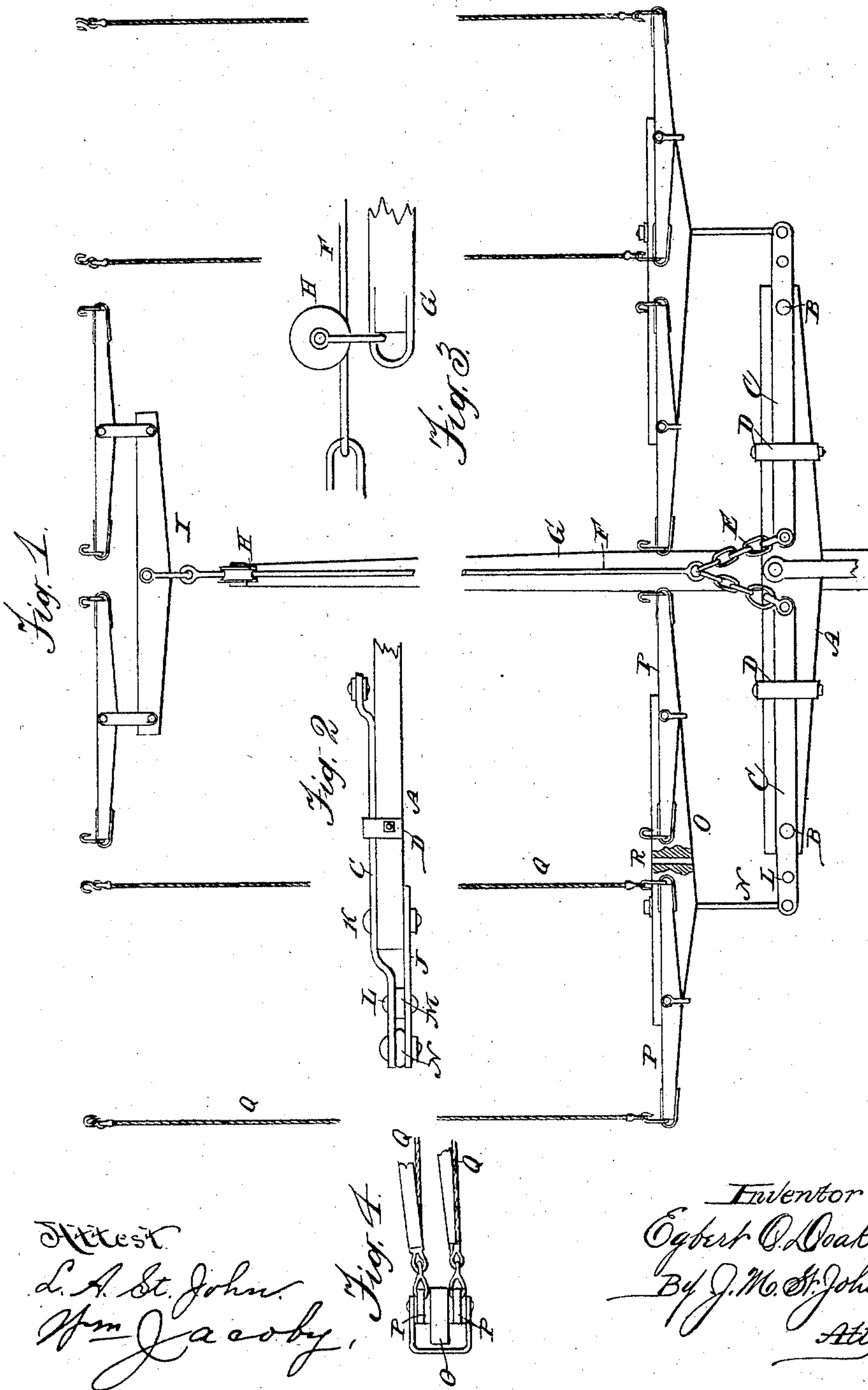


No. 868,601.

PATENTED OCT. 15, 1907.

E. O. DOAK.
DRAFT EQUALIZER.
APPLICATION FILED JUNE 27, 1906.



Attest
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Fig. 4

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UNITED STATES PATENT OFFICE.

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DRAFT-EQUALIZER.

No. 868,601.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed June 27, 1906. Serial No. 323,710.

To all whom it may concern:

Be it known that I, EGBERT O. DOAK, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Draft Apparatus, of which the following is a specification.

This invention relates to draft apparatus such as is employed more especially in the operation of road-graders, dirt elevators, and the like, where a large number of horses are required, and where it is desirable that some of the lead-horses be so connected with the tongue of the implement as to aid in guiding it. The nature of the device is, however, such that it may be used with four, six, or eight horses the changes necessary for such different numbers being easily and quickly made.

In the accompanying drawing, forming a part of this specification, Figure 1 is a plan view of the apparatus as arranged for eight horses. Fig. 2 is a fragmentary rear view of the four-horse evenner, showing the construction of the equalizing lever to which the other evenners are connected. Fig. 3 is a fragmentary side view, showing the connection of the central draft-rod with the tongue. Fig. 4 is an end view of one of the rear whiffletrees, and shows the manner of connecting the swingletrees with the wheel and lead horses, respectively.

To a strong evenner A is pivoted at B a pair of equalizing levers C, the fulcrums being one fourth the effective length of the respective levers. The levers are limited in their forward and backward swing by stirrups D. The longer arms of each lever connect by chains E with a central draft-rod F running over the tongue G and under a sheave H attached thereto. To the front end of this draft-rod is connected a pair of ordinary whiffletrees I. As shown in Fig. 2 the inner ends of these levers are thrown up from the evenner, so that the draft-rod chains may run free. The outer ends of the same levers are depressed, so as not to bring a twisting strain on the evenner, and are provided with auxiliary bars J to take the pivot-bolt K, and securely attached to the main levers at L. A space-block M allows for the coupling of the link N between the ends of the two parts of the lever. This link connects with a three-horse evenner O, at one third its length, as shown. To this evenner are attached three swingletrees P, one at the longer end, and one at each side of the shorter end, as shown in Fig. 4. The wheel horses connect directly, and in the usual way, with swingletrees at the long end of the

evenner, but alternately with the swingletrees at the short end. The other ends of the latter swingletrees connect with tugs Q, which extend as far forward as the front pair of swingletrees, and are provided with suitable hooks to take the harness tugs of the outer lead horses.

The manner of connecting eight horses is so obvious as to require no description.

When it is desired to use but four horses, the links N are shifted to central holes R in the evenners, and the front whiffletrees and extension tugs are detached. The equalizing levers then pull back against the stirrups, and form a rigid evenner.

For six horses, the three-horse evenners are reversed, and the front whiffletrees dispensed with, but the extension tugs are retained, the leaders attached to them, in this case taking the position of those hitched to the front whiffletrees when eight horses are used.

By this construction a light pair of whiffletrees serves in front for the proper guidance of the tongue, which in the case of road-graders and the like is commonly allowed to drag, and the heavy and cumbrous four-horse evenner and whiffletrees usually employed is dispensed with.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In draft apparatus, the combination of an evenner-bar, a pair of levers pivoted thereto, limiting stirrups therefor, a central draft rod connecting with the longer, inner arms of the levers, a pair of three-horse evenners connecting with the outer arms of the levers, a swingletree attached to the longer arm of each three-horse evenner, and a pair of swingletrees to the shorter arm of each, and extension tugs to reach from said swingletrees to the harness tugs of the lead horses.

2. In draft apparatus, the combination with a vehicle tongue, of an evenner, a pair of levers pivoted thereto, three-horse whiffletrees attached to the shorter arms of said levers, a central draft-rod flexibly connected with the longer arms of said levers, and a sheave and stirrup to serve as a guide for said rod.

3. In draft apparatus, the combination of a central draft-rod, an evenner, a pair of levers pivoted to said evenner, and provided with auxiliary bars to take the opposite sides of the evenner, links connecting with the short arms of said levers, and three-horse whiffletrees connecting with said links.

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

EGBERT O. DOAK.

Witnesses:

J. M. ST. JOHN,
L. A. ST. JOHN.