No. 790,999. PATENTED MAY 30, 1905.

C. H. BARROWS.

FERTILIZER DISTRIBUTER.

APPLICATION FILED DEC. 22, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

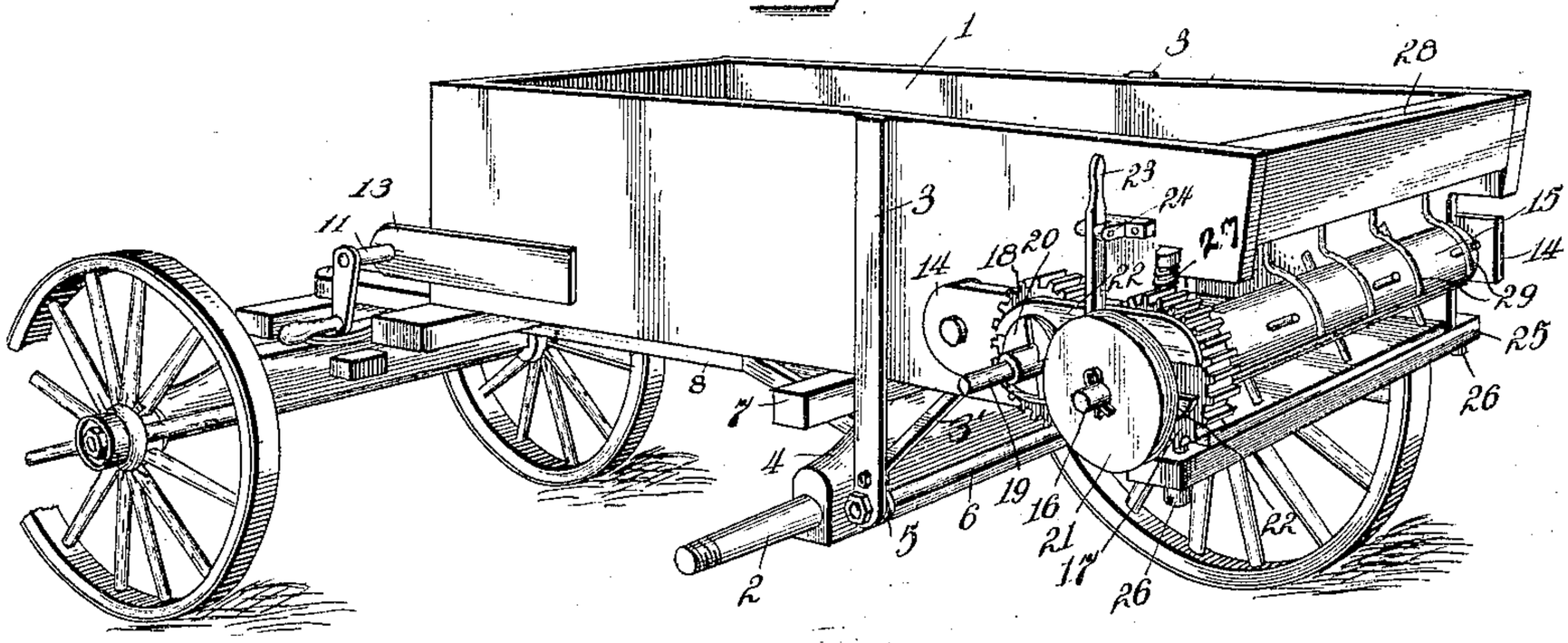


Fig. 3.

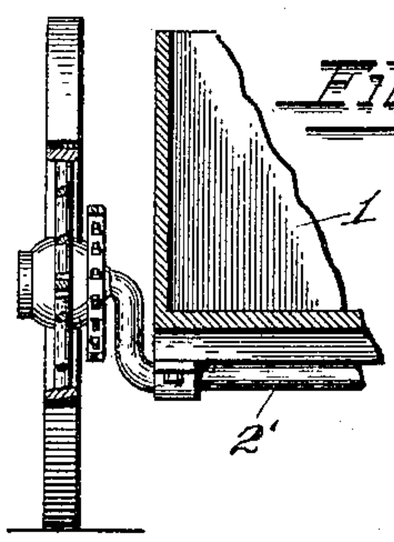
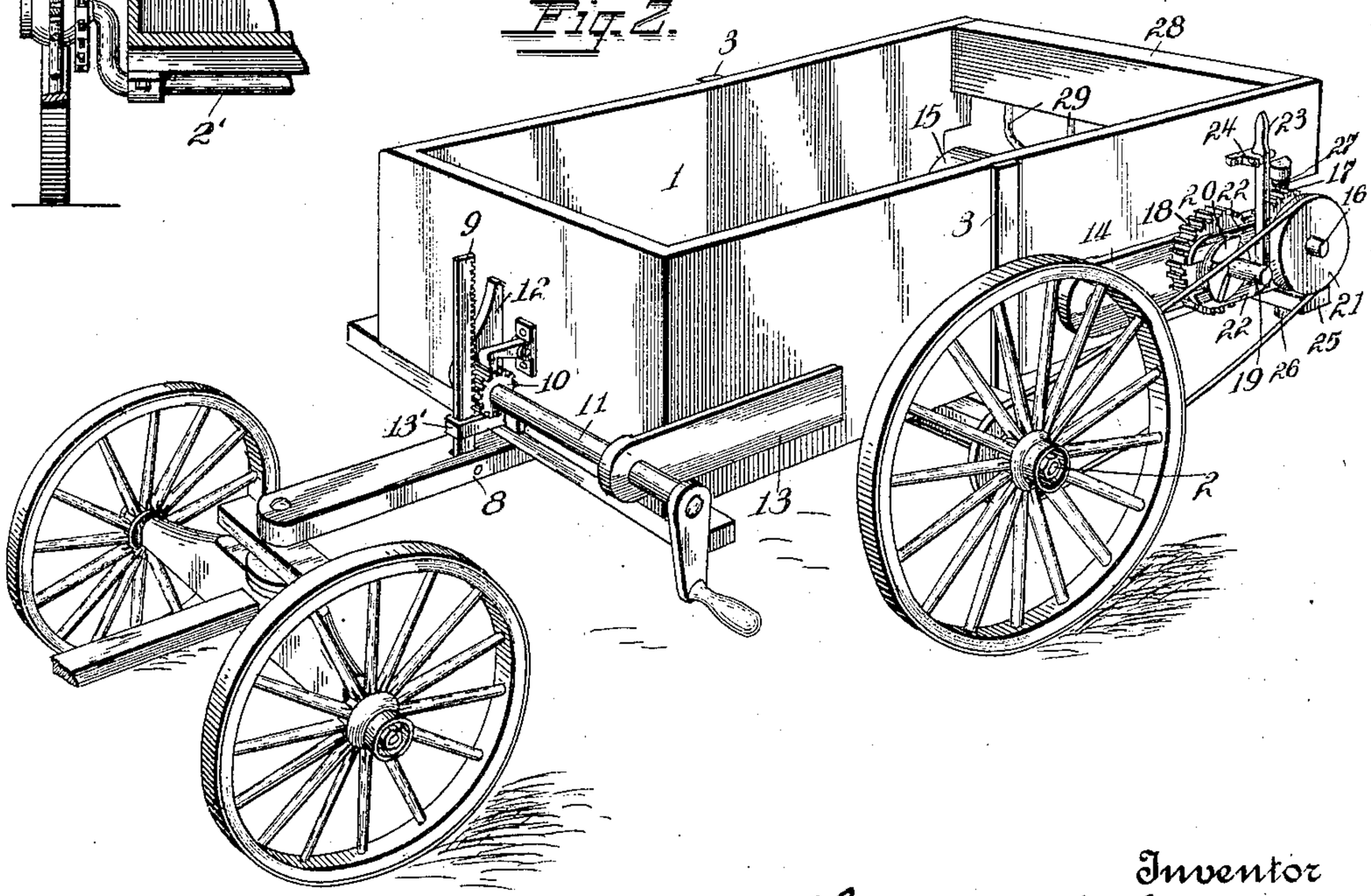


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 4.

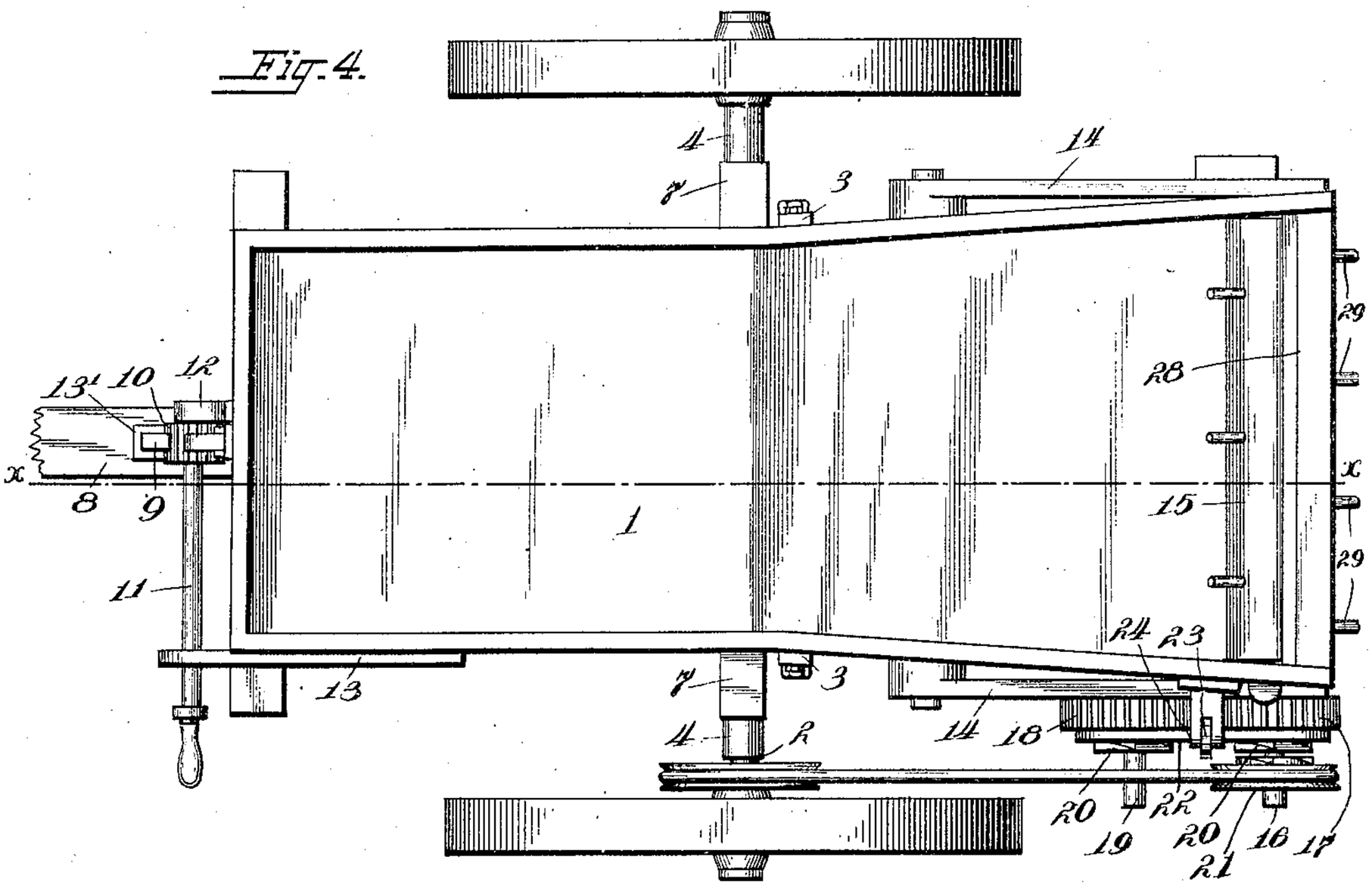
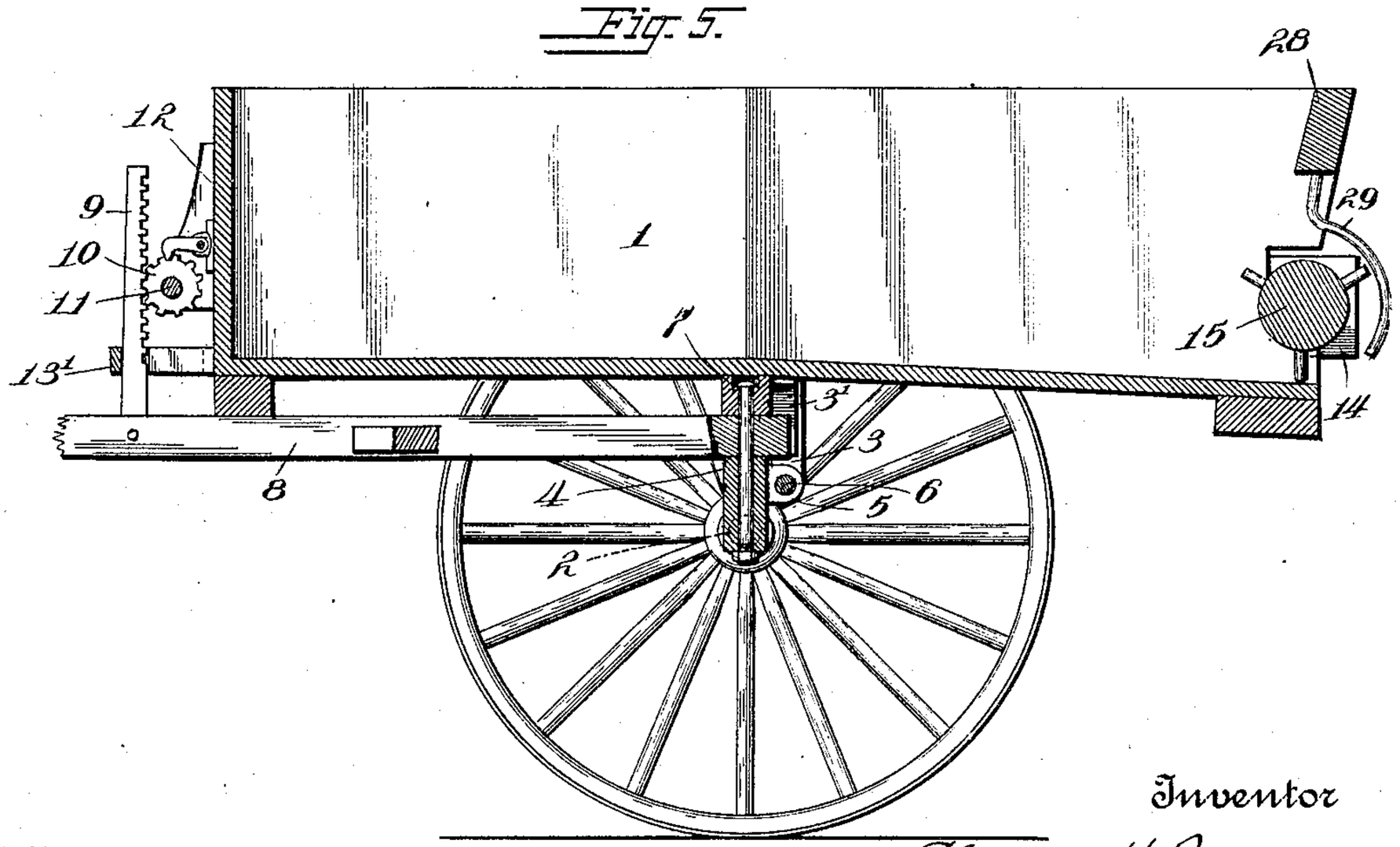


Fig. 5.



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No. 790,999. Patented May 30, 1905.

UNITED STATES PATENT OFFICE.

CLARENCE H. BARROWS, OF GARNEILL, MONTANA, ASSIGNOR OF ONE-HALF TO JAMES C. MURCH, OF GARNEILL, MONTANA.

FERTILIZER-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 790,999, dated May 30, 1905.

Application filed December 22, 1904. Serial No. 237,923.

To all whom it may concern:

Be it known that I, CLARENCE H. BARROWS, a citizen of the United States, residing at Garneill, county of Fergus, and State of Montana, have invented certain new and useful Improvements in Fertilizer-Distributers, of which the following is a specification.

My invention relates to fertilizer-distributers, and more especially to that class of distributers which are adapted to be attached to the running-gear of ordinary farm-wagons; and the object of the invention is to provide a distributer which will perform the function designed under all conditions.

A further object of the device is the provision of means whereby the body can be adjusted so as to allow a uniform and even movement of the material to be distributed toward the distributing-roller.

A further object of the invention is the novel way in which the body is pivoted, so as to keep the operating-chain at the same tension at all times.

A still further object of the invention is the provision of means whereby the amount of material to be distributed may be regulated and means whereby caked lumps of the material being distributed may be crushed and stones may readily pass under the distributing-roller.

A still further object of the invention is the novel means for throwing in and out of gear the operating-roller and for changing its rotation.

In the drawings which form part of this application, Figure 1 represents a rear perspective view of the device, and Fig. 2 is a perspective view showing the mechanism for raising and lowering the rear end of the body. Fig. 3 is a detail cross-section of a modification. Fig. 4 is a plan view showing the divergence of the sides of the body from the axle rearward. Fig. 5 is a longitudinal section on lines *x x* of Fig. 4 and showing the drop of the bottom from the axle rearward.

Referring more specially to the drawings, 1 represents the body of the device, the sides of which are made substantially straight for the first half of its length and then flare outwardly and diverge from a point over the supporting-axle 2. The bottom of the body from the upward end to the axle normally is perfectly level; but the portion rear of the axle drops somewhat from there to the distributing end of the body. Depending from the sides of the body are two arms 3, which are braced by brackets 3′, attached to the bottom of the body. Secured in the ends of the arms 3 is a rod 6, to which is pivotally secured the axle 4 by means of the eyes 5.

The axle 4 supports the ordinary bolster 7, and secured between the axle and the bolster is the reach 8, which carries the pivoted rack-bar 9, adapted to mesh with a pinion 10, rigidly secured to a shaft 11, journaled in suitable bearings 12 and 13 on the front and side of the body, respectively. A suitable guide 13′ is shown to prevent the rack-bar from being displaced with relation to the pinion 10.

Pivoted at a suitable point on the sides halfway between the axle and the rear end of the body are two arms 14, in the outer end of which is journaled the distributing-roller 15, provided with the usual pins. This roller 15 is provided with a stub-shaft 16, on which is splined a cog-wheel 17, in mesh with a similar cog 18, journaled on a stub-shaft 19, carried by one of the arms 14. Each of these cog-wheels is provided with one side of a two-part clutch 20. The shafts 16 and 19 are extended beyond the gears 17 and 18 and provision is made whereby an idle pulley 21 may be journaled. This idle pulley is provided with the opposite side of the two-part clutch 20.

Surrounding the inner part of the two-part clutch 20 are two arms 22, forming one part of a shipper-lever 23, pivoted at 24 to the body and adapted to throw both the cogs 17 and 18 outward, so that if the idle pulley is on shaft 16 and the rotation of the supporting-wheel is as indicated by the arrow in Fig. 1 the roller will receive forward motion. If the idle pulley 21 is on stub-shaft 19 and the supporting-wheel traveling in the direction indicated by the arrow in Fig. 1, the roller 15 will turn in a rearward direction because of the intermeshing of the cogs 17 and 18.

Underneath each arm 14 and screwed into

a cross-beam 25 are adjusting-screws 26, which are adapted to regulate the drop of the arms. Secured in any suitable manner above the arms 14 are spiral springs 27, adapted to normally hold the roller 15 against the adjusting-screw 26 to allow for any upward movement which might be caused by a stone or other hard article passing underneath the roller. Extending from side to side of the body is a beam 28, to which are secured the guard-fingers 29, adapted to overhang the roller 15 and to cause even distribution when the roller is working in the rearward direction or the reverse direction.

It will be understood that the bolster of the wagon, as shown, has no connection with the device and that the reach-beams remain in the same plane and that only the body itself tilts from its normal position as shown in Fig. 1.

By transferring the idle pulley from the roller-journal 16 to the stub-shaft 19 the device is adapted to distribute fertilizer containing straw, &c., and in this instance the rearward motion of the roller is required to carry the material upward and over the roller, thus preventing the machine from becoming clogged. When distributing pulverized fertilizer or sand, gravel, &c., the forward motion is essential, and the idle pulley is transferred from the stub 19 to the roller-journal 16. In each instance the chain has to be lengthened or shortened, as required. The adjusting-screws 26 make the roller adjustable as to height, so as to allow the machine to be regulated to distribute a thick or thin layer of the fertilizer, as may be required. The springs 27 are sufficiently strong to keep the arms in position against the adjusting-screws and to crush any clods or lumps of material which might pass under the roller and are yet pliable enough to allow the roller to pass over the stones or any foreign material in the fertilizer being distributed. This is only in instances where the forward motion of the roller is used. When the material being distributed does not feed rapidly enough to the distributing-roller, the shaft 11 is turned so as to raise the forward end of the body and thereby lower the rear end, thus allowing the material to slide easily toward the distributing-roller. The configuration of the rear end of the body being flared from a point midway of its length assists in this direction.

It will be very evident that this device could be used on a cart, and the pole or shafts could be secured between the bolster and the axle as the reach now is secured.

In Fig. 3 I have shown a modified form of mounting the body 1, in which a drop-axle 2′ is used, doing away with the necessity of using the side arms 3. This construction is used where the invention is used as an independent device, as a distributing-cart, and not as an attachment to the ordinary running-gear of wagons, and allows the machine to be constructed as wide as desired.

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

1. In a device of the class described, the combination with a body, of arms pivoted to said body, rotary distributing means carried by said arms, means for adjusting the height of said distributing means, means normally holding said distributing means in adjusted position, and means for rotating said distributing means in either direction.

2. In a device of the class described, the combination with a body, of arms pivoted to said body, rotary distributing means carried by said arms, means for adjusting the height of said distributing means, a spring adapted to normally hold the arms in adjusted position, means for rotating said distributing means, and means for throwing out of operation said distributing means.

3. In a device of the class described, the combination with a body, of arms pivoted to said body, rotary distributing means carried by said arms, means for adjusting the height of said distributing means, a spring adapted to normally hold the arms in adjusted position, means for rotating said distributing means in either direction, and means for rendering said distributing means inoperative.

4. In a device of the class described, the combination with a body, of arms pivoted to either side of said body, a distributing-roller journaled between said arms, adjusting-screws underneath said arms adapted to adjust the height of said roller, springs adapted to normally keep the arms against the adjusting-screws, a gear splined on the shaft of said distributing-roller and provided with a clutch, an idle pulley, said idle pulley provided with a clutch, means for rotating said idle pulley, and means for throwing said gear into engagement with the clutch on the pulley.

5. In a device of the class described, the combination of a running-gear, a body having substantially straight sides for a portion of its length, said sides flaring from a point midway of the length of the body to the rear portion thereof and a bottom on said body which slants downward from the point at which the sides start to flare.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

CLARENCE H. BARROWS.

Witnesses:

JAMES C. MURCH,

HUGH B. LAWES.