

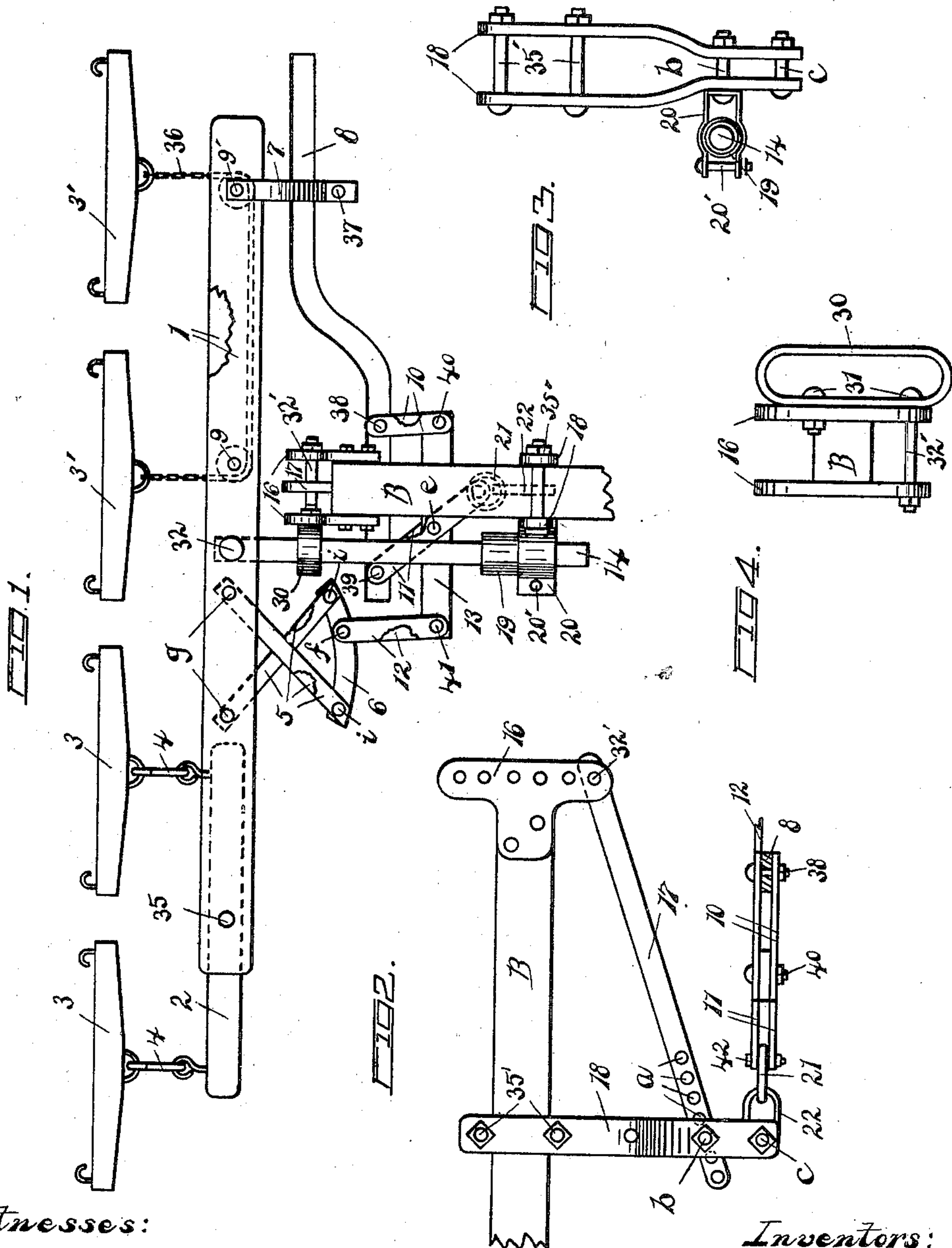
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Patented June 3, 1902.

O. & F. ZOELLER.
FOUR-HORSE EQUALIZER.

(Application filed Apr. 9, 1902.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

OSWALD ZOELLER AND FREDERICK ZOELLER, OF OAKLAND, IOWA.

FOUR-HORSE EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 701,454, dated June 3, 1902.

Application filed April 9, 1902. Serial No. 102,108. (No model.)

To all whom it may concern:

Be it known that we, OSWALD ZOELLER and FREDERICK ZOELLER, residing at Oakland, in the county of Pottawattamie and State of Iowa, have invented certain useful Improvements in Four-Horse Equalizers; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a new and novel improvement in four-horse equalizers.

The aim of our invention is to provide an equalizer so constructed that each horse will draw an equitable amount of the load.

In the accompanying drawings we have shown in Figure 1 a top view, with portions broken away, of an equalizer embodying our invention. Fig. 2 shows a broken detached detail of the forward portion of a plow-clevis. Fig. 3 shows a front view of the rear shackle, while Fig. 4 shows a front view of the forward shackle.

In securing our equalizer we would employ the usual clevises 16, which are fastened to the forward portion of the plow-beam, it being understood that this invention is more particularly adapted to be used in connection with a plow. In Fig. 4 an end view of the clevises as usually constructed is shown, and to these clevises is secured the loop 30 by means of the bolts 31. If desired, this loop 30, which forms a shackle, as it were, may be cast direct to one of the clevises 16.

Extending transversely across from one clevis member 16 to the other is a bolt 32', as is shown in the drawings, and from this bolt 32' extends downward and rearward a draft-bar 17, which is provided at the rear end with a plurality of openings *a*, adapted to adjustably receive a suitable bolt *b*, as is shown more clearly in Fig. 2. This bolt *b* passes through the counterpart yoke members 18, which are clamped to the plow-beam by means of the bolts 35' 35'. Below, these members are secured by the aforementioned bolt *b* and the lower terminal bolt *c*. (Shown in Figs. 2 and 3.) The bolt *b* in addition supports upon one

side a swivel-ear 20, provided with a bolt 20', which clamps the swivel-ear together to hold a collar 19, which collar is in the form of a tube and through which passes the rod 14, as is shown in Figs. 1 and 3. At its forward end this rod 14 extends through the loop 30, within which it is permitted to reciprocate vertically. At its forward end this rod 14 is provided with a bolt 32, which passes through the hollow main tree 1, which tree has pivotally secured to it at one end by means of the bolt 35 the doubletree 2, provided with the singletrees 3 3, secured by means of the links 4 4. Upon the opposite side this hollow main tree is provided with the bolts 9 9', over which passes a chain 36, secured to the singletrees 3' 3'.

Secured to the main tree 1 is a loop 7, secured upon the rear by means of a bolt 37, and this loop holds the end of the pivotally-supported lever 8. Approximately intermediately this lever 8 is provided with a bolt 38, to which is secured upon opposite sides the two connecting-bars 10, while near one end is secured the bolt 39, from which extends the connecting-bar 11, secured, by means of the bolt *e*, to the toggle-bar 13. These connecting-bars 11 are also used in pairs. At one end this toggle-bar 13 by means of the bolt 40 is secured to the connecting-bars 10, while upon the opposite end by means of the bolt 41 are secured the two connecting-bars 12, which bars in turn by means of the bolt *f* are secured to the curved bar 6, as is clearly shown in Fig. 1. By means of the bolts *i i*, secured to the curved bar 6, are pivotally secured the connecting-rods 5 5, which cross one another and are secured by means of the bolts *g*, as shown. These connecting-rods 5 5 are also used in sets of twos. Secured to the rearwardly-extending ends of the counterpart connecting and centrally-pivoted bars 11 11 by means of a suitable bolt 42 is a ring 21, which loops through a link 22, passing over the lowermost bolt *c*, as is indicated in Fig. 2. By means of these instrumentalities the main tree is permitted a pivotal movement upon the center bolt 32, passing through the main rod 14. The movement at the ends of this main tree are imparted to the crossed connecting-rods 5, secured to the crossed pivoted toggle-bar 13, while at the same time the

movement is imparted in an opposite direction to the curved lever 8, which is also connected to the toggle-bar 13.

The yoke members 18 are adjustably held upon the plow-beam B and by means of the bolt *b* may be adjustably secured to the draft-bar 17, which, in effect, is a push-bar, as the strain principally comes upon this bar 17 and is directed against the bolt 32', passing through the clevis members 16.

Our equalizer is more particularly adapted to be used in connection with plows.

Having thus described our said invention, what we claim as new, and desire to secure by United States Letters Patent, is—

The combination with a plow-beam provided with a suitable clevis, of a bolt passing through said clevis, a draft-bar extending rearward and downward from said clevis-bolt, a loop positioned upon one side of said clevis, two depending yoke members adjustably clamped to aforesaid plow-beam, aforesaid draft-bar being secured to said yoke members, a connecting-link secured to the lower end of aforesaid yoke members, a swiveled ear supported by said yoke members, a main rod secured to said swiveled ear and extending through aforesaid loop, a main tree pivotally secured to the forward end of said main rod, a loop extending from aforesaid main tree at one end, a curved lever passing through

said last-mentioned loop and extending approximately parallel with aforesaid main tree, a connecting-bar pivotally secured approximately centrally to said curved lever, a toggle-bar pivotally secured to said last-mentioned connecting-bar, a centrally-pivoted connecting-bar extending from one end of said curved bar and being centrally pivoted to said toggle-bar and secured at the remaining end to aforesaid connecting-link, a second connecting-bar extending forward from aforesaid centrally-pivoted toggle-bar, a curved bar pivotally secured near one end to said last-mentioned connecting-bar, two connecting-rods extending from the ends of said curved bar and crossing one another and being pivotally secured to aforesaid main tree, a doubletree pivotally secured to aforesaid main tree near one end, two bolts secured to said main tree near the remaining end of said main tree, a chain passing over said bolts and provided at each end with a singletree, all arranged substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

OSWALD ZOELLER.

FREDERICK ZOELLER.

Witnesses:

WILSON FEHR,

PETER G. GREEN.