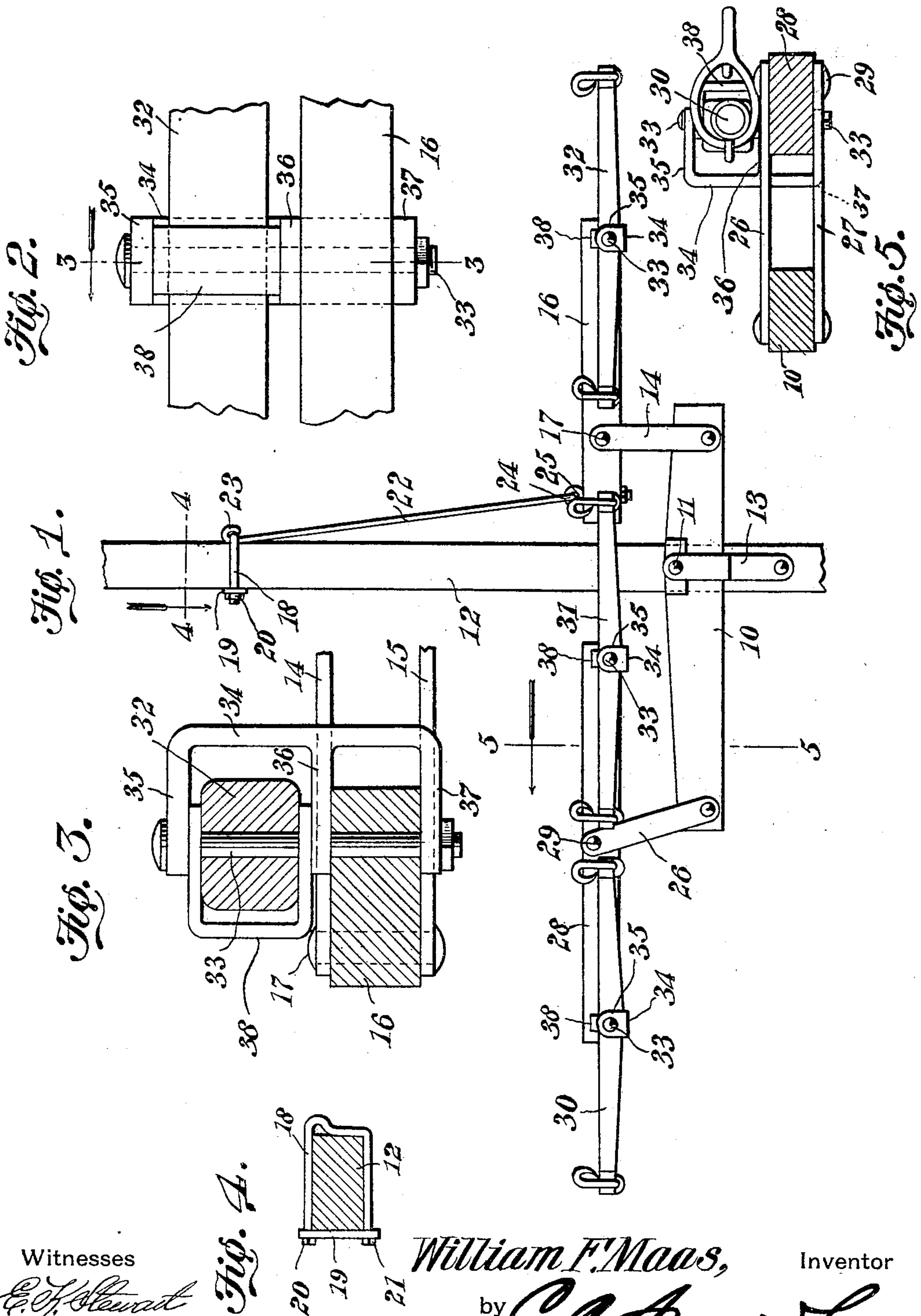


No. 824,254.

PATENTED JUNE 26, 1906.

W. F. MAAS.  
DRAFT EQUALIZER.

APPLICATION FILED NOV. 10, 1906.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM F. MAAS, OF MASSENA, IOWA.

## DRAFT-EQUALIZER.

No. 824,254.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed November 10, 1905. Serial No. 286,730.

*To all whom it may concern:*

Be it known that I, WILLIAM F. MAAS, a citizen of the United States, residing at Massena, in the county of Cass 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, and has for its object to improve the construction and increase the efficiency of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation, it being understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention within the scope of the appended claims.

In the drawings, Figure 1 is a plan view of the improved device. Fig. 2 is a front view, enlarged, of portions of one of the equalizer-beams and one of the swingletrees, illustrating the construction of the coupling means whereby they are movably united. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 is a transverse section, enlarged, on the line 4 4 of Fig. 1. Fig. 5 is a transverse section, enlarged, on the line 5 5 of Fig. 1.

The improved device comprises a main equalizer-beam 10, pivoted at 11 to the draft-tongue 12, the pivot being preferably supported in the usual manner by a keeper 13, the pivot-bolt being disposed nearer one end of the beam than the other, as shown.

Coupled by space links or straps 14 15 to the shorter arm of the equalizer-beam 10 is a shorter or single evener-bar 16, the straps being connected to this evener nearer one end than the other, as at 17, and swinging at both ends, respectively, upon the members 10 16.

Enclasp ing the tongue 12 in advance of the equalizer-beam 10 is a U-shaped member 18, having threaded terminals for receiving a clip-plate 19 and binding-nuts 20 21, the whole forming a clip which is adjustably attached to the tongue at any desired point and

without boring holes in the tongue or otherwise weakening it.

Connecting the U-shaped member 18 with the inner or shorter end of the evener-bar 16 is a rod 22, the rod having an eye 23 at one end loosely engaging the member 18 and with eye 24 at the other end engaging an eyebolt 25 in the evener member.

Coupled by spaced links or straps 26 27 to the longer arms of the equalizer-beam 10 is a longer or double evener-bar 28, the straps being connected at 29 to the double evener-bar at its center, as shown, and swinging at both ends, respectively, upon the members 10 and 28.

Swingletrees 30 31 are connected to swing from the ends of the double evener-bar 28 and a swingletree 32 is connected to swing from the longer or outer end of the evener-bar 16, and as the novel coupling means whereby the swingletrees are coupled to the evener-bars are the same the description of one will suffice for all.

Attached by pivot-bolts 33 to the evener members 16 and 28 are clips or clevises consisting of a rear bar 34 and spaced lateral branches 35, 36, and 37, the branches 36 37 bearing upon opposite sides of the beams 16 28 and the branch 35 spaced above the intermediate branch 36.

Engaging the pivot-bolt 33 between the branches 35 and 36 of the main clevis member are U-shaped clips 38, and the swingletrees 30, 31, and 32 are pivoted upon the pivot-bolts between the arms of the smaller clips, as shown. By this simple means the pivot-bolts are effectually supported and all tendency to deflection or lateral yielding under the severe strains to which they are subjected when in use obviated.

The branches 35 36 of the main clevis member also serve in conjunction with the arms of the smaller clevis or clips 38 as wear-plates to bear the major portion of the friction of the swingletrees and preventing undue wear of the latter.

The swingletrees are disposed above the evener-bars 16 and 28 and are firmly supported in place by the clevises or clips, the elevated position of the swingletrees insuring a higher "hitch" for the traces and effecting a material saving in the lengths of the trace-chains and also gaining a material advantage from the increased power or draft of the horses.



It will be noted that the straps 14 15 and 26 27 are pivotally connected at both ends, respectively, to the members 10 and 16 and to the members 10 and 28, so that the parts  
5 are mutually flexible and readily adapt themselves to all the changes of position which they are caused to assume when in operation and without imparting deflecting strains upon the pivot-bolts.

10 The clip members 18 19 enable the device to be readily attached to or detached from any size of draft-tongue or to the draft-tongue of any of the various machines upon which the device may be employed. By this arrangement it will be obvious that a simply-constructed and efficient three-horse-draft  
15 equalizer is produced wherein the draft is uniformly distributed and side draft eliminated.

20 The device is strong and durable, can be readily applied to all the various machines or vehicles requiring such devices, and may be inexpensively manufactured and in varying sizes as required.

25 Having thus described the invention, what is claimed is—

1. A draft-equalizer comprising a draft-tongue, an equalizer-beam disposed upon said tongue and pivoted thereto nearer one  
30 end than the other, a relatively short evener-bar and a relatively long evener-bar disposed upon opposite sides of said tongue, spaced straps bearing upon opposite sides of said equalizer-beam at its shorter end and pivoted  
35 thereto and likewise bearing upon opposite sides of said shorter evener-bar and pivoted thereto nearer one end than the other, spaced straps bearing upon opposite sides of said

equalizer-beam at its longer end and pivoted thereto and likewise bearing upon opposite  
40 sides of said longer evener-bar and pivoted centrally thereof, a clip having means for adjustable connection to said draft-tongue, a rod movably connected between said clip and the shorter end of said shorter evener-bar,  
45 pivot-bolts extending vertically through said longer evener-bar at the ends and likewise through the shorter evener-bar at the longer end and extending above and below the same, swingletrees swinging upon said pivot-  
50 bolts above said evener-bars, and clevises having spaced branches engaging said pivot-bolts above said swingletrees and below said evener-bars.

2. In a draft-equalizer, equalizer-bars,  
55 means for movably connecting said bars to the draft appliances of the structure to be moved, pivot-bolts extending through said bars, a clevis member consisting of a vertical bar having branches extending laterally  
60 from the ends and at an intermediate point thereof and engaging the pivot-bolt, the intermediate and lower branches bearing above and below the beam and the upper branch spaced above the beam, a swingletree swing-  
65 ing from said bolt between said upper branch and intermediate branch, and a U-shaped clip engaging the bolt between the upper branch and intermediate branch.

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

WILLIAM F. MAAS.

Witnesses:

D. P. HOGAN,

J. J. HOGAN.