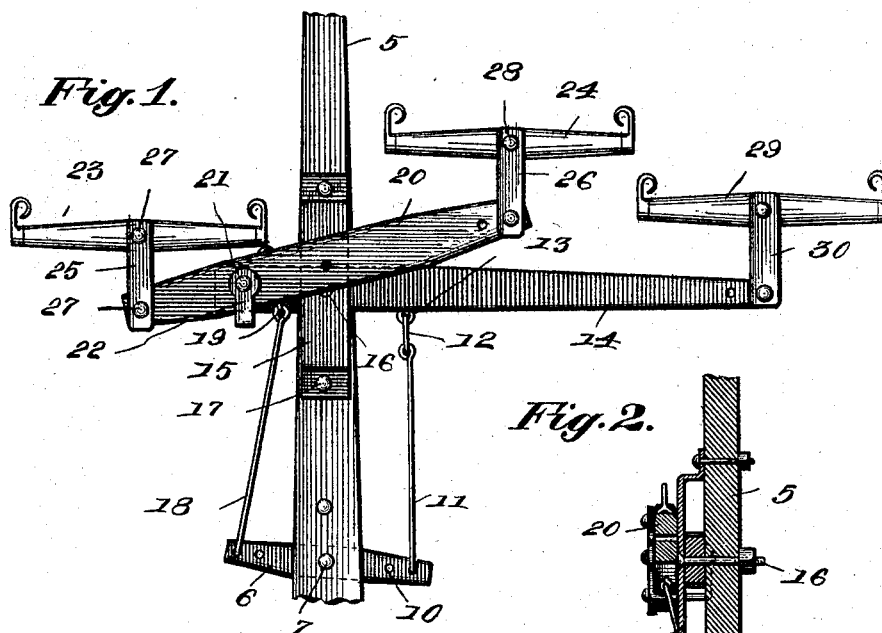


No. 646,947.

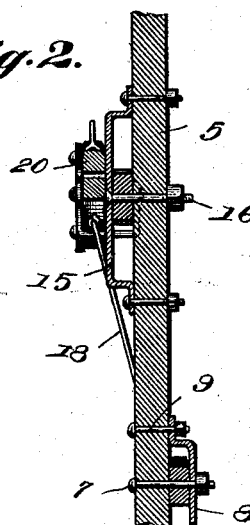
Patented Apr. 10, 1900.

A. BROUK.  
DRAFT EQUALIZER.  
(Application filed Sept. 18, 1899.)

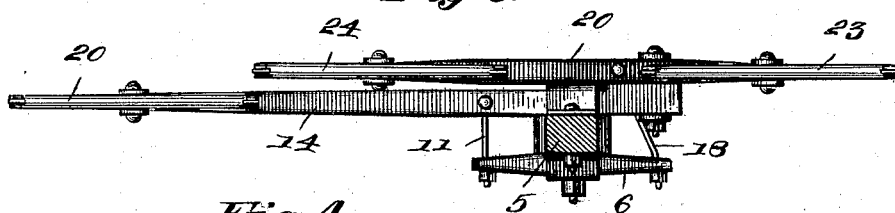
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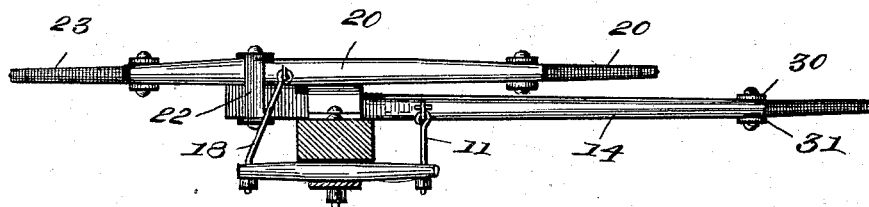
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

ALBERT BROUK, OF HOUSE'S SPRINGS, MISSOURI.

## DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 646,947, dated April 10, 1900.

Application filed September 18, 1899. Serial No. 730,908. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT BROUK, residing at House's Springs, in the county of Jefferson and State of Missouri, have invented a new and useful Draft-Equalizer, of which the following is a specification.

My invention relates to draft-equalizers, and has for its object to provide an improved device of this class especially adapted for use on self-binding harvesters, although applicable to all kinds of vehicles.

With this object in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the appended claim.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a top plan view of a draft-equalizer for three horses constructed in accordance with my invention, showing the middle singletree slightly in advance of the others, the tongue being broken off at the ends. Fig. 2 is a sectional view on a vertical plane cutting longitudinally through the tongue. Fig. 3 is a view in front elevation showing the tongue in section. Fig. 4 is a view in rear elevation.

Like numerals of reference mark the same parts wherever they appear in the several figures of the drawings.

Referring to the drawings by numerals, 5 indicates the tongue, and 6 a bar which I denominate the "rock-bar." The rock-bar is pivotally and centrally connected to the tongue in the rear of the other working parts by a vertical pin or bolt 7, passing through the tongue, and a bracket 8, secured under it by a bolt 9. The rock-bar 6 is provided on each side of the tongue with a series of holes 10, one of which engages the downwardly-turned rear end of a rod 11, connected at its front end by a link 12 to an eye or staple 13 in the rear side of a lever 14, pivotally secured between a keeper or guard 15 and the upper face of the tongue by a bolt 16, the keeper

being secured to the tongue by bolts or rivets 17.

The rear downwardly-turned end of a rod 18 engages in one of the holes 10 of the rock-bar 6 on the other side of the tongue, said rod 18 being connected at its forward end in an eye or staple 19 in the rear side of a doubletree 20, pivotally connected to the short end of lever 14 by a bolt or rivet 21, passing through these parts and through the ends of a clevis 22.

At each end of the doubletree is connected a singletree, as at 23 and 24, by means of link-bars 25 and 26 and bolts or rivets 27 and 28. At the right-hand or long end of lever 14 a singletree 29 is connected by means of link-bars 30 and 31.

From the foregoing description it will be seen that the arrangement is such as to give a true center draft without loss of power, and the weight or necessary pull can be regulated at will by changing the points of connection of rods 11 and 18 with the rock-bar 6 to suit the strength of the horses. The bolts 7 and 16 are both used as fulcrums. With this arrangement it will be impossible to block the power so as to leave one horse free, nor can the near horse be thrown back against the machine and relieved of draft by any sudden forward movement of either of the other horses.

The center or near singletree is shown ahead of the others in the drawings merely for purposes of clearer illustration of the parts, and in the practical operation of the device it will be almost impossible for this position to be brought about. When the parts are properly regulated, the horses will pull in a line with each other, each drawing the proportionate weight according to his strength.

The doubletree alone may be used when desired, a hole 32 being provided at its center for attachment to the tongue.

While I have illustrated and described what I consider to be the best means now known to me for carrying out my invention, I do not wish to be understood as restricting myself to the exact forms and constructions shown, as many slight changes therein or variations therefrom might suggest themselves to the ordinary mechanic, all of which would be

clearly included within the limit and scope of my invention.

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

5 In a draft-equalizer the combination with a tongue, of two bars pivotally secured upon opposite sides thereof, one in advance of the other, the rear one being secured at its center  
10 and having each end provided with a series of holes, and the other one being secured near one end, the longer end being provided with a series of holes; a doubletree, each end and the center of which are provided with a hole  
15 and the portion between the central and one end of the end holes being provided with a

hole by means of which it is pivotally secured to the shorter end of the front bar on the tongue, the longer end of the doubletree extending across the tongue, a rod in each  
20 end of the rear bar, one of which is connected with the longer end of the front bar and the other one is connected with the doubletree between its pivoted point and its longer end, and a singletree secured to the longer end of  
25 the front bar and to each end of the doubletree, substantially as described.

ALBERT BROUK.

Witnesses:

ALBERT MILLER,  
GEO. HARNESS.