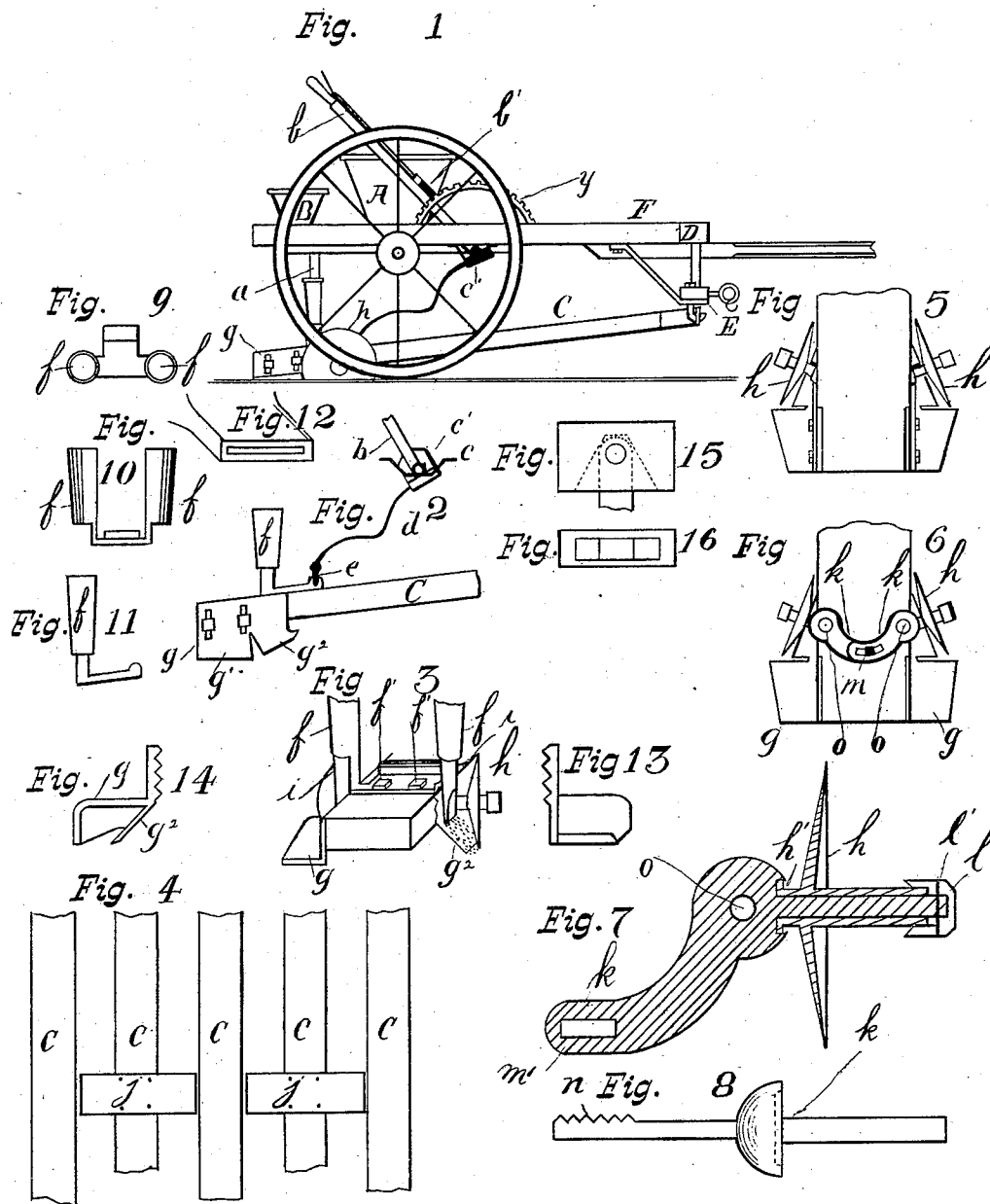


W. D. ARNETT.

SEEDING MACHINE.

No. 312,791.

Patented Feb. 24, 1885.



Attest
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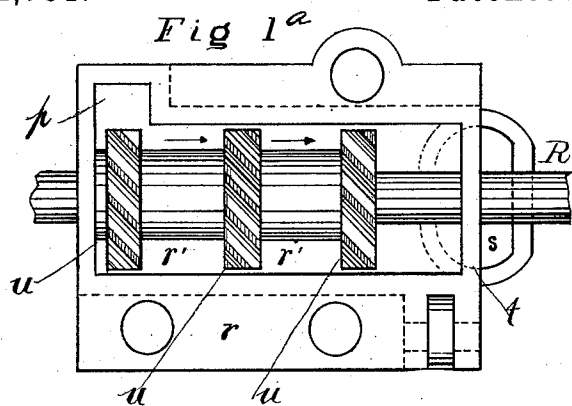
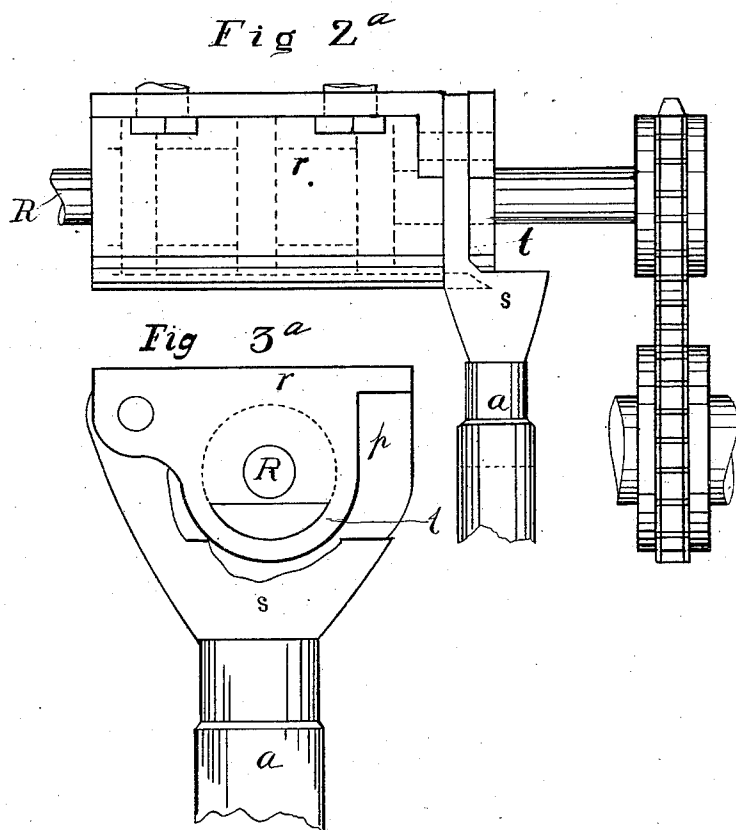
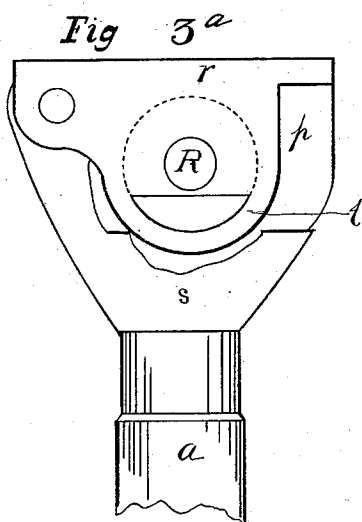
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UNITED STATES PATENT OFFICE.

WILLIAM D. ARNETT, OF MORRISON, COLORADO.

SEEDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 312,791, dated February 24, 1885.

Application filed September 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. ARNETT, a citizen of the United States, residing near Morrison, in the county of Jefferson and State of Colorado, have invented certain new and useful Improvements in Seeding-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in seeding-machines in which a system of drag-bars, with disks, flanges, and springs attached, operated in conjunction with suitable feed mechanism, all attached to a suitable frame and mounted upon wheels, is used to deposit the different varieties of small grain and the various kinds of grass-seed within the earth in any suitable quantities and at any desired depth; and the objects of my improvements are to provide a seeding-machine of the nature above described, which shall be lighter of draft than those now in use, and by which perfect work may be accomplished in uncultivated or sodded ground, and under circumstances which render other machines of little or no avail. I attain the objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1, Sheet 1, is a side view of the machine. Fig. 2 is a side view of a drag-bar with flange, spring, and fluke-guide attached. Fig. 3 is a perspective enlarged view of a drag-bar with disks, flanges, and fluke and spring guides attached. The rear portion of the flange on one side is represented as broken off, to show the manner in which the grain is discharged upon the forward portion of the flange. Fig. 4 shows the drag-bars with guide-bars attached. Fig. 5 is a top view of a drag-bar with disks and flanges attached. Fig. 6 is an inverted view of a drag-bar with disks and flanges attached. Fig. 7 is a longitudinal sectional view of a disk, showing its axle and cap-bearing. Fig. 8 is a side view of the disk-axle, showing its corrugation. Fig. 9 is a top view of the fluke and spring guides. Fig. 10 is a front view of the fluke and spring guides. Fig. 11 is a side view of the fluke and spring guides. Fig. 12 is a perspective view of the lower end of a fluke. Fig. 13 is a

rear view of a flange. Fig. 14 is a front view of a flange. Fig. 15 is a top view of the socket which receives the upper and forward extremity of the spring, and Fig. 16 is a front view of said socket. Fig. 1^a, Sheet 2, is a top view of the feed mechanism; and Fig. 2^a is a side view of same, showing means of driving the conveyers by attachment with revolving main axle, and Fig. 3^a is an end view of feed mechanism.

Similar letters refer to similar parts throughout the several views.

In Fig. 1, Sheet 1, A is a box, in which the grain is placed preparatory to depositing it in the earth by means of my invention. To the bottom of this box is attached, by means of bolts, the feed mechanism illustrated in Figs. 1^a, 2^a, and 3^a, Sheet 2. This feed mechanism consists of a number of cases, which I will call "conveyer-cases" *r*, Figs. 1^a, 2^a, and 3^a, Sheet 2, being an example, through which passes the shaft *R*, three conveyers, *u u u*, with diagonally-corrugated surfaces, being attached to the shaft *R* and received within each conveyer-case, as shown in Fig. 1, Sheet 2.

In the bottom of the grain-box A is an opening communicating with each conveyer-case *r*, through which the grain passes into said case at the point *p*, after which, as the shaft *R* revolves, the grain is forced by means of the conveyers *u u u* through the equalizing-chambers *r' r' r'*, Fig. 1^a, Sheet 2, in the direction indicated, and passes out of the case at the point *t* into the funnel-mouthed pipe *s*, as shown in Fig. 3^a, Sheet 2. The office of the conveyers *u u u* is to force the grain into the funnel-mouthed pipe *s* with perfect uniformity. The velocity of the shaft *r*, and therefore the quantity of grain sown per acre, may be governed by any suitable means now in use. From the pipe *s* the grain passes through the rubber pipe *a* (which is stretched tightly over the lower extremity of the pipe *s*) into the fluke *i*, as shown in Fig. 3, Sheet 1. The fluke *i* is oblong in shape at the bottom, as shown in Fig. 12, and discharges the grain upon the diagonal or oblique forward portion of the flange *g*, as shown in Fig. 3, Sheet 1, this portion of the flange being marked *g'* in the figure, from which the grain slides into the fur-

row made by the disk *h*, and by means of the rear portion of the flange *g* (shown in Fig. 3) the earth thrown out by the disk *h* is reconveyed into the furrow and leveled down, thus covering the grain and pressing the soil compactly around it. The disks *h h* and the flanges *g g* are attached to the drag-bars *C* by means of bolts. The flanges are adjustable, and are raised and lowered by means of the bolts and slots *g'*, as shown in Fig. 2, and by this means the depth of furrow cut by the disk *h* is regulated. The flange *g* having been adjusted as desired, it is securely held in place by means of the corrugation shown in Figs. 13 and 14, the portion of the drag-bar *C* to which the flange is attached being corrugated to correspond therewith. The disks may be adjusted to cut a greater or less width of furrow by means of an adjusting-bolt, *m*, and slots *m'*, Figs. 6 and 7, and the corrugation *n*, (shown in Fig. 8,) the disk-axles *k* being pivoted at *o*, Fig. 7, *o o*, Fig. 6.

The peculiar form of the disk-axle *k* and the cap *l*, as shown in Fig. 7, is for the purpose of excluding dirt from the axle bearing the cap *l*, also serving as an additional bearing for the outer extremity of the hub of the disk. The cap *l* is attached to the axle *k* by means of the bolt *l'*, which passes through the cap and axle, as shown in Fig. 7. The other extremity of the disk-hub, Fig. 7, is supplied with the collar *h'*, as shown in the figure. The collar fits closely within the adjacent part of the disk-axle, the axle being properly fashioned to receive it, thereby excluding dirt and other foreign substances which otherwise might reach the axle-bearing. The disk-axles *h h* are corrugated, as shown in Fig. 8, and the corrugated portions overlap each other, as shown in Fig. 6, and the axles are fastened to each other by means of the bolt *m*.

As the machine is put in motion by the ordinary means, the disks *h h* revolve upon the axles *k k* and cut a small furrow in the earth, in which the grain is deposited, as above described, the width and depth of the furrow being regulated as aforesaid; and this office of the disks is thoroughly performed, even though the earth be sodded and in its uncultivated natural state. The drag-bars *C* are attached in front to the end rail, *E*, of the frame, as shown in Fig. 1, Sheet 1, and extend backward beneath the axle of the wheels upon which the frame is mounted. The guide-bars *j j*, Fig. 4, are attached to each alternate drag-bar *C* at right angles, the extremities of the guide-bars working against the sides of the adjacent drag-bars, as shown in Fig. 4. To the rear portion of each drag-bar *C* is attached two disks, *h h*, and two corresponding flanges,

g g. (Shown in Figs. 5 and 6.) Each pair of fluke-guides *f f*, Fig. 3, constituting one casting, (distinctly shown in Fig. 10,) are also attached to the drag-bars by means of the bolts *f' f'*, Fig. 3, Sheet 1. To each drag-bar is also attached a spring, *d*, Fig. 2, Sheet 1, by means of a clevis, *e*, attached to the forward portion of the fluke and spring guide *f*, as shown in the figure. At its upper and forward extremity the spring *d* is attached to the beam *c* by means of a bolt and socket, (shown in Figs. 15 and 16,) which socket allows the spring a slight lateral movement, as shown by the dotted lines, but no vertical variation within the socket.

The lever *b*, Figs. 1 and 2, Sheet 1, is attached to the beam *c'*, the beam *c'* being attached to the side rail, *F*, of the frame at each side of the machine by a bearing, *e*, as shown in Fig. 2, Sheet 1. The disks are raised out of the ground by pressing forward the lever *b*, which turns the beam *c'*, to which the springs *d* are attached, and the springs in turn lift the drag-bars *C*, together with the disks *h h* and the flanges *g g*. By moving the lever *b* backward the disks are forced into the ground by means of the springs *d* to the desired depth, and so held under all ordinary circumstances; but should the disks come in contact with a stone or other very hard substance they will rise and pass over it without injury to the machinery. The lever *b* is retained in any position desired by means of the catch *b'*, which engages with the notches in the ratchet-segment *y*, the catch *b'* being properly attached to the lever *b* and operated by means of a suitable rod and hand-piece, as shown in Fig. 1, Sheet 1.

B, Fig. 1, Sheet 1, is a box for grass or other very small seeds. The box *B* is supplied with the same feed mechanism as box *A*, but reduced in size to correspond with the size of the seeds. Seed may be fed from either box by changing the pipe *a* from one box to the other.

What I claim as my invention, and what I desire to secure by Letters Patent of the United States, is—

The combination, in a seeding-machine, of the drag-bars *C*, the adjustable disk-axles *k k*, the cap-bearing *l*, the bolt *l'*, the flanges *g g*, the guide-bars *j*, the springs *d*, the beam *c*, and the lever *b*, substantially as set forth, and for the purpose described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM D. ARNETT.

Witnesses:

IDA STUCHELL,
FRED NORMAN.