

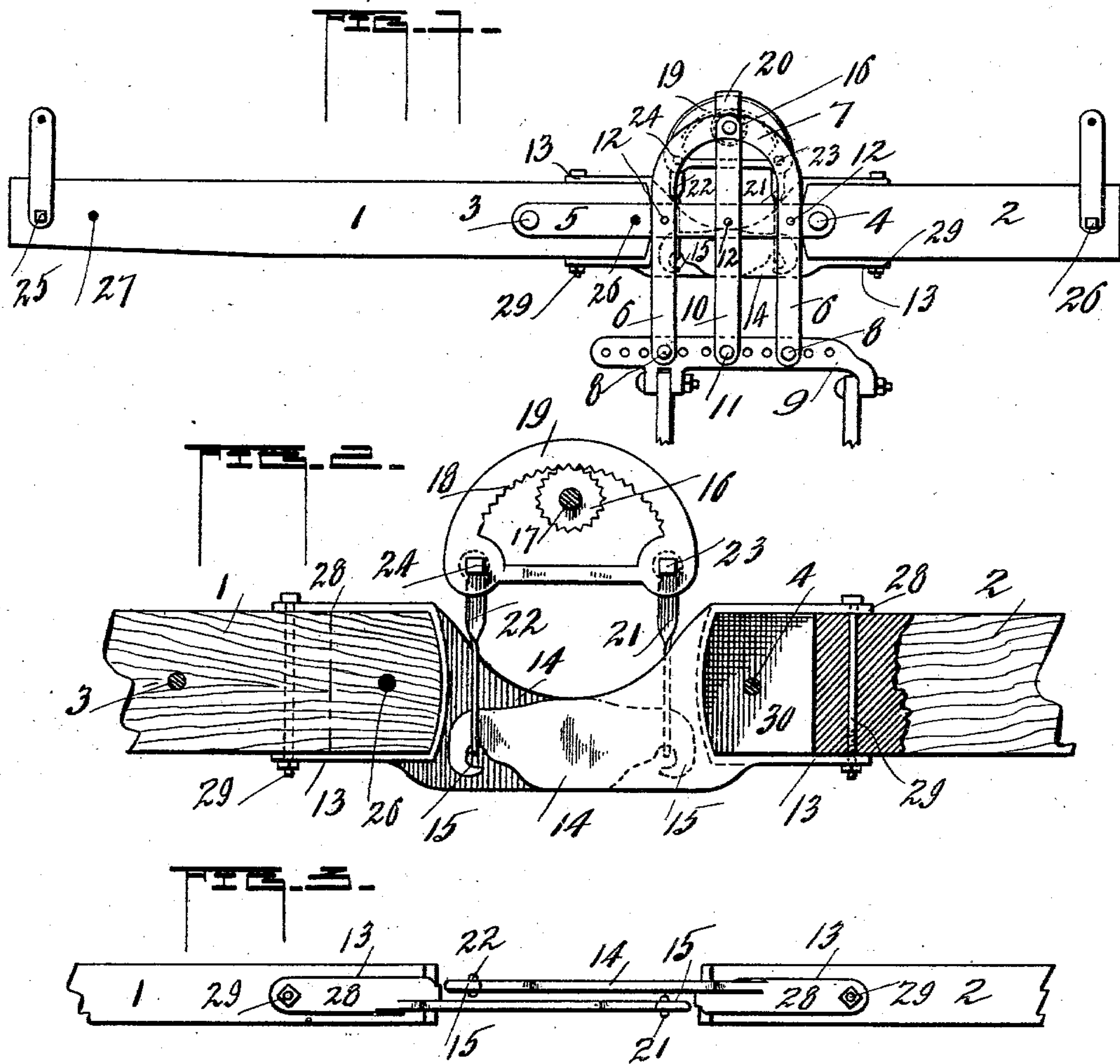
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PATENTED MAR. 1, 1904.

J. H. EMERT.  
DRAFT EQUALIZER.

APPLICATION FILED OCT. 5, 1903.

NO MODEL.



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# UNITED STATES PATENT OFFICE.

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## DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 753,382, dated March 1, 1904.

Application filed October 5, 1903. Serial No. 175,750. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. EMERT, a citizen of the United States, residing at Averyville, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Equalizing Apparatus; 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  
10 which it appertains to make and use the same.

This invention has reference to an equalizing apparatus, and has for its object to distribute the stress of pull equally upon three or four horses abreast and is capable of application to gang-plows, disks, sulky-plows,  
15 harvesters, vehicles, or other machines or implements.

The invention relates more particularly to a side-draft equalizer consisting of a pair of  
20 levers or bars of unequal length fulcrumed in a fixed frame and their matching inner ends provided with overlapping members, an evenner operatively supported in advance of the overlapping members of said levers, and  
25 connections between the outer ends of said members with the opposite sides or ends of said evenner whereby the movement of either of said levers will react upon the opposite lever through the medium of the evenner and its con-  
30 nection with the levers.

Further objects and aims of the invention will appear from the following specification, the appended claims, and drawings forming a part of such specification, in which—

35 Figure 1 is a plan, on a somewhat-reduced scale, showing my improved equalizing apparatus. Fig. 2 is a plan, somewhat enlarged over Fig. 1, showing the arrangement of the overlapping plates of the levers and their con-  
40 nection with the evenner. Fig. 3 is an edge view of parts seen in Fig. 2. Figs. 4 and 5 show in plan details of modified forms of evenners which may be substituted for the form seen in Figs. 1 and 2.

45 The purposes of an equalizing apparatus for equalizing inequalities, due to any cause whatever, tending to produce side draft on machines of the character enumerated are so

well known by those skilled in the art that they need not be herein specifically set forth, 50 as the following description of the construction and arrangement of my device is thought sufficient to enable others skilled in the art to make and use the same.

In the figures, 1 and 2 indicate a pair of le- 55 vers of unequal length, the lever 1 fulcrumed at 3 and the lever 2 fulcrumed at 4 to a frame or cross-bar 5.

6 denotes parallel extensions or bars extend- 60 ing transversely across the frame 5, having the bowed integral portion 7, carried in advance of the front face of the levers 1 and 2, and the rear ends of bars 6, which are at a point beyond the rear face of the levers, con-  
65 nected at 8 with a clevis 9, to which are attached the beam or beams of a plow or other suitable machine or implement, and 10 in-  
70 dicates a bar lying parallel between the bars 6, at its forward end connected with the bowed portion 7 of the bars 6 and at its rear end  
connected at 11 with the clevis 9.

The frame parts 5, 6, and 10 are duplicated beneath the levers, substantially in the man-  
75 ner seen in Fig. 1 and form a rigid frame for the working parts of my apparatus, which are supplemented by a rigid connection with the  
clevis 9 at 8 8 and 11, (see Fig. 1,) the bars 5, 6, and 10 being riveted together at 12.

Referring to the levers 1 and 2, to their in-  
80 ner matching ends are secured the plates or castings 13, with overlapping portions 14 of suitable length and contour, each of which has hook-shaped ends 15 operating in juxtaposi-  
tion to the inner ends of the opposite levers.

Between the bowed portions 7 of the plates 85 or bars 6 I have shown at 16 a pinion rotating on a spindle 17. The pinion meshes with an internal segment 18 of a substantially semi-circular evenner 19, which is held in engage-  
90 ment with the pinion by a cleat 20 or other suitable plate attached to the bowed portion 7 of the plates 6, and 21 and 22 indicate short reaches connecting the hooked portions 15 of the plates 14 with the evenner 19 at 23 and 24.  
95 It is understood that as the evenner and pinion are carried between the duplicated frame



parts so are the overlapping plates of the lever, which are operatively connected with the evener, as described.

On the outer ends of the levers 1 and 2 is shown at 25 and 26 links, to which may be attached suitable double and swingle trees. (Not shown, as these features are well known and understood and it is not thought necessary to illustrate their connection.)

The arrangement of the levers and their fulcrum-points relative to the distance between their respective fulcrum-points and the connection between the plates and evener and between their fulcrum-points and connection of the doubletree is approximately two to one. However, this may be changed to meet the requirements of a particular case and the length of the levers modified and correspondingly their fulcrum-points moved. In the drawings shown the arrangement is for a four-horse equalizer, and to apply it to a three-horse equalizer it is only necessary to move the fulcrum-point 3 of lever 1 to the perforation 26 in lever 1 and bar 5 and the link at 25 to the perforation 27.

From the drawings it will be seen that movement of lever 1 through its connection at 21 with the evener at 23 will react on lever 2 through the oscillation of the evener on the pinion 16 through the connection of the evener at 24 by the reach 22 with the plate of lever 2, or vice versa if the movement is in lever 2. The overlapping of the plates 14 will prevent buckling of the parts, and in the carrying of the evener 19 in advance of the plates and levers permits the apparatus to be brought close up to the pole or its connection with the machine or implement to which it is adapted to be attached.

The plates or castings 13 are provided with the lips 28, which engage the opposite edges of the levers and are bolted together, as at 29, and 30 indicates an intermediate portion of the casting, which is inserted into slots in the ends of the levers, together with the bolts, firmly retaining the plates in position on the levers, as shown.

In Fig. 4 the modified evener consists of a semicircular plate pivoted at 17 and its opposite ends connected to the reaches, as at 23 and 24.

In Fig. 5 the modified evener consists of a sprocket-wheel rotating on the spindle 17, and a chain engages the teeth of the sprocket, with its opposite ends adapted to be secured to the ends of the plates 13, all of which, it is believed, will be readily understood.

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

1. An equalizing apparatus, comprising a frame, a pair of levers fulcrumed in said frame, extended and overlapping plates of said levers, an evener, and connections between the oppo-

site ends of the evener with the plates of the levers.

2. An equalizing apparatus, comprising a frame, a pair of differential levers fulcrumed in said frame, extended plates from the matching ends of the levers, an evener having its pivotal point in advance of the plates, and connections between the plates of the levers and evener.

3. An equalizing apparatus, comprising a frame, a pair of differential levers fulcrumed in said frame, a plate attached to the inner end of each lever and overlying each other, an evener having its pivotal point in advance of the lever, and reach connections from the plates of the opposite levers to the evener upon the opposite side of its pivot.

4. In an equalizer, the combination of a pair of levers having overlying portions, an evener pivotally supported in advance of the overlying portions of the lever, and connections between the free ends of the levers and portions of the evener.

5. In an equalizer, the combination of a pair of levers fulcrumed in a suitable frame, overlying portions of said levers between their respective fulcrum-points, an evener pivotally supported in advance of the overlying ends of said levers, and connections between the ends of the levers and evener.

6. In an equalizer, the combination of a frame, a pair of levers fulcrumed in said frame, overlying plates secured to the matching ends of the levers, said plates having hook-shaped end portions, an evener, a pair of reaches attached to opposite portions of said evener and their opposite ends attached to the hooked end of the opposite levers.

7. In an equalizer, the combination of a frame, a clevis, means for fixedly securing the frame to the clevis, a pair of levers pivoted at unequal distances from the center of the frame and thereto, overlying plates attached to said levers, a semicircular evener provided with an internal gear, a pinion meshing with said gear, and a pair of reaches attached to said evener and their opposite ends attached to the free ends of the overlying plates of the levers.

8. In combination with a pair of levers, of overlying plates attached to said levers, a semicircular evener provided with internally-arranged teeth, a pinion around which the evener moves, and connections between the evener and plates.

9. In an equalizer, the combination of a frame, a pair of levers fulcrumed in said frame, one of the levers having two sets of perforations to change the position of its fulcrum to adapt the equalizer to three or four horses, an evener, and connections between the evener and the inner free ends of the levers.

10. In an equalizer, the combination of a frame, a pair of levers fulcrumed in said frame,

the inner end of the levers having overlying  
portions, a pinion revolubly mounted in the  
frame, an evener provided with teeth in en-  
gagement with said pinion, means for sup-  
5 porting the evener and connections between  
the evener and overlying portions of the le-  
vers.

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

JOHN H. EMERT.

Witnesses:

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CHAS. W. LA PORT.