

No. 630,362.

Patented Aug. 8, 1899.

J. KRAMER.
DRAFT EQUALIZER.
(Application filed May 1, 1899.)

(No Model.)

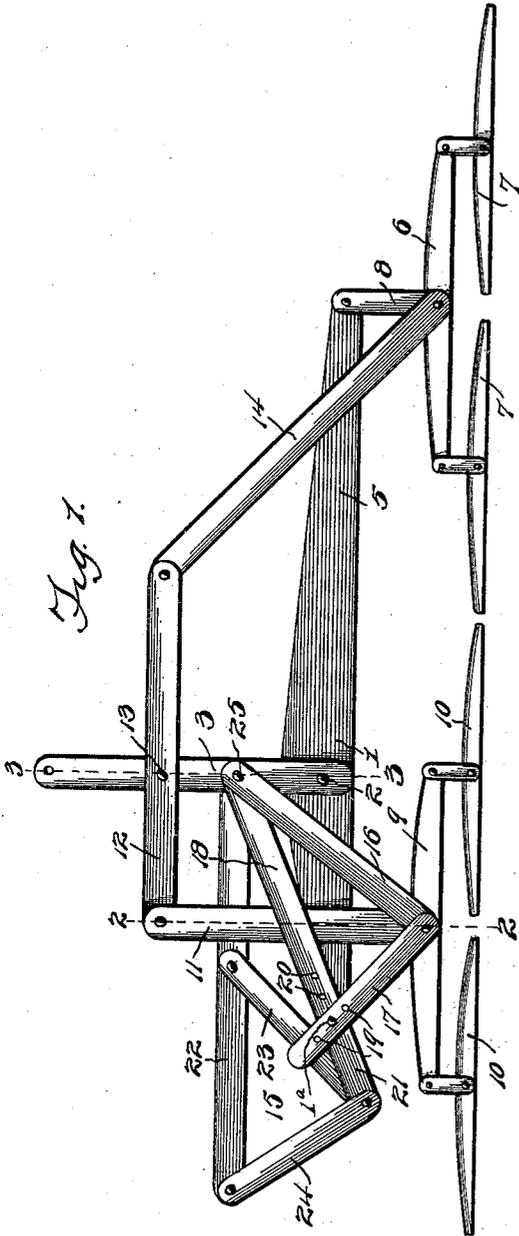


Fig. 1.

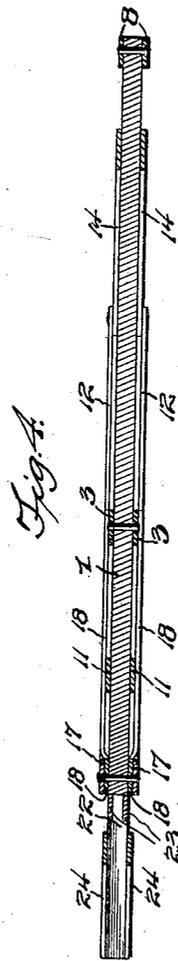


Fig. 2.

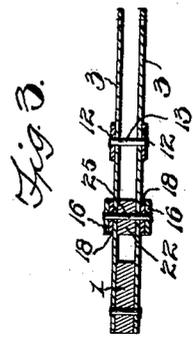


Fig. 3.

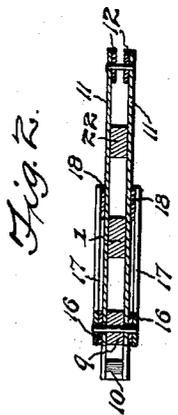


Fig. 4.

Witnesses
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JACOB KRAMER, OF ALVORD, IOWA.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 630,362, dated August 8, 1899.

Application filed May 1, 1899. Serial No. 715,171. (No model.)

To all whom it may concern:

Be it known that I, JACOB KRAMER, a citizen of the United States, residing at Alvord, in the county of Lyon and State of Iowa, have invented a new and useful Draft-Equalizer, of which the following is a specification.

The invention relates to improvements in draft-equalizers.

The object of the present invention is to improve the construction of draft-equalizers and to provide a simple, inexpensive, and efficient one designed to be employed on gang-plows and various other agricultural implements and adapted to arrange the horses so that none of them will walk on plowed ground.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a draft-equalizer constructed in accordance with this invention. Fig. 2 is a sectional view on line 2 2 of Fig. 1. Fig. 3 is a similar view on line 3 3 of Fig. 1. Fig. 4 is a transverse sectional view.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a main evener-bar designed to be constructed of wood or any other suitable material and pivoted between its ends at 2 between the front ends of a pair of upper and lower longitudinal draft-bars 3, which are designed to have their rear terminals attached to the plow or other implement, and the arm 4, at the right-hand side of the evener-bar 1, is designed to be one-half the length of the arm 5, at the other side of the evener-bar. At the left-hand end of the bar 1 is arranged a doubletree 6, provided with singletrees 7 and connected with the adjacent end of the said bar 1 by a pair of upper and lower longitudinal bars 8, arranged above and below the doubletree and the evener-bar 1. At the other end of the evener-bar is arranged a doubletree 9, provided at its ends with singletrees 10, and connected by longitudinal bars 11 with one end of a transverse lever 12, which is composed of a pair of bars or members and which is fulcrumed between its ends at 13 to the draft-bars 3 and a point in rear

of the equalizing-bar 1. The other end of the rear transverse lever 12 is connected by parallel upper and lower angularly-disposed bars 14 with the doubletree 6. Fulcrumed on the right-hand end of the evener-bar 1 at 1^a is a pair of upper and lower substantially triangular lever-frames 15, each composed of rearwardly-diverging side bars 16 and 17 and a transverse connecting-bar 18, pivoted to the rear terminals of the bars 16 and 17 or to a point adjacent to the rear end of the bar 17, the bars 17 and 18 being adjustably connected at this point and provided with series of perforations 19 and 20 to permit such adjustment. The rear or transverse bars of the frames 15 are extended laterally beyond the bars 17 to provide arms 21, which are connected with a laterally-disposed lever 22 by bars 23 and 24, arranged in pairs and located at the upper and lower faces of the laterally-disposed lever. The laterally-disposed lever 22 is pivoted at its inner end at 25 between the pair of draft-bars 3 at a point between the ends thereof. This arrangement of levers equalizes the pull between four horses and by increasing the dimensions of the parts it will be readily apparent that the device may be constructed to accommodate and equalize the draft between more than four horses. A double set of equalizing-levers is provided, and they are adapted to keep the strains and jerks incident to heavy plowing and the like from the main evener-bar.

The invention has the following advantages: The draft-equalizer, which is simple and comparatively inexpensive in construction, is adapted to be employed on gang-plows and various other agricultural machines. It will equalize the draft between four or more horses and will arrange the latter so that no one of them will walk on plowed land. Also the parts may be enlarged to increase the capacity of the device and enable the same to equalize the draft between more than four horses. The outer side of each triangular lever-frame is adjustably connected to the rear or transverse member and the parts may be arranged so that the draft will be equal between the horses.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted

to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. A draft-equalizer comprising a main equalizing-bar, a draft-bar designed to be connected with a plow or other implement and pivoted to the equalizing-bar at a point between the ends thereof, doubletrees provided with singletrees and located at the ends of the evener-bar, a rear transverse lever fulcrumed between its ends on the draft-bar, connecting-bars 11 and 14 extending from the transverse levers to the doubletrees, a short connecting-bar located at the front end of the bar 14 and extending from the adjacent doubletree to the main evener-bar, and a lever-frame fulcrumed on the main evener-bar adjacent to the other doubletree, and connected with the same and with the draft-bar, substantially as described.

2. A draft-equalizer comprising a main equalizing-bar, a draft-bar extending rearward from the same, doubletrees 6 and 9 located at the ends of the evener-bar, the doubletree 16 connected with one end of the same, a transverse lever fulcrumed on the draft-bar and connected with the doubletree, and a lever-frame fulcrumed on the evener-bar at one end thereof and extending forward and rearward from the same and connected with the doubletree 9 and with the draft-bar, substantially as described.

3. A draft-equalizer comprising a main evener-bar, a draft-bar extending rearward therefrom, the doubletrees 6 and 9 located adjacent to the ends of the evener-bar, the doubletree 6 being connected with the adjacent end of the same, the transverse lever fulcrumed on the draft-bar and connected with the doubletree, the substantially triangular lever-frame fulcrumed on the evener-bar at one end thereof and provided at its outer

side with an arm, said lever-frame being extended in advance and in rear of the evener-bar and connected with the doubletree 9, and connections between the said arm and the draft-bar, substantially as described.

4. A draft-equalizer comprising a main evener-bar, a draft-bar extending rearward therefrom, doubletrees 6 and 9 located at the ends of the evener-bar, a transverse lever fulcrumed on the draft-bar and connected with the doubletree, a lever-frame fulcrumed on the evener-bar at the right-hand end thereof and extending forward and rearward therefrom and connected with the doubletree 9, and a laterally-extending lever fulcrumed on the draft-bar and connected at its outer end with the lever-frame at the outer side thereof, substantially as described.

5. A draft-equalizer comprising an evener-bar, a draft-bar extending rearward therefrom, doubletrees located at the ends of the evener-bar, a rear transverse lever fulcrumed on the draft-bar and connected at its terminals with the doubletrees, a substantially triangular lever-frame fulcrumed on the evener-bar at the right-hand side thereof, connected with the adjacent doubletree and having a laterally-extending arm, a laterally-disposed lever fulcrumed at its inner end on the draft-bar and extending from the right-hand side thereof, and the angularly-disposed bars connecting the outer end of the laterally-disposed lever with the arm of the lever-frame, substantially as described.

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

JACOB KRAMER.

Witnesses:

P. F. STIEN,
T. HABEGER.