

L. B. & H. A. MYERS.

Grain-Drill

No. 16,772.

Patented Mar 3. 1857.

Fig. 3.

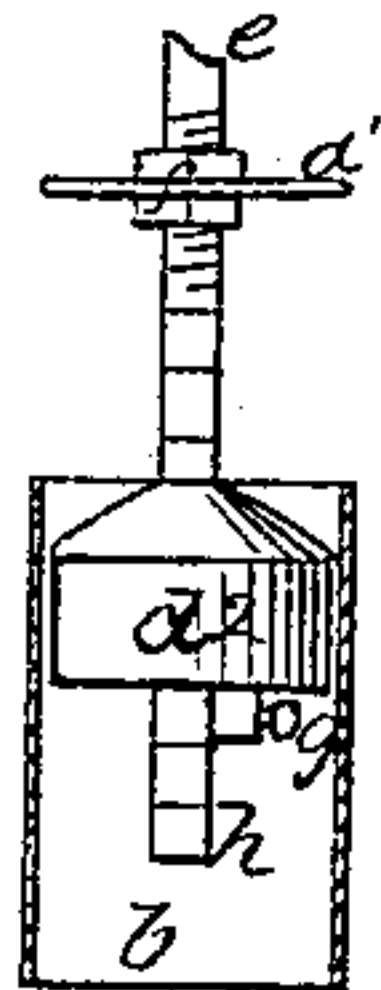


Fig. 4.

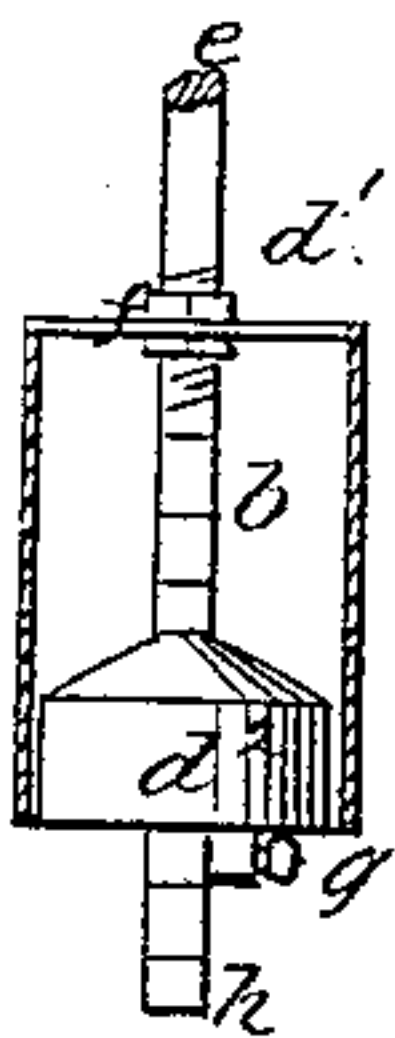


Fig. 5.

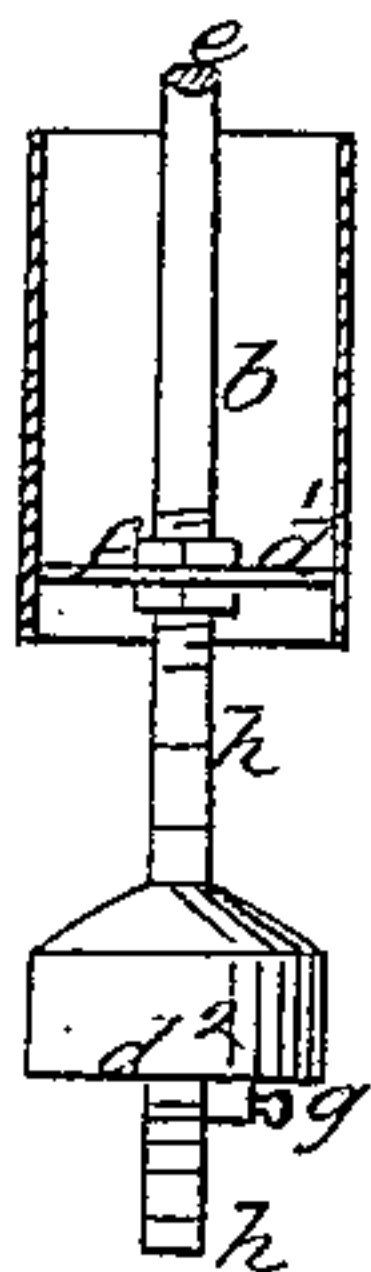


Fig. 6.

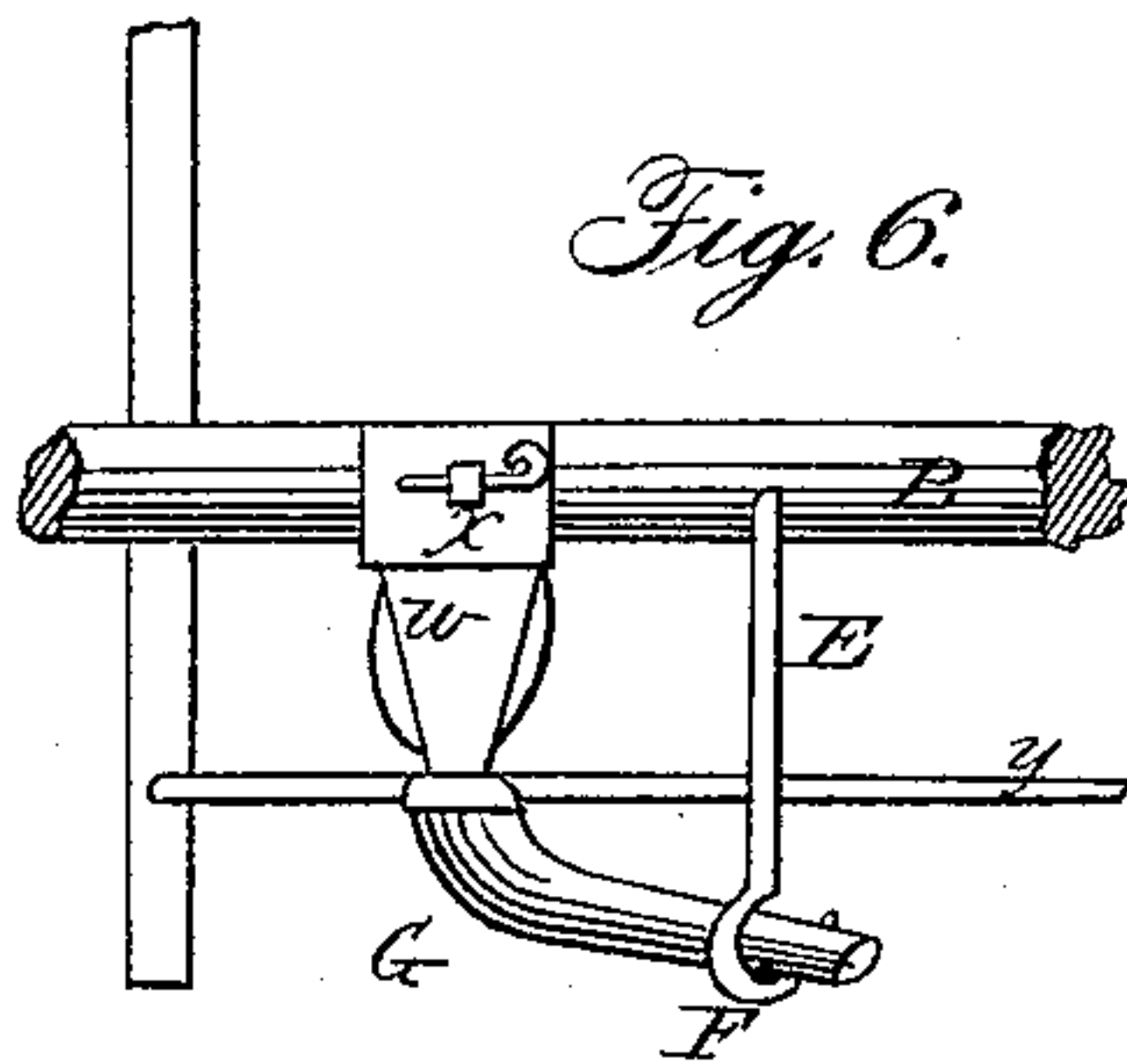


Fig. 2.

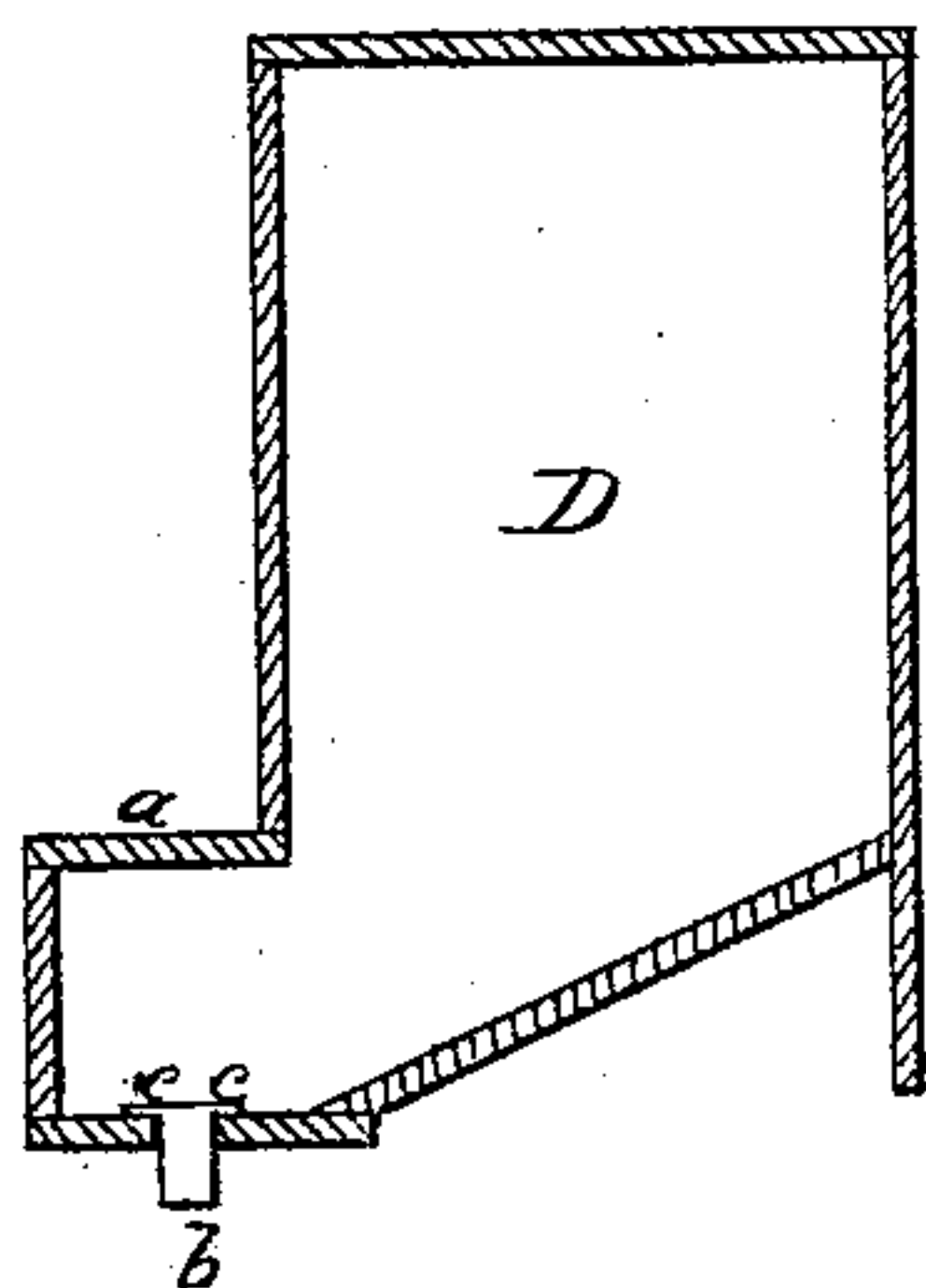
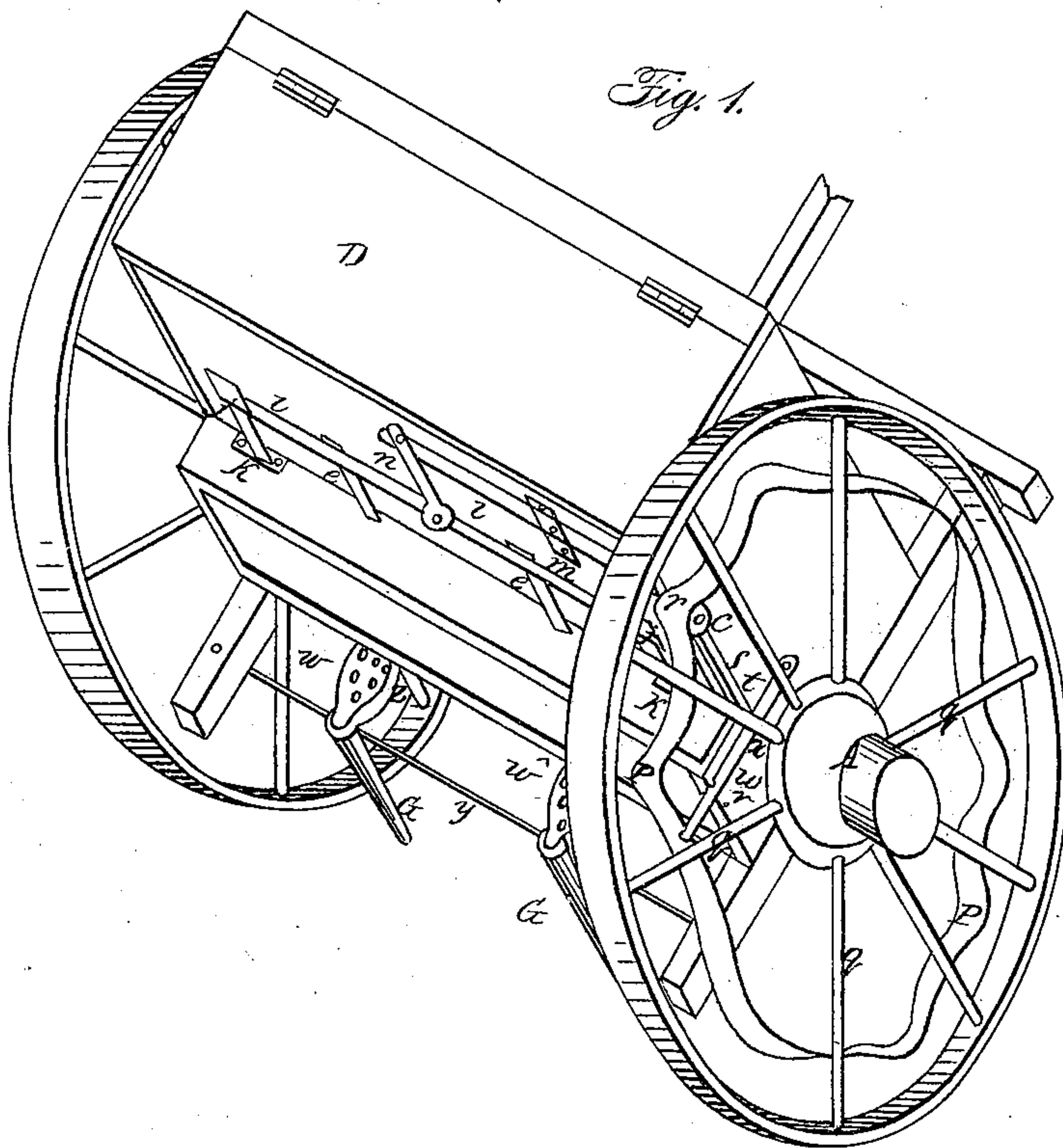


Fig. 1.



Witnesses:

Joseph Heckman  
H. A. Myers

Inventor:

L. B. Myers  
Garnier



# UNITED STATES PATENT OFFICE.

LEWIS B. MYERS AND HENRY A. MYERS, OF MASSILLON, OHIO, ASSIGNORS  
TO THEMSELVES AND ISAAC MYERS, OF SAME PLACE.

## IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. 16,772, dated March 3, 1857.

*To all whom it may concern:*

Be it known that we, LEWIS B. MYERS and HENRY A. MYERS, of Massillon, in the county of Stark, in the State of Ohio, have invented a new and useful device for measuring and distributing grain, seeds, or fertilizers, and other new and useful improvements in seed-drills; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a view in perspective. Fig. 2 is a transverse section of the seed-box. Figs. 3, 4, and 5 are vertical sections of an aperture through a cylinder, with the piston-heads in different positions. Fig. 6 is a bottom view of a section of the axle, frame, &c.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists in a novel method of measuring and distributing grain, seeds, or fertilizers.

In carrying out our invention in an upright position we prefer continuing the back and lower part of seed-box D backward beyond the main box, forming a square offset, *a*, the floor of which is horizontal, while the floor of the main box is raised on an inclined plane, for the purpose of directing the seed back and in offset *a*, as shown in Fig. 2.

*b*, Fig. 2, is an aperture through the floor of the seed-box, having a lining, *c*, in it, which extends out below to give the aperture a proper length; but if the part of the floor through which the aperture passes is of suitable thickness and hardness no lining is required. Any number of apertures, with a corresponding number of seed-tubes, may be used.

*d*<sup>2</sup> are piston-heads on the lower end of rod *e*, and may be set at any distance apart on rod *e* not to exceed the length of aperture *b*. The upper piston-head, *d'*, is made of india-rubber or other yielding material, of a suitable thickness to be sufficiently yielding, and of the same form and size in diameter as aperture *b*, having a hole through its center, through which rod *e* passes, and is secured on the same by two nuts, *f*, or by a shoulder on rod *e* and one nut, whose diameters are considerably less than that of piston-head *d'*. The lower piston-

head, *d*<sup>2</sup>, is of the same form and size in diameter as aperture *b*, with a hole through its center from end to end, through which rod *e* also passes. The upper surface is convex or tapered from all sides toward the center. The lateral sides are straight, and is attached to rod *e* by a thumb-screw, *g*, or in the manner of a nut and screw. The piston-rod *e* is firmly secured to beam *i* by a nut or key, and passes down through a corresponding hole in the top of offset *a* and aperture *b* in the floor of the seed-box, having on its lower end a graduated scale, *h*, each point indicating a definite quantity to the acre at which to set lower piston-head, *d*<sup>2</sup>.

*i* is a horizontal beam, having a guide-rod, *j*, firmly secured to each end.

*k* is a guide-plate, one near each end of the upper and lower surfaces of offset *a*, through which guide-rods *j* move up and down.

*l* is a lever supported and kept in place by cap-fulcrum *m*, which is attached to the back side of the main seed-box and allows free motion to lever *l*.

*n* is a pitman connecting at the upper end with one end of lever *l* by a movable joint and at the lower end with beam *i*.

*o* is a pulley on one end of lever *l*, gearing with cam-circle *p*, which is attached to spokes *q* of axle-wheel A, having as many cams *r* in the circle as the number of discharges required per revolution of axle-wheel A, and of such a form and size as will impart a gradual up-and-down as well as the required length of motion to lever *l* and its attachments.

*s* is a pitman connecting at its upper end with lever *l*, between pulley *o* and end of seed-box, by a loose joint, and at the lower end with lever *t* by a similar joint. Lever *t* is attached at the front end to the end of main seed-box. The other end projects back beyond offset *a*, forming a handle, *u*, for the operator.

*v* is a pin for holding down lever *t* when pressed down by the operator in ungearing lever *l* and its attachments. The front end of seed-spout *w* is attached by a staple and pin, *x*, the other end to rod *y*.

*z* is a vertical projection or elevation on the floor of seed-spout *w*, of a suitable form, for the purpose of preventing the seed from sliding down the seed-spout in a mass as discharged



by distributing devices generally, effecting thereby a steady, gradual, and equal flow of the seed down the seed-spout into the seed-tubes. One or more may be used, and be attached on, raised out of, or cast with the floor of the seed-spout, and be arranged diagonally when more than one is used, and to have it under the discharge of the distributing device if but one is used.

E is a rod, one for each seed-tube, attached to axle B at its upper end, with its lower end bent into a hook or circle, F, to receive the lower end of the leather tube G, for the purpose of directing the same and dropping the seed in front and between the seed-tubes at pleasure in sowing in low wet ground. The seed-tubes, being in their usual position, cover the seed thus dropped in ridges, with a channel between them. Seed sown in low and wet ground by drills in the usual way is more subject to drowning than when sown broadcast. This manner of sowing by a drill, being just the reverse of that, prevents drowning of the seed before and after it has vegetated more effectually than broadcast sowing.

*Operation of the Distributing Device.*—Suppose piston-heads  $d$ , 1, and 2 at that point of their motion when both are in aperture  $b$ , as shown in Fig. 4, an inclosed chamber is formed between them in the aperture. From this point piston-heads  $d$  move once in the one direction far enough to bring piston-head  $d'$  out of the aperture at the one end, and yet allow piston-head  $d^2$  to remain in the aperture, as shown in Fig. 3, and then in the opposite direction far enough to bring piston-head  $d^2$  out at the opposite end of the aperture, and yet allow piston-head  $d'$  to remain in the aperture, as shown in Fig. 5. Thus the piston-heads pass out of aperture  $b$  alternately, while one or the other is always in to keep it closed, as shown in Figs. 3 and 5.

This distributing device may be operated in any position without changing its mechanism or principle of operation.

*Operation with seed.*—Lever  $l$ , gearing with cam-circle  $p$ , imparts an up motion to beam  $i$  and its attachments, which return down by their own weight or gravity; but if not sufficient when made light, additional weight may be attached. Now, when the piston-heads  $d'$  and  $d^2$  are raised up as high as shown in Fig. 3 piston-head  $d'$  is up in the seed-box and piston-head  $d^2$  remains in aperture  $b$ , keeping it closed. In this position the seed rolls between the two piston-heads, filling up the vacuum caused by the upward motion, embedding piston-head  $d'$  in the seed. When they have returned half the down motion piston-head  $d'$  will have entered the aperture  $b$ , as well as all the seed immediately under it, closing it from

above, while piston-head  $d^2$  still remains in the same, forming thereby an inclosed chamber in the aperture  $b$ , as shown in Fig. 4, filled with seed; and when the down motion is completed piston-head  $d^2$  will have passed down through the aperture, opening the inclosed chamber from below, and allow the seed to drop down into spout  $w$ , while piston-head  $d'$  still remains in the aperture, keeping it closed, as shown in Fig. 5. As the piston-heads enter in this position the seed immediately above piston-head  $d'$  sinks down in aperture  $b$  with it, which is again raised into the seed-box by the up motion. Thus a definite quantity is measured and discharged every down motion. Now, to sow a less quantity per acre, raise piston-head  $d^2$  on rod  $e$  nearer to piston-head  $d'$ , thereby lessening the capacity of measuring-seed chamber formed in the aperture  $b$  at half the down motion, when a quantity will be measured and distributed accordingly. To shut off the discharge of seed through any one of the apertures, raise piston-head  $d^2$  on rod  $e$  high enough that it will not come entirely out of aperture  $b$  on the down motion.

*To sow broadcast.*—Detach seed-spouts  $w$  at their front-end connection, leaving them swing back on rod  $y$ , when the seed is dropped down in front of them and the seed-tubes. As the seed leaves apertures  $b$  the conical form of piston-heads  $d^2$  will distribute it on the surface of the ground more uniform and accurate than it can be done by hand. The seed-tubes following up behind will cover it up, or they may be raised up out of the ground and a harrow be attached for that purpose. The quantity thus sown per acre is regulated the same as described for sowing in drills.

This distributing device will distribute oats, barley, and buckwheat with as much facility, uniformity, and accuracy as wheat, grass-seed, or garden seed in drills or broadcast, without choking or breaking of grains.

We are aware that rollers, valves, and slides have been used in seed-drills for distributing the seed. Therefore, being old devices, we do not claim them; neither do we claim an aperture nor two piston-heads on one rod separately; but

We claim—

Measuring and distributing grain, seeds, or fertilizers by two or more piston-heads and one rod, or their equivalent, operating in and out of an aperture, in the manner and for the purpose substantially as described.

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In presence of—

A. HAMMERSMITH,  
W. E. LOUDON.