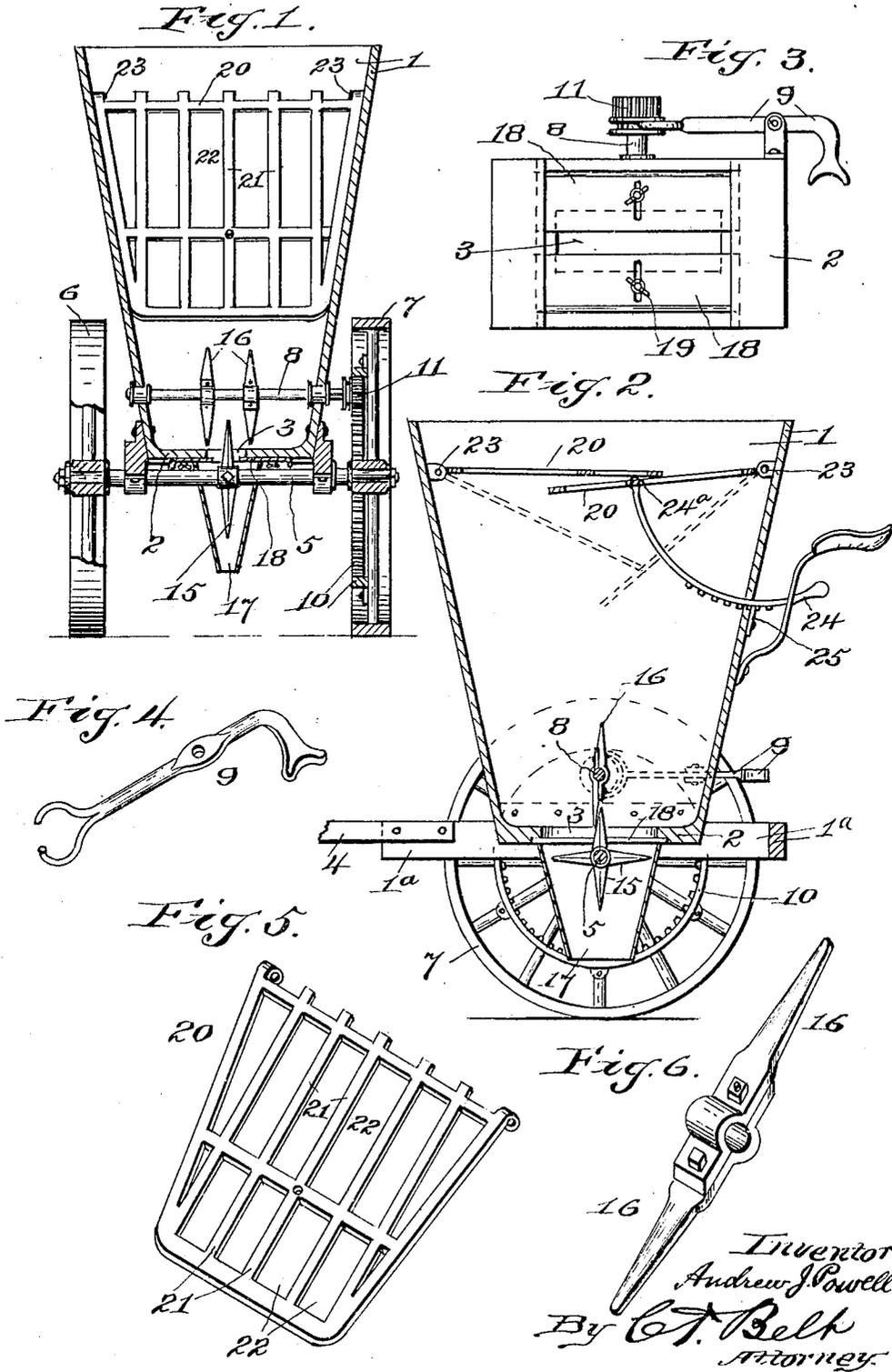


A. J. POWELL.
 FEED REGULATOR FOR MANURE DRILLS.
 APPLICATION FILED MAR. 19, 1918.

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UNITED STATES PATENT OFFICE.

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FEED-REGULATOR FOR MANURE-DRILLS.

1,298,561.

Specification of Letters Patent.

Patented Mar. 25, 1919.

Application filed March 19, 1918. Serial No. 223,386.

To all whom it may concern:

Be it known that I, ANDREW J. POWELL, a citizen of the United States, residing at Aspen Hill, in the county of Giles and State of Tennessee, have invented certain new and useful Improvements in Feed-Regulators for Manure-Drills, of which the following is a specification.

This invention relates to feeding devices for manure drills and pertains especially to feed regulators for feeding material through a drill hopper.

The object of the invention is to provide in a manure drilling machine a pair of cooperating grates within a drill hopper for suspending and regulating the supply of manure or similar material to the outlet of the hopper.

In the accompanying drawings forming part of this application:

Figure 1 is a central cross section partly broken away.

Fig. 2 is a longitudinal section showing the movement of the grates in dotted lines and the tongue broken away.

Fig. 3 is an elevation of the bottom of the hopper without the chute and showing the pinion and its operating lever.

Fig. 4 is a detail perspective view of the pinion lever.

Fig. 5 is a detail perspective view of one of the grates.

Fig. 6 is a detail perspective view of one pair of the shaft prongs clamped together as on a shaft.

The same reference characters denote the same parts in the several views of the drawings.

In carrying out my invention I employ a hopper 1 having a closed bottom 2, except for a central slot 3 forming a discharge outlet for the manure through said bottom, and the latter has a frame 1^a, extending forward of the hopper for attaching thereto suitable draft appliances, such as shafts, or a tongue 4 having double and swingle trees. The hopper is mounted on an axle shaft 5 extending through the hopper and having suitable traction wheels 6 and 7, one of which revolves loosely upon the axle shaft 5, and the other is keyed or otherwise secured to said shaft so as to turn the latter as the machine is propelled. The object of having one of the traction wheels loose upon the axle is to permit this wheel to turn without revolving

the axle shaft, as when the machine is turned at the end of a row or furrow, so as to lessen or prevent revolution of the axle shaft during the operation of turning and transferring the machine.

A shaft 8 extends through the hopper parallel with and above the axle shaft 5, and these shafts are coupled and uncoupled by operating a foot lever 9 which is suitably connected with means for transmitting the movement of the axle shaft to the shaft 8. This may be accomplished in various ways, such as having a gear wheel 10 upon one of the traction wheels, and providing this end of the shaft with a pinion 11.

The shaft 5 is provided with a plurality of prongs or vanes 15 within the hopper and centrally above the slot 3 and the shaft 8 is provided with two pair of prongs or vanes 16 having a space therebetween through which the vanes 15 are revolved in one direction by the shaft 5, while the shaft 8 revolves the vanes 16 in the opposite direction when the said shafts are coupled during the forward movement of the machine. The vanes not only continuously agitate the manure, but break and crush the manure preparatory to its passage through the discharge slot 3. Depending from the bottom 2 is a spout or chute 17 for conveying the pulverized manure from the slot 3 into a furrow. The discharge opening or slot 3 is regulated for varying the amount of manure discharged, according to the nature or character of seeding, by means of shutters or slides 18, which are held in desired adjusted position on the bottom of the machine by thumb screws 19.

In order to avoid crowding or packing of the manure on the agitators and shafts as the manure is deposited in the hopper, I have devised a feed regulating device for temporarily holding or suspending the manure preparatory to its being broken or crushed by the agitators. Said device consists of grates 20 having alternate slats and openings 21 and 22 respectively. One end of each grate is hinged at 23 to the front and back respectively of the hopper adjacent to the top of the hopper and the other end of the grates overlaps centrally within the hopper. The grates are operated in swinging movement by a hand lever 24 attached at 24^a to the central portion of the rear grate, and having notches for engagement with a catch,

as 25, for holding the lever and the grates in adjusted position.

It will be understood that stable manure comprises considerable long bedding material which is necessary to be broken and crushed for feeding into a seeding furrow, and, in order not to have such material retard or choke the crushers or agitators, the grates are gradually lowered or swung to various inclined positions for depositing the manure gradually upon the agitators. Should particles of manure become lodged in the grates, they may be worked by the grate lever for dislodging the same through the grates.

It will be seen that the crushing device is only operated when the shafts are coupled by the clutch during a drilling operation, but any manure remaining on the bottom of the drill while the latter is changed from one furrow to another or from one field to another with the discharge opening closed by the slides, is agitated and rendered in condition for feeding by the revolution of the axle shaft prongs or vanes.

Obviously various mechanical changes and variations may be made in this machine for practical use as desired or as conditions may require, especially in transmitting power

from the wheel shaft to the other shaft, and in attaching and connecting the various parts to the hopper, therefore I do not wish to limit myself in these respects, nor to any particular size, shape or material in the manufacture of the drill and in the several parts thereof.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A hopper having pivoted adjacent to its inlet overlapping grates one of which is adapted to ride upon the other, and means connected with one of said grates within the hopper and working through one of the walls thereof for operating said grates.

2. A hopper having a pair of grates pivoted thereto above the outlet thereof, one of said grates being supported by overlapping the other grate central of the hopper, and means attached to said other grate for adjusting and holding said grates in overlapped position.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ANDREW J. POWELL.

Witnesses:

EDWIN WILLIAMS,
W. R. SIMPSON.

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