June 5, 1928. 1,672,038

J. A. REIMER

DRAFT EVENER FOR HARROWS

Filed April 8, 1927 2 Sheets-Sheet 1

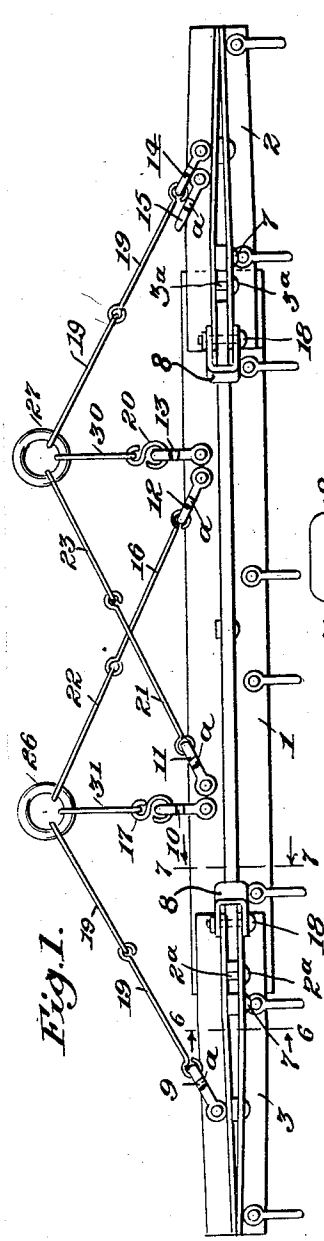


Fig. 1.

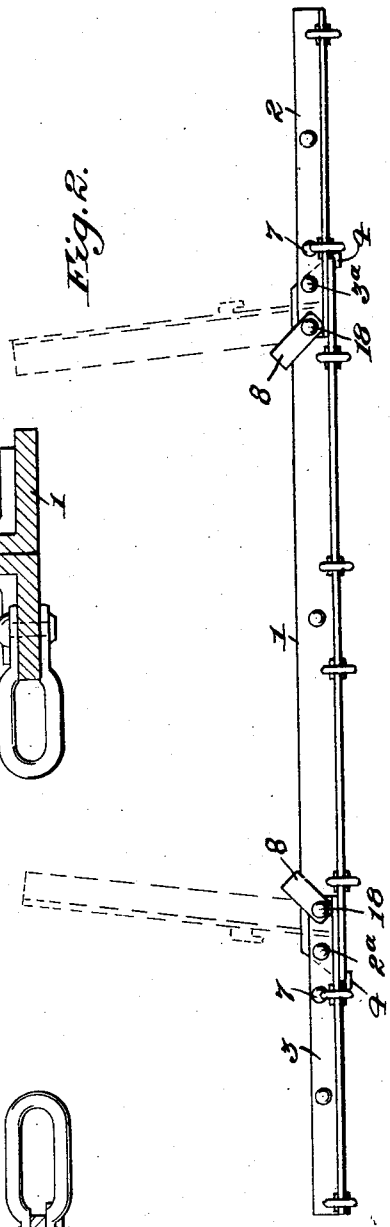


Fig. 2.

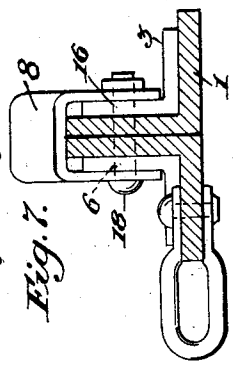


Fig. 7.

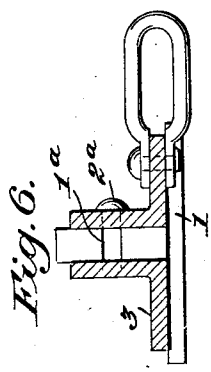


Fig. 6.

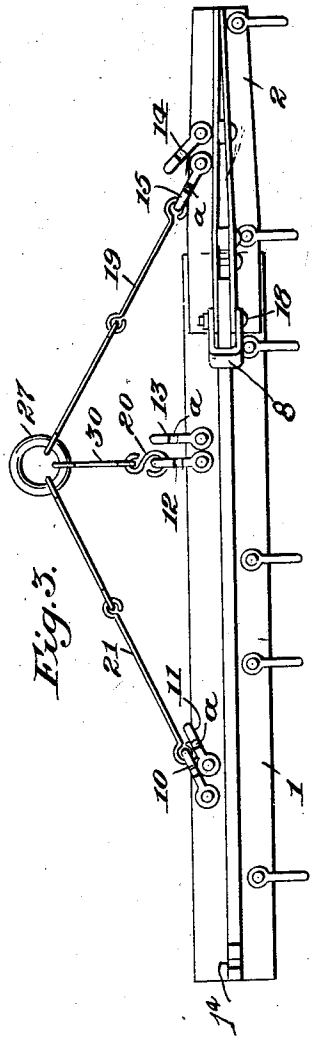
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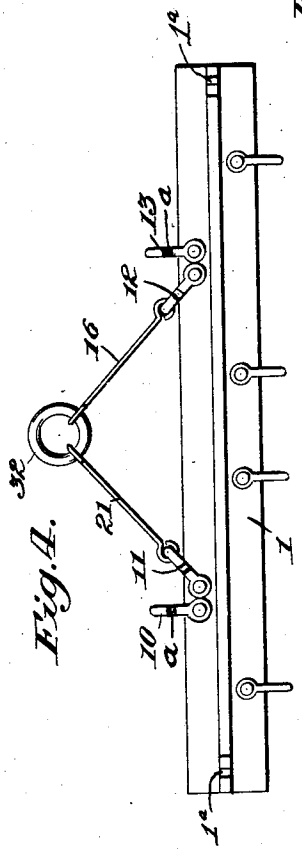
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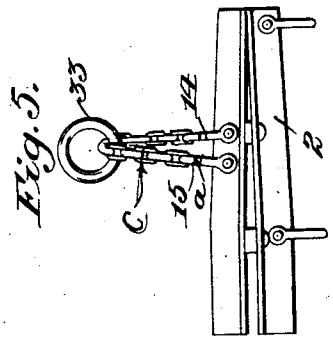
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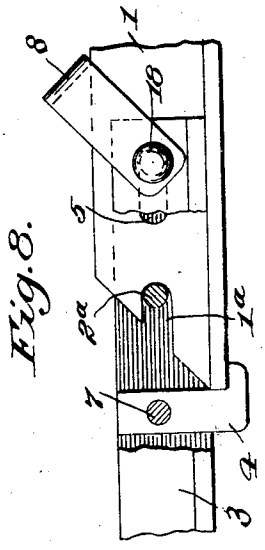
DRAFT EVENER FOR HARROWS

Filed April 8, 1927 2 Sheets-Sheet 2









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Patented June 5, 1928. 1,672,038

UNITED STATES PATENT OFFICE.

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DRAFT EVENER FOR HARROWS.

Application filed April 8, 1927. Serial No. 182,166.

This invention relates to draw-bars for multiple section harrows and has for its object to provide a draw-bar which is adapted for use either as a one, two, three or four section, evenly-balanced, draw-bar. The two end sections of the full-length draw-bar are connected with the central double section in such a manner that these end sections may be turned up for convenience in passing through gates or over bridges which might be too narrow for the full four section length of the draw-bar, all as will hereinafter more fully appear.

In the accompanying drawings Fig. 1 is a plan view of the improved draw-bar arranged for a four-section harrow. Fig. 2 is a side view of the same looking from the bottom of Fig. 1. Figs. 3, 4 and 5 are plan views showing arrangements for three, two and one section harrows, respectively. Fig. 6 is a section on line 6—6, Fig. 1, and Fig. 7 is a section on line 7—7, Fig. 1. Fig. 8 is a detail view, partly broken away, showing the connection between an end section and the central section when the parts are in working position.

Referring to the drawings, 1 denotes the central double length section of the draw-bar and 2 and 3 are the end sections thereof. The section 1 is of inverted T-shape in cross section and may be of one integral part or may be built up of angle bars, L-shaped in cross section and riveted together. (See Fig. 7.) Each end section, as herein shown, consists of two angle bars, L-shaped in cross section, separated at their inner ends so as to straddle or embrace the upright central rib of the bar 1, these end sections being jointed to the said upright part of the bar 1 by means of pivot bolts 18 passing loosely through slots 5 in the said rib of the bar 1, and also passing through holes 6 in the separated bars of the said sections 2 and 3.

The upright rib portion of the bar 1 is provided at each end with a notch 1^a adapted to receive pins 2^a and 3^a riveted to the said sections 2 and 3, the ends of the upright rib of the bar 1 being formed inclined to enable the pins 2^a and 3^a to pass upward over the said ends when the said sections 2 and 3 have been slid outward, as is permitted by the slots 5, when it is desired to turn said end sections up on the pivot bolts 18, for the purpose of shortening the draw-bar to enable the harrow to pass through narrow gates or over narrow bridges.

Between the separated parts of each end section 2 and 3 is mounted a hook 4 secured in place by one or more rivets 7, said hook engaging the bottom of the horizontal part of the section 1 when the end sections are in their inward or working positions, as shown in Fig. 2; but when the said end sections are slid out, as is permitted by the slots 5, the said hooks will be disengaged from the section 1, as will also the pins 2^a, 3^a which pins will then be drawn outward beyond the upper walls of the open notches 1^a of the upright rib of the bar 1; thus permitting said end sections to be turned up as denoted in dotted lines in Fig. 2, and when thus turned up the upright portions of the sections 2 and 3, embracing the rib portion of the bar 1, will come against stops afforded by clevises 8 mounted on the pivot bolts 18, thus retaining said end sections in inclined upright positions.

The bar 1 is provided with a series of clevises 9, 10, 11, 12, 13, 14 and 15, and when the draw-bar is in its full length position for a four-section harrow, as shown in Fig. 1, the clevises 9 and 14 are connected by jointed hooked rods 19 with the draft rings 26 and 27; and the clevises 11 and 12 are connected with said draft rings by hooked rods 21 and 23 and 16 and 22, respectively. Also the draft ring 26 is connected with the clevis 10 by the hooked rod 31 and S-hook 17, while the draft ring 27 is connected with the clevis 13 by the hooked rod 30 and S-hook 20. In these positions of the parts the four section harrow will have an even draft and the jointed rods 19 will hold the end sections 2 and 3 inward, with the bolts 18 against the inner ends of the slots 5 and with the hooks 4 engaged beneath the lower part of the bar section 1, thus rendering the four-section bar rigid when in use.

The draw-bar is adjusted for a three-section harrow, as shown in Fig. 3, by removing the end section 3, unhooking the rod 16 from clevis 12 and also unhooking the S-hook 17 from clevis 10, taking out the pivot-bolt 18 of section 3 and then removing said section 3 from section 1 after the left rod 19 has been unhooked from clevis 9. The rod 19 at the right is then unhooked from the clevis 14 and is hooked into extra clevis 15. The S-hook 20 is unhooked from clevis

13 and is hooked into clevis 12, and rod 21 is unhooked from clevis 11 and hooked into clevis 10. This makes a perfect balance for a three-section harrow.

To adjust the draw-bar for a two-section harrow, as shown in Fig. 4, all of the rods are unhooked from the clevises excepting rods 16 and 21 which are hooked into clevises 12 and 11, respectively, these rods being hooked at their outer ends into a ring or clevis 32. These rods 16 and 21 are of proper length to allow a proper clearance, for large animals, between the draft-ring or clevis 32 and the draw-bar. With this adjustment an ordinary doubletree connected with the draft-ring or clevis 32 will complete the arrangement for a two-section harrow.

For a one-section harrow, as shown in Fig. 5, the end section 2 may be employed, and in such case, with the rod 19 unhooked from the clevis 14, a short piece of chain C may be connected with the clevises 14 and 15, and said chain may be provided with a draft ring 33 for the attachment of a whiffletree.

To enable the different hooked rods and S-hooks to be connected with the clevises, without danger of becoming detached, the said clevises are preferably provided at their tops with notches *a* which will enable these hooked parts to be engaged with said clevises without having the hooks sufficiently far open so that there will be any danger of their becoming detached when in use.

The joints at or near the middles of the two-part rods 19 are provided to permit the end sections 2 and 3 to be turned up on the pivot-bolts 18 without disconnecting said rods 19 from said sections.

The draw-bar is provided on its rear side with a series of clevises 25 to which are preferably attached S-hooks 24, for convenient connection of the harrow sections.

From the foregoing it will be understood that the invention provides a strong and convenient draw-bar which may readily be adjusted to several evenly-balanced lengths, as circumstances may render desirable.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. A metallic draw-bar, for multiple section harrows, formed of angle bars and comprising a central section having an upright rib, and end sections slidingly and pivotally connected with said rib, and means for rigidly connecting said end sections with said central section when said draw-bar is to be used with a four or three section harrow.

2. A metallic draw-bar, for multiple section harrows, formed of angle bars and comprising a central section having an upright rib, and end sections slidingly and pivotally connected with said rib, and means for rigidly connecting both or one of said end sections with said central section when said draw-bar is to be used with a four or three section harrow, said central rib having a slot near each end and a notch in each end, and a pin carried by each end section, adapted to engage said notch, said end sections each having a hook arranged to engage the bottom of said central section.

3. A draw-bar, for multiple section harrows, consisting of a central double length section of inverted T-shape in cross section, and end sections pivotally and slidingly connected with said central section, each of said end sections comprising two L-shaped angle bars separated at their inner ends so as to straddle the upright rib part of said central section, said end sections having fixed hooks mounted between their separated parts and adapted to engage the under end parts of said central section.

In testimony whereof I affix my signature.

JORGEN ALFRED REIMER.