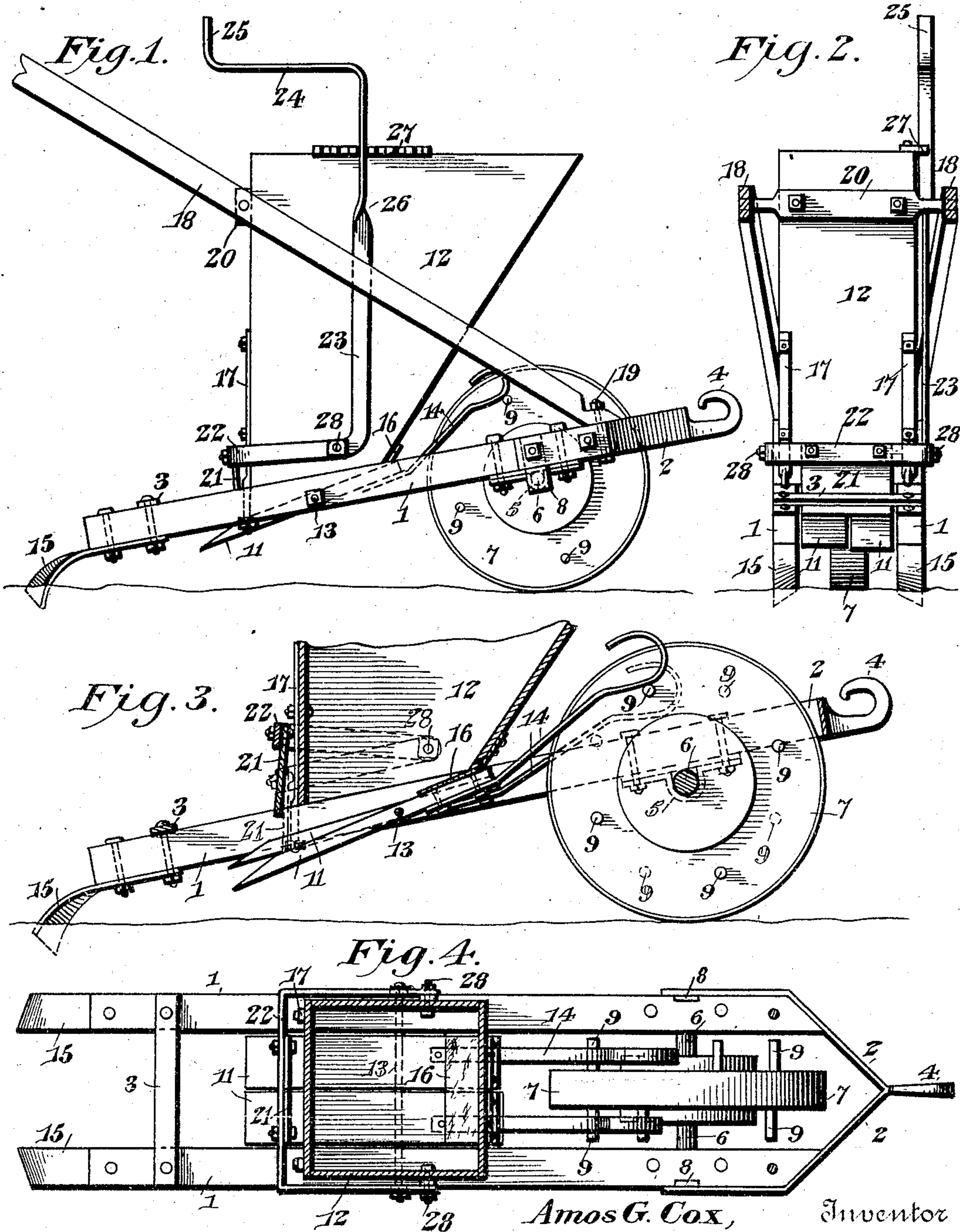


No. 772,220.

PATENTED OCT. 11, 1904.

A. G. COX.
FERTILIZER DISTRIBUTER.
APPLICATION FILED MAY 23, 1904.

NO MODEL.



Amos G. Cox, Inventor

By

E. G. Siggers

Attorney

Witnesses
Jas. E. McCathran
J. F. Piley

UNITED STATES PATENT OFFICE.

AMOS GRAVES COX, OF WINTERVILLE, NORTH CAROLINA.

FERTILIZER-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 772,220, dated October 11, 1904.

Application filed May 23, 1904. Serial No. 209,203. (No model.)

To all whom it may concern:

Be it known that I, AMOS GRAVES COX, a citizen of the United States, residing at Winterville, in the county of Pitt and State of North Carolina, have invented a new and useful Fertilizer-Distributor, of which the following is a specification.

The invention relates to improvements in fertilizer-distributers.

The object of the present invention is to improve the construction of fertilizer-distributers and to provide a simple and comparatively inexpensive one capable of discharging and covering guano and of enabling the feed to be easily changed and when necessary entirely cut off without stopping the draft-animals.

A further object of the invention is to provide a device of this character in which the means for regulating the feed will also operate to throw the shaking-shoes out of operation.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a fertilizer-distributor constructed in accordance with this invention. Fig. 2 is a rear elevation, partly in section. Fig. 3 is a longitudinal sectional view of the fertilizer-distributor, the upper portion being broken away; and Fig. 4 is a horizontal sectional view.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a pair of parallel side bars arranged at a slight inclination and connected at their front ends by a metal fork 2 and at their rear ends by a transverse bar 3. The fork, which is provided with parallel rear portions, has converged front portions which are

formed integral with a draft-hook or clevis 4, and the latter enables the draft-animal to be hitched to the fertilizer-distributor. The inclined bars are provided at their lower edges near their front ends with bearings 5, consisting of plates and receiving the ends of an axle 6 of a wheel 7. The sides of the fork 2 are arranged at the outer faces of the parallel bars 1, and the axle is held against longitudinal movement by means of plates 8, interposed between the sides of the fork and the bars 1 and arranged in recesses of the latter and depending therefrom, as clearly shown in Fig. 1.

The wheel 7 is provided at opposite sides with tappets 9 consisting of projecting pins, the pins of one side being arranged opposite the intervals between the pins of the opposite side, whereby a pair of shaking-shoes 11 will be alternately or reversely vibrated. The shoes 11, which are arranged beneath the hopper 12, consist of bars pivotally mounted between the bars 1 by a transverse rod 13, which pierces the said bars. The rod 13 is located between the ends of the shoes 11, which are preferably constructed of wood and which are provided at their front ends with longitudinal rods 14, constructed of metal and arranged to be engaged by the tappets. These rods 14, which are constructed of metal, are located at opposite sides of the tappet-wheel 7, and they form arms by means of which the shoes are vibrated. The arms of the shoes are alternately engaged by the tappets of the wheel 7, and the rear portions of the shoes, which extend rearward beyond the hopper, are adapted to positively discharge the guano or other fertilizer, which is covered by blades 15. The fertilizer is prevented from escaping from the front of the shoes by means of flexible strips 16 of leather or other suitable material secured to the exterior of the front of the hopper and extending rearward upon the upper faces of the front portions of the shaking-shoes. The front ends of the rods 14, which constitute the arms of the shaking-shoes, are curved or bent backward to enable them to be readily engaged by the pins or tappets of the wheel 7 without injury when the wheel is rotated in

either direction. The hopper, which is of the usual configuration, is mounted upon the side bars, being secured to the same by plates 17, which terminate in bolts that pierce the side bars 1. The hopper is also supported by a pair of handle-bars 18, which are secured at their front ends at 19 to the side bars 1 and which are connected at the back of the hopper by means of a transverse bar 20. The transverse bar 20 is bolted to the back of the hopper, as clearly shown in Fig. 2 of the drawings.

The blades 15 consist of plates bolted to the lower edges of the rear ends of the side bars 1 and extending longitudinally thereof and projecting rearward beyond the same. The rear portions of the blades are twisted slightly and curved downward to present an inner concaved face to the soil and adapted to throw the soil inward over the discharged fertilizer, whereby the same is covered.

The feed of the fertilizer is controlled by means of a gate or closure 21, arranged at the back of the hopper and movable upward and downward to vary the size of the opening between it and the shaking-shoes. The cut-off is adapted to both control the feed and entirely shut off the same and also throw the shaking-shoes out of operation. When the gate or closure is moved downward to the dotted-line position illustrated in Fig. 3 of the accompanying drawings to its lowermost position, it forces the shaking-shoes downward and throws their front arms upward out of the path of the tappets. This prevents the escape of the fertilizer and throws the machine out of operation. The gate or closure is carried by a substantially U-shaped loop 22, which constitutes one arm of a lever 23, which is of bell-crank form. The loop is disposed approximately horizontally, and it embraces or surrounds the rear portion of the hopper, being spaced from the rear wall of the same sufficiently to permit the necessary movement of the gate or closure. The other arm of the lever extends upward from the top of the hopper and is provided with a rearwardly-extending portion 24, terminating in a handle or grip 25. The lever is preferably constructed of a bar of metal, which has its lower portion arranged flat against the walls of the hopper and which is given a quarter turn or bend at 26 to arrange its upper portion edgewise to the hopper for engaging a ratchet-bar 27. The ratchet-bar 27 is provided with a series of teeth and is adapted to hold the gate or cut-off in its adjusted position. The lever 23 is pivoted to the hopper at opposite sides thereof by bolts 28. When the fertilizer-distributor is drawn forward by the draft-animal, the wheel rotates and operates the shaking-shoes if the latter are free to move. The metal rods 14 overbalance the weight of the rear portions of the shoes and automatically swing the said rear portions

upward. When the tappets of the wheel 7 engage the forwardly-extending arms of the shoes, the rear portions of the latter are swung downward. By this construction the shoes are positively operated. The feed or discharge of the fertilizer is adapted to be controlled by the lever without stopping the draft-animal, and, if necessary, the feed may be completely stopped and the fertilizer-distributor thrown out of operation without stopping the draft-animal.

Instead of providing a pair of reversely-operating shoes, as illustrated in the drawings, it will be readily understood that one shoe may be employed for this purpose.

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

1. In a machine of the class described, the combination of a hopper provided with a shaking-shoe, a tappet-wheel for operating the same, and a feed-regulating closure arranged to engage the shaking-shoe for throwing the machine out of operation, substantially as described.

2. In a machine of the class described, the combination of a hopper provided at the bottom with a shaking-shoe, a tappet-wheel for operating the shaking-shoe, a gate or closure arranged at the back of the hopper, and means for adjusting the gate or closure to regulate the feed and for carrying the closure into engagement with the shaking-shoe for throwing the machine out of operation, substantially as described.

3. In a machine of the class described, the combination of a hopper provided at the bottom with a shaking-shoe, a tappet-wheel for operating the same, a closure for regulating the feed of the machine, said closure being also arranged to engage the shaking-shoe to throw the machine out of operation, and a lever fulcrumed on the machine and carrying the closure, substantially as described.

4. In a machine of the class described, the combination with a hopper, and a tappet-wheel, of a pair of shaking-shoes arranged at the bottom of the hopper and provided with arms arranged to be engaged by the tappet-wheel, said shoes being extended in rear of the hopper, a closure arranged at the back of the hopper and located above the shaking-shoes, and means for raising and lowering the closure for controlling the feed and for engaging the shaking-shoes to throw the machine out of operation, substantially as described.

5. In a machine of the class described, the combination of a hopper, a tappet-wheel, shaking-shoes located at the bottom of the hopper and actuated by the tappet-wheel, a lever fulcrumed on the hopper and having one arm extended around the rear portion of the hopper, said lever being also extended to the top of the hopper, a closure mounted on the lower portion of the lever and arranged to regulate

the feed and also to engage the shaking-shoes, and means for securing the lever in its adjusted position, substantially as described.

5 6. In a machine of the class described, the combination of a pair of side bars, a hopper mounted thereon, a tappet-wheel supporting the front portions of the side bars, a pair of shaking-shoes pivotally mounted between the side bars and located beneath the hopper and
10 having front arms arranged in the path of the tappets, and a closure for regulating the feed, said closure being also arranged to engage the shaking-shoes to throw the machine out of operation, substantially as described.

15 7. In a machine of the class described, the combination of a hopper, a shaking-shoe pivoted at an intermediate point of its length and arranged below the hopper, one end of the shoe projecting in front, and the other extending rearwardly from the hopper, a tap-
20 pet-wheel adapted to engage the front end of the shoe, and a feed-regulating closure at the rear of the hopper for engaging the rear end of the shoe to swing the front end out of en-
25 gagement with the tappet-wheel, substantially as described.

8. In a machine of the class described, the combination of a hopper, a shaking-shoe pivoted at an intermediate point of its length and
30 arranged below the hopper, one end of the

shoe projecting in front, and the other extending rearwardly from the hopper, a tappet-wheel adapted to engage the front end of the shoe, a feed-regulating closure at the rear of the hopper for engaging the rear end of
35 the shoe to swing the front end out of engagement with the tappet-wheel, and a substantially U-shaped loop mounted on the hopper and carrying the said closure, said loop being provided with a bell-crank lever for operat-
40 ing it, substantially as described.

9. In a machine of the class described, the combination of a hopper, a shaking-shoe pivoted between its ends at the bottom of the
45 hopper, a closure arranged to engage the shaking-shoe to throw the same out of action, a tappet-wheel, and a metal rod extending forwardly from the front end of the shoe and overbalancing the rear portion of the same to
50 bring it automatically into action when the closure releases the shoe, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

AMOS GRAVES COX.

Witnesses:

R. H. HUNSUCKER,
JNO. R. CARROLL.