

H. A. & L. B. MYERS.

Grain-Drill.

No. { 1,637, }  
32,641. }

Patented June 25, 1861.

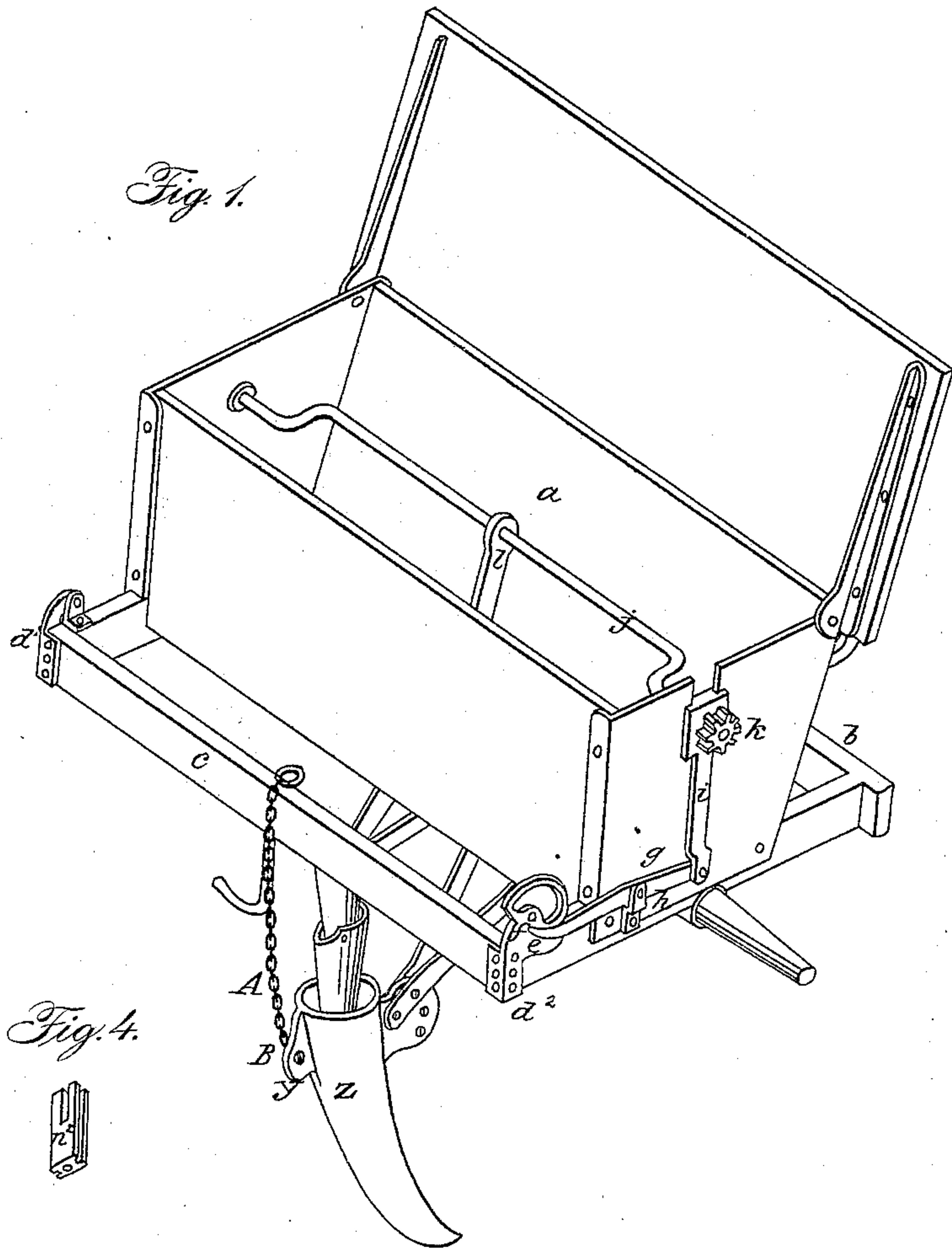


Fig. 2.

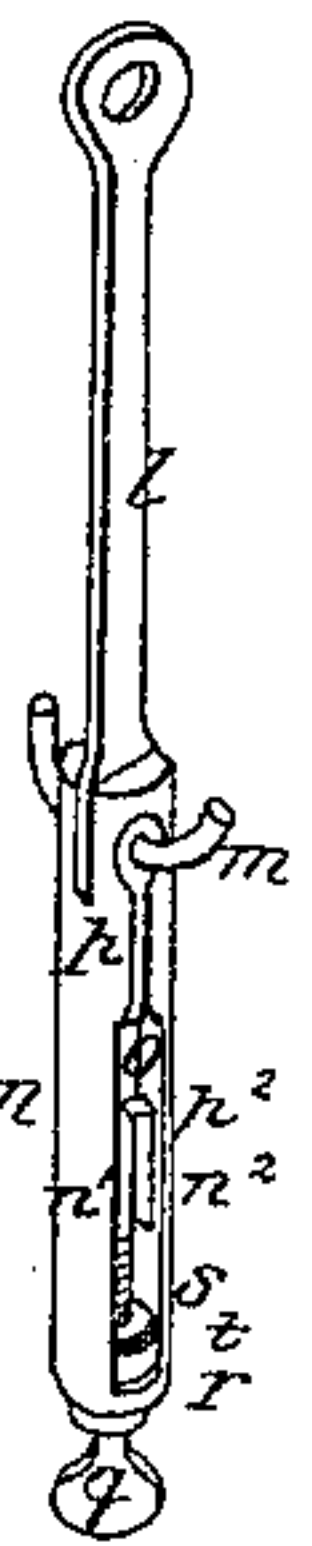


Fig. 3.



Fig. 4.



Fig. 9.

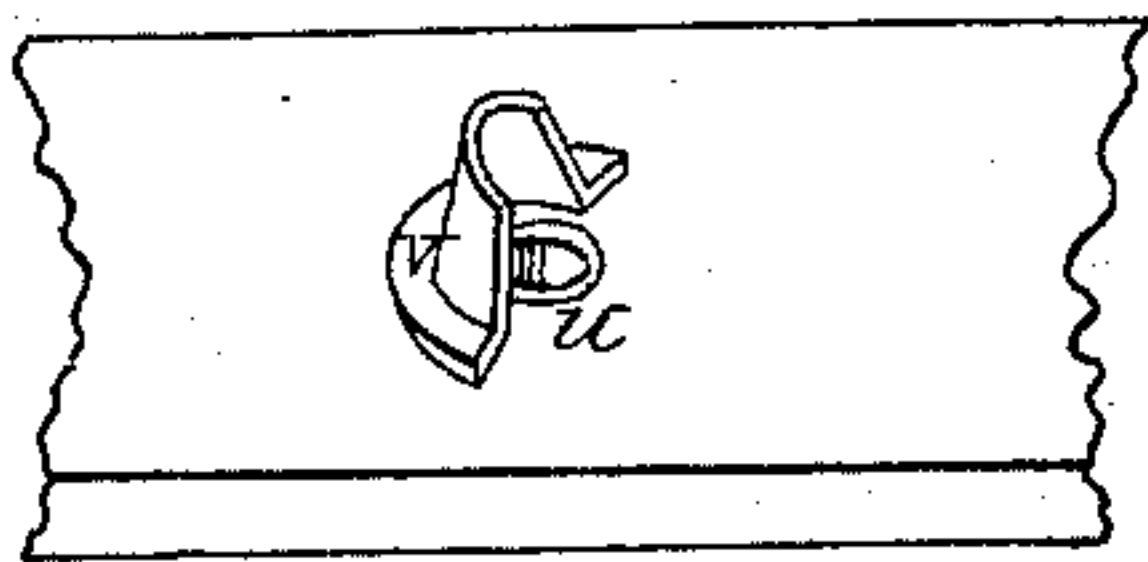


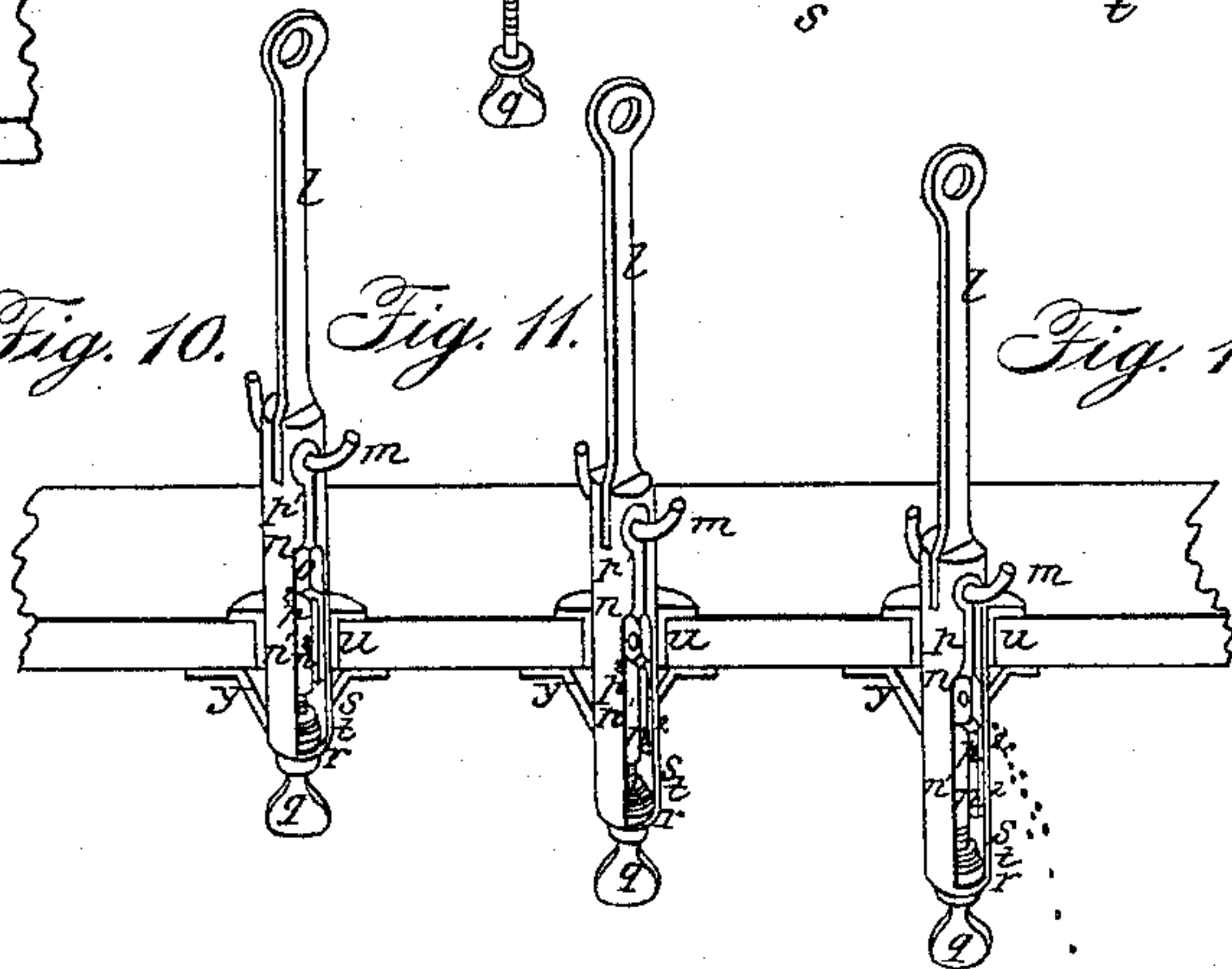
Fig. 5. Fig. 6. Fig. 7. Fig. 8.



Fig. 10.

Fig. 11.

Fig. 12.



Witnesses:

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# UNITED STATES PATENT OFFICE.

H. A. MYERS AND L. B. MYERS, OF ELMORE, OHIO.

## IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. 32,641, dated June 25, 1861.

*To all whom it may concern:*

Be it known that we, H. A. MYERS and L. B. MYERS, of Elmore, in the county of Ottawa and State of Ohio, have invented new and useful Improvements in Grain-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 view of the double piston; Fig. 3, a view of the upper piston; Fig. 4, a view of the lower or movable piston; Fig. 5, a set-screw; Fig. 6, a nut; Fig. 7, a metallic washer; Fig. 8, a gum-disk; Fig. 9, a view of the floor of seed-box turned under side up. Figs. 10, 11, and 12 are sectional views of apertures through the floor of seed-box, with the conical shelf and piston in their relative places.

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

Our invention consists in a novel method of measuring and striking off grain without the aid of brushes or gum, in making a double discharge of the grain after being measured off, and in novel hinges and connections with lever for raising and keeping up the lifting-board and throwing in and out of gear.

$a$  is the seed-box;  $b$ , the frame;  $c$ , the lifting-board, which is secured at both ends to the frame by hinges  $d'$  and  $d''$ , which are so formed as to place the board  $c$  when down entirely behind and when up entirely in front of their centers or joints, and when turned up in a line perpendicular will remain up of itself, while its own weight and that of the fluke draw it still farther over center against the box. The upper end of hinge  $d''$  expands into an eccentric ear, and with arm  $e$  forms a circular slot or jaw,  $f$ , which receives and firmly holds the one end of lever  $g$ , when the lifting-board is turned down and the machine ready for operation. Lever  $g$ , at the middle, works on a joint or adjustable-cap fulcrum,  $h$ , and at the other end connects by a joint with an upright arm,  $i$ , the upper end of which works by guides in a slot in the end of seed-box  $a$  and forms a bearing for the gear end of crank-shaft  $j$ , which extends from one end of seed-box to the other.

$k$  is the pinion, on the one end of the crank-shaft  $j$ .

$l$  is the pitman, which is slipped on shaft  $j$

at one end and at the other end connects with the upper end of double piston  $n$  by a movable joint. The joint-pin  $m$ , projecting out each side for agitators, as shown in Figs. 2, 10, 11, and 12.

$n'$  and  $n''$  constitute the double piston  $n$ , which together form two adjustable cavities,  $o$ , diametrically opposite each other, of somewhat a diamond shape. Each cavity converges at both upper and lower end into a narrow and shallow groove,  $p'$  and  $p''$ . The pistons  $n'$  and  $n''$  are held together, and the cavities  $o$  enlarged to any size required, by means of set-screw  $q$ , which works by a swivel-joint, to which a uniform tension is given to keep the screw from turning of itself by an elastic disk,  $r$ , placed between the end of piston  $n'$  and nut  $s$ , with a metallic washer,  $t$ , placed under the nut to protect the disk against friction.

$u$  is a metallic aperture through the floor of the seed-box, in which double piston  $n$  operates up and down, as shown in Figs. 10, 11, and 12.

$v$  is the conical shelf whose base is attached to the under side of floor of seed-box around the double piston  $n$ , at one of the sides provided with a cavity,  $o$ , as shown in Figs. 9, 10, 11, and 12.

Operation: When motion is given to the pinion, crank-shaft  $j$ , revolves round and imparts a straight up-and-down motion to double piston  $n$ . When the piston is up, as shown in Fig. 10, cavities  $o$  fill with seed. As the piston moves down to the position shown in Fig. 11, the edges of the aperture stroke off cavities  $o$  and slide the excess of grain along the oblique edges of the cavities  $o$  to the narrow shallow grooves  $p'$  and allow it to escape without injury. In this position cavities  $o$  are closed from above and below with the exception of the grooves  $p'$  and  $p''$ , which are only deep enough and wide enough to allow a grain to escape in closing off without breaking same, but not to leak. When cavities  $o$  have passed down through the aperture, as shown in Fig. 12, cavity  $o$  on the one side discharges direct, while that on the other side discharges into the pocket formed by the piston when down with conical shelf  $v$ , as shown in Fig. 12, which opens and discharges on the return motion of the piston, as shown in Fig. 10. The grain thus struck off by metallic surfaces and discharged up and down with rapidity is meas-



ured and distributed with more than ordinary precision and uniformity. In turning up lifting-board *c* the eccentric of hinge  $d^2$  bears down the end of lever *g* and raises up the shaft and pinion for ungearing. At the same time the fluke is raised up, and by letting the board down arm *e* of hinge  $d^2$  directs end of lever *g* into jaw *f* and draws down shaft and pinion for gearing.

We claim—

The conical shelf *v*, with the up-and-down movement of the piston, as and for the purpose described.

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In presence of—

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