pivotally connected to said reach-bar and having its inner end disposed at a point to the rear of the pivotal connection of the lever with the reach-bar, the opposite lever being pivotally connected
120 with the end of said reach-bar to the rear of the pivotal connection of the opposite lever therewith, and an evener connected with the inner end of said first mentioned lever and with the opposite lever near its outer end.

10. In an apparatus of the class specified, the combination of a reach-bar adapted to have a single connection with a suitable machine, a pair of opposing levers, one of said levers crossing and being pivotally connected to said reach-bar and having its inner end disposed at a point to the rear of the pivotal connection of the lever with the reach-bar, the opposite lever being pivotally connected with the end of said reach-bar to the rear of the pivotal connection of the opposite lever therewith, and an evener pivotally connected with the inner end of the first mentioned lever and adjustably connected with the opposite
135 lever.

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

JOSEPH MILLER.

Witnesses:

ROBERT N. MCCORMICK,
CHAS. N. LA PORTE.