

A. W. FRICKE.
Seeding-Machines.

Patented Oct. 13, 1874.

No. 155,938.

Fig 1 .

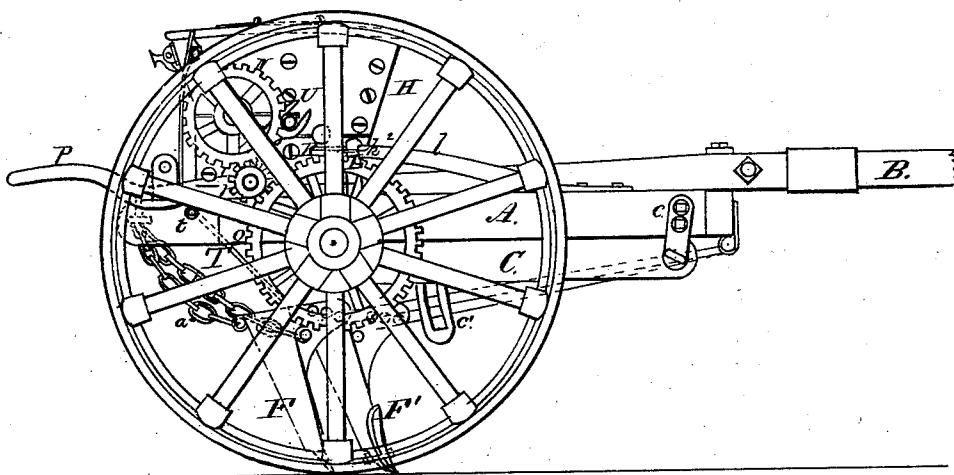
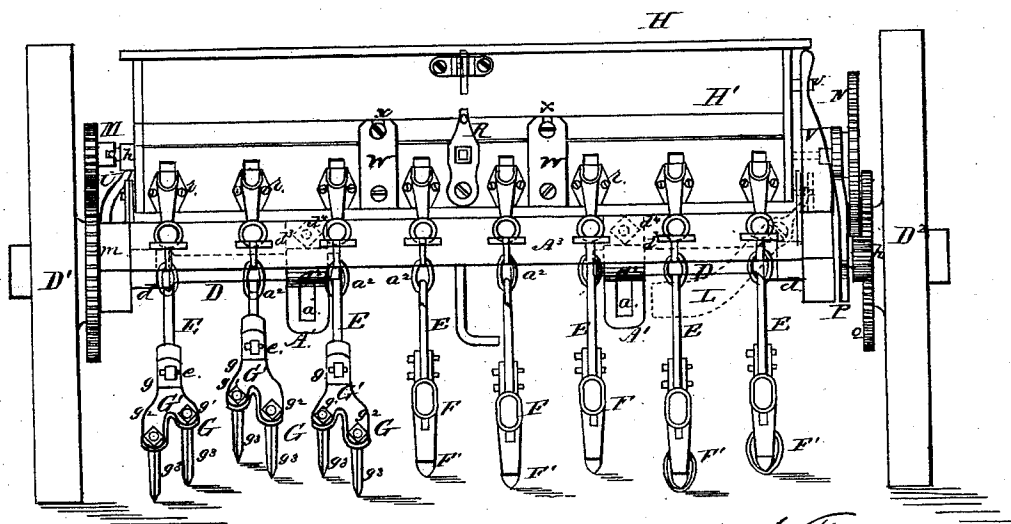


Fig 2.



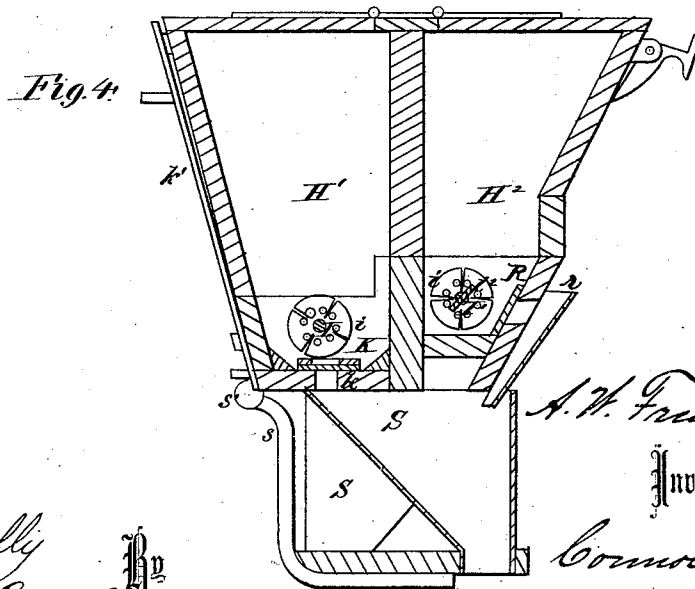
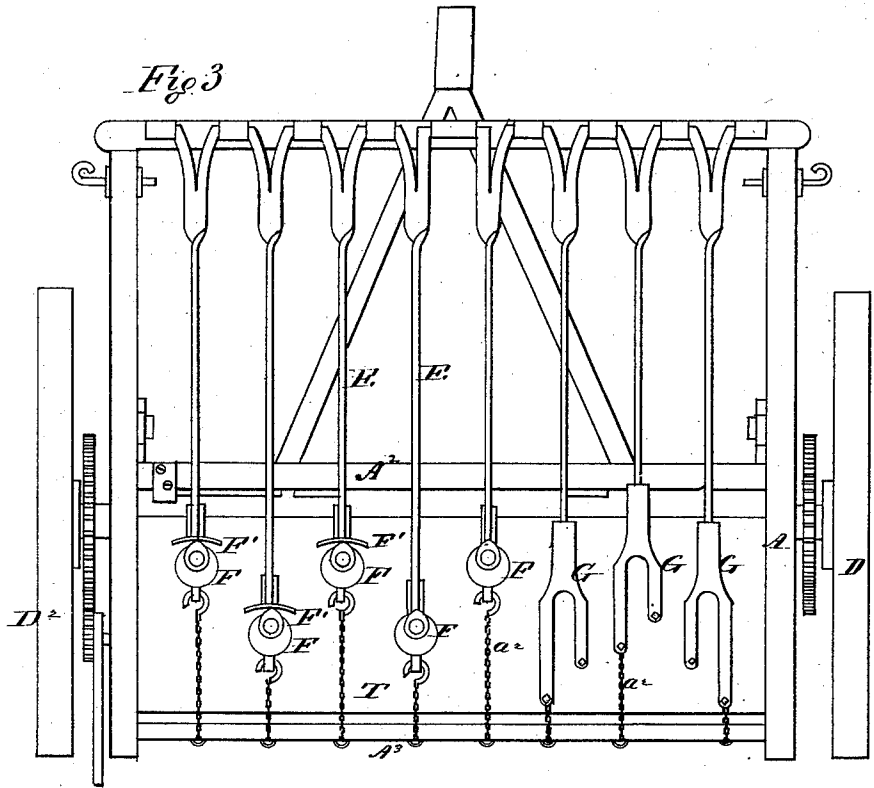
Witnesses.
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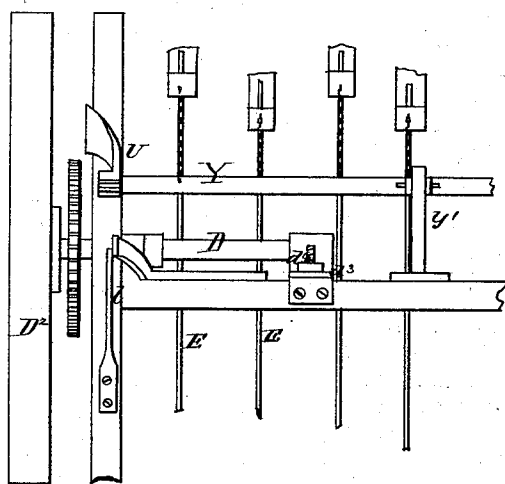


Fig. 5.

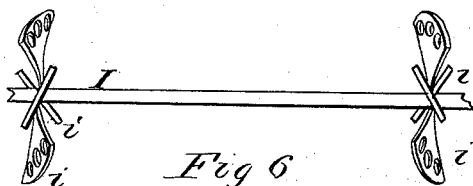


Fig. 6.

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UNITED STATES PATENT OFFICE.

ADOLPHUS W. FRICKE, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN SEEDING-MACHINES.

Specification forming part of Letters Patent No. **155,938**, dated October 13, 1874; application filed March 13, 1874.

To all whom it may concern:

Be it known that I, ADOLPHUS W. FRICKE, of Wilmington, in the county of New Castle and State of Delaware, have invented a certain new and useful Improved Grain-Drill, Broadcast-Sower, Fertilizing-Machine, Harrow, and Cultivator Combined; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, a rear elevation; Fig. 3, a bottom view; Fig. 4, a transverse vertical section of hopper; and Figs. 5 and 6, detail views.

The nature of my invention consists in the novel construction and combination of parts, as hereinafter fully described.

Referring to the accompanying drawing, A is the main frame of the machine, having a tongue, B. C is a supplemental frame, to which the frame A is pivoted in front, at *c*, and attached by means of the slotted guide-plates *c'*. To the frame C are secured the separate axles D D of the wheels D¹ D², said axles turning in sleeves *d d*, having flanges, by which they are screwed fast to said frame C. A¹ A¹ are hangers depending from the cross-beam A² of the frame A, and *d² d²* are collars, in which the axles D D turn, said collars having flanges *d³ d³*, which rest against the hangers A¹ A¹, and are made adjustable thereon, so as to elevate the rear end of the frame A above the axles D D, by means of vertical slots *a a* in said hangers, and set-screws *d⁴ d⁴* working therein. E E are the fluke-bars, pivoted on the front part of the frame C, and F F are drill-tubes secured to the rear end of said fluke-bars in any suitable manner. To these tubes shovels F' may be attached by means of pins, rivets, or bolts, when a cultivator is wanted, said shovels being secured to the drill-tubes in such manner that they may be readily detached therefrom. G G are the harrows, formed of the bar G', having a slot for the passage of the fluke-bars E E, which are fastened by means of a pin, *e*. The bar G is bent at *g*, and bifurcated or forked, forming tines *g¹ g²*, as shown, of unequal length, which are furnished with teeth *g³*.

By making the fluke-bars of unequal length and alternating the arrangement of the tines *g¹ g²*, as shown, the harrow-teeth will be made to rest upon the ground in a V form. A³ is the usual pivoted transverse bar, by means of which the drill-tubes and harrow-teeth are raised from the ground when necessary, chains *a²* being employed to connect said parts in the ordinary manner.

H is the hopper, divided into two compartments, H¹ H², the former for grain, and the latter for fertilizers. In the front hopper—that designed for grain—is a shaft, I, provided with agitators *i*, consisting each of a disk with oblique wings or flanges, similar to the wings of a screw-propeller, which are arranged right and left, alternately. In the compartment H² is a similar shaft, I', having agitators *i'* and pins *i²*, which serve to break any lumps that may be found in the fertilizing material. The right and left arrangement of the screws or agitators *i i'* serve to keep the grain and fertilizing material constantly worked and agitated between them. If the agitators were all arranged in the same direction, the contents of the hoppers would be constantly worked toward one end of the hopper. K and *k* are slides in the bottom of the front hopper, having discharge-openings for the passage of the grain. The lower slide *k* is adjusted by means of a lever, *k¹*, which registers with a dial upon the front of the hopper, while the upper or cut-off slide K is provided at one end with pins *k² k²*, between which rests the upper extremity of a pivoted lever, L, against which bears a spring, *l*. When the fluke-bars are raised in turning the machine, one of them bears against said lever L, forcing in the cut-off slide K, and stopping the discharge of grain from the hopper. On dropping the fluke-bars the spring *l* returns the slide K to its former position, by bearing upon the lever L, and the flow of grain is resumed. The shaft I has a pinion, M, which meshes with a gear-wheel, *m*, on the axle D, and the shaft I' has a similar but larger pinion, N, gearing with the wheel *o*, through the medium of the idler *p*, located at the bend of the lever P, which is pivoted on the shaft I'. The weight of the lever P serves to keep the wheels N, *o*, and *p* in gear until said lever is raised. Should any foreign matter—as a stone or lump

of earth—become interposed between said wheels, the wheel *p* will readily rise with the lever, thus preventing any accident by breakage. *R* is a slide for governing the openings in the hopper *H*², and *r r* are guards or chutes for conducting the fertilizing material to the ground.

When it is desired to have the grain and fertilizer mix and pass through the tubes *F F* together, the supplemental hoppers *S S* are employed, being fastened by means of rods *s* passing through clips *s'* on the front of the hopper.

When a broadcast sower is required the supplemental hoppers *S* are removed, and the incline or chute *T* is placed beneath the discharge openings of the hopper, being held in place by means of the rod *t*, which passes through the side beams of the frame *A*.

U U are forked standards on the frame *A*, which afford bearings for the journals or studs *h* on the ends of the hopper *H*. *V* is a spring-standard, which is also attached to the frame *A*, and has a notch at its upper end engaging with a pin, *v*, on the end of the hopper *H*, and serving to hold said hopper in position. Should any earth or other obstacle get between the teeth of the wheel *m* and pinion *M* the hopper *H* will rise in its bearings in the standard *U*, the spring *V* disengaging its attachment with the pin *v*.

It will be observed that the forward ends of fluke-bars are bifurcated and flaring. One of the tines, however, of each of the two middle bars is straight, the other two tines of said middle fluke-bars having a flaring tendency. When the straight ends are placed inside or adjacent to each other, the two middle fluke-bars will be the same distance apart as the rest of the bars. When, however, the straight tines of said bars are outside said middle bars will be a considerable distance apart, so as to leave room in the middle of the frame for a row of growing corn or other plants, which will be straddled in cultivating. At the same time the frame *A* will be raised above the plants by the means already described—namely, the slotted hangers *A*¹ *A*¹ and set-screws working therein. The axle *D* being divided, or, what amounts to the same thing, a separate axle being provided for each of the supporting-wheels, there will be ample room left beneath the frame for straddling and cultivating plants which have attained a considerable growth.

When a harrow alone is required the toothed bars *G* will be attached to all the fluke-bars.

When a combined harrow and cultivator is required the harrows will occupy one side with a single cultivator-tooth, the other side of the frame being occupied by a number of the cultivators, so that in traversing the field one side of a row will first be harrowed advancing, and then cultivated coming back, the cultivator returning on that side of the row on which the harrows went forward.

The hopper *H* is made in two horizontal sec-

tions, so that the upper part may be removed from the lower, being kept in position when in place by means of the metal plates or straps *w* and screws *x*.

The detachability of the upper part of the hopper is principally of value for the purpose of obtaining ready access to the fertilizer-shaft, so as to remove or clean the same, the phosphates generally used containing corrosive matter, which will seriously injure said shafts if not removed.

A specially important feature of my invention is the construction and arrangement, as described and shown, of the devices for agitating the fertilizer.

I do not, however, claim, broadly, an agitator having spiral or oblique wings; nor do I claim the arrangement of agitators generally in alternate oblique relation upon a rotary shaft, the same being respectively anticipated in the Patents Nos. 93,368 and 77,269; but I base my claim upon the certain peculiar construction and relative arrangement of the special form of agitator described and shown, whereby superior advantages are gained in agitating the fertilizing material and expelling it from the hopper.

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

1. The combination, with the seed-compartment *H*¹, of the double slide *K k*, lever *L*, and fluke-bar *E*, as and for the purpose specified.

2. The hinged adjustable supplementary frame *C*, in combination with the main frame *A* and wheels *D*¹ *D*², substantially as described and shown.

3. The combination of the axles *D D*, journaled to the adjustable supplementary frame *C*, slotted plates *a*, and flanged collars *a*², substantially as described.

4. The detachable hoppers or chutes *s s*, in combination with the double compartment hopper *H*, as and for the purpose specified and shown.

5. The combination of the spring-standard *U* with the pivoted hopper *H*, having the stud *V* engaging with said standard, as shown and described.

6. The forked standard *U*, attached to the frame *A* and supporting the hopper *H*, as described and shown.

7. The combination of the spring *l*, lever *L*, slide *k*, and fluke-bars *E*, substantially as shown and described.

8. The spiral-winged fertilizer-agitators *v'*, arranged in pairs and alternately right and left upon the shaft *I'*, as shown and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 18th day of February, 1874.

ADOLPHUS W. FRICKE.

Witnesses:

EUGÈNE P. EADSON,
JNO. A. BELL.