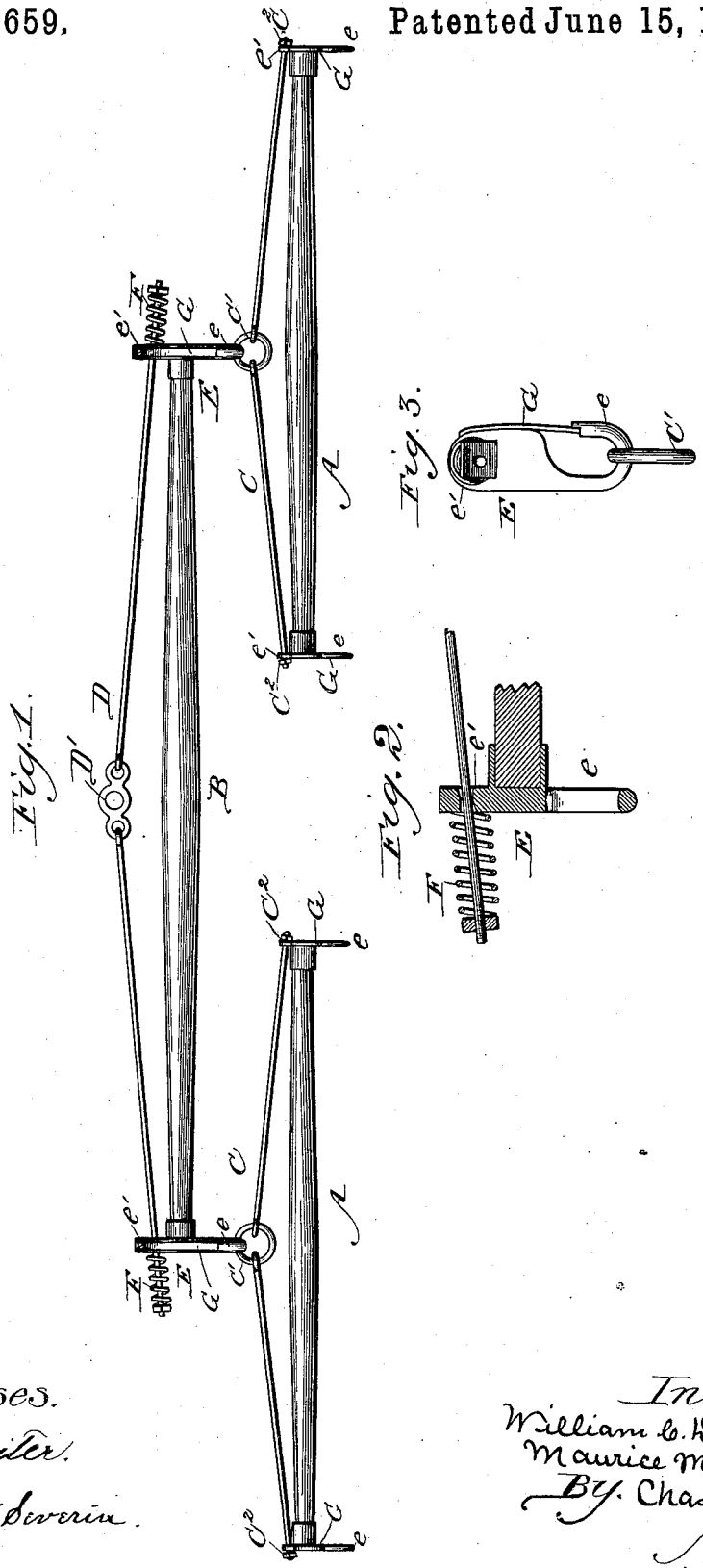
(No Model.)

W. C. DEVEREAUX & M. MURPHY.

DRAFT EQUALIZER.

No. 343,659. Patented June 15, 1886.



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UNITED STATES PATENT OFFICE.

WILLIAM C. DEVEREAUX AND MAURICE MURPHY, OF CHICAGO, ILLINOIS, ASSIGNORS TO SAID DEVEREAUX AND SISTER M. RAPHAEL, OF SAME PLACE.

DRAFT-EQUALIZER.

SPECIFICATION forming part of Letters Patent No. 343,659, dated June 15, 1886.

Application filed January 16, 1886. Serial No. 188,786. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM C. DEVEREAUX and MAURICE MURPHY, both citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Draft-Equalizers, of which the following is a specification.

It has heretofore been proposed to provide, as a means for attaching a whiffletree to the cross-bar of a pair of thills, or to the clevis of a plow or other implement, an appendage to the whiffletree consisting of a pair of rods, each secured to one end of the whiffletrees by a bolt passing through the whiffletree and through an eye at the end of the rod, said rods being arranged to converge to the rear of the whiffletree, and being connected together at their proximately meeting ends by a goose-neck ring that is to be attached to the cross-bar of the thills or to the plow-clevis. In another instance it has been proposed, as a means for providing a spring resistance in opposition to the pull upon the whiffletree, to provide the whiffletree with an appendage consisting of two rods, each bolted at one end to an end of the whiffletree, and both arranged to converge rearwardly to within a short distance of each other, at which juncture the rods are bent forward and secured to the middle portion of the whiffletree. The said forwardly-bent portions of these rods are encircled by a coiled spring attached at its ends to disks fitted to slide upon said forwardly-bent portions of the rods, and to the disk nearest the whiffletree is attached an eyebolt that extends back centrally through the spring. The eye of said bolt is designed to be attached to the vehicle or implement to be drawn. Under such construction, however, lateral strain is exerted on the whiffletree along its middle portion when a pull is exerted upon the traces that are attached to the whiffletree-hooks.

The principal object of our invention is to provide a whiffletree or double-tree with an attachment wherein all of the advantages of the two foregoing constructions are combined and the disadvantages avoided. To such end we provide a flexible or jointed rod, desirably composed of two rod-sections arranged to converge somewhat from the ends of the whiffletree or double-tree, the proximately meeting inner ends of the sections being suitably linked together, while at their outer ends said rod-sections have yielding spring-connections with the whiffletree or double-tree. In this way the pull of the traces upon the hooks at the ends of the whiffletree or double-tree will be transferred to the flexible or jointed rod, so as to relieve the whiffletree or double-tree from lateral strain, and at the same time a spring resistance be interposed between the trace and the vehicle or implement that is to be drawn, thereby relieving the horse's neck from sudden positive shocks or jerks.

A further object is to provide each end of the whiffletree or double-tree with a novel and improved construction of socket-piece that is formed with a hook for a trace, and with a bearing for one end of the flexible or jointed rod and the spring that is provided at such point.

In the drawings, Figure 1 represents a plan view of a draft-equalizer embodying the principles of this invention. Fig. 2 is an enlarged detail representing a section through one end portion of the evener-bar. Fig. 3 is an enlarged end view of the evener-bar and its end attachment.

In said drawings, A A refer to the whiffletrees, and B to the evener-bar. Each whiffletree or single-tree is provided with a jointed rod, C, attached to the ends of the whiffletree and adapted to be drawn at its middle portion, to some extent, back from the single-tree, as herein illustrated.

As a simple and convenient mode of forming the jointed bar, it is composed of two sections attached at their outer ends to the single-tree, and connected together at their inner ends by a ring, C′, which latter serves as an efficient device for connecting the jointed rod with the evener. The evener B is likewise provided with a jointed or two-part rod, D, having the outer ends of its two sections connected with the ends of the evener, and their inner ends connected together by a suitable ring, link, or plate, D′, provided with a perforation, whereby it can be attached to the pole or vehicle.

The ends of the single-trees and evener are provided with end caps or socket-pieces, E, which are each formed with a lateral hook-shaped projection, *e*, at one side, and a later-

ally-projecting lug, e', at the opposite side. These socket-pieces are fitted to the ends of the bars constituting the single-trees and the evener, so as to bring the hooks at the front and the lugs at the rear of said members.

The hooks of the whiffletrees or single-trees are designed to engage the traces, while the hooks of the evener are designed to engage the rings C′ of the single-tree rods, thus dispensing with clevises, and providing a simple and ready connecting device.

The lugs e' are perforated to receive the ends of the jointed rods, those of the jointed rod C being simply inserted through the perforations and then furnished with nuts C^2; or the rod can be headed at its ends to prevent its detachment from the lugs, or otherwise suitably connected therewith, as may be preferred. The ends of rod D are, however, passed to some extent through the lugs of the evener socket-pieces or end caps, and springs F are arranged upon the rods between said lugs and nuts or heads on the termini of the rod. In this way, when a pull is exerted upon the evener, the end portions of rod D will be drawn back, or practically the lugs drawn forward upon the rod and against the springs, which yield to the pull with a gradually-increasing resistance up to a point where the resistance becomes positive.

The socket-pieces or end caps are provided with springs G, secured at one end to the socket-pieces, and having their free ends arranged to normally lie in notches formed at the ends of the hooks in such way that the springs can be pushed or bent back toward the shanks of the hooks, but cannot be bent outwardly away from the hooks. In this way these springs, which are in the nature of spring-tongues, serve as reliable keepers.

By reason of the foregoing arrangement it will be obvious that a pull upon the hooks at the ends of either whiffletree will be transferred to the rod C, thus relieving the whiffletree from strain; and it will likewise be evident that a pull of the whiffletrees upon the hooks of the evener will be transferred to the rod D, so as to relieve the evener of lateral strain in a similar way.

With regard to the principles of this invention, we desire to be understood as claiming the feature of the jointed rod applied to one or two whiffletrees, according to whether one or two may be employed, and also we claim the said feature substantially as herein applied to an evener.

The feature of the springs in connection with the jointed rod could evidently be applied to a whiffletree, and hence we do not limit ourselves to an evener but claim the same as applied to a whiffletree.

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

1. A whiffletree or double-tree combined with a flexible or jointed rod attached at its ends to the ends of the whiffletree or double-tree by yielding spring-connections, substantially as and for the purposes herein described.

2. A whiffletree or double-tree combined with the socket-pieces E, each formed with a hook, and the flexible or jointed rod attached at its ends by yielding spring-connections to the said socket-pieces, substantially as described.

3. The whiffletree or double-tree combined with the socket-pieces E, each formed with a hook, e, and a perforated lug, e', the flexible or jointed rod having its ends extended through the perforated lugs of the socket-pieces, and the springs F, applied between the ends of the rod and the said lugs, substantially as described.

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