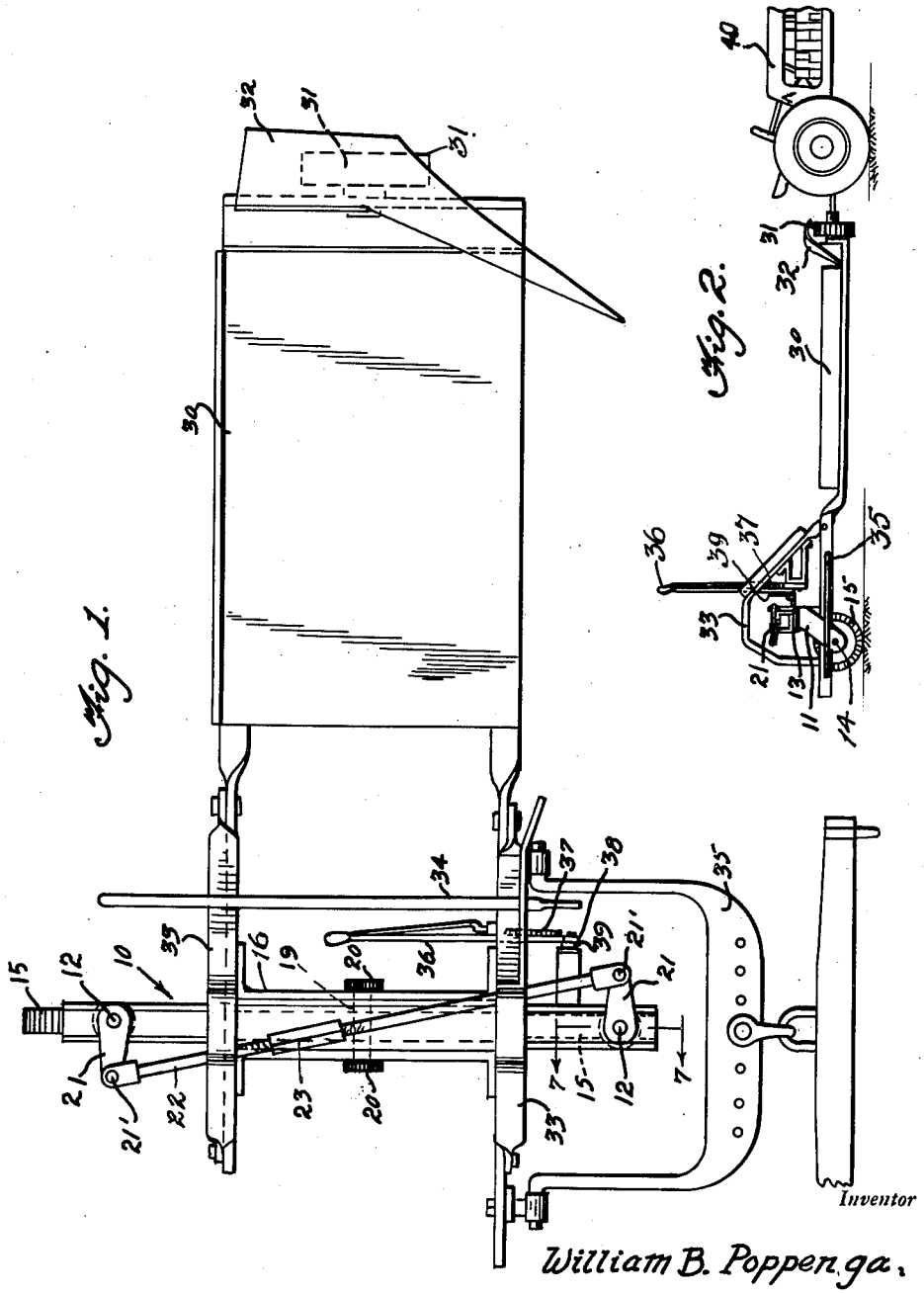
July 5, 1949. W. B. POPPENGA 2,475,196

CARRYING ATTACHMENT FOR BINDERS

Filed Jan. 4, 1946 3 Sheets-Sheet 1



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CARRYING ATTACHMENT FOR BINDERS

Filed Jan. 4, 1946 3 Sheets-Sheet 2

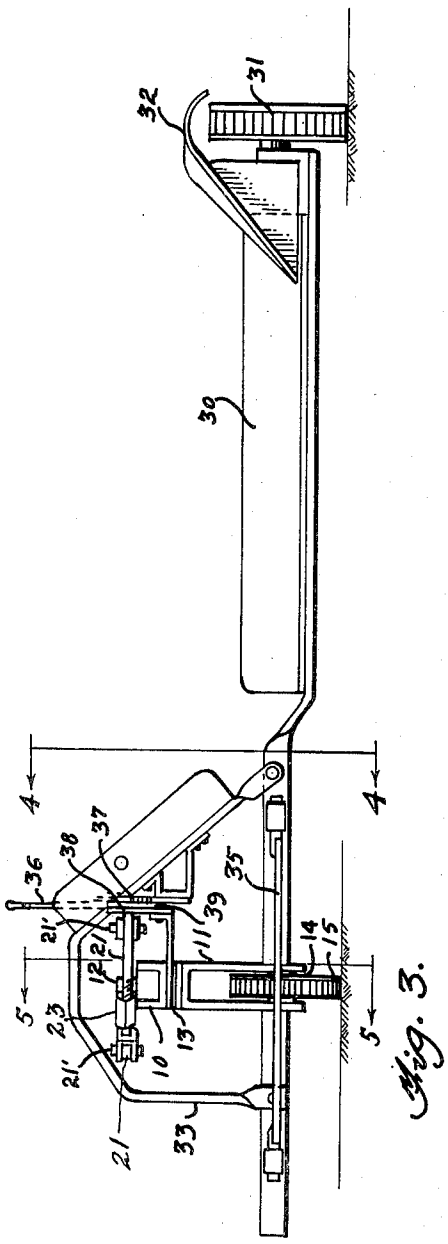

Fig. 3.

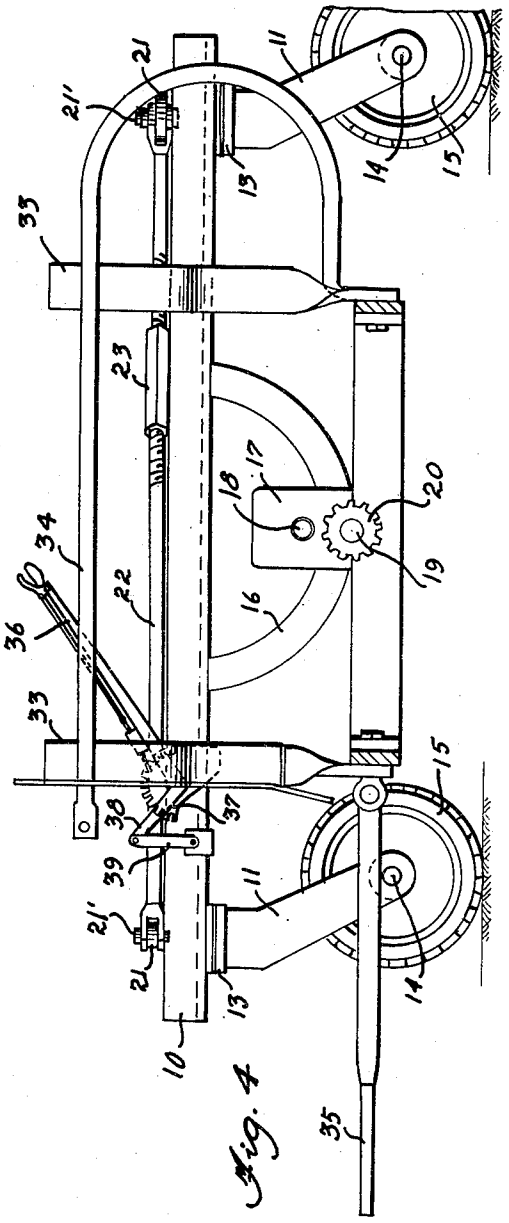

Fig. 4

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CARRYING ATTACHMENT FOR BINDERS

Filed Jan. 4, 1946 3 Sheets-Sheet 3

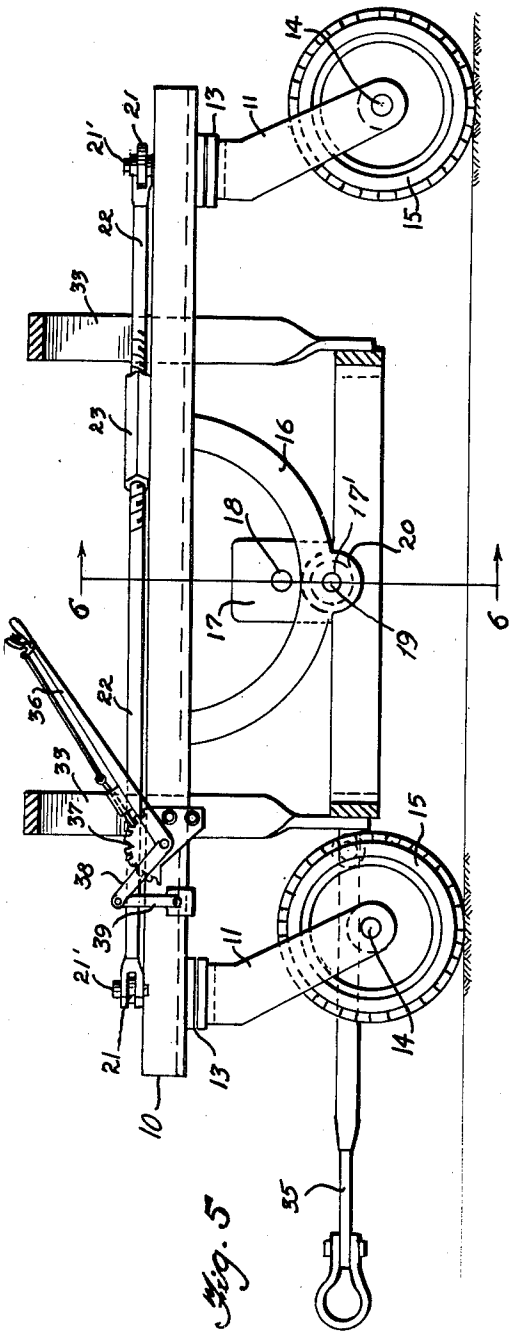

Fig. 5

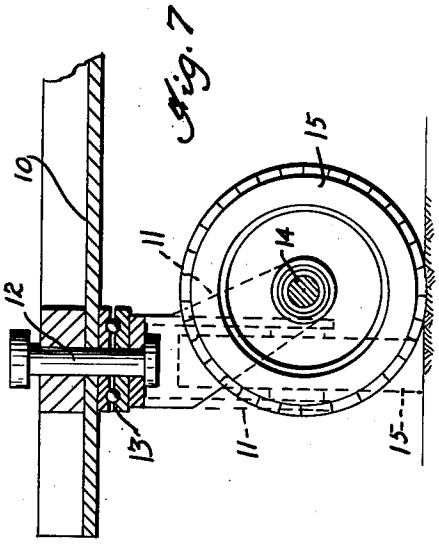

Fig. 7

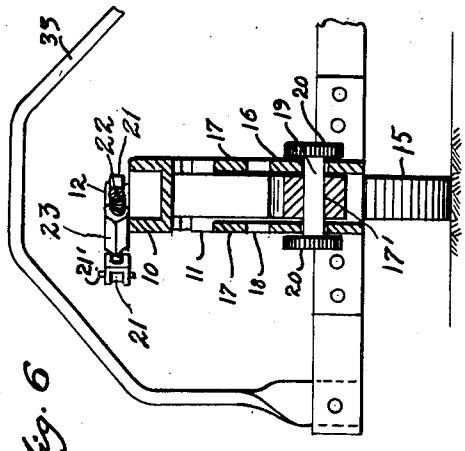

Fig. 6

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CARRYING ATTACHMENT FOR BINDERS

William B. Poppenga, Sioux Falls, S. Dak.

Application January 4, 1946, Serial No. 639,036

2 Claims. (Cl. 56—228)

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This invention relates to a carrying attachment for binders, harvesters, combines, corn pickers, mowers and like tractor or horse-drawn machines, and more particularly to a device adapted to be inserted under such machines, such as a grain binder for use in place of the ordinary main or bull wheel as an operating or running gear as well as to facilitate automatic square turning or at sharp angles and to eliminate the necessity of employing transport trucks, to carry the machines or binder endwise when going through gates or other narrow or restricted passageways, and transferring the machine along a road or from one field to another or the like.

A primary object of the invention resides in the provision of an improved carrying attachment for such agricultural machines as grain binders which may be readily applied thereto in place of the ordinary main or bull wheel, and which is provided with means whereby the grain binder may be raised and lowered when carried by the attachment in the same manner as when carried by its own main or bull wheel.

An additional object of the invention is the provision of such a carrier which may be readily associated with a grain binder to support and carry the same in place of the usual bull wheel, and provided with improved guide means whereby the binder may be towed either in its normal operating position, or by a simple adjustment towed, in effect, sidewise to permit the same to be passed through restricted places, such as gates or the like and over the highways.

Still another object of the invention is the provision of such a device which will be sturdy and durable in construction, reliable and efficient in operation, and relatively simple and inexpense to manufacture and assemble.

Other objects reside in the combinations of elements, arrangements of parts and features of construction, all as will be more fully pointed out hereinafter and disclosed in the accompanying drawing wherein there is shown a preferred embodiment of this inventive concept.

In the drawings:

Figure 1 is a top plan view of the carrying attachment of the instant invention, in association with a binder, only portions of the latter being shown.

Figure 2 is a fragmentary side elevational view showing the method of moving the device transversely to its normal path of travel.

Figure 3 is a side elevational view of the elements shown in Figure 1.

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Figure 4 is an enlarged sectional view taken substantially along the line 4—4 of Figure 3.

Figure 5 is an enlarged sectional view taken substantially along the line 5—5 of Figure 3, as viewed in the direction indicated by the arrows.

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 5, as viewed in the direction indicated by the arrows.

Figure 7 is an enlarged sectional view taken substantially on the line 7—7 of Figure 1, as viewed in the direction indicated by the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Having reference now to the drawings, the device of the instant invention consists of a main supporting frame generally indicated at 10 comprised of a bar of channel iron or the like from which depend forks or bearing brackets 11, secured thereto as by means of spindles 12 and thrust bearings 13 (see Figure 7). Each of the brackets 11 carries an axle 14, adapted to support a rubber tired caster wheel 15, and is swiveled to turn with respect to frame or bar 10 in roller or anti-friction bearings at spindles 12 and bearings 13.

Depending from the underside of the main channel frame member 10 intermediately between forks 11 is a semi-circular bracket member 16, provided with side plates 17 having aligned apertures 18 therethrough, for a purpose to be more fully described hereinafter. Member 16 is provided with a bore 17' through which and apertures 18 is passed an axle 19, which is vertically adjustable in apertures 18 and provided at its extremities with cog gears 20 one of which fits in and engages the usual internal yoke gear of the binder lift lever after removing the bull wheel so that the binder can be raised or lowered the same as when carried on the bull wheel, and the other gear is driven from the power take-off of the tractor to operate the binder.

Secured to the upper extremity of each of the spindles or stub shafts 12 is a laterally extending arm 21, the arms extending on opposite sides of the frame and apertured at their free ends. Pivotally and detachably connecting the apertured extremities of the arms 21 in any suitable manner as at 21' is an equalizer or guide rod 22 extending diagonally across the frame, provided with an equalizer adjusting nut, coupling or turnbuckle 23 to connect the two sections thereof and suitably vary and adjust the length thereof to adjust the relative positions of or align caster wheels 15 and so that they will turn in opposite directions

for square or short turns of the machine or binder. The connection of the ends of the connecting rod 22 with the arms 21 may be made in any suitable way as by securing downturned ends of the rod in the apertures of the arms, by pins and clevises or otherwise to render the same pivotal and detachable as well known in the art.

It will now be seen that when the main frame is turned, in a manner to be more fully described hereinafter, that the caster wheels 15 will be moved in opposite directions by means of the guide rod 22 connecting the oppositely extending arms of the spindles 12.

Portions of a binder are disclosed in association with the device, and include the usual frame and platform 30, the outside or grain wheel 31 and its associated fenders 32, elevator supporting members 33 on the binder frame at one end of platform 30 to accommodate the usual bull wheel replaced by the present carrier, and a hairpin seat pipe 34. A harness bracket 35 is also shown pivoted to one supporting member 33. A lever 36 with a quadrant and catch 37 is also provided such as on a supporting member 33 and connecting the lever to frame 10 at the front by arm 38 and link 39 to tilt the front end of the machine or binder up and down, or this may be done by the usual lever having the internal yoke gear engaging the usual bull wheel generally provided on binders.

From the foregoing the operation of the device should now be readily understandable. When it is desired to use the carrier, the front end of the main frame of the machine or binder is lifted, the main bull wheel is removed from the binder, and the channel steel frame positioned beneath the binder elevator supporting members 33. One gear 20 engages the usual internal yoke gear of the binder and the other is operated by the power take-off of the tractor, and the binder may be raised and lowered in the customary manner or by the lever 36. When the binder is mounted on the carrying attachment, it may be operated from the power take-off of the tractor. It will be readily understood that when it is desired to move the apparatus through a gate or a restricted passageway, the rod 22 may be disconnected from the arms 21 and removed, permitting the caster wheels 15 to swivel or rotate at right angles instead of in line with the channel or bar of frame 10 to the position shown in Figure 2 and a tractor 40 secured to the end of the binder frame to tow the same through restricted passageways endwise or sidewise to cause the carriage to automatically make a square turn and obviate the necessity of using transport trucks in going through gates and transferring the machine along a road or from one field to another. Figure 2 shows the tractor 40 pulling the machine or binder from the outside or grain wheel end.

From the foregoing it will now be seen that there is herein provided a device accomplishing all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

1. A carrying attachment for grain binders to replace the usual main wheel thereof, comprising the combination with a binder having the usual frame and platform, outside grain wheel, arched elevator supporting members above and in line with the front and rear of the frame and platform thereon, comprising a main supporting frame in the form of a bar of channel iron, a pair of vertical spindles journaled in said bar near the ends thereof, forks on the lower ends of the spindles, ground wheels journaled in said forks and offset in the same direction from the spindles, arms fixed to the upper ends of the spindles and extending in opposite directions at opposite sides of the bar, an equalizer bar connecting the free ends of said arms in diagonally arranged position across the bar and comprising sections and a turnbuckle adjustably connecting said sections, a semi-circular bracket member depending from the bar between the spindles and provided with side plates, said side plates having each a plurality of apertures therethrough, a shaft journaled through aligned apertures in each plate and having gears fixed on the ends thereof one of which fits in and is adapted to engage the usual internal yoke gear of the binder lift lever after removing the bull wheel to permit the binder to be raised or lowered and the other of which is driven from the power take-off of a tractor to operate the binder.

2. A carrying attachment for grain binders to replace the usual main wheel thereof, comprising the combination with a binder having the usual frame and platform, outside grain wheel, arched elevator supporting members above and in line with the front and rear of the frame and platform thereon, comprising a main supporting frame in the form of a bar of channel iron, a pair of vertical spindles journaled in said bar near the ends thereof, forks on the lower ends of the spindles, ground wheels journaled in said forks and offset in the same direction from the spindles, arms fixed to the upper ends of the spindles and extending in opposite directions at opposite sides of the bar, an equalizer bar connecting the free ends of said arms in diagonally arranged position across the bar and comprising sections and a turnbuckle adjustably connecting said sections, a semi-circular bracket member depending from the bar between the spindles and provided with side plates, said side plates having each a plurality of apertures therethrough, a shaft journaled through aligned apertures in each plate and having gears fixed on the ends thereof one of which fits in and is adapted to engage the usual internal yoke gear of the binder lift lever after removing the bull wheel to permit the binder to be raised or lowered and the other of which is driven from the power take-off of a tractor to operate the binder, and a lever mounted on one of said elevator supporting members and having adjustable throw means, and link connections with the bar, for raising and lowering the binder frame.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
676,780	Steward	June 18, 1901
980,817	Moore	Jan. 3, 1911
1,253,089	Owens	Jan. 8, 1918
1,837,056	Meier	Dec. 15, 1931
2,028,332	Johnson	Jan. 21, 1936