April 9, 1929. W. RING 1,708,328

FOLDING DRAG BAR FOR HARROWS

Filed Oct. 27, 1924

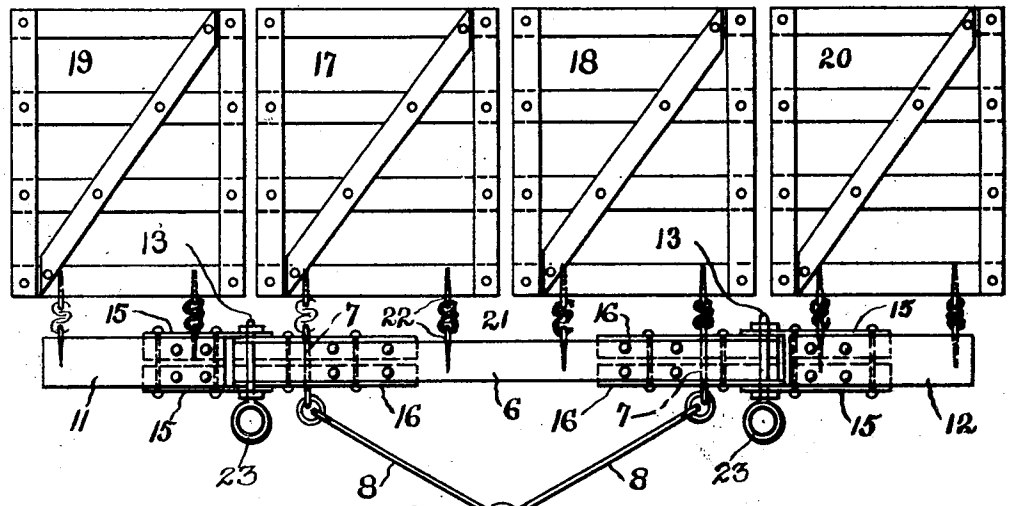
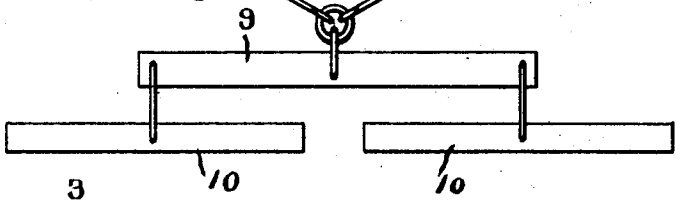


Fig. 1.



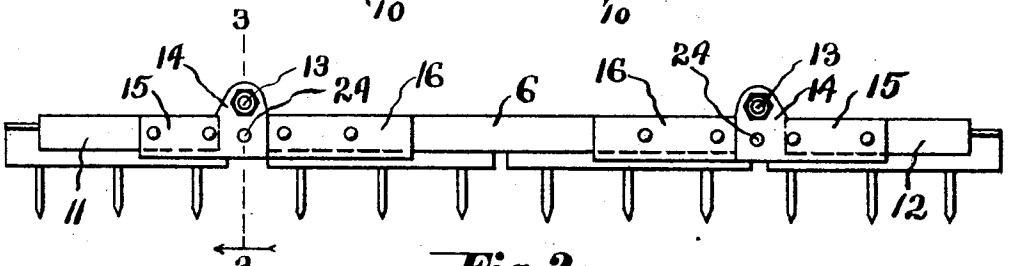


Fig. 2.

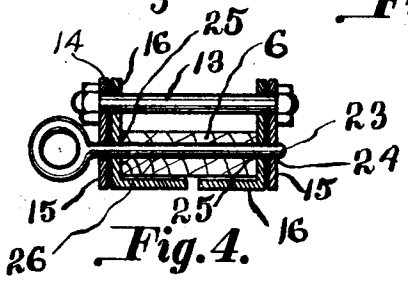


Fig. 4.

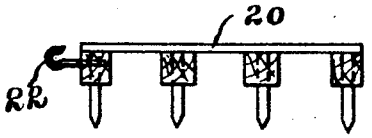


Fig. 3.



Fig. 5.

Inventor

Wallace Ring

By Arthur H. Sturges,

Attorney

Patented Apr. 9, 1929. 1,708,328

UNITED STATES PATENT OFFICE.

WALLACE RING, OF WAKEFIELD, NEBRASKA.

FOLDING DRAG BAR FOR HARROWS.

Application filed October 27, 1924. Serial No. 746,140.

This invention relates to drag-bars for harrows. In the work of farming it has been the custom to use a plurality of harrows disposed side by side and connected with a drag-bar, the advantage being that a greater area of ground may be cultivated at each movement across a field. However, the considerable length required for a drag-bar for supporting the harrow operates to a great disadvantage for the reason that it will not adequately sustain the stresses directed thereto unless of metallic construction, and would be of objectionable proportions if constructed of wood, and in order that they may be of limited weight, wood is a desirable material for use in their construction. A further disadvantage of drag-bars in general use is that on account of their length required for supporting the harrows narrow bridges cannot be crossed and driving through narrow gateways is quite impossible unless the harrows are detached from the drag-bar at an expense of loss of time.

One of the objects of the present invention is to provide a drag-bar which will adequately sustain stresses. Another object is to prevent undue upward swinging movements of the harrows occasioned generally when their teeth engage rough ground or lumps of earth, and another object is to provide such a construction that two of the harrows furthest from the line of draft may be swung inwardly to lie upon other harrows near the line of draft, the drag-bar being of three-part construction for this purpose, so that narrow gateways may be passed and that narrow bridges may be crossed. The invention also includes a novel and useful locking means for the parts of a drag-bar which may be conveniently operated.

With the foregoing objects in view and others to be mentioned hereinafter, the invention consists of the construction, combination and arrangement of parts as described herein and claimed, and as shown in the accompanying drawings, it being understood that changes in form, size, proportion and minor details may be made without departing from the spirit of the invention, said changes to be within the scope of the invention as claimed.

In the drawings Fig. 1 is a plan view of harrows attached to the drag-bar.

Fig. 2 is a view in front elevation of the drag-bar and harrows, the coupling pins being omitted.

Fig. 3 is a side view of one of the harrows.

Fig. 4 is a sectional view on line 3—3 of Fig. 2 through the drag-bar and reinforcing-plates of one of the wings of the drag-bar to show the mounting of the coupling-pin.

Fig. 5 is a side view of a coupling-pin.

Referring now to the drawings, numeral 6 indicates a drag-bar provided with eye-bolts 7 to which may be attached links 8 for supporting a connecting-bar 9 to which whiffletrees 10 may be attached.

For purposes of the invention I provide a pair of wings for the drag-bar, indicated at 11 and 12, each being pivotally connected with an outer end of the bar 6 by means of a bolt 13, each bolt 13 being disposed above the bar 6 and engaging in an ear 14 said ears preferably being parts of the opposed reinforcing plates 15 for said wings 11 and 12. The bar 6, preferably, is also provided with reinforcing plates 16, these preferably being angular in cross section as best shown in Fig. 4 to be disposed at the sides and bottom of said bar 6, all of the reinforcing plates mentioned being suitably bolted or otherwise secured to the bar 6 or its wings.

For use in connection with the bar 6 and wings 11 and 12 I have shown two harrows 17 and 18 adapted to be disposed side by side rearwardly of said bar 6, and have shown a harrow 19 supported by the wing 11 at the side of the harrow 17, and a harrow 20 supported by the wing 12 at the side of the harrow 18, any suitable connection being provided for these harrows with said bar 6 and its wings, chains or hooks 21 in the present instance being shown which engage holders 22 provided for the harrows, and bar 6 and said wings.

As thus described it will be understood that each wing together with the harrow attached thereto may be swung inwardly to be disposed in the plane of the bar 6 and harrows 17 and 18, the wings 11 and 12 engaging the top of the drag-bar 6, the harrow 19 being disposed upon the harrow 17 and the harrow 20 being disposed upon the harrow 18. It will be noted that this arrangement for the wings and harrows may be readily and conveniently accomplished and when thus disposed narrow bridges may be crossed and the harrows and drag bar may

move in narrow passageways without inconvenience.

In order that the wings may be maintained in line and that any swinging movement of the wings relative to the bar 6 may be prevented I provide a pair of coupling pins 23 each being adapted to lock a wing to the drag bar 6. For this purpose apertures 24 are formed in the ears 14 of the plates 15 of the wings preferably below and in the vertical plane of the bolts 13 and apertures 25 formed in the plates 16 of the bar 6, as best shown in Fig. 4 of the drawings, and the coupling-pins may be readily inserted or removed, apertures 26 being provided in the bar 6 for receiving said pins.

The coupling-pins do not require a threaded connection with the reinforcing plates and they may be readily removed to permit the area normally occupied by the drag bar and harrows to be reduced, and when said pins 23 have been inserted any swinging movement of the wings relative to the bar 6 will be prevented, and any undue swinging movements of the harrows 19 and 20 will be prevented. It is understood of course that a harrow should be permitted to have a limited swinging movement so that its teeth may suitably engage the ground and undulating parts of the ground, but undue swinging movements for the harrows should be prevented, and therefore the wings 11 and 12 should be maintained in alignment with the drag bar 6, and this is accomplished by the coupling-pins and their mounting as described.

I claim as my invention:—

The combination with a drag-bar having a pair of harrows connected therewith, of reinforcing plates arranged in pairs at the sides of said bar at its ends, said plates and bar having openings near the ends thereof, a pair of wings disposed at the ends of said bar each having a harrow connected therewith, reinforcing plates arranged in pairs at the sides of each wing at one of the ends thereof and having extensions overlapping the plates of the bar, bolts connecting the extensions of the wings with the reinforcing plates of said bar and offset upwardly from the bar to permit each wing to be swung upwardly to lie upon the drag bar and to permit the harrow connected with the wing to be swung upwardly to lie upon the respective first named harrow, said extensions having holes, and coupling-pins detachably disposed in the openings and holes and in the vertical plane of the bolts to prevent the swinging movement of the wings relative to said drag-bar.

In testimony whereof, I have affixed my signature.

WALLACE RING.