

D. M. HARKRADER.
Draft Equalizer.

No. 231,037.

Patented Aug. 10, 1880.

Fig. 1.

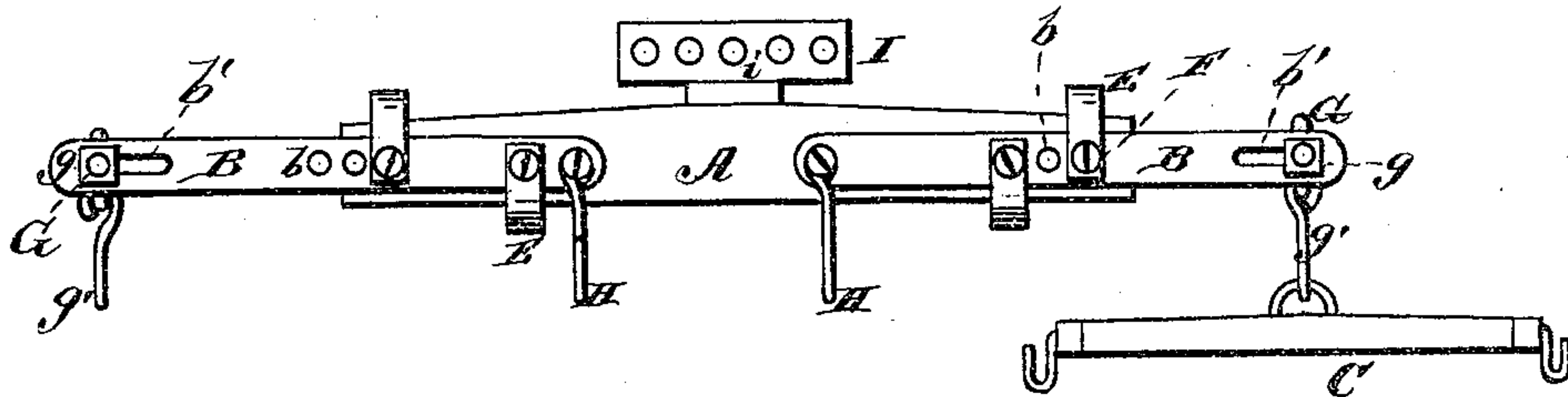


Fig. 2.

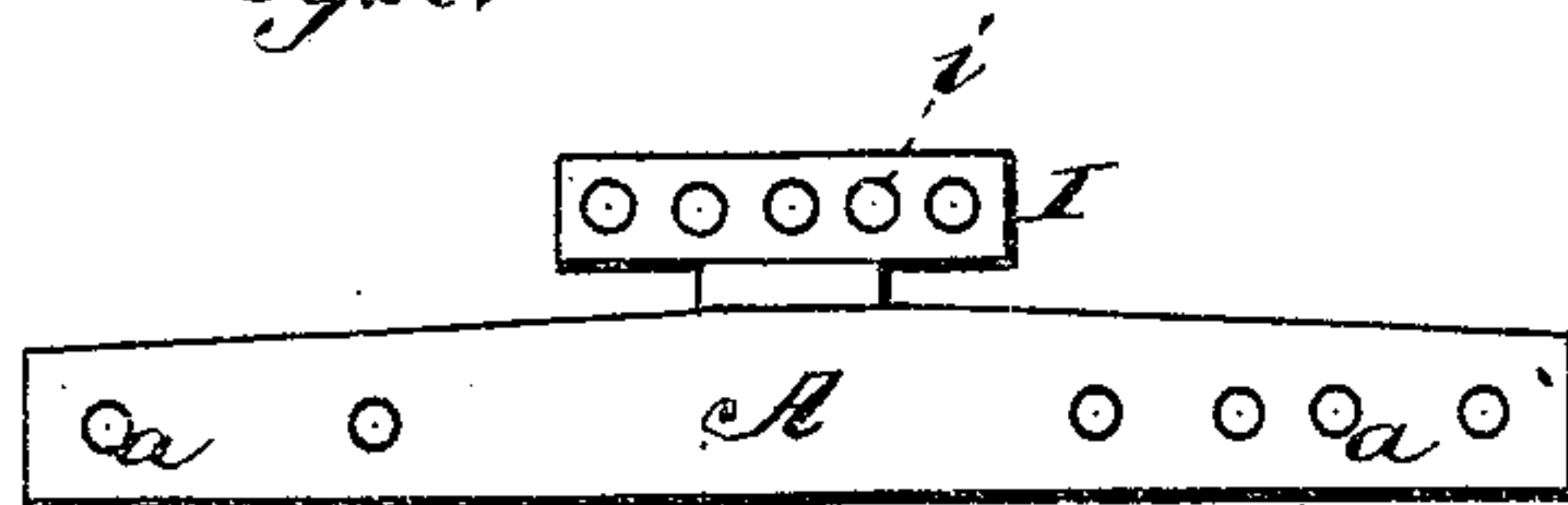
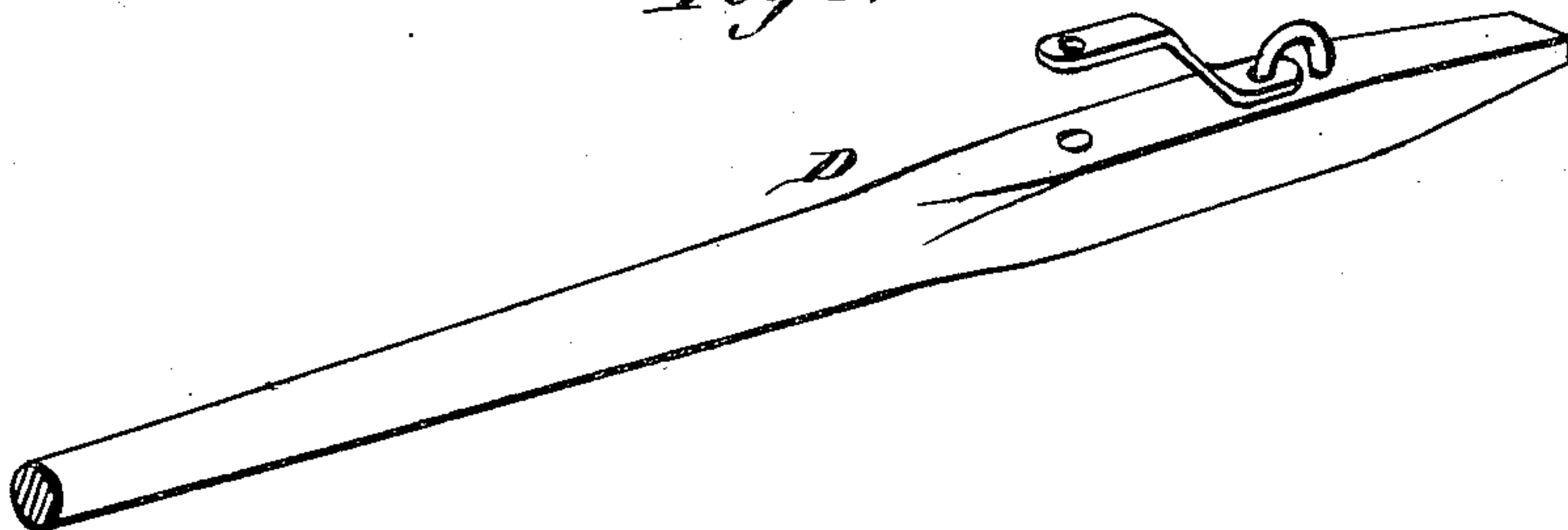


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID M. HARKRADER, OF BARRY, ILLINOIS.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 231,037, dated August 10, 1880.

Application filed February 26, 1880.

To all whom it may concern:

Be it known that I, DAVID M. HARKRADER, of Barry, in the county of Pike and State of Illinois, have invented certain new and useful Improvements in Reversible Equalizers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a plan of my reversible equalizer, and Figs. 2 and 3 are detail views.

The invention relates to a reversible draft-equalizer for two, three, or four horses.

The improvement consists in the construction and arrangement of parts, as herein described, and particularly pointed out in the claims.

Let A designate the double-tree, B the equalizers or eveners, and C a single-tree. D designates a wagon-pole, with which the double-tree may be connected when desired. Each evenner B is formed with the several holes *b* and an end slot, *b'*. The double-tree is formed with two sets of holes, *a a*, and the evenners are connected with the double-tree by clevises E and bolts F, passed through the clevises and the holes in the evenners and double-tree. As herein shown, I employ two bolts and two clevises for each evenner. This gives the evenners but little play and is used when it is desired to make the evenners practically rigid with the double-tree.

Under certain circumstances, in disposing of the single-trees and horses, it may be desirable to dispense with one bolt and clevis from each evenner, so that each will turn freely upon its pivot, or but one bolt and clevis may be removed.

As an effective means of adjusting the draft, I secure an eyebolt, G, in each slot at the outer end of each evenner by means of nuts *g*. Hooks *g'* are connected with these eyebolts, and to these hooks may be connected the outer single-trees. By loosening the nuts the eyebolts can be shifted in position in the slots. To the inner ends of the evenners are swiveled hooks H H, for the purpose of connecting one or more single-trees therewith.

The double-tree has a centrally-projecting arm with a cross-bar, I. This cross-bar has a series of holes, *i*, for the reception of a bolt for bolting the double-tree to a plow-beam or to a pole. By shifting the bolt the plow may be made to take land, since one arm of the double-tree will then be longer than the other. It may also be of use in bringing the pole of a vehicle to one side of the center of the double-tree, so that by properly arranging the single-trees and evenners one horse may be hitched to one side and two horses to the remaining side, the pole extending forward alongside of the single horse.

As shown, the pole has a hinged and bent strap, K, and the bolt is passed through said strap, the cross-bar I, (which I designate the "shifting-plate,") and through a hole in the pole. In such case a nut will be screwed upon the end of the bolt.

By fastening one end of one of the evenners to the double-tree near the center of the latter the device may be used for four horses.

The hooks at the inner ends of the evenners may be employed for one or two single-trees, and so on, the arrangement of such single-trees with reference to the hooks being a matter of practice well understood by those skilled in the art.

It is evident that the cross-bar or shifting-plate may be connected with the machine or vehicle to be drawn by other means than those above set forth, such as by two flexible connections.

What I claim, and desire to secure by Letters Patent, is—

1. In a draft-equalizer, the evenner connected with the double-tree by two bolts and two clevises, as and for the purpose specified.

2. The evenner B, with an end slot, in combination with an eyebolt, G, nut *g*, and hook *g'*, as herein shown and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID M. HARKRADER.

Witnesses:

R. D. OSBORN,
M. LANE.