

A. BROOKS.

Grain-Drill.

No. 42,069.

Patented Mar. 29, 1864.

Fig. 1.

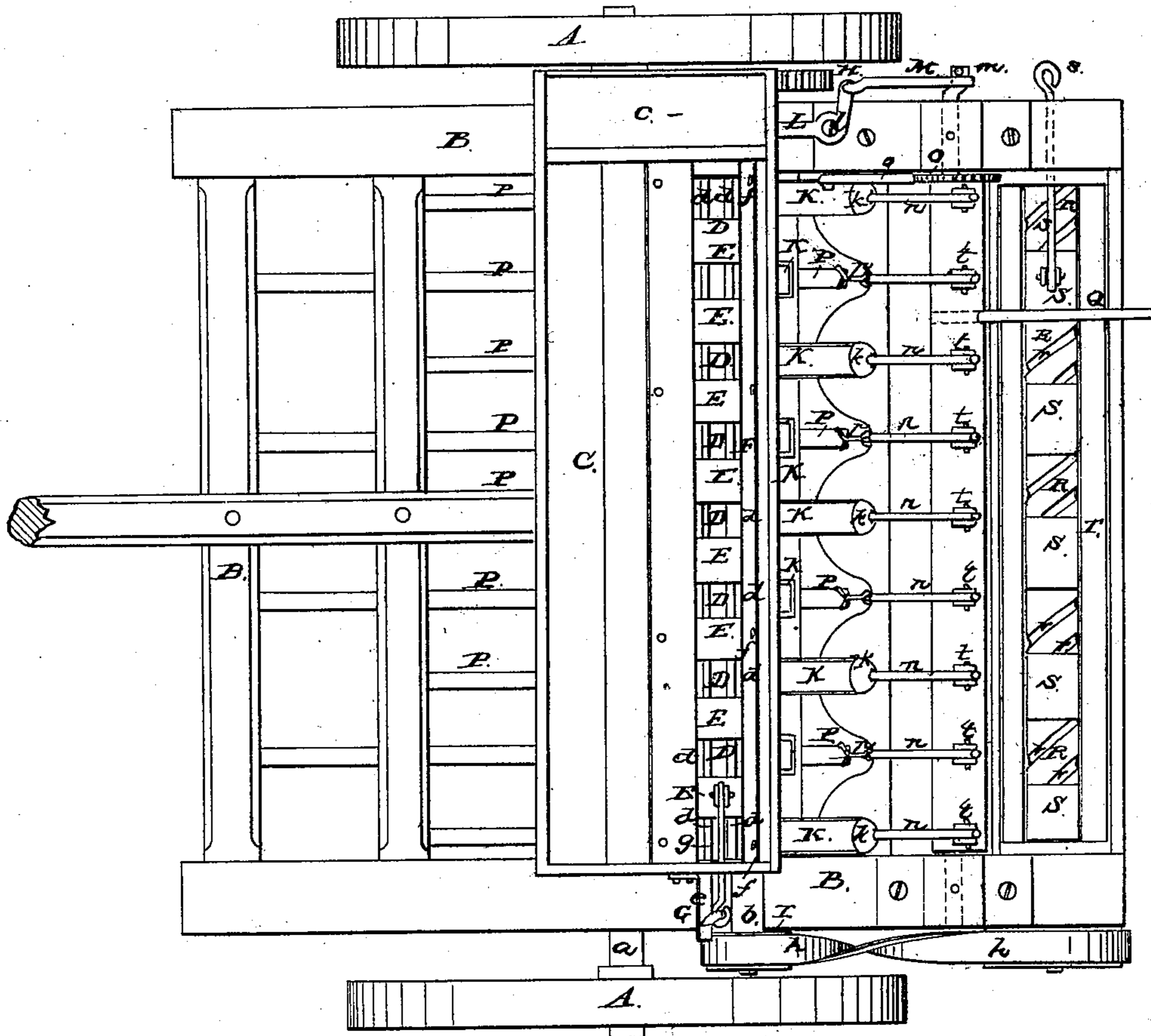
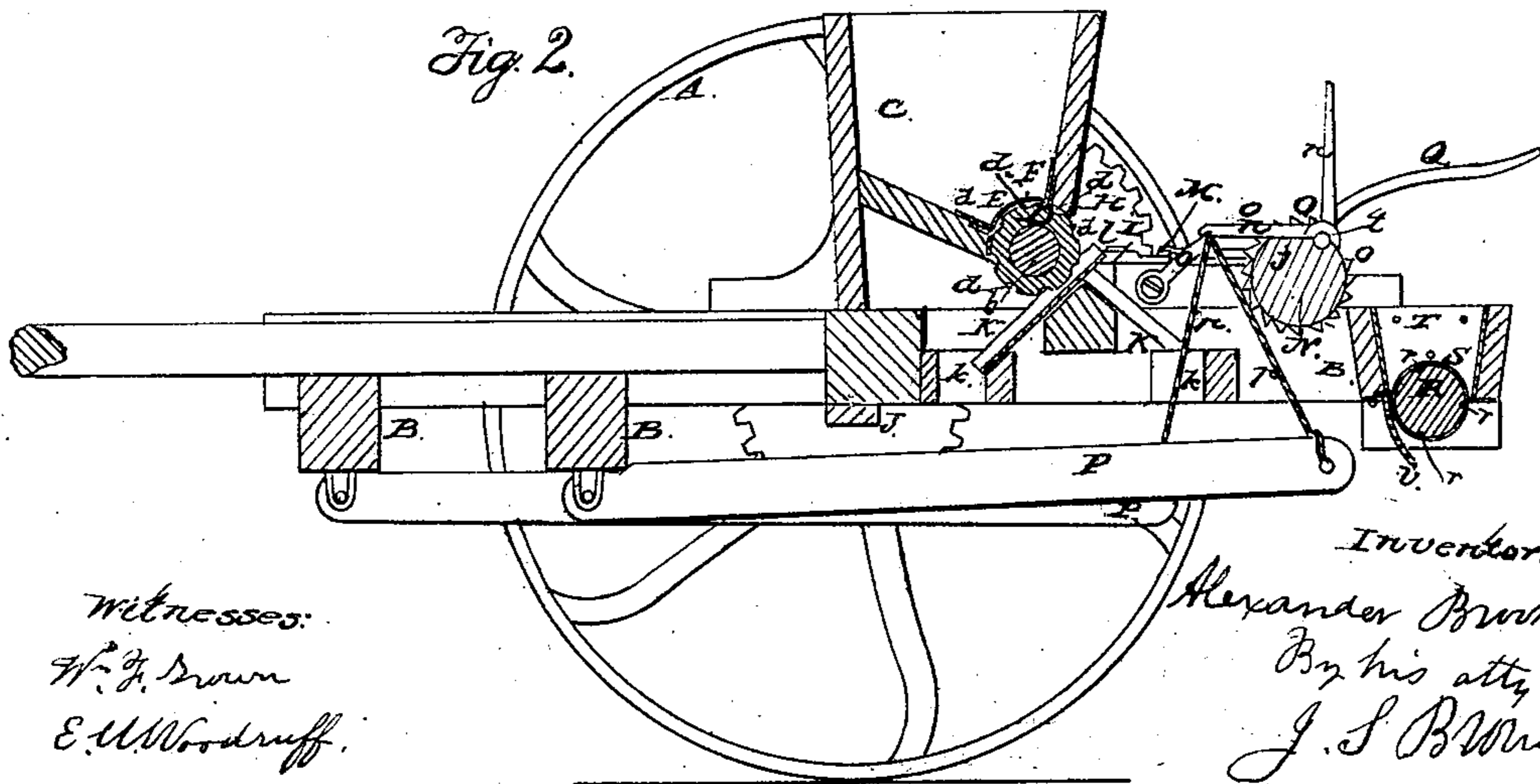


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALEXANDER BROOKS, OF FACTORYVILLE, NEW YORK.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. 42,069, dated March 29, 1864.

To all whom it may concern:

Be it known that I, ALEXANDER BROOKS, of Factoryville, in the county of Tioga and State of New York, have invented a new and Improved Seed-Drill; and I do hereby declare that the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a plan of my improved seed-drill; Fig. 2, a longitudinal vertical section thereof.

Like letters designate corresponding parts in all of the figures.

The general construction of my improved seed-drill may not differ essentially from that of many other seed-drills in use, especially in respect to the driving and supporting wheels A A, frame B, and seed-box C. A cog-wheel, J, Fig. 2, on the hub of the right driving-wheel A gears into another cog-wheel, H, which runs on a shaft, b, extending across the machine in the rear lower corner of the seed-box C, either loosely thereon when simply drawing the machine or coupled thereto and turning the same with it when grain is to be sown. Upon this shaft b is located a series of short seed rollers or disks, D D, of suitable length, and at such distances apart as are required for the drills to be sown, there being mere stationary disks between them to fill up the spaces. These rollers are provided with grooves *d d* parallel, or nearly so, with the axis of the rollers, and of a proper length, depth, and width, and a sufficient number of them equidistant around the periphery of the rollers to sow the largest amount of grain to the acre ever required. These rollers do not occupy spaces in the bottom of the seed-box merely, but rather in both bottom and rear side thereof, substantially as shown in Fig. 2, so that by turning out backward through said side the grain is carried upward rather than downward out of the seed-box. By this means the grain or seed does not clog by the weight of the superincumbent grain, nor is the quantity carried out variable according to the quantity of grain in the seed-box. Above these grooved rollers is a gage-plate, F, adjustable to or from the rollers by screws *ff* passing through slots therein, for the purpose of preventing any grain except what is in the grooves of the rollers from passing out. This plate, together with the upward motion of the roller on the inner side, effectually

divides the grain in the grooves from the mass above without clogging and entirely obviates the use of the brush.

Above and fitting closely over the grooved rollers D D is a concentric sliding register-plate, E, having a set of openings therein corresponding in length, position, and distance apart exactly with the seed-rollers, substantially as shown in Fig. 1, so that they will expose either the whole of all of the rollers at once, or by sliding it endwise it will partially cover all the rollers equally and to any desired extent, or entirely hide them. This plate gages exactly the quantity of grain or seed to be sown by simply exposing varying portions of the grooves *d d*, into which the grain falls, from the greatest amount when the whole rollers are exposed to nothing when the entire rollers are covered thereby. It is moved by means of a handle, *g*, extending out through the end of the seed-box. Attached to the outer end of this handle or rod *g* is an index, G, which indicates upon a scale, *e*, by the side of it the quantity sown to the acre as marked on said scale.

At the rear end of the machine is another seed-box, T, and a similar set of grooved rollers, R R, except that the grooves *r r* run spirally in the peripheries of the rollers, so that the dropping of the seed may be continuous. A similar convex sliding plate, S, moved by a handle, *s*, is also employed to gage the seed sown by the rollers. These rollers sow the seed broadcast, there being a scattering-plate, *v*, Fig. 2, below them to distribute the seed evenly upon the ground. When used in connection with the main seeding apparatus above described, this broadcast apparatus may be employed to sow grass-seed or distribute fertilizers. Either seeding apparatus may, however, be used separately. To give motion to these grooved rollers, a band, *h*, runs from a pulley, I, on the shaft of the rollers D D to another pulley, *i*, on the shaft of the said rollers R R.

Spouts K K receive the grain dropped from the seed-rollers D D and conduct it to the mouths *k k* of the drill-teeth tubes. These spouts are represented as conducting alternately forward and backward, respectively, to two banks or rows of drill-teeth, which are suspended from the bars P P in the usual manner, but not shown in the drawings. These drill-teeth bars are raised or all lowered together or

each one separately, and adjusted to any height, by means of a roller, N, having one side, *j*, flattened, and of a series of right-angled or knee-shaped levers, *n n*, which are hinged to the roller N at *t t*, so that one arm of each lever may rest upon the flattened side thereof, while the other arm projects outward for grasping with the hands. From the forward ends of the levers *n n* cords or chains *p p* extend to the ends of the bars P P to be raised and lowered. Arranged in this manner, when the roller N is fixed its flat side *j* sustains all of the levers *n n* in a uniform position, and consequently the bars P P all at the same height, and by turning the said roller one way or the other by means of a handle, Q, or its equivalent, the bars P P and their drill-teeth are all simultaneously and equally raised and lowered; and when one of the drill-teeth is to be raised separately in case of an obstruction it is readily accomplished by turning its bent lever *n* upward by itself.

There is a ratchet-wheel, O, on one end of the roller N, and into this a pawl, *o*, substantially as shown. This ratchet-wheel and pawl not only serve to hold the roller N in any position for keeping the drill-teeth up when raised, but its principal use is to gage the depth at which the drill-teeth run in the ground, and consequently the depth at which the seed is to be sown. This is a valuable addition to the machine, since it is very desirable to adjust the depth of sowing according to the nature of the soil.

There is also on the end of the journal or gudgeon of the roller N a crank, *m*, which operates through a connecting-rod, M, an angular lever or bell-crank, L, pivoted at *l* on the frame of the machine. This crank-lever moves a clutch (not seen in the drawings) of any suitable construction for coupling the cog-wheel H

to the seed-roller shaft *b* or uncoupling it; and the whole device is so arranged that when the follower N is turned round so as to raise the drill-teeth from the ground the clutch on the shaft *b* uncouples it from the cog-wheel H, and when the roller N is turned so as to let the drill-teeth down into the ground for working the clutch couples the said shaft to the cog-wheel. Thus by the mere turning of the roller N the clutch is automatically operated in such a manner as to sow the grain when the drill-teeth are operating, and not to sow when merely moving the machine from one place to another.

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

1. In combination with the seed-rollers D D, arranged as described, and with ungrooved portions or cylinders occupying the intermediate concentric spaces, the sliding register-plate E, either with or without an index to indicate its movement, arranged and operating substantially as herein set forth.

2. The combination of the flat-sided roller N and hinged angle-levers *n n* with the ratchet-wheel O and pawl *o*, substantially as and for the purpose herein specified.

3. The combination of the crank *m* on the roller N, the connecting-rod M, and crank-lever L, substantially as herein specified, for automatically operating the clutch by which the shaft of the seed-rollers is coupled to the driving cog-wheel H or uncoupled therefrom when the drill-teeth are raised and lowered.

The above specification of my improved seed-drill signed by me this 3d day of November, 1862.

ALEXR. BROOKS.

Witnesses:

HENRY W. CRANE,
A. W. FOX.