M. W. BRENNAN.

MANURE LOADER.

APPLICATION FILED JUNE 10, 1909.

960,490. **Patented June 7, 1910.**

3 SHEETS—SHEET 1.

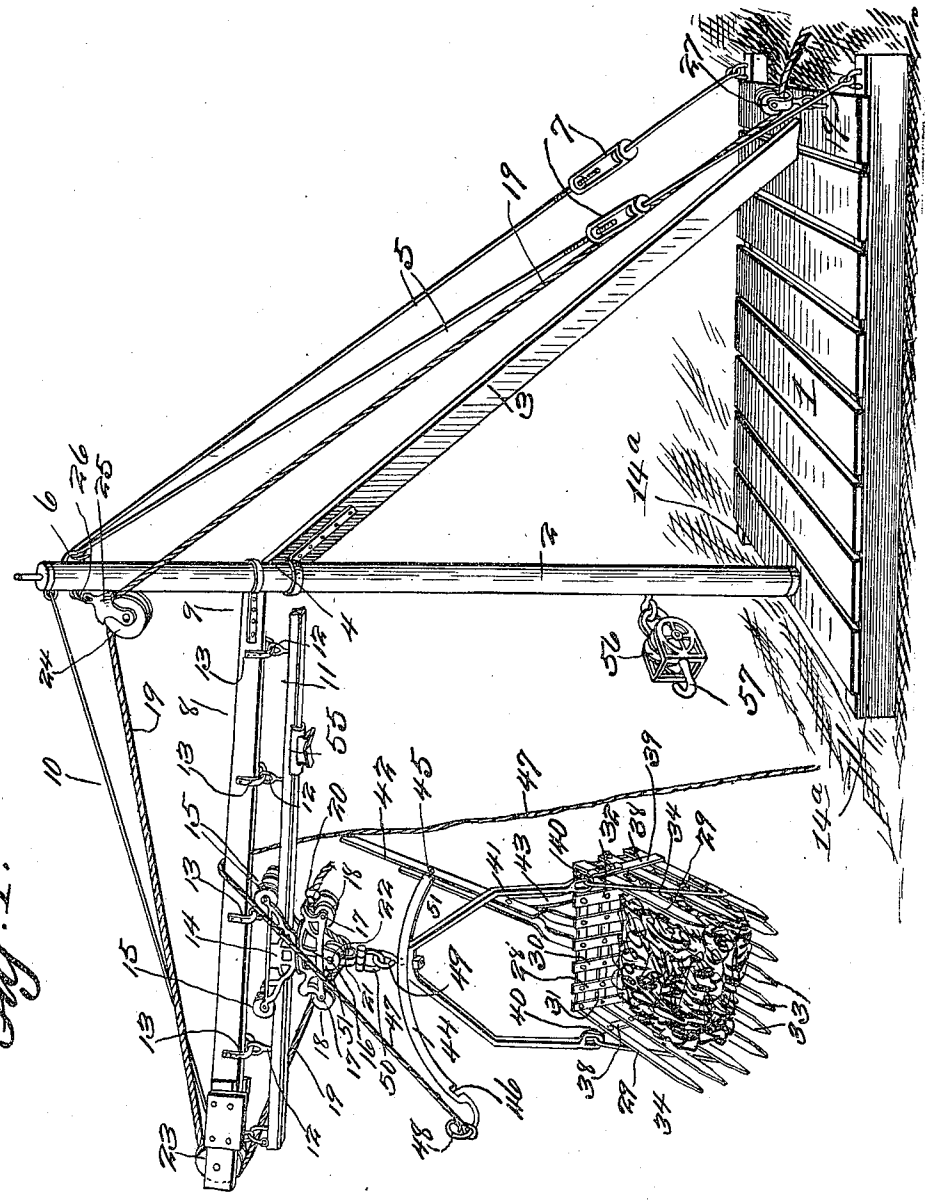

Fig. 1.

Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

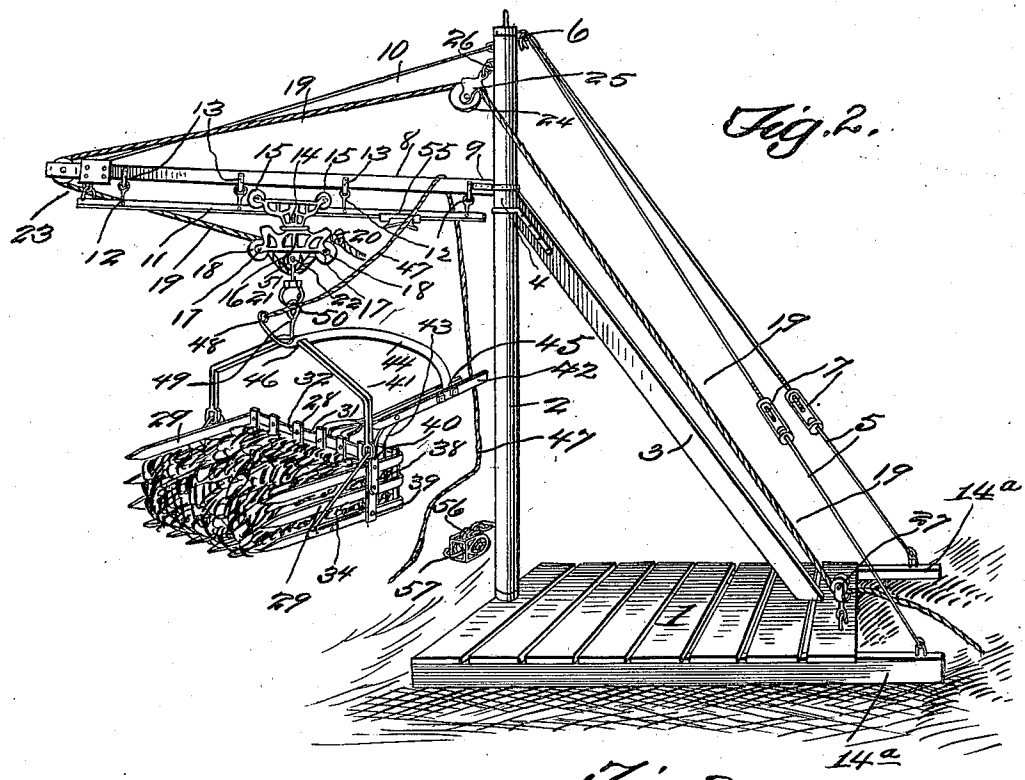
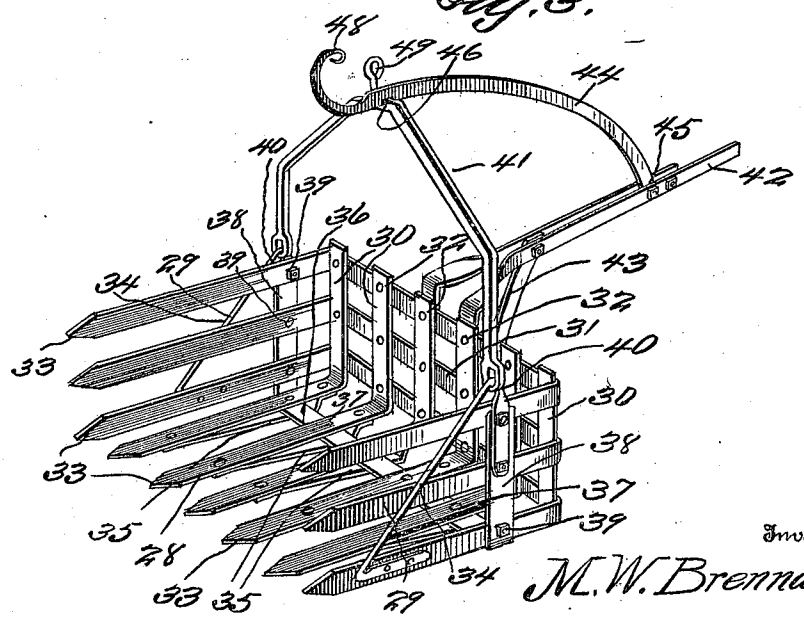


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

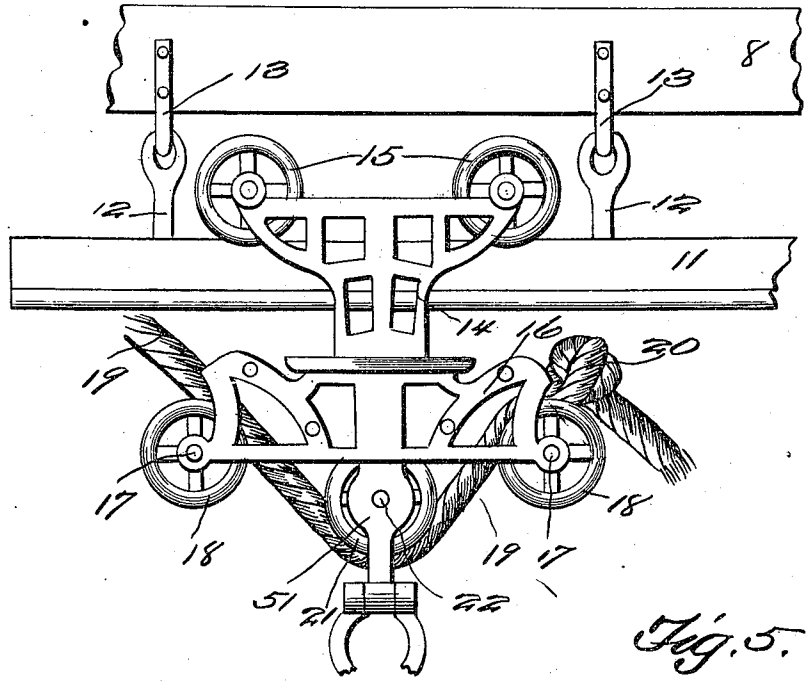
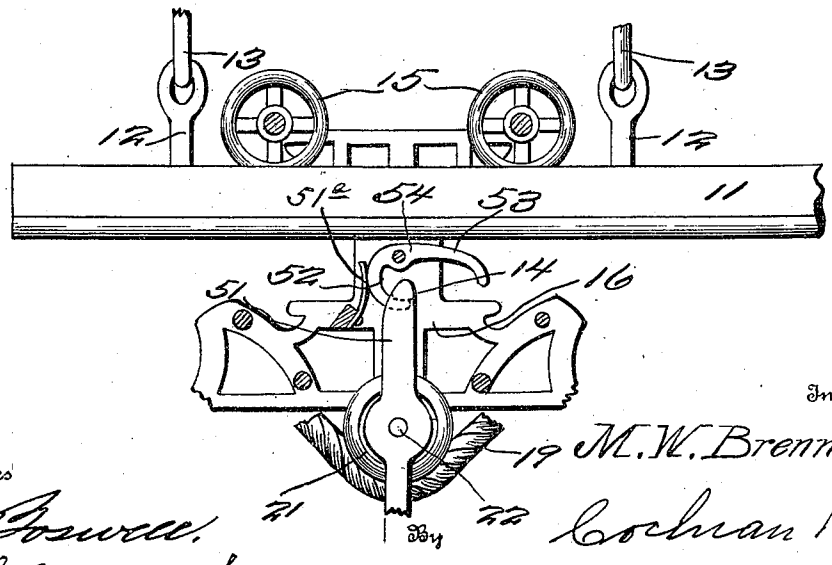


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

MAURICE W. BRENNAN, OF MASKELL, NEBRASKA.

MANURE-LOADER.

960,490. Specification of Letters Patent. Patented June 7, 1910.

Application filed June 10, 1909. Serial No. 501,300.

To all whom it may concern:

Be it known that I, MAURICE W. BRENNAN, a citizen of the United States, residing at Maskell, in the county of Dixon and State of Nebraska, have invented a new and useful Manure-Loader, of which the following is a specification.

This invention relates to certain new and useful improvements in manure loaders of that class in which the manure is taken up by a horse fork, elevated, then swung around into position over a wagon, and then dumped and afterward lowered.

The present invention has for its objects among others to provide a simple and improved device of this general nature which can be easily operated and in which the fork, after being dumped, will, of its own weight, return to its position near the pole or standard from which the crane is suspended where it may be easily lowered to the ground and made ready for another load.

The device is designed to be manipulated by two persons, one to drive the team and the other to manipulate the fork.

I aim further at improvements in the details of construction whereby the parts of the device may be more readily assembled, less liable to get out of order, and more certain and positive in their operation.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view of my improved manure loader showing the parts in position just as the fork is being dumped. Fig. 2 is a similar view showing the parts in the position they assume when the fork is suspended from the track and in a position to be dumped. Fig. 3 is an enlarged perspective view of the fork. Fig. 4 is an enlarged detail in side elevation showing the carrier and the track from which it is suspended. Fig. 5 is a section through Fig. 4.

Like numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 designates a platform of suitable size and construction, adapted to rest upon the ground, and which, if desired, may be removed from place to place, although designed primarily to be stationed in one position, and the fork moved so as to take up the manure from the different portions of the yard or field. Rising from this platform is a post 2 of steel or any suitable material, braced by a suitable brace 3 firmly secured at its lower end to the platform and at its upper end connected with the post, as shown, being strengthened at its upper end by a suitable metallic brace and clamp 4. This post is further braced by the guy wires or ropes 5 suitably connected at their upper ends to the post, as by an eye or the like 6, and at their lower ends to the sills or side bars 14^a of the platform, being provided intermediate their ends with suitable means, as, for instance, the turn buckles or the like 7 by which the same may be lengthened or shortened, as occasion may require.

8 is a crane disposed near the upper end of the post and connected therewith in any suitable manner, so as to swing radially thereupon, so as to bring the crane into any desired position. In this instance, a suitable metallic brace or arm 9, secured to the end of the crane and embracing the post, forms one efficient means of connection. The outer end of this crane or arm 8 is braced by a suitable brace rod 10, as seen in Figs. 1 and 2.

Suspended from the crane or arm 8 is a track 11, in this instance being shown as suspended by the hangers 12 which are suspended from the irons 13 suitably secured to the crane or arm 8, as seen best in Fig. 4. This track is somewhat inclined, the lower end being nearest the post 2 so that, after the fork has been unloaded, or its contents dumped, the fork will, of its own weight, run back on the track to the post in position to be lowered to the ground again and ready for another load.

14 is a carrier or traveler provided with wheels 15 adapted to travel on the track 11, as shown, and depending from this carrier is the member 16 in which are journaled, on suitable shafts 17, the pulleys 18, over which the rope 19 is designed to pass. This rope, 19, has one end provided with a knot or the like 20 which serves to connect it with the depending portion of the carrier and pre-

vent its being pulled therethrough, as shown best in Fig. 4. The rope then passes under the pulley 21 carried by the shaft 22 and over the opposite pulley 18 and then over a pulley 23 at the outer end of the arm or crane 8 and thence over a pulley 24 carried by the block 25 suspended, as at 26, from the upper end of the post, and thence down and under a pulley 27 suitably mounted at the end of the platform farthest from the post 2, as shown. This rope is then designed to be suitably equipped for attachment and to be drawn by a horse or horses to move the fork over the ground to gather the manure.

28 designates the fork. This may be of any suitable form of construction, but, preferably, of substantially the form seen in Fig. 3, wherein it will be seen that the bottom and sides are composed of the bars or slats 29, of metal or other suitable material, the bottom bars having the vertical extensions 30 and the side bars having the cross portions 31 which are secured to said vertical extensions by suitable means, as bolts or the like 32. The front ends of both the bottom and side bars are pointed or sharpened, as shown at 33. Angular braces 34 are also provided for strengthening the sides, as seen clearly in Fig. 3. These members 34 also provide a sliding engagement between the bail and the fork so that in one position the bail may be used to hoist the fork and in another position to draw it along the ground. Additional braces 35 are provided for the bottom bars, as seen in said Fig. 3, and 36 is a bar extending across the bottom of the fork upon the under side of the bottom bars thereof and secured thereto by suitable means, as the bolts or the like 37, said cross bar 36 having the vertical extensions 38 secured to the side bars by suitable means, as the bolts or the like 39. The upper ends of the angular braces 34 have their upper ends provided with hooks or the like 40, designed to receive the lower ends of the vertical portions of the bail or handle 41 of the fork. The fork is free to swing upon the connections between the lower ends of the side bars of the bail 41 and the hooks 40, when not otherwise restrained, it being noted that these pivots are to one side of the center, that is, to the side farthest from the open or discharge end of the fork.

42 is a handle secured to the back vertical face of the fork and braced by a suitable brace 43.

44 is a curved trip lever pivotally connected, as at 45, to the handle 42 and having near its free end a notch 46 adapted to engage the bail 41, as seen clearly in Fig. 3. When this notch of the trip lever is thus engaged with the bail 41, the fork is held in a horizontal position.

47 is a trip rope connected in any suitable manner with the free end of the trip lever 44, which latter, in this instance, is shown as provided with a hook 48 to engage the end of the trip rope. This trip rope passes up over the crane or beam and extends down within convenient reach of the operator.

49 is an eye swiveled in the upper end of the bail 41 and designed for suitable connection with the eye 50 depending from the member 16 of the traveler or carrier.

The pulley 21, under which the rope 19 passes, is connected with the eye 50 and the shaft thereof is mounted in a swinging hanger 51, as seen best in Fig. 5. This hanger is designed to engage with the hook 52 of the arm or lever 53 which is pivotally mounted, as at 54, on the carrier just beneath the track 11. A spring 51^a, seen best in Fig. 5, tends to press the catch into engagement with the eye on the fall block 51. Secured to the under side of the track, near the end nearest the post 2, is a trip plate 55, as seen best in Fig. 1, with which the free end of this lever 53 is designed to engage as the carrier, after the fork has been dumped, returns by gravity to its position at the end of the track nearest the pole 2, so as to automatically release the hanger 51 and the pulley 21 and allow the fork, by its own weight, to descend.

With the parts constructed and arranged substantially as hereinbefore described, the operation is as follows. The fork, being lowered to the ground, the rope 19 is slackened and the fork taken to the desired position from which it is desired to gather the manure. The operator, holding the fork slightly inclined so that its pointed ends will enter the manure, holds the same in such tilted position and then the power is applied to the free end of the rope and the fork dragged along until it is brought near the platform, the rope 47, in the meantime, having one portion thereof passed around the pulley 56 secured to the post 2 near the lower end thereof and then passed through the eye 57, so as to guide the same. When the fork, filled with the manure, is brought up sufficiently near the platform, the rope is disengaged from the side pulley and eye and then, when power is applied to the end of the rope, the fork is hoisted into the position in which it is seen in Fig. 1. The carrier is then moved along the crane into the position desired and the crane swung around so as to bring the fork over the wagon or other place where it is desired to deposit the manure. The trip rope 47 is then pulled upon to disengage the notch 46 of the trip lever from the bail of the fork, when the fork automatically tilts upon its pivots and the manure is dumped.

It is to be understood that when the fork is raised, the pulley 21 is raised therewith, and when the fork is raised to its uppermost position, the hanger 51 is engaged with the hook 52 of the pivoted lever 53 on the carrier

or traveler. After the fork has been dumped, it returns, by gravity, to a position at the end of the track near the post 2. As the end of the lever 53 comes in contact with the trip plate 55, the lever is moved so as to disengage its hooked end from the hanger 51 and then the pulley 21 is free to descend with the fork and the latter is ready to be again taken to the desired position when the operation is repeated.

It will thus be seen that I have devised a simple, yet most efficient form of manure loader, which can be readily operated and which requires but little attention on the part of the persons manipulating the same; and, while the practical embodiment of the invention as hereinbefore disclosed is what I at the present time consider preferable, it is evident that the same is subject to changes, variations, and modifications in detail without departing from the spirit of the invention or sacrificing any of its advantages. I therefore do not wish to restrict myself to the construction, proportion of parts etc., as hereinbefore disclosed, but reserve the right to make such changes, variations and modifications as come properly within the scope of the protection prayed.

It is deemed important that the post 2 be a single post and that the crane be so mounted thereon as to swing radially so that the crane may be swung through practically an entire circle, so that the manure may be gathered from the ground not only throughout the area of an entire circle but gathered up from a long distance, which is not possible where the supporting member or portion is a framed structure and the crane mounted to swing only within the limit of the opposite side bars of such framed support.

What is claimed as new is:—

1. In a manure loader, a single upright, a crane mounted at one end thereon for radial movement through practically an entire circle, a track suspended from said crane, a carrier movable on the track, a member suspended from the carrier, pulleys on said member, a rope passed around the said pulleys, a pulley on the outer end of the crane, and a pulley on the upper end of the upright through which said rope passes, a lever pivotally mounted on the carrier, a swinging hanger on the member for engagement with a hook on the lever, and a trip plate depending from said track, and a fork connected with said rope and movable with the carrier through practically an entire circle about the upright.

2. In a manure loader, a single upright, a crane mounted at one end thereon to swing radially throughout substantially an entire circle, a track suspended from the crane and inclined, a carrier movable on said track, a lever pivotally mounted on said carrier, a spring on the carrier acting on the lever, a swinging hanger for engagement with the hook of the lever, a trip plate depending from said track, and a rope guided on the upright and crane and having one end connected with the carrier, whereby a fork attached to said rope may be moved through practically an entire circle.

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Witnesses:
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