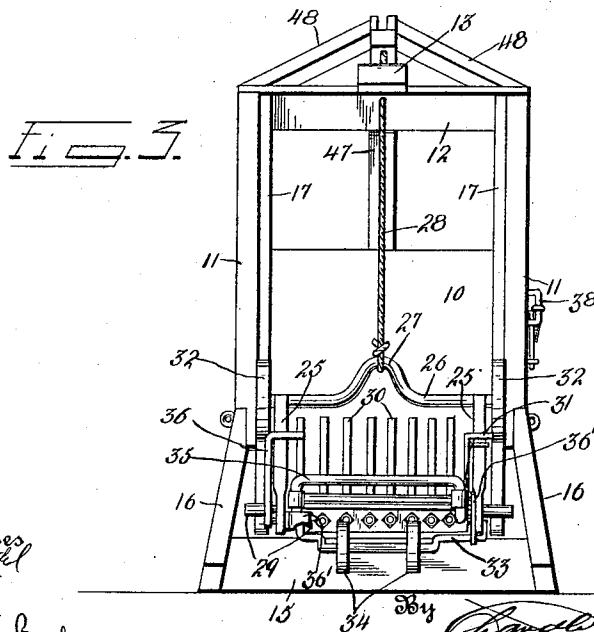
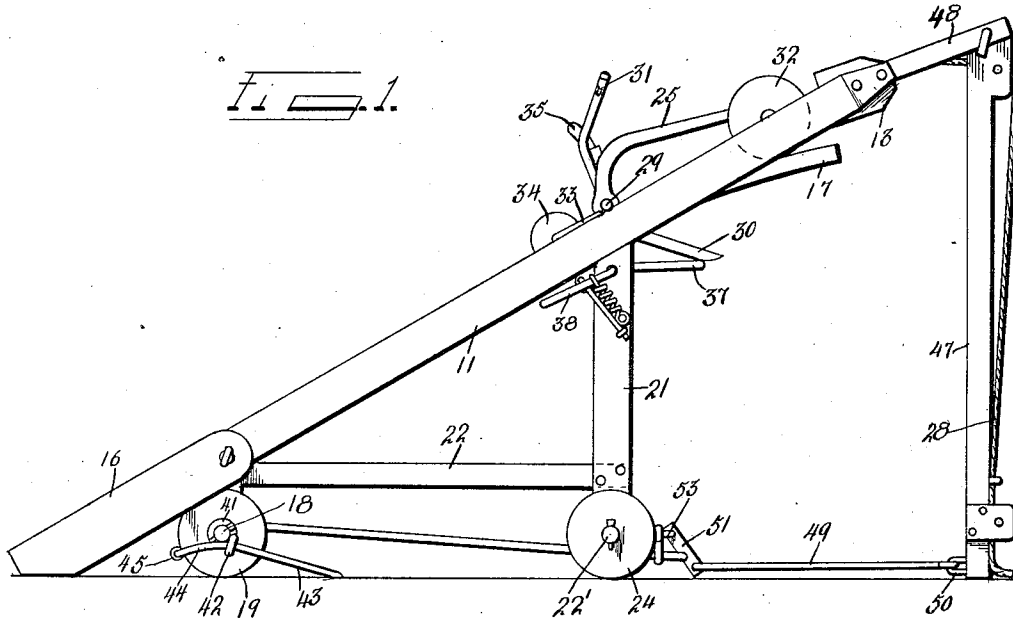


J. P. & J. A. LUCAS.
MANURE LOADER.
APPLICATION FILED MAR. 20, 1911.

1,033,814.

Patented July 30, 1912.

3 SHEETS—SHEET 1.



Witnesses
J. C. Storkel

Ernest Boyle

Inventors
J. P. LUCAS.
J. A. LUCAS.

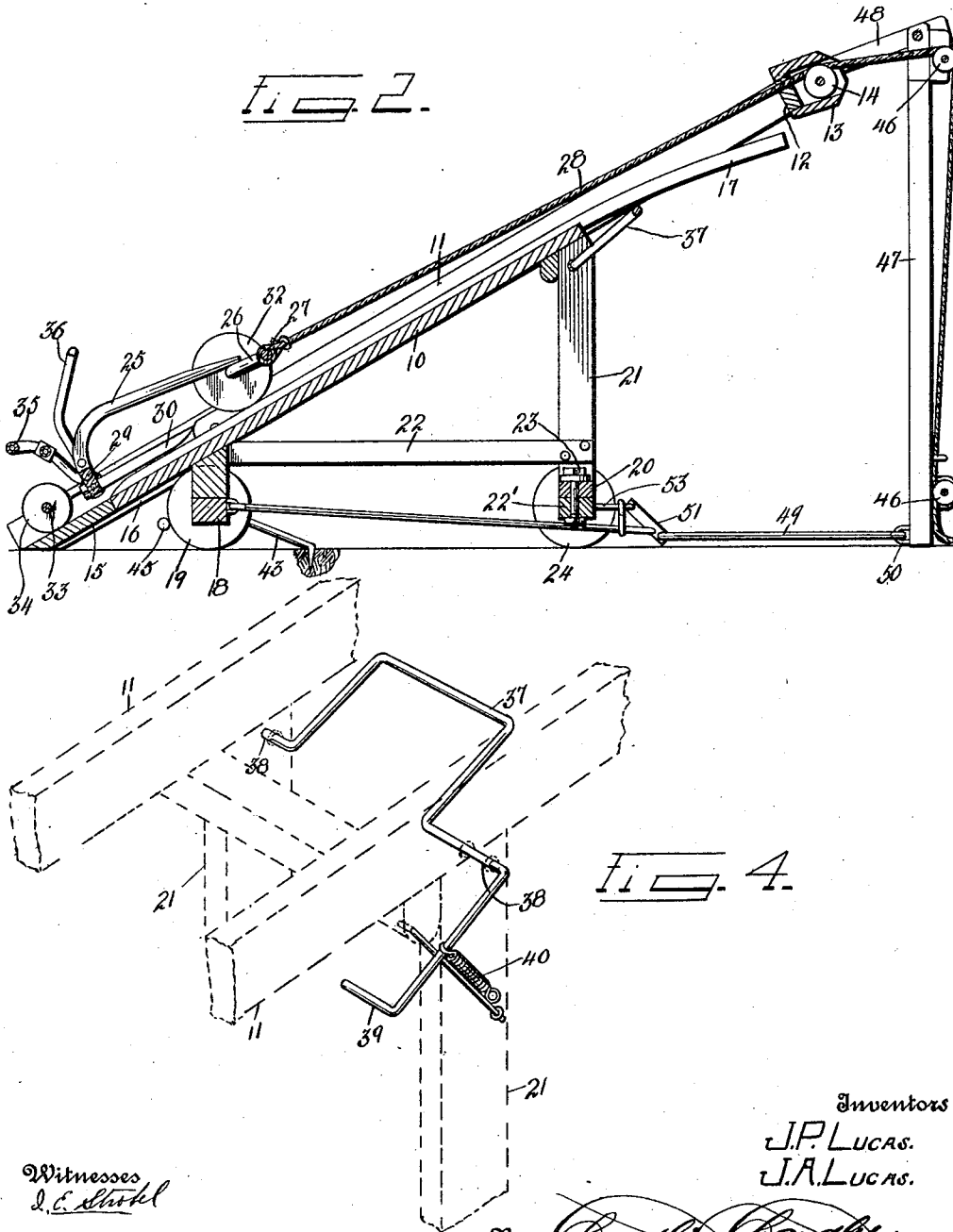
Charles Chandler
Attorneys

J. P. & J. A. LUCAS.
 MANURE LOADER.
 APPLICATION FILED MAR. 20, 1911.

1,033,814.

Patented July 30, 1912.

3 SHEETS-SHEET 2.



Witnesses
 L. E. Stahl

Francis Boyle

Inventors
 J. P. LUCAS.
 J. A. LUCAS.

By

Charles Chandler

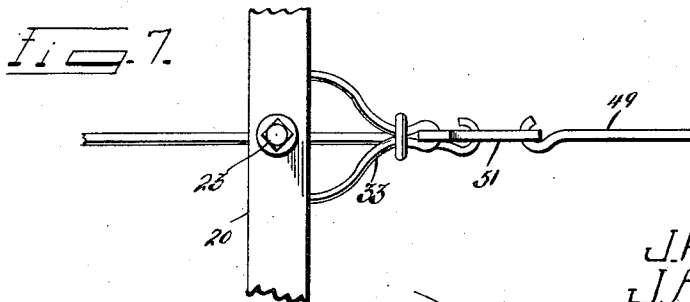
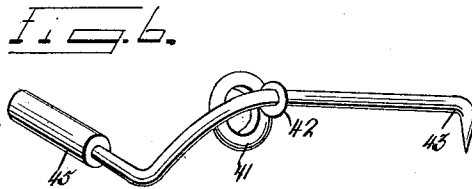
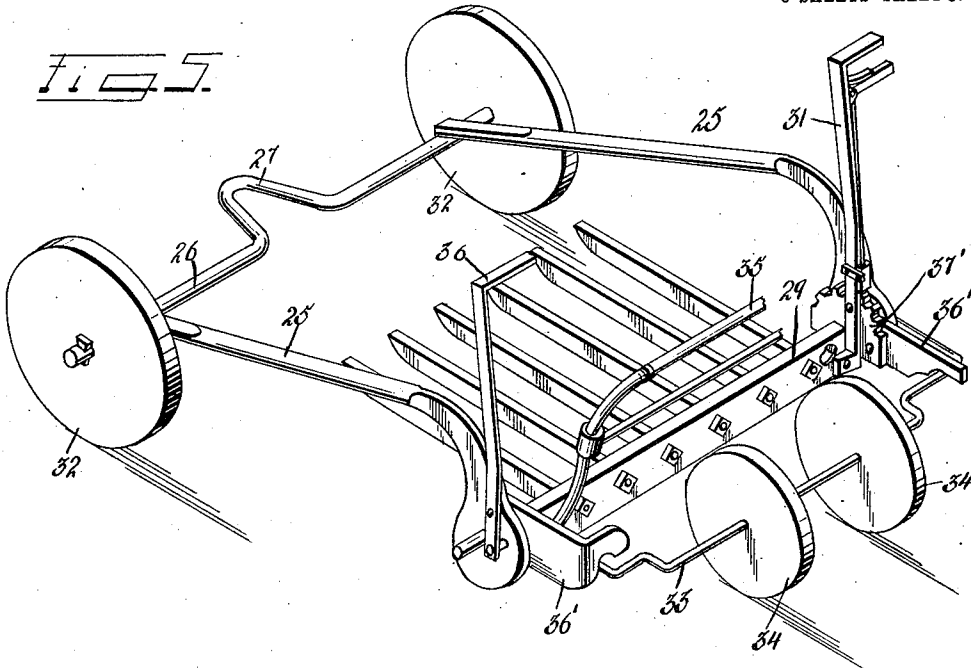
Attorneys

J. P. & J. A. LUCAS.
MANURE LOADER.
APPLICATION FILED MAR. 20, 1911.

1,033,814.

Patented July 30, 1912.

3 SHEETS—SHEET 3.



Witnesses
L. E. Stadel

Francis Boyle

By

Charles H. H. H.

Attorneys

Inventor
J. P. LUCAS.
J. A. LUCAS.

UNITED STATES PATENT OFFICE.

JOHN P. LUCAS AND JOSEPH A. LUCAS, OF BROWERVILLE, MINNESOTA.

MANURE-LOADER.

1,033,814.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed March 20, 1911. Serial No. 615,644.

To all whom it may concern:

Be it known that we, JOHN P. LUCAS and JOSEPH A. LUCAS, citizens of the United States, residing at Browerville, in the county of Todd, State of Minnesota, have invented certain new and useful Improvements in Manure-Loaders; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to manure loaders and has for one object to improve that class of loaders described in U. S. Letters Patent No. 958882, issued us on the 28th day of Jan. 1910.

A further object of the invention is to provide novel means for anchoring the loader in stationary position.

A still further object is to improve the loader fork and its mountings.

A still further object is to provide means for automatically returning the fork to operative position from dumping position.

Finally, the invention contemplates strengthening the main frame work of the device to resist collapsing, and to assemble with this frame work means for attaching a horse power for operating the fork.

With the above objects in view the invention consists in certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawing forming part of this specification:—Figure 1 is a side elevation of the device with the fork in unloading position. Fig. 2 is a longitudinal sectional view of the device with the fork in loading position. Fig. 3 is a front elevation of the device with the parts in the position shown in Fig. 2. Fig. 4 is an enlarged detail perspective view showing the fork tilting means. Fig. 5 is a detail perspective view of the fork. Fig. 6 is a detail perspective view of one of the anchoring pins. Fig. 7 is a fragmentary plan view of the means for holding the draw cable supporting rod in upright position.

Referring now to the drawing in which like characters of reference designate simi-

lar parts, the numeral 10 indicates the elevator incline on the opposite sides of which are arranged side rails 11, these rails extending above the incline proper and being connected by a cross rail 12 which is centrally provided with a housing or guide for a pulley 14. The lower end of the incline flares out and forms an intake apron 15 for the incline, side rails 16 being fixed on the lateral edges of the apron and being hinged to and forming extensions of the incline side rails 11. Arranged on the incline and apron, is a pair of spaced track rails 17, the upper ends of these rails projecting upward beyond the apron, and being directed uniformly downwardly below the bottom edge of the incline side rails 11.

The incline lower end is supported upon an axle 18 upon the opposite ends of which are mounted ground wheels 19. A bolster 20 is attached to the upper end of the incline by means of struts 21, these struts being further connected to the side rails of the apron through the instrumentality of horizontally disposed braces 22, these latter braces being designed to form a bed for a gas engine or the like (not shown) for furnishing power to operate the fork. An axle 22' is swivelly connected to the bolster through the instrumentality of a king-bolt 23 and the opposite ends of this axle are equipped with ground wheels 24.

The loading fork consists of a bail including spaced J-shaped side members 25, and an end member 26 having a central bight 27 to which one end of a hauling cable 28 is secured. The hooked ends of said side members are perforated and in these perforations are journaled the ends of a shaft 29. The journaled ends of the shaft project over the side rails 11 of the incline and ride upon these rails when the fork is in unloading position to prevent falling of the fork through the dumping opening between the side rails 11 at the upper end of the incline. To the shaft 29 is attached a plurality of straight fork teeth 30, and further this shaft is provided with an integral handle lever 31 by means of which the fork may be manipulated in loading.

Journaled on the opposite ends of the fork end member 26, are wheels 32 these wheels traveling upon the track rails 17. Secured to the side members 25 of the fork

are the opposite end portions of a substantially U-shaped axle 33, wheels 34 being mounted for rotation upon the bight of this axle and in rear of the shaft 29. An inverted U-shaped strap 35 is secured in any preferred manner to the shaft of the fork and serves to retain the material upon the fork. A lever 36 is pivotally secured to one of the side members 25 and is terminally secured to an end of the U-shaped shaft 33, rocking of this lever serving to rotate the shaft in the nature of a crank underneath the fork and this rocking movement of the shaft causing the wheels 34 to bind against and elevate the shaft 29 of the fork, this elevation of the fork permitting of the fork being readily driven into the material to be loaded. The lever 36 may now be rocked in the opposite direction to move the shaft 33 to its normal position. Secured to the side members 25 are stop fingers 36' which bear upon the U-shaped shaft 33 as shown in Fig. 5 and limit the outward swinging movement of this shaft when being returned to operative position by the lever 36. For enabling the fork to be inclined at any desired angular position relatively to the incline, a notched segment 37' is fixed to one of the side members 25 and the lever 31 is equipped with a spring controlled pawl as shown, this pawl normally being held out of engagement with the segment but being capable of being engaged with the segment. By manually holding the pawl engaged with the segment, after the lever 36 has been tilted to elevate the rear end of the fork to any desired position, the fork will be locked in this adjusted position until the pawl of the lever 31 is released. When the fork has been drawn in to the top of the incline the ends of the fork axle 29 will rest upon the top faces of the side rails 11 as clearly shown in Fig. 1 and support the fork. The fork proper will rotate and dump the contents through the dumping opening at the top of the incline.

In order to automatically return the fork proper to its operative position, a U-shaped frame 37 has straight opposite end portions 38 pivoted in suitable orifices in the struts 21, one end portion extending downwardly beyond its related strut and terminating in a downwardly directed crank arm 39. A helical spring 40 is secured at one end to this crank arm and at its opposite end to the strut, and normally holds the bight of the skeleton frame in approximately the plane of the underneath face of the incline. During rotation of the fork in unloading the skeleton frame will be depressed and during such depression the spring will store up energy to rock upwardly the skeleton frame and return the fork to its operative position after dumping.

For anchoring the loader in stationary

position upon the ground, rings 41 are disposed upon the outer ends of the axle 18, each ring being equipped with a lateral eye 42 through which is engaged the shank of a pin 43, the head of the pin being curved as shown at 44 in outline and being terminally equipped with a laterally directed head 45 which engages the tread of the wheel. The pointed ends of the pins project toward the dumping end of the loader as shown in Fig. 1, and penetrate the ground so as to resist creeping of the loader, the transverse heads of the pins binding against the wheel treads and locking the wheels against rotation.

For operating the loader by horse power, the draw cable 28 is trained over sheaves 46 carried upon a post 47, this post extending in vertical position and being pivotally secured at its upper end to the juxtaposed extremities of a pair of divergent arms 48 the opposite ends of which are connected to the side rail 11 in any preferred manner. The post 47 is anchored against displacement by a brace 49 connected at one end through the instrumentality of a hook and eye connection 50 to the lower end of the post, and at its opposite end is provided with a hooked extremity which loosely engages in a suitable orifice formed on a draft link 51, this draft link being connected to the axle 22 through the instrumentality of a stay cable 53 as clearly shown in Fig. 1.

When it is desired to move the loader, the apron is rocked back upon the incline, while the post 47 and rod 49 are rocked upward and thrown back upon the incline. In this position of the parts the loader is in a compact form and can readily be moved from place to place.

What is claimed, is:—

1. A loader fork including spaced side members having supporting wheels at their forward ends, a shaft journaled in the rear ends of the side members having fork teeth, a U-shaped crank shaft journaled in said side members and having supporting wheels on the crank thereof disposed in rear of the first named shaft, a handle lever pivoted on one of said side members and serving to rock said crank shaft whereby to bodily elevate the rear ends of the side members, fingers fixed to said sides and engaging over said crank shaft whereby to limit upward swinging movement of the crank shaft, a notched segment carried by one of said side members, a lever fixed to the first named shaft, and a pawl carried by said lever engaging said notched segment.

2. A loader including a portable elevator incline, having a dumping opening at its upper end, a fork movable longitudinally on said incline, a depending pole pivotally secured to said incline above said dumping opening, and rockable on to said incline into released position, a removable tie element

connecting the lower end of said pole to said
elevator incline and anchoring the pole in
stationary upright position, and a draw
cable carried by said fork and trained over
5 sheaves on said pole, the free end portion of
said draw cable extending outwardly from
the lower end of said pole.

In testimony whereof, we affix our signa-
tures, in presence of two witnesses.

JOHN P. LUCAS.

JOSEPH A. LUCAS.

Witnesses:

STEPHEN J. MIOZLA,

DAN J. JONCKOWSKI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
