J. DAVIS.

Grain-Drill.

No. 50,914. Patented Nov. 14, 1865.

Fig. 1.

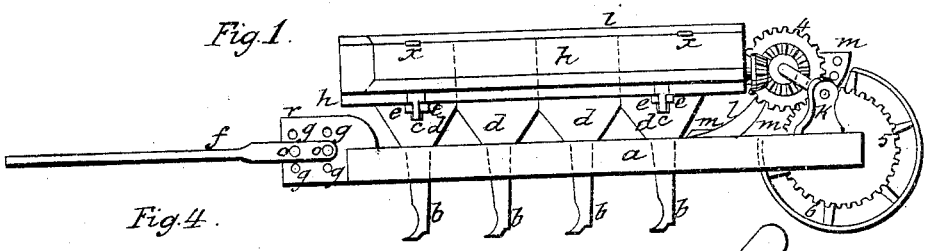


Fig. 4.

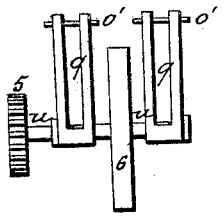


Fig. 2.

Fig. 5.

Fig. 3.

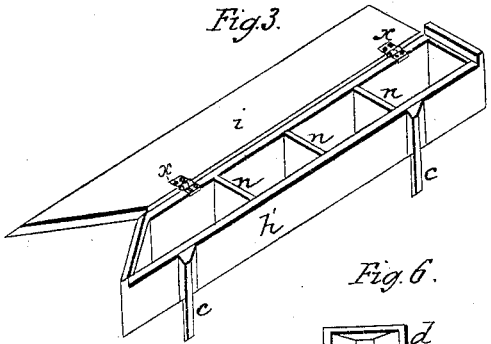


Fig. 6.

Fig. 7.

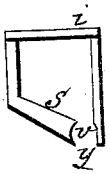
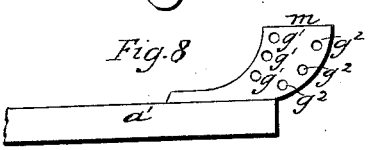


Fig. 8



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UNITED STATES PATENT OFFICE.

JOHN DAVIS, OF ALLEGHENY CITY, PENNSYLVANIA.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. **50,914**, dated November 14, 1865; antedated November 2, 1865.

To all whom it may concern:

Be it known that I, JOHN DAVIS, of the city and county of Allegheny, in the State of Pennsylvania, have invented certain new and useful Improvements in Grain-Drills and Broadcast-Sowers; and I 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.

The nature of my invention consists in an arrangement of operating-gear for driving or operating the seed-rollers in the seed-chamber, the several parts being constructed, arranged, and operating substantially in the manner hereinafter described.

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

In the accompanying drawings, Figure 1 represents a side view of my improvement. Fig. 2 represents a top view of the same. Fig. 3 represents a perspective view of one of the hoppers. Fig. 4 represents a section of the operating-gear. Fig. 5 represents a transverse section of the seed-roller. Fig. 6 represents a top view of the receiving-chambers of the drill-teeth, (marked *b*.) Fig. 7 represents a transverse section of the hoppers. Fig. 8 represents a side view of one of the supports of the operating-gear and a section of the frame to which said support is attached.

In the drawings, *a a' a²* represent the frame of the drill, in the outside bars of which are secured the drill-teeth, (marked *b*,) which are furnished with receiving-chambers, (marked *d*.) The two front and two back receiving-chambers are furnished with dovetails for receiving the lugs *c* of the hoppers *h'*. The hoppers or seed-chambers *h* and *h'* are divided into compartments equal in number to the teeth used—that is to say, when four teeth are placed on each side of the drill, as shown in Fig. 1, then the hoppers *h* and *h'* are divided into four compartments, as shown in Fig. 3. By thus dividing the hoppers into compartments each tooth or drill *b* will have its own compartment for seed, so that several varieties of the same kind of seed may be sown or drilled in, or a different kind of seed may be placed in each compartment, and all sown at the same time, when so desired.

The hoppers or chambers *h* and *h'* are furnished with inclined bottoms *s*, (see Fig. 7,) chamber *v*, for the seed-roller, and a lid, *i*, which is hinged at *x*.

f represents the tongue. *r* represents the clevis, which is secured to the point of the drill-frame, and is furnished with a number of openings, (marked *g*,) which are used for regulating the position of the tongue *f*, which is secured to the clevis by means of bolts, (marked *o*.)

The supports *m* are made in the form represented in Fig. 8, and are secured to the part of the frame marked *a'* and *a²*, and in the position shown in Figs. 1 and 2, and are used for the purpose of supporting the hangers (marked *q*.) The holes (marked *g'*) in the supports *m* are used for the purpose of raising or lowering the driving-wheels, (marked 6,) by means of which, and in connection with the position of the tongue on the front end of the frame, the depth of drilling in is regulated.

In the holes *g²* are placed stop-pins, which are used for the purpose of preventing the hangers *q*, shaft *u*, and wheels 5 and 6 swinging beyond the point desired. *k* and *l* are the supports or bearings of the shaft *j*, on which are placed wheels 3 and 4.

The shaft *j* can be shifted in its bearings, by means of levers or other device, for the purpose of shipping and unshipping the wheel marked 3, thereby making the seed-roller operative or inoperative.

The seed-rollers are furnished with wheels 1 and 2, and series of seed-cells, which are of different sizes and depths, as represented in Fig. 5, and marked 9, 10, 11, and 12. By having the seed-cells in the rollers A in series of different sizes and depths seed of different kinds and different quantities of the same kind can be sown.

The rollers A are covered with a sheath, B, as represented in Fig. 5, which is furnished with one series of openings, which are arrranged so as to correspond with the cells in the roller A and cover all the cells except the one series desired for sowing. This sheath B of the roller A may be secured to the roller in the desired position by means of a set-screw or any other

known device. The hangers q, which serve as bearings for the shaft or axle u of the wheels 5 and 6, are secured to the supports m by means of bolts, (marked o',) which are put through openings in the upper ends of the hangers q, as shown in Fig. 4. These bolts o' secure the hangers q to the supports m by passing them through holes g' in said supports m. By thus securing the hanger q the wheel 5 will always keep in gear with the wheel 4, for the axle or shaft u of the wheels 5 and 6 will move in a line corresponding to the arc of wheel 4.

It will be observed that in the drawings but one end of the drill and broadcast-sower is furnished with the operating-gear, (see Fig. 2,) but in making the working machine both ends are furnished with operating-gear, which is arranged and operated in like manner and for like purpose; and it will also be observed that by the use of the supports m, hangers q, and wheels 5 and 6, in connection with the other operating-gear, that the same depth of drilling can be obtained, however uneven the surface of the ground may be over which the drill has to work, for the wheel 6 will follow the surface, the hangers swinging up or down with the rise or fall in the surface of the ground.

The operation of my improvement is as follows: Having secured the operating-gear and the tongue f in the desired position for obtaining the desired depth of drill, I then arrange the sheath B on the rollers A to suit the kind and quantity of seed to be sown. I then place the rollers with their sheaths in the chambers v of the hoppers. I then put in the hoppers the desired seed—that is to say, if I desire to drill in oats and sow broadcast timothy-seed at the same time, I put the oats in the hoppers h and the timothy-seed in the hoppers h'. I then put the drill in motion, which will turn the wheel 6, which will turn the wheel 5, which will turn the wheel 4, which will turn the wheel 3, which will turn the wheel 2, which will turn the wheel 1, and thereby put in motion the seed-rollers A in the hoppers h and h', which motion of the seed-rollers will throw the seed in hoppers h in the desired quantities into the seed-chambers d of the drill-teeth b, from which it will fall into the furrows made by said drill-teeth, and seed in the hoppers h' will be sown broadcast through the openings y.

Having thus described the nature, construction, and operation of my improvement, what I claim as of my invention is—

The arrangement of the supports m, hangers q, wheels 6, 5, 4, 3, 2, and 1, used in connection with the rollers A, sheath B, and hoppers h and h', the whole being constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

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Witnesses:

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