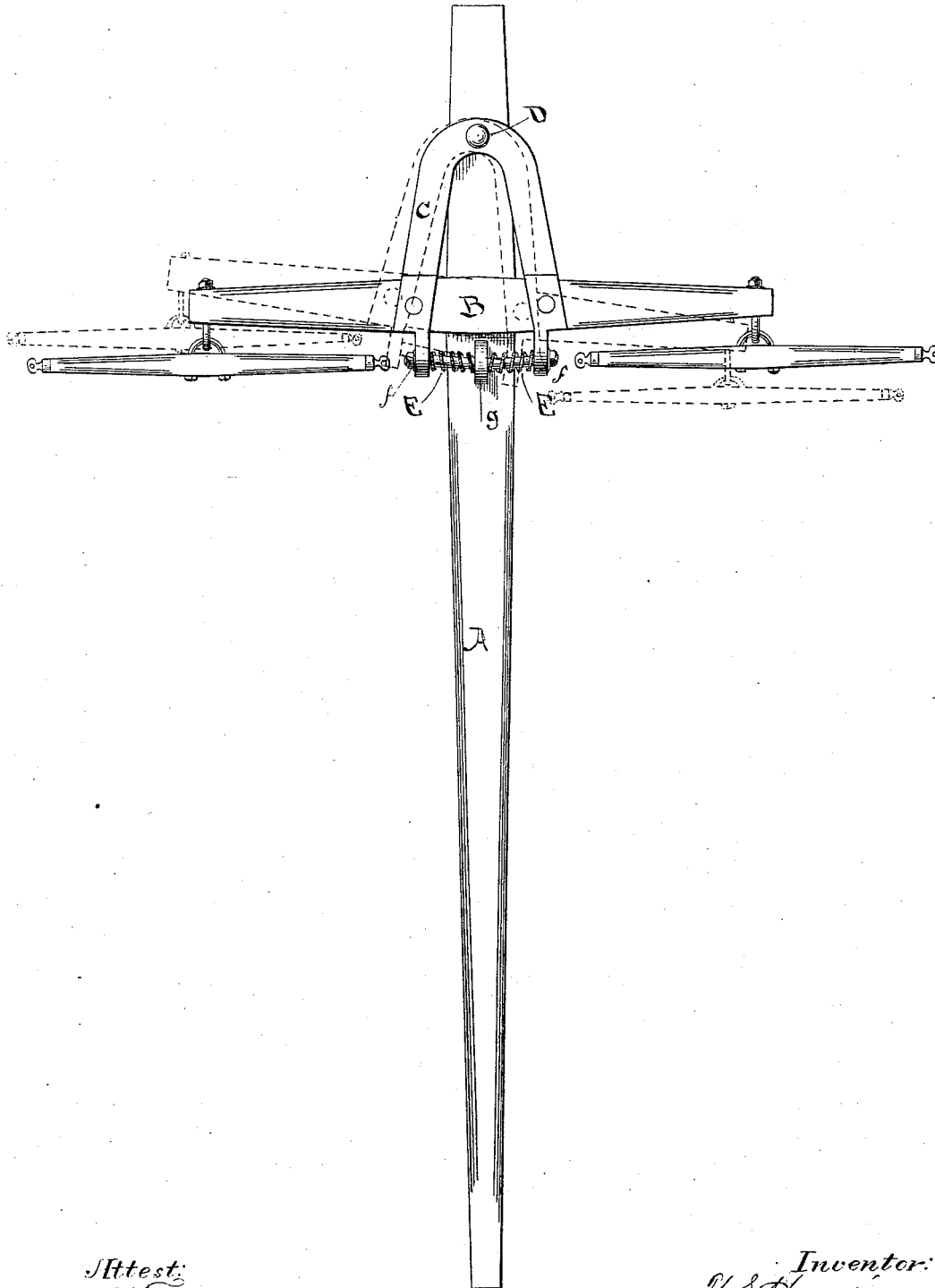


(No Model.)

T. HARDING.
DRAFT EQUALIZER.

No. 264,285.

Patented Sept. 12, 1882.



Attest:
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UNITED STATES PATENT OFFICE.

THOMAS HARDING, OF LAFAYETTE, INDIANA.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 264,285, dated September 12, 1882.

Application filed February 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HARDING, of Lafayette, Tippecanoe county, in the State of Indiana, have invented a new and useful Improvement in Draft-Equalizers; and I do hereby declare that the following is a full and accurate description of the same.

This invention consists of an ordinary double-tree pivoted to the tongue or other proper part of the running-gear of a wagon at a point some distance in the rear of a right line, which may be drawn between the points of attachment of the single-trees to said double-tree, combined with an equalizing-spring, whereby when, by reason of a preponderating force of draft, one end of the single-tree advances it does so in a curved line toward the tongue, and therefore with diminishing leverage, while at the same time the opposite single-tree recedes from the tongue, and therefore has an increasing leverage, a part of the preponderating force being taken up by the equalizing-spring.

That others may fully understand my invention, I will more particularly describe it, having reference to the accompanying drawing, whereof the figure is a plan of my equalizer.

A is the wagon-tongue, of ordinary structure, and B is a double-tree, with a draft-connection to the tongue or other part of the wagon, by means of the arm C rigidly fastened to the double-tree, and extending backward therefrom to a pivot, D, whereon the double-tree not only sways, but swings, as shown in dotted lines, so that a preponderating draft-strain on the single-tree at one end causes that end to move forward in a line curved about the center D, and with diminishing distance from the axis of draft, and therefore with a shortened leverage on that side, while the opposite end of the double-tree recedes from the axis of draft in a corresponding degree, and with a lengthened leverage. This effect will be immediately understood when it is remembered that the pivot of the double-tree has always heretofore been put on or about a right line, which joins the points of attachment of the single-trees, and that therefore the double-tree lies on the diameter of the circle in which said single-tree connections move. Both single-trees therefore simultaneously and equally advance and recede from the axis of draft; but

in this device the double-tree lies not on the diameter, but upon a chord of the circle, and therefore has a bodily motion across the axis of draft whenever the draft-strain on one side preponderates over that on the other.

Heretofore in draft-equalizers of this description there has not been any means for taking up any portion of the preponderating force except by the counter-force at the other end of the double-tree. As between two horses, for instance, one of which is more powerful than the other, the change of leverage within the range of similar double-trees as heretofore made will be insufficient to equalize the draft. It is therefore advantageous to provide a means for absorbing in a lateral or other direction a part of the preponderating power, and thus, when such power greatly preponderates, a portion of it will be neutralized by other force than the draft power.

In the drawing a lateral equalizing-spring, E, is shown between a lug, *f*, projecting from the double-tree, and a solid abutment, *g*, on the tongue. Springs E are placed on each side of said abutment *g*, so that the stronger force may be on either side. A portion of the preponderating force is thereby taken up by said spring, and the weaker force is aided in equalizing the draft to that extent.

Having described my invention, what I claim as new is—

1. A draft-equalizer consisting of a double-tree with a pivotal connection to the tongue A or other proper part of the running-gear of a wagon at a distance in rear of the right line, which may be drawn between the connections of the single-trees to the double-tree, combined with the equalizer-springs E E, as set forth.

2. The tongue A of a wagon and the double-tree B, combined with an arm, C, projecting backward from the double-tree, having at its outer extremity a pivotal connection, D, with said tongue, and at its inner or forward extremity means for attachment to said double-tree, and projecting lugs *f f*, to serve as abutments for the springs E E, and the stationary abutment *g*, fastened to the tongue.

THOMAS HARDING.

Witnesses:

C. B. SIMPSON,
W. T. BARBEE.