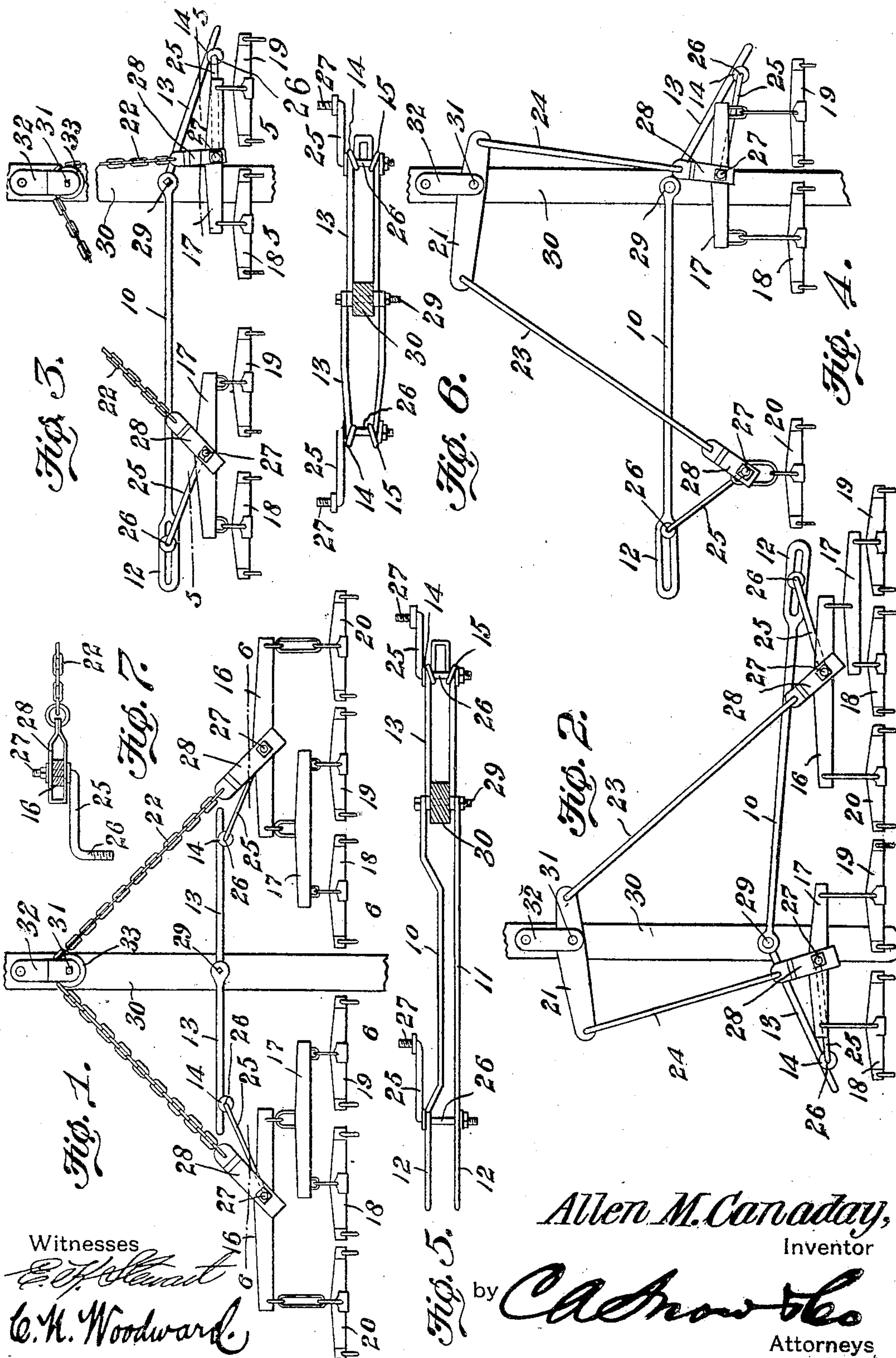


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UNITED STATES PATENT OFFICE.

ALLEN M. CANADAY, OF MORRIS, ILLINOIS.

DRAFT-EQUALIZER.

No. 835,151.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALLEN M. CANADAY, a citizen of the United States, residing at Morris, in the county of Grundy and State of Illinois, have invented a new and useful Draft-Equalizer, of which the following is a specification.

This invention relates to draft-equalizers, and has for its object to improve the construction and increase the efficiency of devices of this character.

With these and other objects in view, which will appear as the nature of the invention is better understood, the invention consists in certain novel features of construction, as hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which corresponding parts are denoted by like designating characters, is illustrated the preferred form of the embodiment of the invention capable of carrying the same into practical operation, it being understood that various changes in the form, proportions, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention within the scope of the appended claims.

In the drawings, Figure 1 is a plan view of the improved apparatus arranged for six horses. Fig. 2 is a plan view of the improved apparatus arranged for five horses. Fig. 3 is a plan view of the improved apparatus arranged for four horses. Fig. 4 is a view of the improved apparatus arranged for three horses. Fig. 5 is a front view in section on the line 5 5 of Fig. 3 with the draft appliances removed. Fig. 6 is a front view in section on the line 6 6 of Fig. 1 with the draft appliances removed. Fig. 7 is a sectional detail of one of the draft-clevises.

The improved device may be arranged for three, four, five, or six horses by rearranging the parts and without structural changes therein, said parts consisting of a relatively long lever member, preferably in two parts 10 11, spaced apart and with elongated eyes or slots 12 at one end; two or more relatively short lever members 13, preferably U-shaped and with loops or eyes 14 15 near one end; two or more evener-beams 16, having means for pivoting nearer one end than the other; two or more doubletrees 17, with their connected swingletrees 18 19; two or more swingletrees 20; an equalizer-bar 21, having means

for pivoting the same nearer one end than the other to a draft-tongue; a guide-sheave 33; a section of chain 22; two rods 23 24 of unequal length; two crank members 25, having means at one end 26 for being movably connected to the levers and at the other ends 27 to the evener-beams, to the doubletrees, or to the swingletrees, and two clevises 28, having means for being movably coupled between said crank members and chain or between said crank members and rods, as the case may be.

When the device is to be arranged for six horses, as in Fig. 1, the shorter lever members 13 are pivoted at their inner ends by a bolt to the draft-tongue 30 of the machine to be moved and with the cranks 25, pivoted by their ends 26 in the loops 14 15 of the levers and secured in place by nuts or other suitable means. The guide-sheave 33 is then disposed in position upon its pivot 31 upon the tongue 30 and preferably supported by a keeper 32. The chain 22 is then coupled at the ends to the clevises 28 and the latter mounted to swing upon the upper ends of the cranks 25 and secured in position by nuts or other suitable fastening means. The evener-beams 16 are then disposed within the clevises and pivoted upon the arms of the cranks, passing therethrough, and each provided at one end with one of the doubletrees 17 and its swingletrees 18 19 and at the other end with one of the swingletrees 20.

When the device is to be arranged for five horses, as in Fig. 2, the guide-sheave 33 is replaced by the evener-bar 21 and the chain 22 replaced by the rods 23 24, which are coupled between the clevises 28 and the ends of the evener-bar. One of the levers 13 is also replaced by the longer lever 10 11, with one of the cranks 25 swinging by its arm 26 in the slots 12 in the longer lever. The evener-beam 16 on the remaining shorter lever is replaced by one of the doubletrees 17 and its swingletrees 18 19. This arrangement will dispose four of the swingletrees at one side of the tongue and one swingletree only at the other side, which will be the arrangement employed when the device is applied to gang-plows and similar devices, the single horse operating on the "furrow" side and the four horses operating on the "land" side of the draft-tongue.

When the device is to be arranged for four horses—as, for instance, when applied to

grain-binders, as in Fig. 3—the longer lever 10 11 and shorter lever 13 are reversed in position and the guide sheave and chain connected to the clevises, as in Fig. 1, and the
 5 evener-beam and its doubletree and swingle-tree replaced by a doubletree 17 and its swingle-trees 18 19, so that three horses will be disposed upon one side of the tongue, the “grain” side, and three horses upon the op-
 10 posite or “stubble” side, as shown.

When the device is to be arranged for three horses, as in Fig. 4, the evener-bar 21 and rods 23 24 are disposed upon the tongue and, as before described, for the five-horse
 15 arrangement, and one of the swingle-trees 20 connected to the crank and clevis at the free end of the longer lever, and one of the two horse eveners 17 and its swingle-trees 18 19 attached to the crank and clevis of the shorter
 20 lever. This arrangement places one horse on the furrow side and two horses on the land side of the tongue and is employed upon gang-plows and similar apparatus when three horses only are required. Thus it will
 25 be obvious that the draft of all the horses will be equalized and side draft eliminated in all the various arrangements of the parts illustrated.

The device may be employed upon harvesters, headers, gang-plows, and similar
 30 implements requiring a greater number of draft-animals upon one side of the line of draft than upon the other.

Under some conditions the equalizer-bar
 35 21 may be substituted for the chain 22 when the device is arranged as a four-horse equalizer; but this would not be a departure from the principle of the invention, as would be evident.

40 The elongated slots 12 provide for the necessary flexibility between the parts and the lateral movement of the horses when in motion and prevent any swaying movement being imparted to the apparatus being drawn
 45 forward.

Having thus described the invention, what is claimed is—

1. In a draft-equalizer, a draft-tongue, two lever-arms pivoted at the inner ends to
 50 said tongue and extending in opposite directions therefrom, crank-arms swinging respectively from the free ends of said lever-arms, equalizer-beams swinging from the free ends of said cranks, draft appliances
 55 connected to said equalizer-beams, and a

flexible connecting element between the free ends of said cranks and the draft-tongue.

2. In a draft-equalizer, lever members of unequal length connected at the inner ends 60 to a draft-tongue and extending in opposite directions therefrom the longer of said lever members having a longitudinal slot in its free end, crank-arms swinging respectively from the free end of said shorter lever mem- 65 ber and the slotted end of said longer lever member, an equalizer-beam swinging from the crank-arm of said shorter lever member and carrying draft appliances, an evener-beam swinging from the crank-arm of said 70 longer lever member and carrying draft appliances, and a flexible connecting element between the draft-tongue and the free ends of said cranks.

3. In a draft-equalizer, a draft-tongue 75 two lever-arms pivoted at the inner ends to said tongue and extending in opposite directions therefrom, crank-arms swinging respectively from the free ends of said lever-arms, clevises having spaced sides and swing- 80 ing from the free ends of said cranks, equalizer-beams swinging from the free ends of said cranks and disposed between the spaced sides of said clevises, draft appliances connected to said equalizer-beams, and a flexi- 85 ble element connecting said clevises and draft-tongue.

4. In a draft-equalizer, a draft-tongue, a relatively long lever member formed in two parts having eyes at one end for pivotally 90 engaging the tongue from opposite sides and with longitudinal slots in their free ends, a relatively short lever member formed from a single rod bent into U shape and with terminal eyes for pivotally engaging said 95 tongue and with loops near the bend at the free end, cranks swinging respectively in said loops and in the slots of the longer lever, draft appliances swinging from the free ends of said cranks, and a flexible element 100 between the free ends of said cranks, and the draft-tongue.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALLEN M. CANADAY.

Witnesses:

J. G. PETTEYS,
 E. C. MILLER.