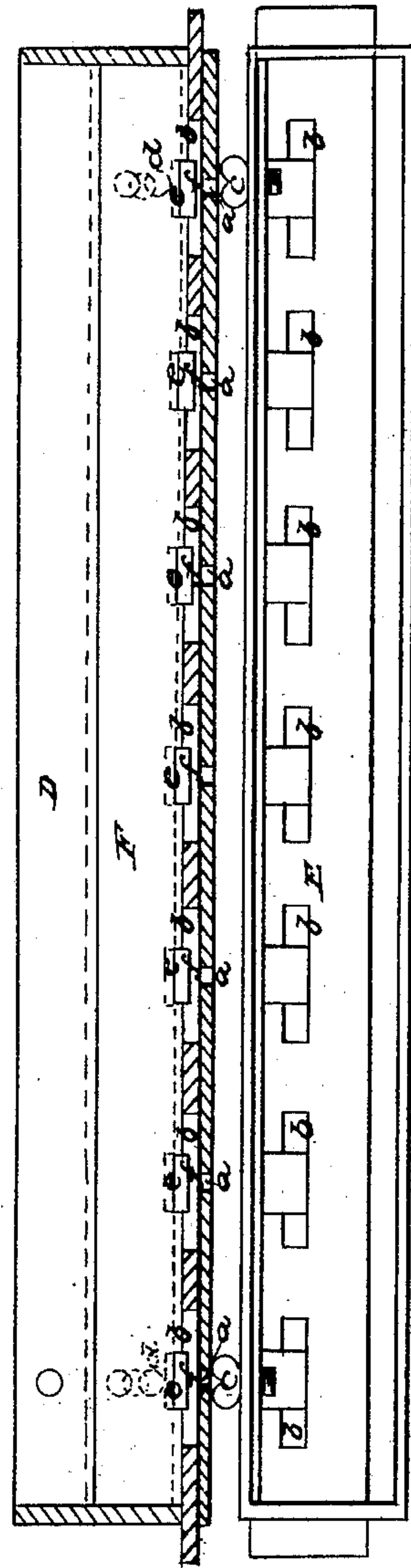
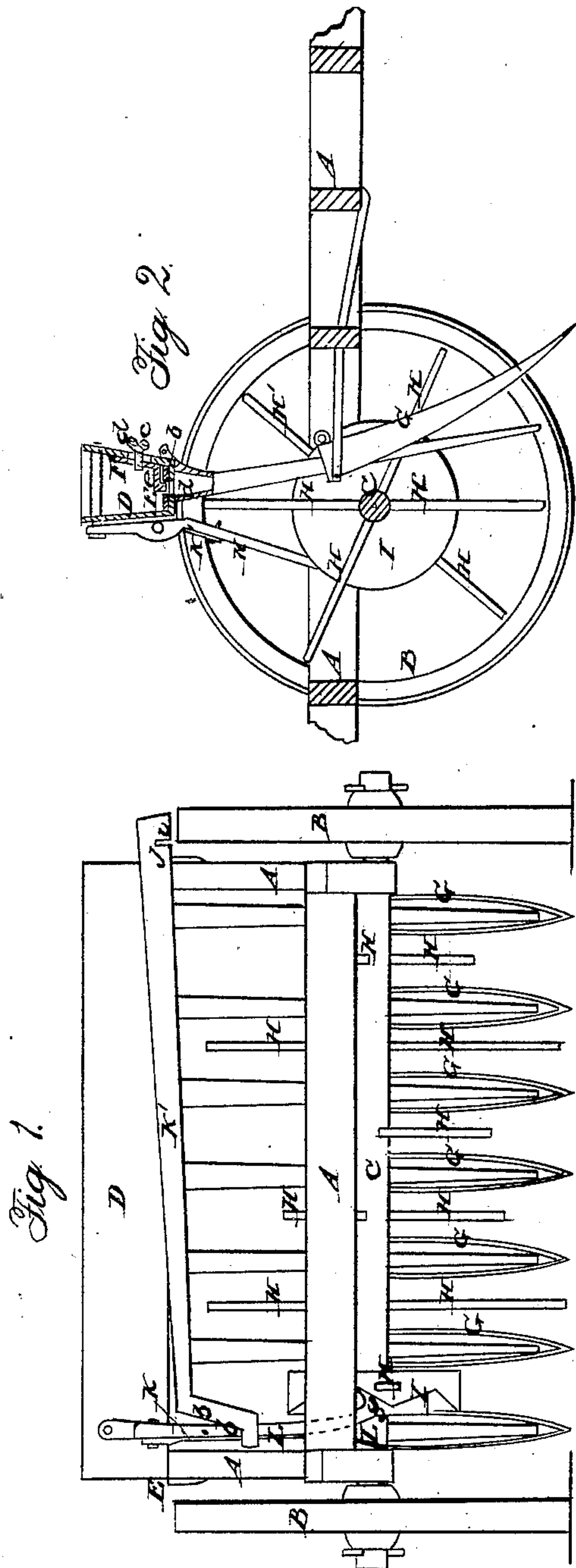


P. M. GUNDLACH.

Grain-Drill.

No. 18,690.

Patented Nov. 24, 1857.





# UNITED STATES PATENT OFFICE.

PHILIP M. GUNDLACH, OF BELLEVILLE, ILLINOIS.

## IMPROVEMENT IN SEED-DRILLS.

Specification forming part of Letters Patent No. 18,690, dated November 24, 1857.

*To all whom it may concern:*

Be it known that I, PHILIP M. GUNDLACH, of Belleville, in the county of St. Clair and State of Illinois, have invented a new and useful Improvement in Seed-Drills; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear end view of a seed-drill constructed with my improvements. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a plan, and Fig. 4 a vertical section, of the hopper and distributing apparatus detached from the frame.

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

My invention embraces, first, the arrangement consisting of a variable vibrating slotted slide, vertical adjustable plate with overhanging guards and downward-projecting spurs, and perforated hopper for united operation, as presently described, whereby the discharge is rendered certain, and the quantity of seed sown to the acre can be regulated and the drill adapted for planting oats, corn, wheat, and every description of seed.

My invention embraces, second, the arrangement of a series of radial arms in spiral lines directly upon the propelling-axle, and of said axle and arms behind the seed-tubes, and in such relation to the same that the arms shall pass successively between the lower extremities of the tubes and clear the same of vines or other impediments to their progress.

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

A represents the frame of the seed-drill; B B C, the truck for sustaining and propelling the same.

D is the hopper, with perforations *a a* in its bottom; E, the vibrating seed-slide, arranged on the bottom of the hopper, and furnished with a series of oblong slots, *b b*. F is the vertical gage and guard-plate, arranged against the front side of the hopper, and in a manner to be adjusted up and down by means of set-screws *c c* and slots *d d*, said plate having a series of narrow overhanging guards, *e e*, and downward-projecting spurs *f f e e*; G G, the drill-tubes, arranged in front of the axle C of the truck. H H are the radial clearing-rods, placed

in spiral lines round the axle C, and made of sufficient length to just clear the ground, and to extend and pass up between the lower extremities of the tubes in a manner to remove weeds, grass, or other impediments which may collect on their points and interfere with their entrance into the soil. I is the serpentine cam, arranged in and near one end of the axle C. K is the standard, which supports a friction-roller which comes in contact with the cam, and on which the connecting-rod K' of the vibrating slide F is adjusted by means of a series of adjusting-holes, *b b*. This standard is pivoted by one end to the hopper, while the other end remains pendulous. L is the spring which holds the friction-roller or lower extension, *g*, of the standard snug against the cam, no matter how the rod K' of the slide may be adjusted. This spring is placed against the outer side of the standard K, as shown in Fig. 1. The connecting-rod K' is connected to the slide by a slot, *i*, and bracket *j*, as shown in Fig. 1, and can therefore be disconnected readily when it is desired to stop the feed. The drill-tubes are made entirely open at their back side, so that they shall not hold dirt in their ends, and thus render imperfect the discharge of the seed.

Operation: The operation of the distributor is as follows: If turnip-seed, wheat, or other small seed have to be planted, the gage and guard-plate is lowered to the position shown in black in Fig. 3, so that the space between the bottom of the hopper shall be narrow, at the same time the stroke of the slide is lengthened. By thus adjusting the gage-plate and slide the seed are prevented from passing off too freely, and are planted regularly in drills, and in uniform quantities. If oats are to be planted, the space should be broad and the stroke long, although they are long and thin. This manner of adjustment for planting oats is necessary because more are required to be sown to the acre, and also because they are very liable to choke. If corn is to be planted, the space should be broad, as shown in red lines, and the stroke short, because it is planted irregularly or in hills, and because it is thick and very ready to discharge.

From experiment it is found that it is not good to have a short stroke with small or thin long grain, nor a long stroke with thick grain, and therefore, in order to plant all kinds



of seed in proper manner with the same machine, it is very important to have my improved distributor.

It may be evident that by having the guards *e e* overhang the perforations *a a* at the center of the slots *b* of the slide *E* seed will be discharged at each half-vibration of the slide. It may also be evident that it is by having the spurs *f f* of the guards extend down into the slots that the passage of the seed to the perforations, unless carried forward by the slots in the slide, is prevented to the extent necessary to prevent premature discharge.

I am aware that clearers have been used to work between cultivator-teeth for the purpose of clearing said teeth or tubes from stubble, &c., and I do not therefore claim such feature, broadly, but only with reference to my particular arrangement therefor.

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

1. The arrangement consisting of a variable vibrating slotted slide, *E b*, vertical adjustable plate *E*, with a series of overhanging guards, *e e*, and downward-projecting gage-spurs *d d*, and perforated hopper *D a*, for united operation, substantially as and for the purposes set forth.

2. The arrangement of a series of radial arms, *H H*, in spiral lines directly upon the propelling-axle *C*, and of said axle and arms behind the seed-tubes, and in such relation to the same that the arms pass successively between the lower extremities of the tubes, substantially as and for the purposes set forth.

The above specification of my improvement in seed-drills signed by me this 26th day of October, 1857.

PHILIP M. GUNDLACH.

Witnesses:

G. YORK ATLEE,  
J. P. JACOBS.