No. 825,739. PATENTED JULY 10, 1906.

F. LINDSTROM.

DRAFT EQUALIZER.

APPLICATION FILED OCT. 4, 1905.

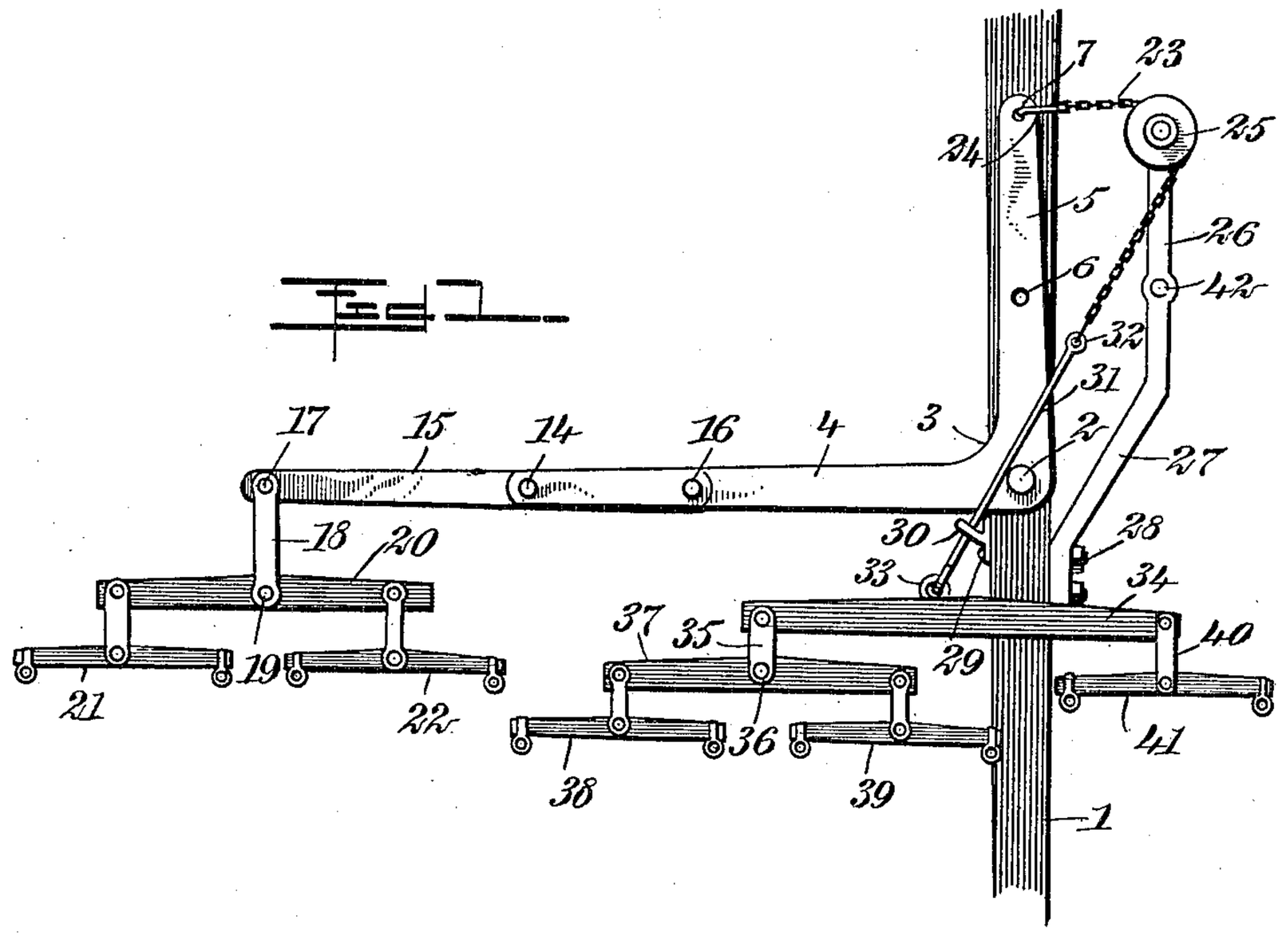
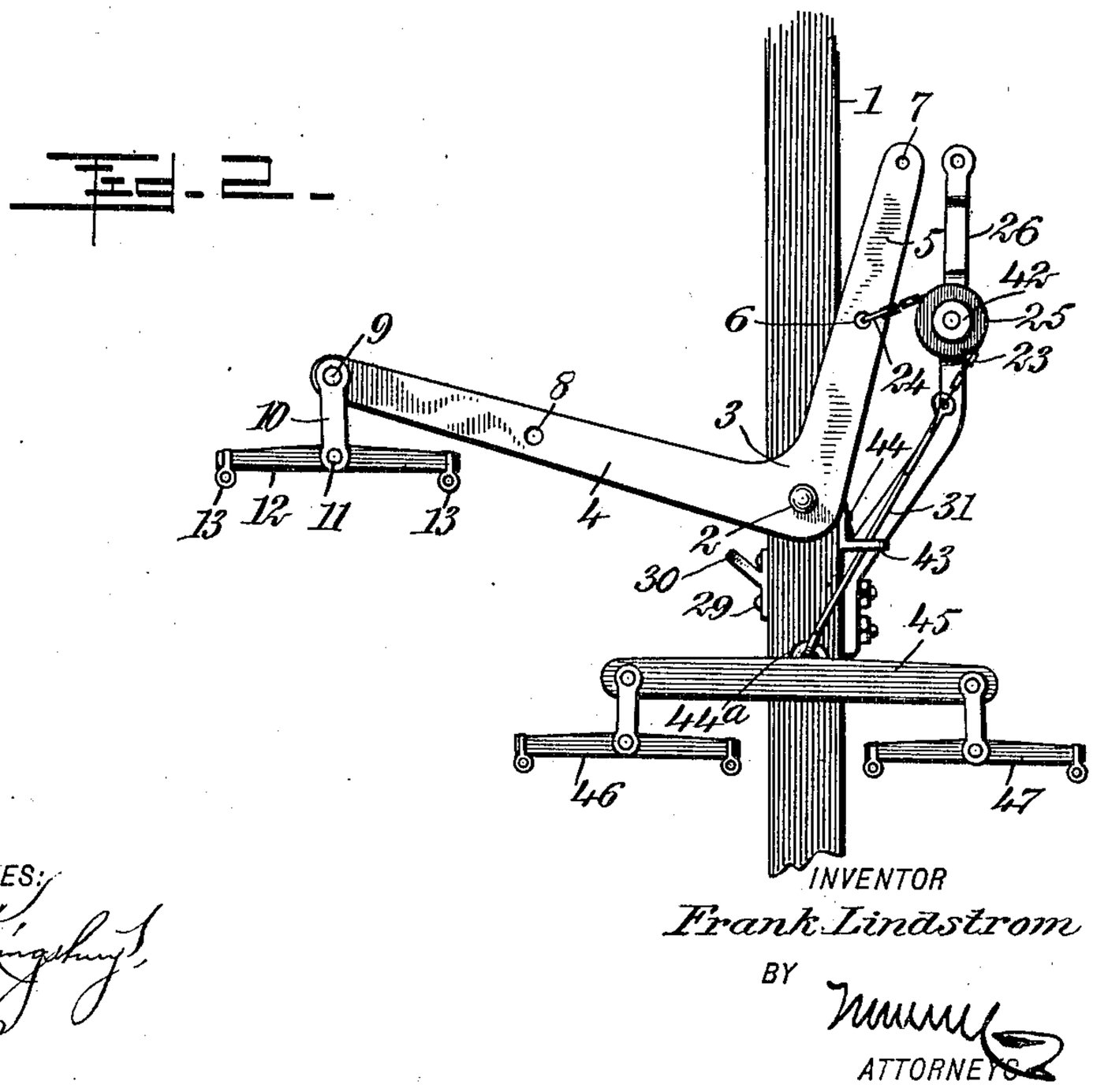


FIG. 2.



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FRANK LINDSTROM, OF MARQUETTE, KANSAS.

DRAFT-EQUALIZER.

No. 825,739. Specification of Letters Patent. Patented July 10, 1906.

Application filed October 4, 1905. Serial No. 281,275.

To all whom it may concern:

Be it known that I, FRANK LINDSTROM, a citizen of the United States, and a resident of Marquette, in the county of McPherson and State of Kansas, have invented a new and Improved Draft-Equalizer, of which the following is a full, clear, and exact description.

This invention relates to draft-equalizers; and it consists, substantially, in the details of construction and combinations of parts hereinafter more particularly described, and pointed out in the claims.

The invention is intended more especially for use in agricultural machines, as binders, harvesters, both gang-plows and sulky-plows and other wheeled structures drawn by either three, four, or five horses abreast, as the case may be.

One of the principal objects of the invention is to provide a draft-equalizer of an embodiment to overcome numerous disadvantages and objections encountered in the use of many other contrivances of the kind hitherto employed.

A further object is to provide a draft-equalizer which is simple in construction and comparatively inexpensive to manufacture, besides being thoroughly effective and reliable in operation and possessing the capacity for long and repeated service.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a draft-equalizer embodying my improvements, showing the parts thereof adjusted or organized for the employment of five draft-animals abreast of each other; and Fig. 2 is a similar view showing the parts as adjusted or organized for the employment of, say, three horses abreast of each other.

Before proceeding with a more detailed description it may be stated that in the form of my improvements herein shown I employ a draft-equalizer comprising a specially-constructed horizontally-rotatable member mounted upon the tongue or draft-beam of the wheeled structure with which my improvements may be employed, together with special means coöperating with said member for effecting the desired equalization of draft, whether three, four, or five draft-animals be employed abreast of each other, all as will presently be explained.

The embodiment of my improvement herein shown is such that in either adjustment thereof all side draft is practically overcome in the use of the equalizer, and while I have herein shown my improvements in a certain preferred form it will be understood that I am not limited thereto in precise detail, since immaterial changes therein may be made coming within the scope of my invention.

Reference being had to the drawings by the designating characters thereon, 1 represents the tongue or draft-beam of the wheeled structure (not shown) with which my improved draft-equalizer may be associated or employed. Pivotally mounted at 2 upon the said tongue or draft-beam 1 is a right-angled lever 3, the longer arm of which is indicated at 4 and the shorter arm at 5, it being noted that the pivotal point for the lever is at the junction or angle of intersection of the said longer arm and said shorter arm thereof with each other. The shorter arm 5 of the said right-angled lever 3 is provided about centrally of its length with a hole or opening 6 and at near the free end or extremity thereof with another hole or opening 7, while the said longer arm 4 of the lever is provided also with a hole or opening 8, located a suitable distance from the end thereof, (see Fig. 2,) this arm being also provided at near the free end or extremity thereof with another hole or opening (not shown) in which when but three draft-animals are to be employed with the draft-equalizer a fastening pin or rivet 9 may be placed or inserted for holding the clip 10, to which is pivotally applied at 11 an ordinary swingletree 12, having at the ends thereof suitable eyes 13 for the attachment of the ends of the traces of the harness of one of the draft-animals. Whenever is is desired to employ five draft-animals for propelling the wheeled structure with which my improved draft-equalizer may be employed, then the hole or opening referred to, in which is placed or inserted the said pin or rivet 9, has placed therein another pin or rivet 14, Fig. 1, for the purpose of securing to the longer arm 4 of the lever 3 an extension member 15 for said arm, this member lapping the arm for a suitable distance and being further secured thereto by means of still another pin or rivet 16, passing through the aforesaid hole or opening 8 in the arm, it being understood, of course, that the extension member 15 is provided with a hole

or opening (not shown) registering with the hole or opening 8 and through which the said pin or rivet 16 is placed or inserted, it being preferable in practice that each of the pins or rivets 9, 14, and 16 referred to be readily removable for the purposes of applying or detaching the extension member, accordingly as its use may or may not be required, and also to enable the ready detachment of the swingletree 12 from the end of the longer arm 4 of the lever 3 whenever the parts of the draft-equalizer are to be adjusted or organized for the use of five draft-animals, as shown in Fig. 1, instead of but three draft-animals, as shown in Fig. 2.

In the embodiment shown in Fig. 1 the free end of the extension member has pivotally applied thereto at 17 a link 18, to which is pivoted at 19 a doubletree 20, having attached to the same near its ends ordinary swingletrees 21 and 22, and a thorough equalization of draft is effected under this embodiment by means of a chain or cable 23, having one end thereof provided with a hook 24, which is received and held in the said opening 7 at the free end of the shorter arm 5 of the lever 3, said chain or cable 23 passing over a guide-pulley 25 therefor, supported at the rearward end of an arm 26 by a bracket 27, which is secured at 28 by means of nuts and bolts to the left side of the hereinbefore-mentioned tongue or draft-beam 1, the opposite side of the latter having secured thereto in any suitable way at 29 a guide 30, through which extends a diagonally-disposed rod 31, the rearward end of which is connected at 32 with the forward end of the said chain 23 and the forward end of which is movably held by an eye 33, secured to the rearward face of an ordinary whiffletree 34, having applied to the end thereof at the right of the tongue or draft-beam 1 a link 35, to which is connected at 36 a doubletree 37, carrying swingletrees 38 and 39 at the ends thereof in a manner well understood. To the end of the whiffletree at the left of the tongue or draft-beam 1 is similarly applied a link 40, carrying a swingletree 41, it being understood that the three swingletrees last mentioned are each provided at the ends thereof with means for attachment thereto of the ends of the traces of the several draft-animals employed under this embodiment of my improvements.

Whenever it is desired to employ but three draft-animals in connection with my improved draft-equalizer, the extension member 15 is detached from the longer arm 4 of the right-angled lever 3 and the hereinbefore-mentioned swingletree attached to the end of said longer arm, as already explained. At the same time the hook 24 is disconnected from the free end or extremity of the shorter arm 5 of the lever and inserted in the hole or opening 6 of this arm, as shown in Fig. 2, it being noted that the guide-pulley 25 for the chain 23 is also at this time removed from the support therefor at the rearward end of the arm 26 of bracket 27 and the spindle for the pulley mounted in a bearing 42, provided therefor in said arm 26 a considerable distance forwardly of the arm. Under this embodiment of my improvements also instead of passing or extending the rod 31 through the guide 30, as mentioned in connection with the embodiment shown in Fig. 1, I employ another guide 43 therefor, secured in any suitable manner at 44 to the left side of the tongue or draft-beam 1, it being further noted that the forward end of said rod 31 is connected with an eye 44ª, secured centrally between the ends of a doubletree 45, having applied to the ends thereof suitable swingletrees 46 and 47. It will thus be seen that when five draft-animals are employed in connection with the wheeled structure with which my improved draft-equalizer may be associated the longer arm 4 of the lever 3 is made still longer by the attachment thereto of the extension member 15, while at the same time the connection of the chain 23 with the shorter arm 5 of the lever is at a greater distance from the pivot or center upon which the lever turns than is the case in the employment of but three draft-animals when the extension member 15 of the shorter arm 4 of the lever 3 is detached and the rearward end of the chain 23 connected to the shorter arm 5 of the lever by the insertion of the hook 24 in the hole or opening 6 of said arm, which thus practically makes the arm 5 still shorter than is employed in the manner shown in Fig. 1. It may be added that when my improved draft-equalizer is employed on a plow the loops 30 and 43 will be secured to some part of the equalizer itself instead of to the tongue 1.

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

1. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, a guide on one side of said beam, a rod extending diagonally through the guide, having a draft appliance at the forward end thereof, a chain connecting the other arm of said lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting this guide.

2. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beam, a rod extending through one of said guides diagonally, having a draft appliance at its forward end, a chain connecting the other arm of the

lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting the guide.

3. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beams, a rod extending through one of the guides diagonal to the beam, having a draft appliance at its forward end, a chain connecting the other arm of the lever with the rearward end of the rod, a guide-pulley for the chain, and means on the beam for supporting the pulley.

4. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, a guide on one side of said beam, a rod extending diagonally through the guide, having a draft appliance at the forward end thereof, a chain connecting the other arm of said lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting this guide, the arms of the lever being of unequal lengths.

5. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beam, a rod extending through one of said guides diagonally, having a draft appliance at its forward end, a chain connecting the other arm of the lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting the guide, the arms of the lever being of unequal lengths.

6. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beams, a rod extending through one of the guides diagonal to the beam, having a draft appliance at its forward end, a chain connecting the other arm of the lever with the rearward end of the rod, a guide-pulley for the chain, and means on the beam for supporting the pulley, the arms of the lever being of unequal lengths.

7. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, a guide on one side of said beam, a rod extending diagonally through the guide, having a draft appliance at the forward end thereof, a chain connecting the other arm of said lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting this guide, the arms of the lever being of unequal lengths and the longer one provided with a detachable extension member.

8. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beam, a rod extending through one of said guides diagonally, having a draft appliance at its forward end, a chain connecting the other arm of the lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting the guide, the arms of the lever being of unusual lengths and the longer one provided with a detachable extension member.

9. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, a guide on one side of said beam, a rod extending diagonally through the guide, having a draft appliance at the forward end thereof, a chain connecting the other arm of said lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting this guide, the arms of the lever being of unequal lengths and the shorter one having holes at the end and practically the central portion thereof, respectively.

10. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beam, a rod extending through one of said guides diagonally, having a draft appliance at its forward end, a chain connecting the outer arm of the lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting the guide, the arms of the lever being of unequal lengths and the shorter one having holes at the end and practically the central portion thereof, respectively.

11. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, a guide on one side of said beam, a rod extending diagonally through the guide, having a draft appliance at the forward end thereof, a chain connecting the other arm of said lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting this guide, embodying a bracket having a rearwardly-extending arm having bearings for the guide at its rear end and middle portion, respectively.

12. A draft-equalizer, comprising a draft-beam, a horizontally-rotatable right-angled lever mounted thereon, having a draft appliance at the end of one of the arms thereof, guides on opposite sides of the beam, a rod extending through one of said guides diagonally, having a draft appliance at its forward end, a chain connecting the other arm of the

lever with the rearward end of the rod, a guide for the chain, and means on the beam for supporting the guide, embodying a bracket having a rearwardly-extending arm having bearings for the guide at its rear end and middle portion, respectively.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK LINDSTROM.

Witnesses:
R. A. THOMPSON,
OLAF LARSEN.