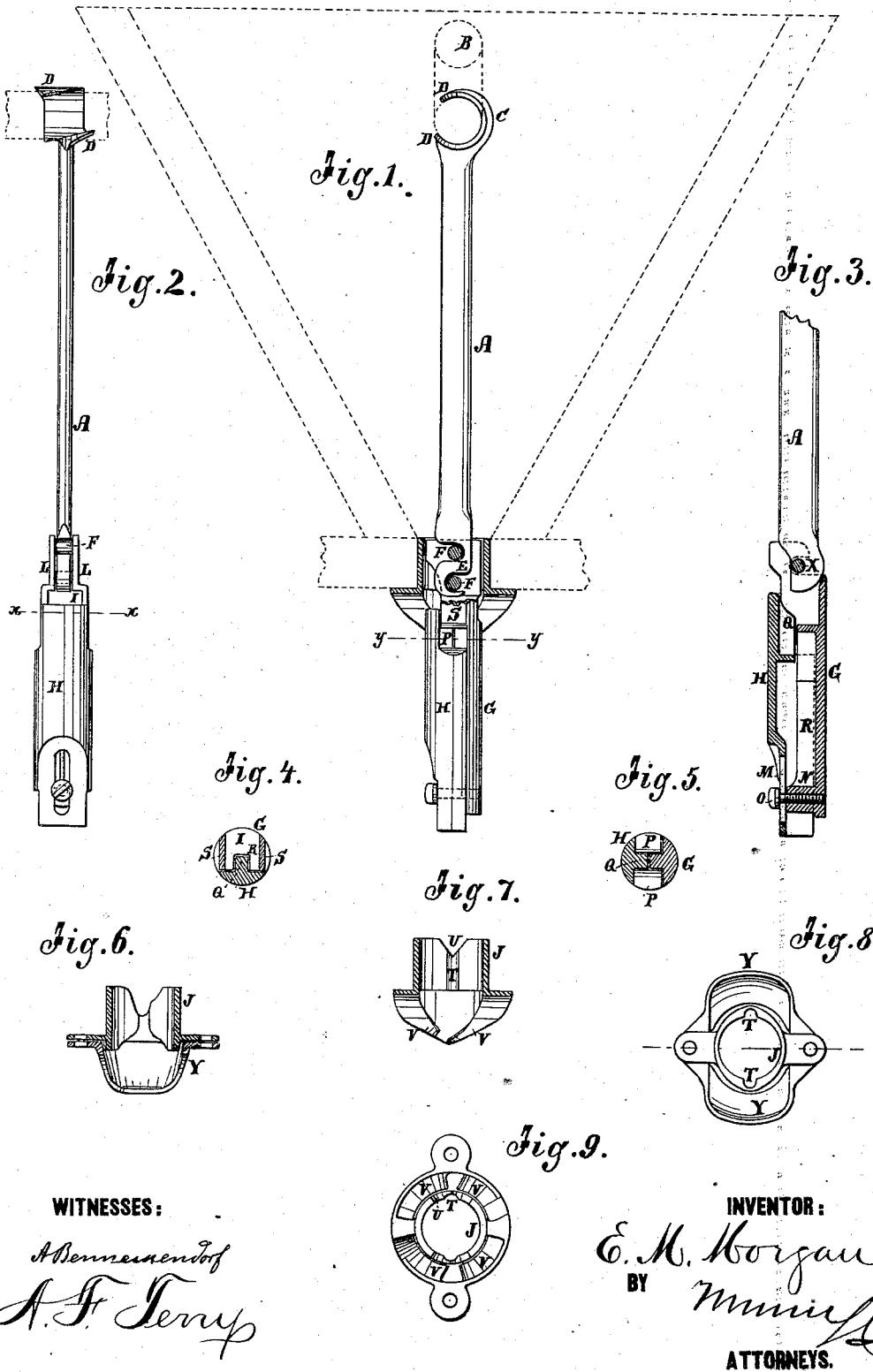


E. M. MORGAN.
Seed-Dropper.

No. 160,611.

Patented March 9, 1875.



WITNESSES:
A. F. Terry

INVENTOR:
E. M. Morgan
BY *M. M. Morgan*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ELIAS M. MORGAN, OF BELLEVILLE, ILLINOIS, ASSIGNOR TO HENRY RENTCHLER, OF SAME PLACE.

IMPROVEMENT IN SEED-DROPPERS.

Specification forming part of Letters Patent No. **160,611**, dated March 9, 1875; application filed October 3, 1874.

To all whom it may concern:

Be it known that I, ELIAS M. MORGAN, of Belleville, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Seed-Droppers, of which the following is a specification:

My invention consists of a new and improved piston and aperture for the distribution of seed or grain.

I am aware that the piston-feed is well known; therefore my claims will be upon the peculiar construction of the different parts.

The pitman is for the purpose of connecting the piston with a crank-shaft, situated in the upper part of a hopper, and by the revolving of the shaft the piston works up and down through the aperture or cup.

Figure 1 is a sectional elevation of the aperture, and side elevation of the piston and connecting-rod; also a dotted section of the hopper, in which the dropper is to be used. Fig. 2 is a side elevation, the piston and connecting-rod showing a modified arrangement of the connection. Fig. 3 is a vertical cross-section of Fig. 1; Fig. 4, a horizontal cross-section of Fig. 2 on the line *x x*; Fig. 5, a horizontal section of Fig. 1 on the line *y y*; Figs. 6, 7, 8, 9, views of the seed-distributing aperture in section and plan.

Similar letters of reference indicate corresponding parts.

For connecting the pitman A to the crank-shaft B it is provided with a peculiar hook, C, having extended points D on the upper and lower sections reverse to each other. By turning the pitman a little to one side the hook may be slipped on or off the crank-shaft, and by the extended points is prevented from detaching itself from the shaft while the pitman is in a right angle to the shaft. I have made my piston in two sections, G H. At the upper end of one section is a slotted opening, in which the two cross-bars are fixed. On the outside of the said slotted opening are prominent shoulders J for the more special purpose of agitating the grain, and thereby securing the filling of the seed-openings.

The advantages of these means of agitation over other agitating contrivances will be seen from the fact that they pass down into the

aperture K entirely below the grain and lift it up, thereby securing a loose and lively condition of the grain, which is the most favorable to a uniform flow of the grain to the distributor.

The other section of my piston is provided with a slotted hole, M, at the lower end, through which a bolt passes for the purpose of attaching it to the other section, on which is a raised nut, N, to receive the bolt O, and by means of the slotted hole the section may be moved down or up to increase or diminish the size of the seed-openings P.

The two sections are so put together as to form the adjustable seed-openings by means of recesses in their edges, and thereby avoid the use of a slide and thumb-screw with nut-washers, &c., altogether, which is a great saving of labor and expense, and also of loss on account of imperfect work frequently done in the fitting up of the parts mentioned.

The seed-openings are separated from each other by an inside flange, Q, part of which is on each section of the piston, and being fitted in grooves form guides, which, combined with the raised nut and outside flanges of the movable section, keep the two sections in proper relation to each other. The rib R between the end of the flange separating the seed-openings and the raised nut is to strengthen the casting. Just above the grain recesses is a plane or flat surface, S, which, in connection with grooves in the apertures, hereinafter described, allows the grain or seed to escape breakage, which otherwise would occur on the descent of the piston. The movable section is so fitted to the other as to have its bearing-points at the extreme ends, so that the pressure of the bolt holding the two sections together comes between the two bearing-points, and thus utilizes the spring of the metal, which, being constantly exerted on the bolt, prevents it from getting loose.

My aperture or cup, through which the piston works, is provided on either side with a groove, T, headed by a V-shaped recess, U, which strikes off the seed as it is measured at each motion of the piston, and also said recesses gather the grain or seed in toward the center or groove, and the seed thus driven to the

center is held in a position to escape breakage, as the plane surface on the upper part of the piston enters the aperture. Below the aperture are chambers on each side, in each of which are placed two chutes, V, emptying toward each other, the end of one being below the other, so that the grain from the upper chutes strikes the other end, and is thus doubly retarded in the downward progress, and said chambers are placed on each side of the aperture, so that when the piston descends the seed or grain from the seed-openings in the piston is discharged in part onto the chutes in said chambers, and thereby detained or prevented from falling as quickly as the rest of the discharge, and by this means I secure a more uniform flow of the grain or seed in its passage to the ground. I can accomplish the same end by a detached cup, Y, (held by the same screws that hold the aperture) without chutes, but constructed in such a shape as to retard the flow of the grain as much as is necessary for the purpose before described; and also by the use of these chambers I prevent the deflection or scattering of the seed,

and direct it downward in a straight line. This scattering has been partially obviated heretofore by crimping leather half-funnels, and nailing them to the bottom of the hopper at each piston or distributor, the labor and expense of which is avoided by my invention.

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

1. A grain-hopper piston, made in two sections, G H, having guides Q, nut N, and slot M to enable them to be clamped by a screw-bolt, O, at different points of adjustment, and thus regulate the size of seed-apertures.

2. The combination, with the piston, of the seed-cup, having grooves T and recess U, as and for the purpose set forth.

3. A seed-cup, having chutes V, discharging toward each other, one below the other, and placed on opposite sides of aperture, as and for the purpose described.

ELIAS M. MORGAN.

Witnesses:

H. RENTCHLER,
JOHN W. McCULLEY.