

(No Model.)

M. S. O'NEIL.
DRAFT EQUALIZER.

No. 322,197.

Patented July 14, 1885.

Fig. 1.

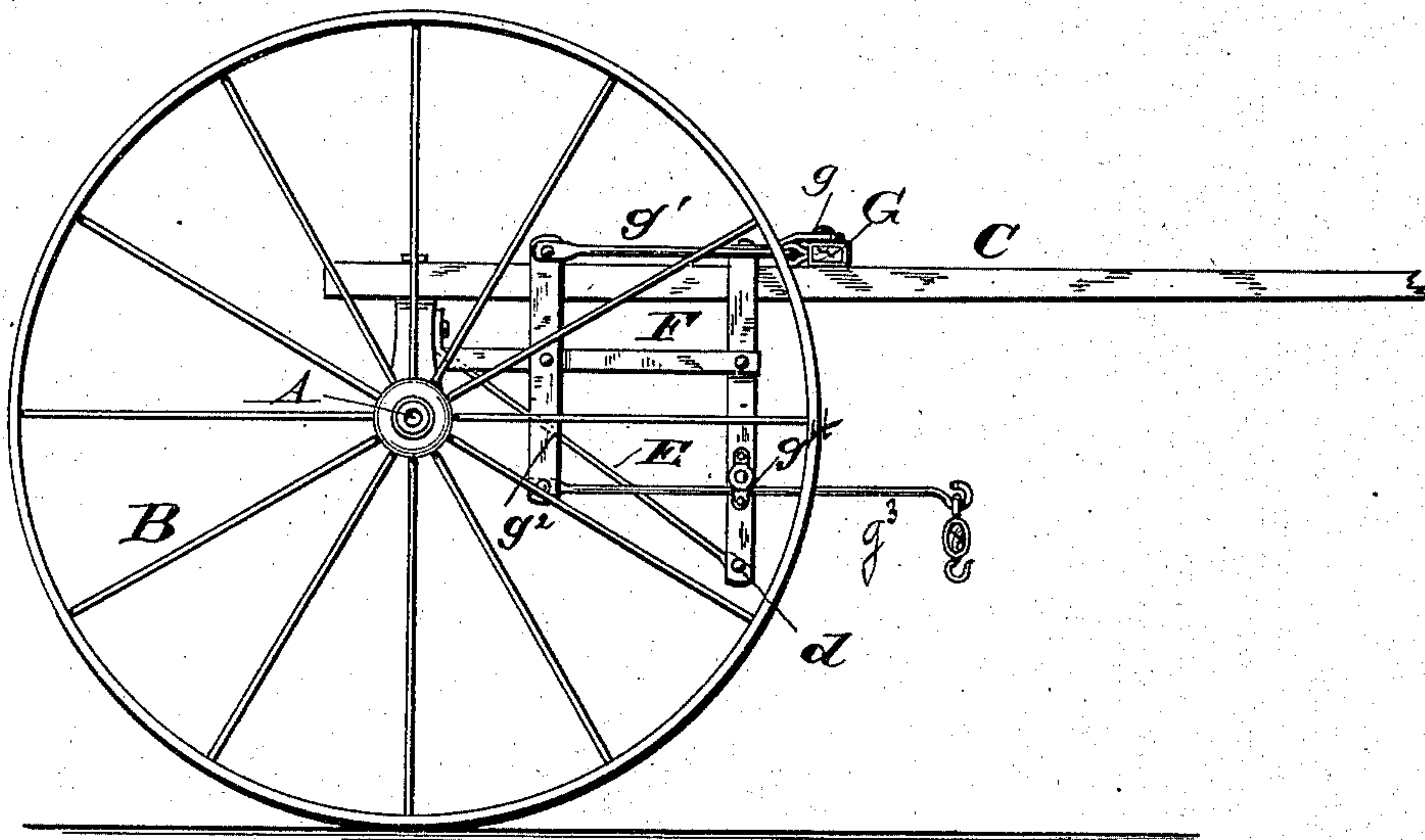
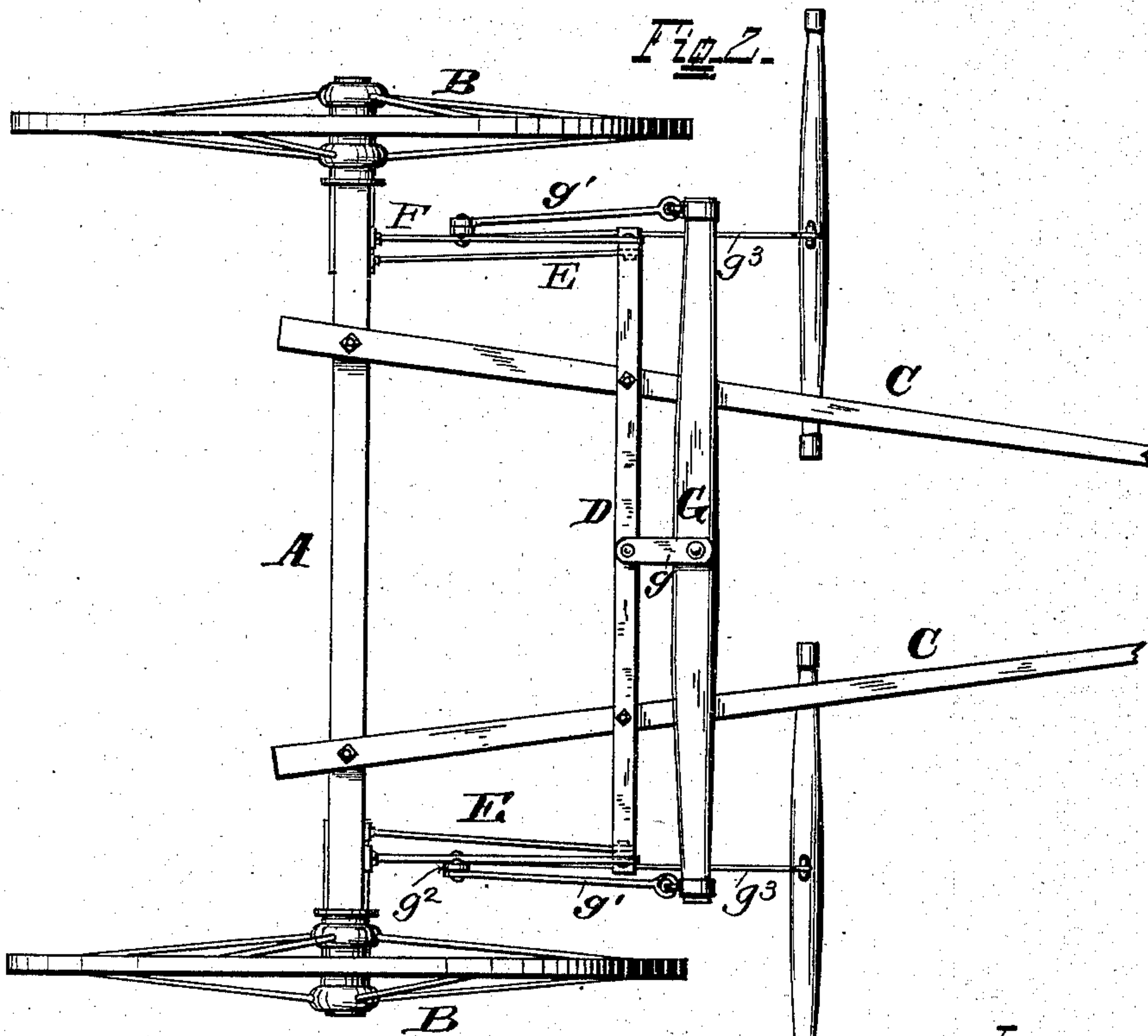


Fig. 2.



Attest
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DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 322,197, dated July 14, 1885.

Application filed March 27, 1885. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL S. O'NEIL, of Rock Island, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Draft-Equalizers, of which the following is a specification.

My invention relates to that class of equalizers which are known as "two-horse" or "double-team" equalizers, in which the draft of one horse is balanced against that of the other, and particularly to such devices as are employed to equalize the draft of teams in sulky-plows, cultivators, and other wheeled and tongued implements of a similar kind; and it consists in the peculiar construction of devices and the various combinations hereinafter described and claimed.

My invention may be applied with greater or less effectiveness to many kinds of vehicles, sulky-plows, and other tongued and wheeled implements; but for the purposes of this specification I will illustrate and describe the same as applied to an ordinary combined riding and walking cultivator.

In the drawings, Figure 1 is a side view of the running-gear of a cultivator embodying my invention, and Fig. 2 is a top view of the same.

A is the axle of a cultivator, upon the ends of which are supported the carrying-wheels B B. To the axle, at about midway between the center and its ends, are secured the open ends C C of the forked tongue to which the draft attachments are secured. Upon the tongue is secured, at right angles to its length, a strong cross-bar, D, having its ends d turned down at right angles to its body portion and extending to a point below the axle. The vertical portion or pendants of the cross-bar are sustained by braces E, securely bolted to its lower ends and to the axle of the cultivator, and by horizontal braces F, secured to such cross-bar slightly below the bends and such axle, and the cross-bar is thereby held perfectly rigid. Swiveled to the front of the cross-bar by a short link, g , is the double-tree G, having rearwardly-extending links g' g' , which in turn are swiveled to vertical bars g^2 , pivoted at or about their centers to the horizontal braces F. To the lower ends of the latter are hung the draw-bars g^3 g^3 , which extend for-

ward, passing through roller-casings g^4 , secured to the pendants of the cross-bar and ending in hooks, to which the single-trees or the horses directly are attached. By this construction the line of the draft is below that of the axle, being from the pivotal engagement of the vertical bars with the horizontal brace, and the tendency of such low draft is to prevent the tongue, which, in this class of machines, is a heavy forked one formed from two pieces of timber, from bearing down upon the necks of the team.

The principal constituents of a perfect equalizer are long connections between the immediate draft or single-trees and the double-tree, to provide a regular, uniform, and steady balance between the draft of the horses, coupled with compactness, simplicity of construction, and absence of friction.

The difficulties in constructing such an apparatus have been that in providing such long connections so much space has been required as to render the device inconvenient for ordinary use, also causing the employment of complicated mechanism, entailing expense, increasing the liability of the machine to get out of order or break, and subjecting it to more or less friction.

In the device embodied in my invention, by the employment of the rearwardly-extending links from the double-tree, vertical bars connected thereto, and long forwardly-extending draw-bars hung to the lower ends of such vertical bars, a very long connection is afforded between the double-tree and the single-trees, while the device is compact, occupying no space required for the operative parts of the machine, is simple, easily constructed, and adds but little additional to the cost of the machine.

By the use of the roller-casings, through which the draw-bars pass, and rollers therein on the pendent ends of the cross-bar, and the peculiar construction of the joints, there is very little friction between the various parts.

In operation the action of the equalizer is to make the draft regular, steady, and smooth, with very little jerky motion, and consequently proportionately little jarring of the tongue against the bodies of the horses, and the draft of each horse is as nearly as practi-

cable balanced against that of the other, and each horse is thereby compelled to draw his portion of the load.

When used as a riding-cultivator, the draw-bars are placed on top the rollers, in the roller-casing fixed to the cross-bar pendants, and the draft from the draw-bars in such position serves to partially counterbalance the weight of the seat and that of the driver.

When used as a walking-cultivator, the bars are placed beneath the rollers in the roller-casings, and in this position the draft counterbalances to some extent the weight of the tongue upon the necks of the team.

I am aware it has been proposed to provide a cultivator with a draft-equalizer consisting of a swiveled double-tree, levers pivoted to the frame, a link connecting the levers and double-tree, and draw-bars attached to the pivoted levers, and hence I make no broad claim to such construction.

I am also aware it is not new to pass the draw rods or chains over a pulley, and I make no broad claim to such construction.

My construction I believe is better than those just referred to, as it is more compact, and is strong and durable.

I claim—

1. A double-team draft-equalizer consisting of a double-tree swiveled at its center by a short link or immediately to a cross-beam upon the tongue, rearwardly-extending links at its ends, swiveled to the upper ends of vertical bars pivoted to horizontal braces between the axle and the pendent ends of the cross-bar, and having forwardly-extending draft-rods at their forward ends.

2. A double-team draft-equalizer consisting of a double-tree connected by a link at its center or immediately to a cross-beam upon the tongue, rearwardly-extending links at its ends swiveled to the upper ends of vertical bars pivoted to horizontal braces between the axle and the pendent ends of the cross-beam, and having forwardly-extending draft-bars,

which pass through roller-casings secured to the pendent ends of the cross-bar, each having a roller, and adapted to be placed below or on top of such roller, substantially as described, for the purpose set forth.

3. A double-team draft-equalizer consisting of a horizontal double-tree swiveled to the tongue or a cross-bar thereon, vertical double-trees or bars pivoted between their ends to braces from the cross-bar to the axle or other suitable part, and connected at their upper ends to the ends of the horizontal double-tree by rearwardly-extending links, and having attached to their lower ends forwardly-extending draft-rods.

4. A double-team draft-equalizer consisting of a horizontal double-tree swiveled to the tongue or a cross-bar thereon, vertical double-trees or bars pivoted between their ends to braces from the cross-bar to the axle or other suitable part, and connected at their upper ends to the ends of the horizontal double-tree by rearwardly-extending links, and having attached to their lower ends forwardly-extending draft-rods which pass through roller-casings, having rollers secured to the pendent ends of the cross-beam.

5. In a cultivator or other like tongued and wheeled implement, the combination of the cross-bar D with pendent ends d , braces E and F, links g' , vertical bars g'' , draw-bars g^3 , roller-casing g^4 , and roller, substantially as described.

6. A draft-equalizer consisting of a pivoted double-tree, levers in rear of the double-tree pivoted to the frame of the machine, links connecting the upper ends of the pivoted levers to the ends of the double-tree, and draft chains or rods secured to the lower ends of the pivoted levers, as shown.

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Witnesses:

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