W. CROASDALE.

Fertilizer.

No. 15,171. Patented June 24, 1856.

Fig. 1.

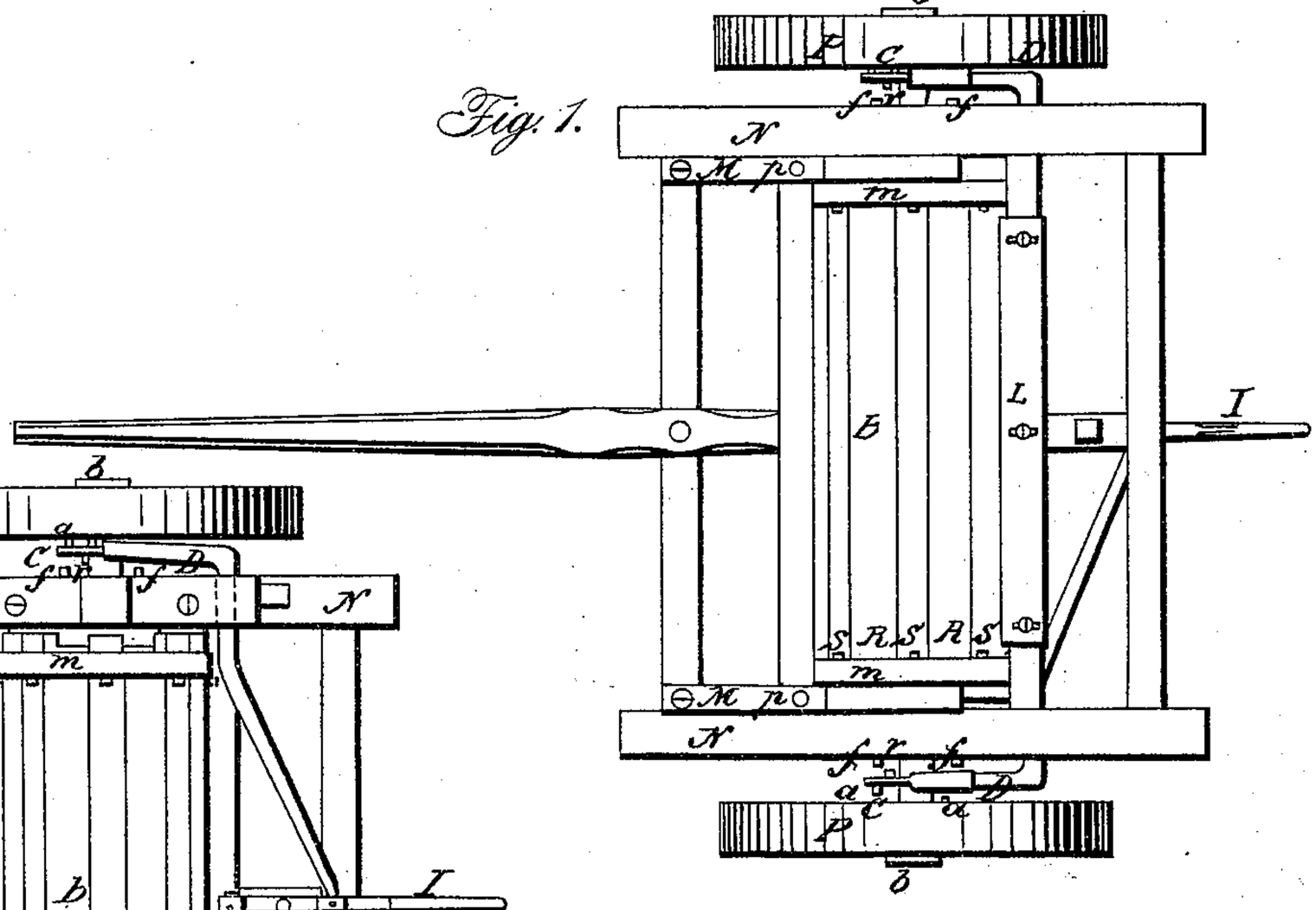


Fig. 2.

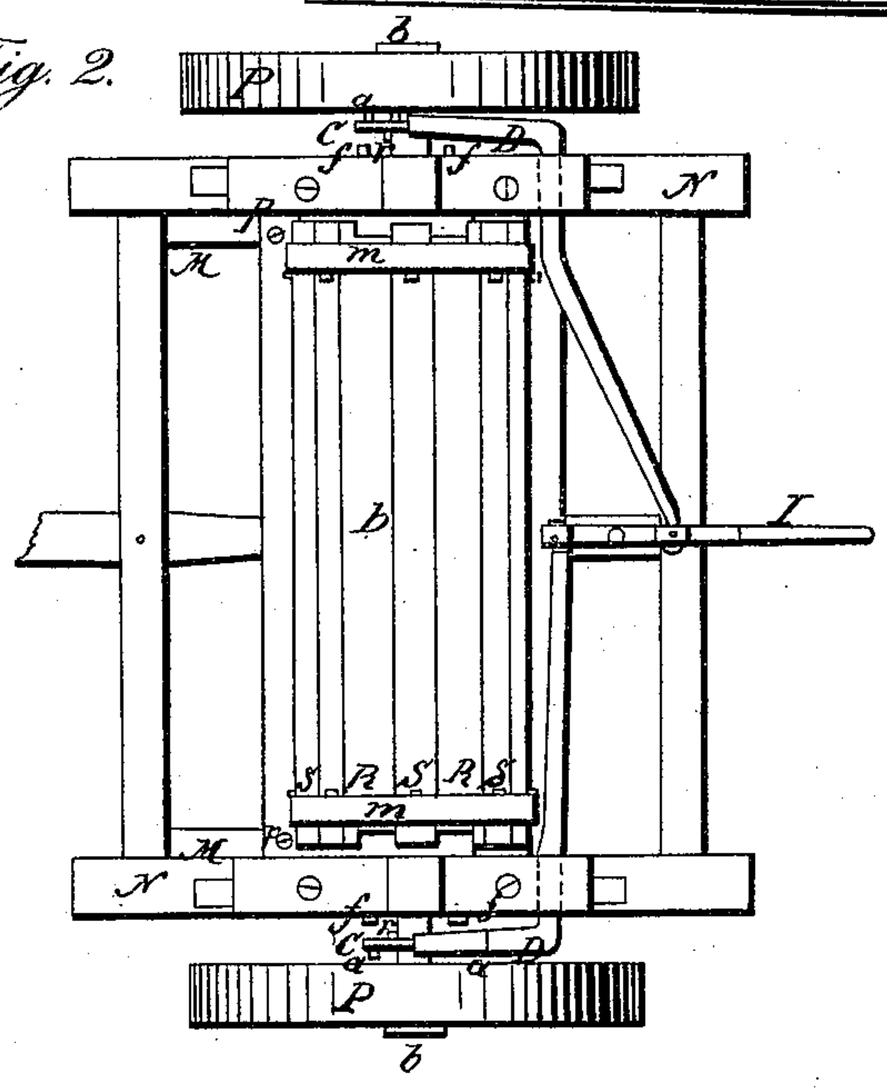


Fig. 3.

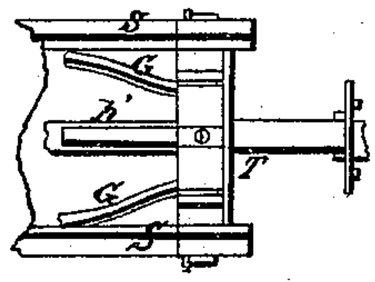


Fig. 4.

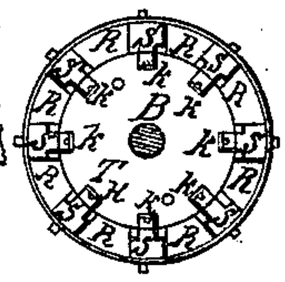


Fig. 5.

Fig. 6.

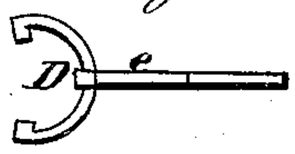


Fig. 8.

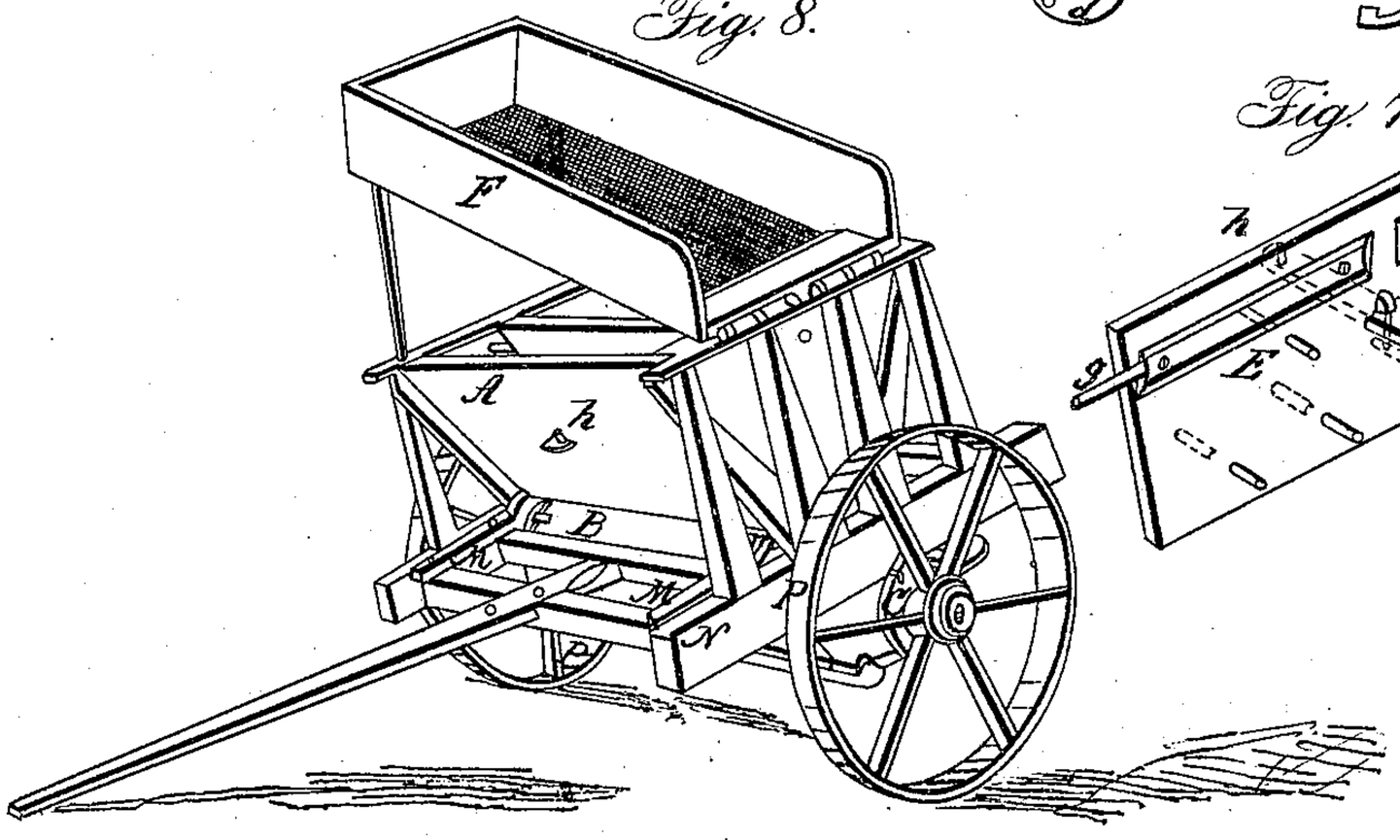
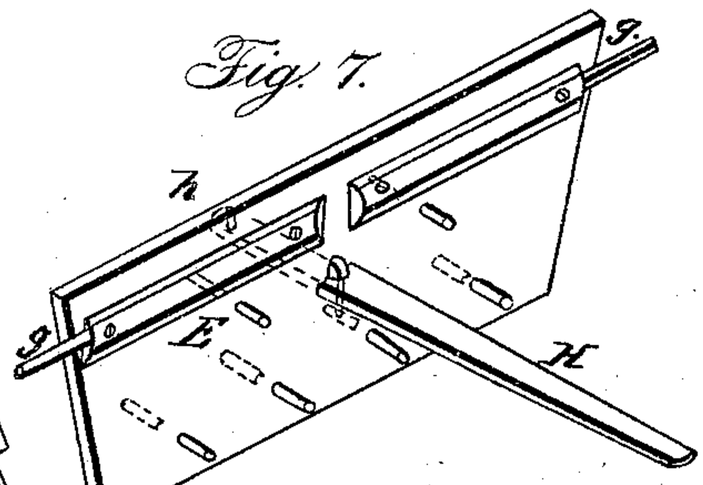


Fig. 7.



UNITED STATES PATENT OFFICE.

WILLIAM CROASDALE, OF HARTSVILLE, PENNSYLVANIA.

IMPROVEMENT IN LIME AND GUANO SPREADERS.

Specification forming part of Letters Patent No. **15,171**, dated June 24, 1856.

To all whom it may concern:

Be it known that I, WILLIAM CROASDALE, of Hartsville, in the county of Bucks and State of Pennsylvania, have invented a new and useful Machine for Spreading Guano, Lime, Ashes, Salt, Plaster, &c.; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a top view, the hopper and frame-work being removed in order to show the cylinder; Fig. 2, a plan of the bottom, showing the manner of the action of the locks, governors, and the lever controlling them; Fig. 3, part of a longitudinal section of the cylinder, showing the spring. It was not deemed necessary to give the cylinder in full, both ends being alike; Fig. 4, an end elevation of the cylinder; Fig. 5, view of the lock; Fig. 6, side view of the governor; Fig. 7, a perspective view of the shaker with the lever controlling it; Fig. 8, a perspective view of the machine.

Like letters refer to like parts.

A is the hopper; B, the cylinder; C, the lock; D, the governor; E, the shaker; F, the screen; G, the springs; H, the lever controlling the shaker; I, the lever controlling the lock; K, the axle; L, the scraper; M, the rubbers; N, the frame supporting the hopper; P, the carrying-wheels; R, the alternate and permanent strips of the cylinder; S, the intervening and movable strips of the cylinder; T, the movable head of the cylinder; *a*, the knobs on the outside of the lock; *b*, the hub of the carrying-wheels; *d*, the circular reins of the locks; *e*, the arm of the governor; *f*, the projections of the hopper-frame; *g*, the axles of the shaker; *h*, the end of lever extending through the side of hopper; *k*, notches in the circular ends of the cylinder; *m*, the bands which encircle the ends of the cylinder; *p*, the screws causing pressure on the rubbers; *r*, knobs or projections on the inside of lock.

To enable others skilled in the arts to make and use my invention, I will proceed to describe its construction and operation.

It consists of a hopper, A, surmounted by a screen, F, which is supported by frame-work N on an axle, K, and carried by two wheels, P; also, a hollow cylinder, B, which is permanently fixed on the axle K of the carrying-wheels P. The cylinder B consists of longitudinal strips R and S. The alternate strips R are permanently attached to the circular heads T of the cylinder B. The intervening strips S, alternating with those permanently fixed to the heads, are movable and attached to springs G, which, when left free to act, force them out to a surface uniformly cylindrical with the permanent ones. Around each end of the cylinder B is a band, *m*, which prevents the spring G, under the movable strips S, from forcing them beyond the uniform surface. There are notches *k* in the circular ends T of the cylinder, as seen in Fig. 4, into which the movable strips S are forced by rubbers M, so that the part of the cylinder B which is brought in contact with the hopper A may have its movable strips so depressed as to form a cavity of any required depth, and thus admit the proper quantity of the material to be spread. The movable strips S project beyond the bands *m* on the ends of the cylinder B, and also beyond the circular ends T, while the permanent strips R terminate with the bands *m* and circular ends.

There are rubbers M attached to the frame N, which supports the hopper A. These press upon the ends of the movable strips S, which project beyond the bands *m*, and the amount of pressure exerted is regulated by screws *p*, causing the rubbers M to press more or less, according to the depth of cavity required in the cylinder B, so as to admit the proper quantity. When the cylinder is turned so the movable strips are freed from the pressure of the rubbers M and forced out again by the springs G the cylinder is cleaned of any particles which may adhere to it by a scraper, L, attached also to the frame N, which supports the hopper A on the axle K.

There is a movable head, T, at each end of the cylinder B, which, by turning a certain distance, prevents the movable strips S from sinking when the cylinder is used for other purposes, which are not patentable, and therefore not necessary to be described in this specification.

There are two locks, C, represented by Fig. 5, which are fitted to and around that part of the axle K which is between the carrying-wheels P and the frame supporting the hopper A. These are fitted to the axle K so as to slide on it. At the point just named the axle

is either made square or has a projection on the side to regulate the sliding movement of said locks C. These locks C are circular pieces, which turn with the axle K and have knobs or projections on both sides. The knobs *a*, on the outside of the lock, catch upon corresponding knobs on the hub *b* of the carrying-wheels P, and the knobs *r* of the inner side of the locks catch upon corresponding knobs, *f*, on the hopper-frame. The locks are shifted in and out by means of semicircular governors D. (Shown in Fig. 6 of the accompanying drawings.) These governors D are fitted as a clasp upon the circular reins *d* of the locks, and allow the locks to turn in the clasp, and at the same time control their lateral movement. The arms *e* of the governors D are attached to the arms of a lever, I. By means of the lever I, governors D, and locks C the cylinder is thrown in and out of gear. When the locks C are thrown out its projections *a* catch upon corresponding ones of the hubs of carrying-wheels P and cause them to carry the cylinder around with them, and when drawn in the projections *r* on the inside catch upon corresponding ones, *f*, of the hopper-frame and allow the carrying-wheels to move freely, but prevent the cylinder from turning.

There is a shaker, E, (represented by Fig. 7,) which is fixed in the hopper by means of two arms or axles, *g*, extending through each end of the hopper A and controlled by a lever, H, extending through the sides *h* of the hopper A. The object of this shaker is to prevent the material to be spread from arching over the cylinder B.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the cylinder B, composed in part of the movable strips S, with the rubbers M, both being constructed and arranged, substantially in the manner and for the purposes set forth.

WILLIAM CROASDALE.

Witnesses:
ISAAC B. BARNES,
JOSEPH BARNSLEY.