(No Model.)

C. E. BURNETT.

DRAFT EQUALIZER.

No. 384,190. Patented June 5, 1888.

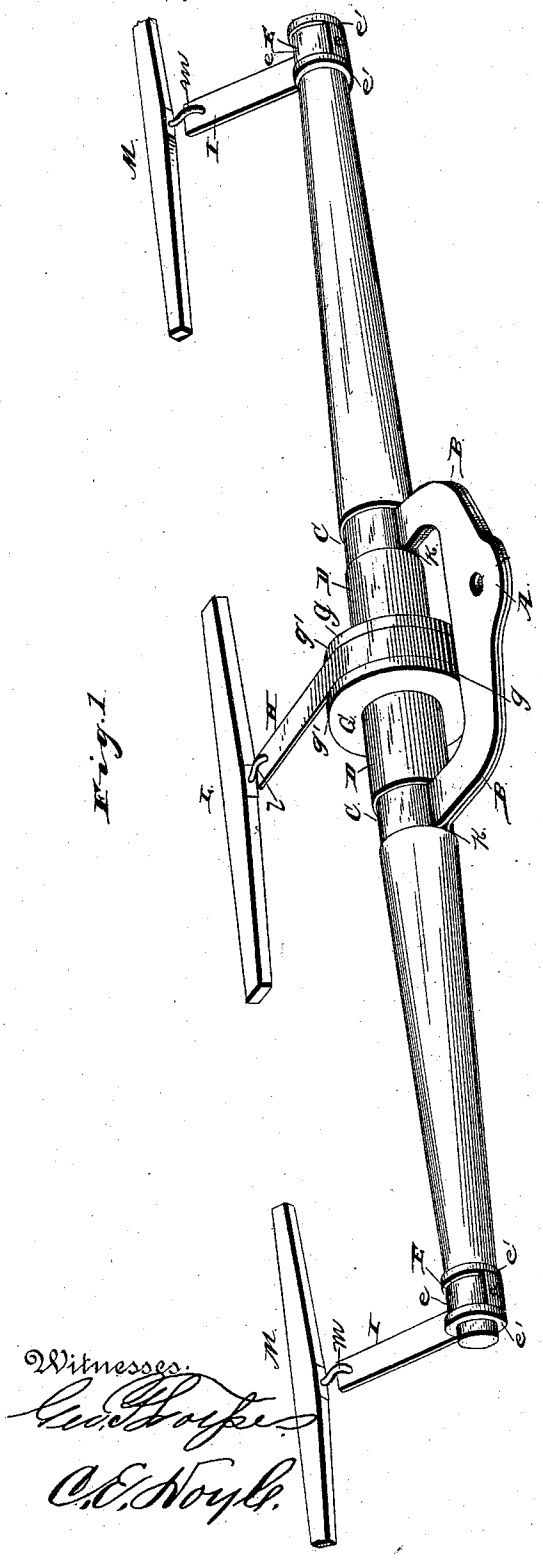

Fig. 1.

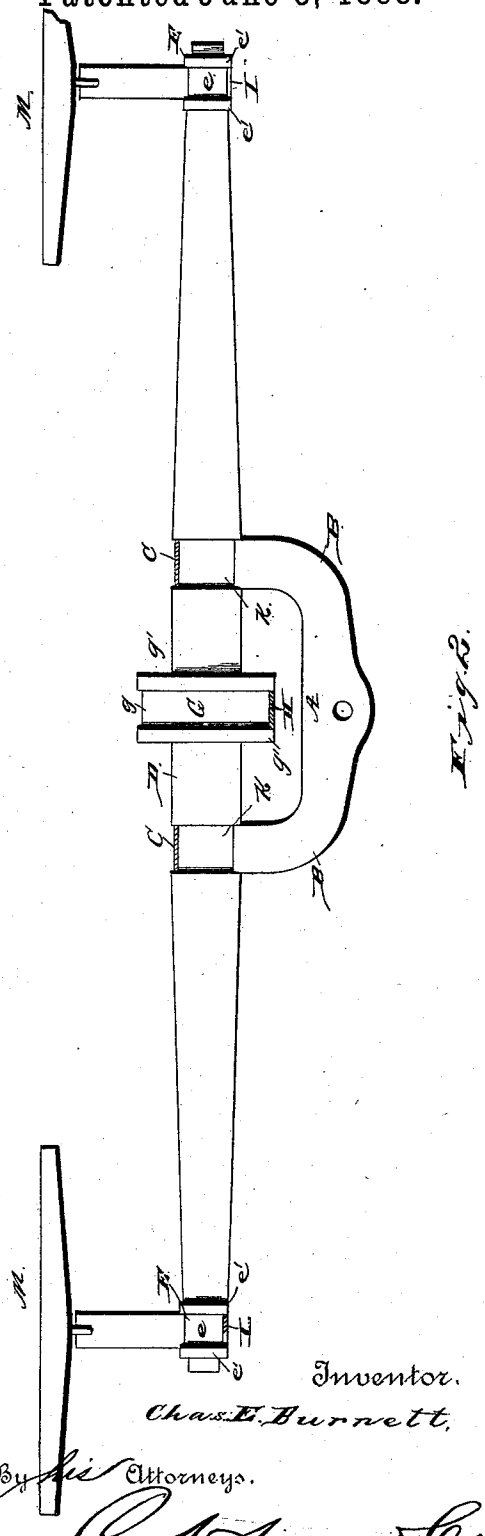

Fig. 2.

Witnesses.
Geo. Boyle.
C. E. Boyle.

Inventor.
Chas. E. Burnett.
By his Attorneys.
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES E. BURNETT, OF GIRARD, ILLINOIS.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 384,190, dated June 5, 1888.

Application filed February 24, 1888. Serial No. 265,110. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. BURNETT, a citizen of the United States, residing at Girard, in the county of Macoupin and State of Illinois, have invented new and useful Improvements in Draft-Equalizers, of which the following is a specification.

My invention relates to improvements in draft-equalizers for two, three, or more horses; and it has for its object to provide a simple, cheap, and easily-adjusted device, such that when the horses are attached thereto the strain upon all will be equal and there will be no chance for one of them to shirk.

The invention consists in a certain novel construction and arrangement of devices, hereinafter more fully described in connection with the accompanying drawings, wherein—

Figure 1 is a perspective view of the equalizer in its operative position. Fig. 2 is a top plan view, partly in section, of the same, to show the manner in which the draft-bar is mounted on the yoke, and also to show more clearly the manner in which the straps, ropes, or chains are attached to the former.

Referring by letter to the drawings, A designates a yoke, which is attached in any suitable or preferred way to the machine or vehicle, and its arms B B are provided with bearings C C, in which the draft-bar D is mounted. The said bar D is round or square, and is provided at its ends with the spools E E and at its center with the spool G. The last-named spool is much larger than the others and it operates between the arms B B of the yoke. The spools consist of the round bodies *g e e*, having the flanges *g' e' e'* at their sides, for a purpose to be hereinafter described.

H I I represent straps, ropes, or chains, which are attached to the spools G E E, respectively, and they fit between the flanges at the sides of the said spools. Thus the straps, ropes, or chains are held in place and kept from slipping laterally.

The strap, rope, or chain H is wound on the spool G from the upper side—that is, it passes over the spool—so that when the strap, rope, or chain is pulled it draws upon the upper side of the spool. The straps, ropes, or chains I I, on the other hand, pass under their respective spools, and thus, when pulled, they draw upon the lower sides of the spools. These spools are rigid with the draft-bar, and hence, as one of the straps, ropes, or chains is wound on its spool from the upper side and the other straps, ropes, or chains are wound on their spools from the under side, the strains upon the different straps, ropes, or chains will tend to turn the draft-bar in opposite directions, and will therefore oppose each other. If the spools were all of the same size, it is evident (assuming that the horses pulled equally upon the straps, ropes, or chains) that, as the strengths of two horses are applied in one direction against the strength of one horse in the opposite direction, the draft-bar would turn in the direction indicated by the straps, ropes, or chains at the ends of the bar, and the said straps, ropes, or chains would be unwound, while the strap, rope, or chain H would be wound. This difficulty is overcome, however, by increasing the radius of the spool G, and thus increasing the leverage of the strap, rope, or chain thereon.

The draft-bar is provided on opposite sides of its center with annular grooves K K, in which fit the bearings C C on the ends of the arms of the yoke. The draft-bar is thus held from slipping laterally out of place.

L M M represent singletrees, having hooks *l m m* on their rear sides, which are engaged in the ends of the straps, ropes, or chains H I I, respectively.

The operation of this device will now be clearly understood. The three horses are so connected to the draft-bar that the draft of two of the horses, acting together, is equalized by the draft of the other horse, which has a greater leverage on the draft-bar, so that when all the horses pull equally the draft-bar will not rotate, but will be at rest. If the center horse increases his pull, the strap, rope, or chain to which he is attached will be unwound and the straps of the other two horses will be correspondingly wound. If the center horse slacks or attempts to shirk his work, his strap will be wound and the other straps will be unwound. If one of the horses at the ends of the draft-bar attempts to shirk his work, the draft-bar will be turned on the pivot of the yoke. Thus the driver can detect the slightest disposition on the part of one of his horses to throw the work upon the others.

As will be seen, this device is in effect a

revoluble whiffletree, to which two, three, or more horses may be applied. (Six horses may be attached if doubletrees are used instead of singletrees.)

The yoke is adapted to be pivoted to a vehicle or machine by means of a king-bolt of the ordinary kind passed through the opening or bearing *a* in the yoke. I thus provide a simple and convenient equalizer which may be applied to any vehicle or machine with no preparation of the latter and by simply inserting the king-bolt through the said bearings, and therefore by this peculiar and simple arrangement I simplify and cheapen devices of this kind.

Having thus described my invention, I claim—

The draft-equalizer comprising the yoke A, having the bearing *a*, mounted on a suitable vertical bolt on the vehicle, and provided with bearings C C at the ends of its arms, the draft-bar D, having peripheral grooves K K, mounted in the said bearings and held from lateral play, and the straps, ropes, or chains wound on the said bar and having the singletrees attached thereto, as specified.

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

CHARLES E. BURNETT.

Witnesses:
THOMAS WARREN,
CHARLES CARPENTER.