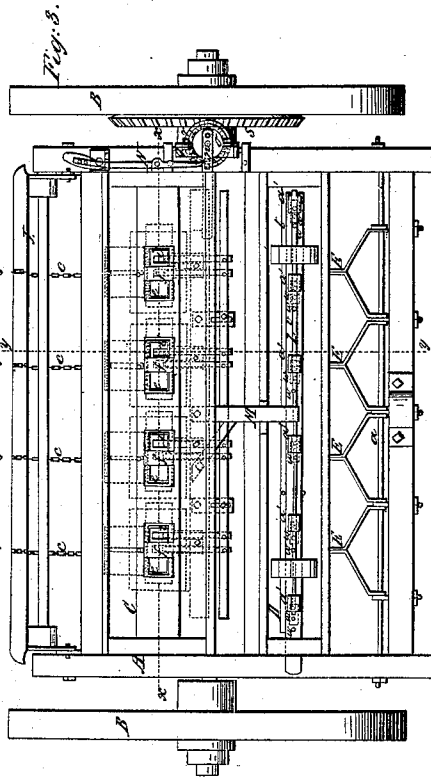
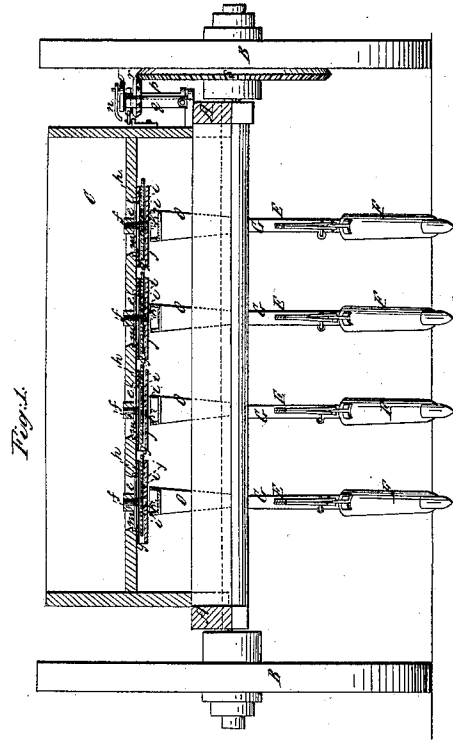
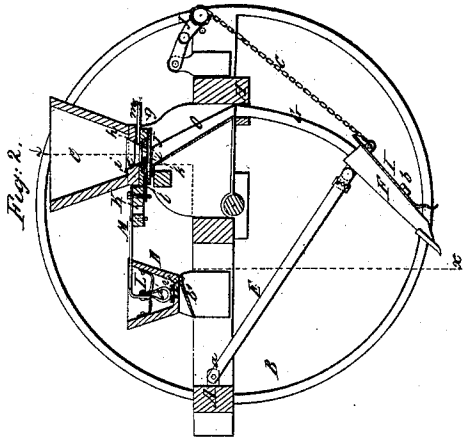


B. BARNARD.
Grain Drill.

No. 30,115.

Patented Sept. 25, 1860.



Witnesses
J. W. Coombs.
R. S. Spencer.

Inventor
Barnard
per Munn & Co
Attys.

UNITED STATES PATENT OFFICE.

BENJAMIN BARNARD, OF FARMINGTON, OHIO.

IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. 30,115, dated September 25, 1860.

To all whom it may concern:

Be it known that I, BENJAMIN BARNARD, of Farmington, in the county of Trumbull and State of Ohio, have invented a new and Improved Seeding-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of my invention, taken in the line *x x*, Figs. 2 and 3; Fig. 2, a transverse vertical section of the same, taken in the line *y y*, Fig. 3.

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

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a rectangular frame, which is mounted on wheels B B, and has two seed-boxes, C D, placed on it. These seed-boxes are parallel with each other, as shown clearly in Fig. 3. To the front end of the frame A there are attached a series of arms, E, said arms being fitted on a rod, *a*, and allowed to work freely thereon. To the back end of each arm E there is a hollow tooth, F, into the upper ends of which flexible tubes G pass, the upper ends of the tubes G being fitted in a traverse-bar, H, at the back part of the frame A, as shown clearly in Fig. 2. To the back side of each tooth F a gage, I, is attached. These gages are formed of metal plates attached to the teeth by bolts *b*, which pass through oblong slots in the plates and into the backs, so as to admit of the plates being adjusted higher or lower, as may be desired. The lower ends of the plates are bent outward and rest on the ground, and of course regulate the depth of the penetration of the teeth F. (See Fig. 2.) To the back side of each tooth F there is attached a chain, *c*, and the upper ends of these chains are attached to a hinged or swinging frame, J, at the back part of the frame A.

The bottom of the seed-box C has its bottom *d* perforated, or has rectangular openings *e* made through it at equal distances apart. These openings *e* are each divided centrally by a brush, *f*. These brushes serve as cut-offs, as will be presently shown. To the under side of the bottom *d* metal plates *g* are attached, which have openings made through

them, corresponding in size to the openings *e* in the bottom *d*. These plates *g* are recessed or grooved, so as to receive each a plate, *h*, which plates have two holes, *i i*, in them.

To the under sides of the plates *g* plates *j* are attached, which have each one hole, *k*.

The plates *h*, it will be seen by referring to Fig. 1, are fitted and work between the plates *g j*, and each plate *h* is provided with a shank, *l*, which is attached to a bar, K, directly in front of said box C.

Directly over each plate *g* there is placed a slide, *m*. By adjusting these slides the holes *i i* in the plates *h* may be closed, as desired. Each hole *i* is also provided with a slide, *i'*, said slides being attached to the bar K, and by adjusting which the holes *i* may be varied in size as desired. The bar K has a reciprocating movement given it by means of a pitman, *n*, which is attached to a crank-pulley, *o*, the latter having its axis *p* fitted in a small frame, *q*, the lower end of which is connected by a joint to the frame A. The axis *p* of the crank-pulley has a pinion, *r*, fitted on it, and this pinion gears into a wheel, *s*, which is attached to the inner side of and connected with one of the wheels B.

The bottom *t* of the seed-box D is perforated at equal distances apart with holes *u*, and on the bottom *t* a slide, *v*, is placed. This slide *v* is perforated with small holes *w*, several of which are formed over each hole *u* in the bottom *t* of the seed-box *d*. By adjusting the slide *v* therefore more or less seed may be dropped from the box D, according to the number of holes *w* that are made to register with each hole *u* in the bottom *t*. Within the box D there is placed a longitudinal bar, L, which is connected by a rod, M, with the bar K, and consequently has a reciprocating movement communicated to it from the bar K. To the bar L there is attached a series of metal loop-shaped scrapers, *a'*, the form of which is clearly shown in Fig. 2. These scrapers are attached to the bar L at equal distances apart and directly over the holes *u* in the slide *v*.

To the small frame *q*, in which the axis of the crank-pulley *o* is placed, there is attached a lever, N, as shown clearly in Fig. 3. O represents inclined spouts, which convey the seed from the box C to the flexible tubes G.

The operation is as follows: As the ma-

chine is drawn along, the gearing *r s* communicates a reciprocating movement to the bar *K*, and the holes *i i* of plates *h* receive the seed as said plates move back and forth, the seed being discharged from the tubes *i* as the latter pass underneath the brushes or cut-offs *f* and register with the holes *h* in the plates *j*. (See Fig. 1.) A greater or less quantity of seed may be sown in a given area by regulating the slides *i'*, and any of the holes *i* may be entirely closed by adjusting the plates *m*. Simultaneously with the sowing of the seed from the box *C*, the seed in box *D*, which is more particularly designed for sowing grass-seed, is distributed through the perforations *u w* of the bottom *t* and slide *v*, the amount of seed to be sown on a given area being regulated by adjusting slide *v*. The scrapers *a'* insure an even distribution of the seed from the box *D*. The seed falls from the perforations *k* in the plates *j* into the inclined spouts *O'*, by which

it is conveyed to the flexible tubes *G*, and thence into the hollow teeth *F*. The seed falls from the perforations *u* in the bottom *t* of box *D* on inclined plates *b'*, which serve as scatterers, and insure said seed being sown in a broadcast and even manner.

The machine may be rendered inoperative at any time by adjusting the frame *q* through the medium of lever *N*.

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

The arrangement of the plates *m*, pitmen *n h g j*, slide *v*, scrapers *a'*, and bars *K L*, and rod *M*, as and for the purpose herein shown and described.

BENJAMIN BARNARD.

Witnesses:

ANDERSON DANA,
DANIEL DANA.