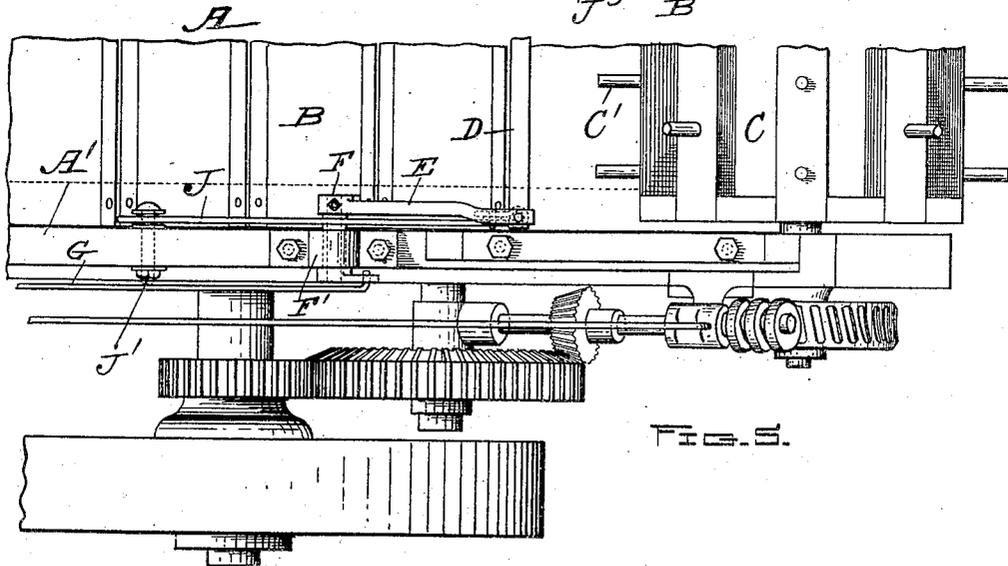
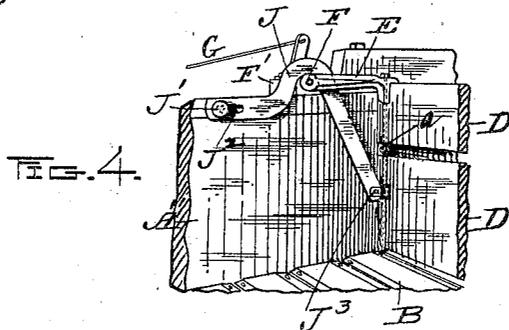
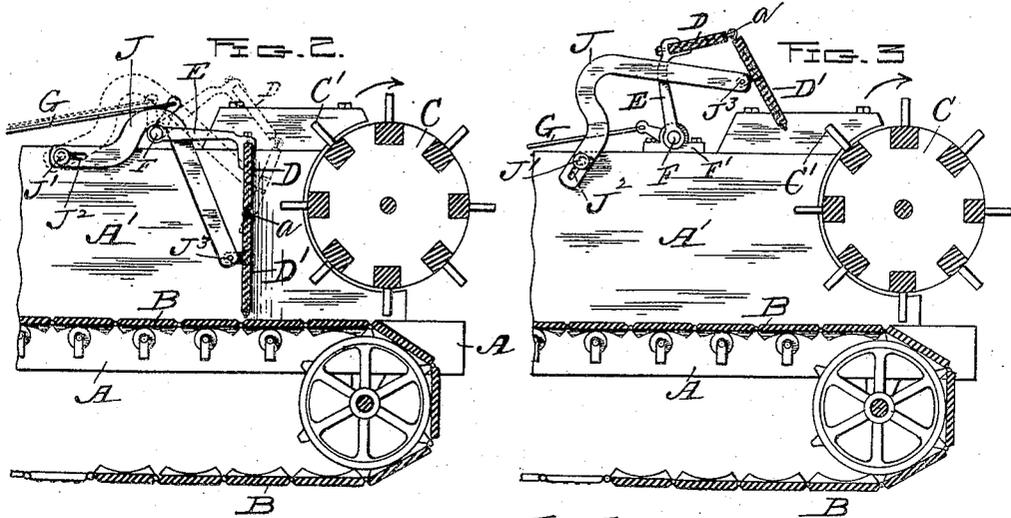




T. BROWN.  
MANURE SPREADER.

APPLICATION FILED AUG. 15, 1904.

2 SHEETS—SHEET 2.



Witnesses,  
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# UNITED STATES PATENT OFFICE.

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## MANURE-SPREADER.

No. 821,779.

Specification of Letters Patent.

Patented May 29, 1906.

Application filed August 15, 1904. Serial No. 220,781.

*To all whom it may concern:*

Be it known that I, THEOPHILUS BROWN, draftsman, residing in the city and county of Worcester and State of Massachusetts, have  
5 invented certain new and useful Improve-  
ments in Manure-Spreaders; and I do hereby  
declare that the following is a full, clear, and  
exact description of the same.

My invention relates to an improvement  
10 in the mechanism for operating the end-gate  
employed in front of the rotary beater at the  
rear of the cart to keep the load from settling  
rearward while conveying it to the field or  
place of spreading, and more particularly to  
15 means for holding and guiding said end-gate  
in proper position during the operation of  
elevating and lowering the same.

Said improvement consists of two pecu-  
liarly-shaped arms arranged one at each side  
20 of the cart, preferably inside of and next to  
the side-boards of said cart, one end of each  
arm being pivoted to its respective side-  
board, and the other end to the lower part of  
the end-gate, which is preferably made in  
25 two horizontal parts pivoted together, the  
purpose of said arms being, as aforesaid,  
to properly hold and guide said end-gate when  
elevated or lowered by the usual rod-and-le-  
ver mechanism controlled by a lever at one  
30 side of the driver's seat. By the employ-  
ment of said holding and guide arms the  
usual grooved guides on the side-boards for  
guiding said end-gate are dispensed with, as  
will be hereinafter more fully set forth.

In the drawings, Figure 1 represents a side  
35 view of a manure-spreader with my improved  
end-gate attachment applied thereto. Fig.  
2 is a vertical longitudinal section through  
the rear end of the spreader, showing my im-  
proved holding and guide attachment by  
40 full lines in the position it occupies when the  
end-gate is in its lowest position and by dot-  
ted lines when said end-gate is partly ele-  
vated. Fig. 3 is a similar sectional view to  
45 Fig. 2, showing the end-gate and holding and  
guide attachment in their most elevated po-  
sitions, being the positions which they occupy  
during the operation of spreading the ma-  
nure. Fig. 4 is a perspective view of part of  
50 the end-gate and cart and my aforesaid at-  
tachment, and Fig. 5 is an enlarged plan of  
part of the rear end of the spreader, showing  
my attachment applied thereto.

To enable others to better understand the  
nature and purpose of my said invention, I  
55 will now proceed to describe it more in detail  
with reference to the accompanying drawings  
and the letters of reference thereon.

A detailed description of the old parts of  
the spreader, upon which my present inven-  
60 tion is an improvement, may be obtained by  
reference to my former United States patent,  
No. 731,539, granted to me June 23, 1903.

Referring to my present drawings, A rep-  
resents the body of the cart; B, its movable  
65 bottom; C, the transverse rotary beater; D  
D', the end-gate, which in this instance is  
made in two parallel horizontal sections of  
about equal width and pivoted together at a.

E is a crank-lever pivoted at F to a sta-  
70 tionary bearing F' on each side-board A' of  
the cart and attached to the end of the upper  
edge of the upper board D of the end-gate.  
Said crank-lever E is also pivoted to the usual  
rod G, connected with the operating-lever H  
75 at one side of the driver's seat I, and J is my  
improved attachment, which is made in the  
form of a goose-shaped arm in side view, as  
is shown in the drawings. It is designed in  
practice to use one of these arms upon each  
80 side of the cart just inside of the side-boards  
thereof in about the position shown in Fig. 5;  
but I do not limit myself to this number.  
For the purpose of convenience I will de-  
85 scribe only one of them. One end thereof—  
the rear end—is pivoted to the end-gate, pref-  
erably to the lower board D' just above its  
horizontal center, and its forward end is piv-  
oted to the side of the cart at J'. The arm J  
90 is slotted at J<sup>2</sup> for a short distance longitu-  
dinally at said pivot to permit of the longi-  
tudinal movement thereof, so that it may  
automatically adjust itself to the irregular  
swinging movements of the parts when the  
end-gate is elevated or lowered, this pro-  
95 vision being necessitated by said end-gate be-  
ing supported at three pivotal points, J', J<sup>2</sup>,  
and F.

The bottom board D' of the end-gate be-  
ing pivoted to the top board D and the arm  
100 J pivoted to said bottom board and to the  
side-board of the cart results in a peculiar  
swinging movement of the attached parts  
when the crank-lever E is operated to elevate  
or lower the end-gate.

The parts are constructed and arranged to  
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operate in practice as follows: When the lever E commences to elevate or draw up the end-gate, the arm J forces the lower section D' away from and relieves it from the pressure of the load, and as the end-gate is continued to be drawn upward it is moved in a curved line outward and conforming to the radial movement of the arm J on its fulcrum J' and is therefore lifted without friction from the load, at the same time holding the upper part of said load in position from being forced onto the upper part of the rotary beater.

In my patented manure-spreader previously referred to guides are employed on the sides of the cart for holding the end-gate in position in lifting and lowering the same. These are liable to become clogged, so that said end-gate is moved with difficulty, and to overcome this objection and provide a way of lifting and lowering the same more easily and without friction is the main purpose of my invention.

The movable bottom B of the spreader travels in practice in the direction from front to rear, thereby carrying the body of manure placed thereon toward the rear or end gate, and the rotary beater C turns, as is shown by the arrows, toward the front at the bottom and toward the rear at the top thereof, thereby causing its teeth C' to discharge the manure over the same between it and the bottom of the adjustable end-gate, said teeth in the revolution of the beater tearing through the closely-packed manure and breaking it up preparatory to being discharged from the spreader. Naturally the smaller the space is between the beater and the bottom edge of the end-gate the finer it will be pulverized in passing through by the teeth of the beater on account of its confined condition between it and the end-gate.

The degree of said pulverization of the manure in discharging it from the spreader is regulated by lengthening or shortening the rod G by its turnbuckle G', so as to lower or raise the end-gate, and thus decrease or increase the space between the bottom of said end-gate and the ends of the rotary beater-pins C', as aforesaid, and when rocks or any other hard substances in the manure come in contact with the bottom of the end-gate the latter automatically yields and allows the same to pass through without injury to the parts, owing to the slots J<sup>2</sup>, formed in the arms J, which permit the latter to be forced back longitudinally by said rocks or other larger substances in passing through.

I do not of course limit myself to the exact shapes or positions of said arms J J. Any

similar attachment connected at one end with the cart-body and the other end with a hinged end-gate may be employed within the scope of my invention to accomplish the same result, said end-gate, made in hinged sections, being, it is thought, a new feature in a manure-spreader or other vehicle of a similar nature.

Having now described said invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate attached to the upper of said sections, and an arm with one end pivotally attached to a stationary bearing and with the other end pivoted to the lower section of the end-gate, whereby the path of the movement of said lower section is determined independently of the means of lifting said end-gate.

2. The combination of the cart-body, its hinged end-gate D D', and the lifting-lever E attached to the upper part of said end-gate, with the arm J pivoted at one end to said cart-body and at its other end to the bottom part of the end-gate, substantially as set forth.

3. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate, and means for yieldingly guiding the lower of said sections in a path independent of the path of the upper section.

4. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate, an arm with one end pivoted to the lower section of the end-gate and with the other end pivotally attached to the cart-body, and means whereby the length of said arm between said pivots is automatically varied.

5. In a manure-spreader, the combination with an end-gate, and means for raising and lowering said end-gate, of an arm with one end pivoted to said end-gate and with the other end pivotally attached to the cart-body, and means whereby the length of said arm between said pivots is automatically varied.

6. In a manure-spreader, an end-gate formed of two pivoted sections, means for raising and lowering said end-gate, and means for guiding the lower of said sections in a path independent of the path of the upper section.

Worcester, Massachusetts, August 9, 1904.

THEOPHILUS BROWN.

Witnesses:

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ALBERT A. BARKER.