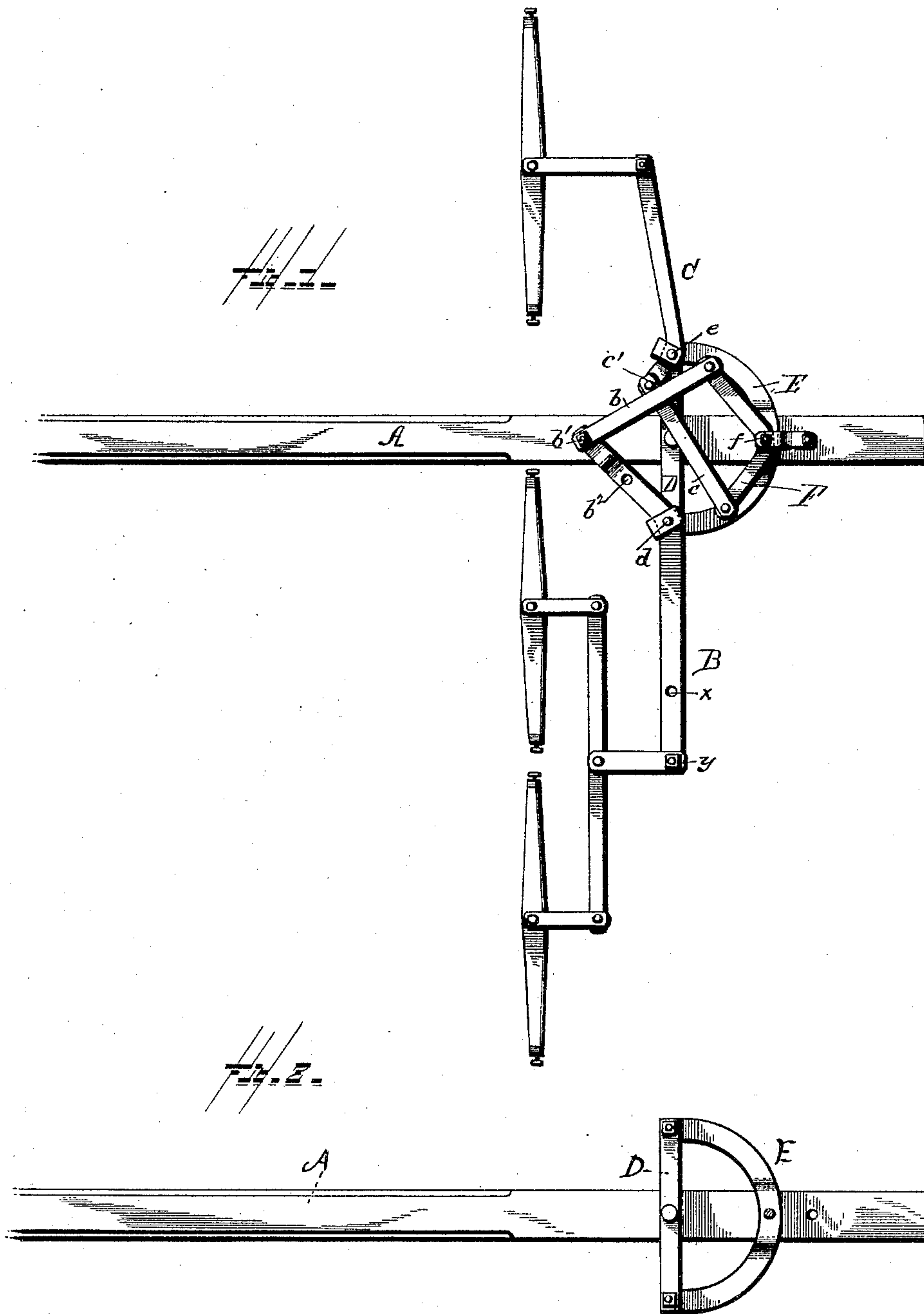


(No Model.)

A. G. BROWN.
DRAFT EQUALIZER.

No. 413,167.

Patented Oct. 22, 1889.



Witnesses

Albert Speiden,
N. Bartlett.

Inventor

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UNITED STATES PATENT OFFICE.

ALFRED GILBERT BROWN, OF LA CROSSE, WISCONSIN, ASSIGNOR OF ONE-HALF TO ERVIN G. BOYNTON.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 413,167, dated October 22, 1889.

Application filed August 1, 1889. Serial No. 319,427. (No model.)

To all whom it may concern:

Be it known that I, ALFRED GILBERT BROWN, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Draft-Equalizers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to draft-equalizers, and comprises the features and arrangements of parts clearly shown in the accompanying drawings, in which—

Figure 1 is a plan view of the equalizer attached to a vehicle-pole. Fig. 2 is a view of the plate which forms a bearing for the arms of the equalizer proper.

The objects of my invention are to equalize the draft of one horse as against two in such manner as to overcome side draft and secure a form of equalizer readily adaptable for the use of three horses.

In the manufacture of devices of this class it has been found difficult to transfer a proper portion of the excessive draft when in use upon one side of the pole to the opposite side thereof, so that the tendency to side or diagonal draft is not overcome. I have obviated this difficulty by the use of an independent draft-lever upon each side of the pole, from the inner or short end of which the back-pressure is carried to the opposite ends of a cross-arm pivoted at the center of the pole. As will be seen, by a proper adjustment of proportions in the construction of the levers and of the two ends of the cross-arm, a sufficient portion of the excessive draft on the long lever is carried to the draft-point of the short lever. The manner of accomplishing this will be more clearly understood from the following detailed description of my device.

Let A represent the vehicle-pole, B the

long or two-horse lever, and C the short or one-horse lever. These levers are pivoted at *d* and *e*, respectively, to the ends of the cross-bar D and half-circle E, both of which are fixed rigidly to the pole. The pivoted points *d e* are equidistant from the central line of the pole A. From the inner ends of the levers B C extend the rods *b c*, which cross each other and are attached to opposite ends of the cross-arm F, which is pivotally secured at *f* to the pole A. It will be seen that by this arrangement of parts, the draft-points being equidistant from the central line of the pole, the draft and back-pressure are both transferred directly to the center of the pole. By making the short arm of the one-horse lever relatively shorter than necessary to counteract the draft of the two horses the excess of draft of the latter is carried by the rod *b*, the cross-arm F, and rod *c* to the point *c'*, which in effect becomes the fulcrum-point of both draft-levers. The proportions between the several parts having been properly adjusted—a mechanical and mathematical problem—it will be found that the draft at *c'* is just equal to the draft at *b'*.

My device may at once be adjusted for the use of but two horses by pivoting the rod *b* at the point *b²* and attaching a single whiffletree in place of the double whiffletree at *y*, as shown.

Having described my invention, I claim—

In a draft-equalizer, independent draft-levers pivoted at equal distances from the center line of the vehicle-pole, in combination with a cross-arm pivoted on said pole, the inner ends of the draft-levers being attached to the opposite ends of the cross-arm by means of suitable connecting-bars, substantially as and for the purpose described.

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

ALFRED GILBERT BROWN.

Witnesses:

RUDOLPH A. JOHNSON,
RALPH E. BROWN.