

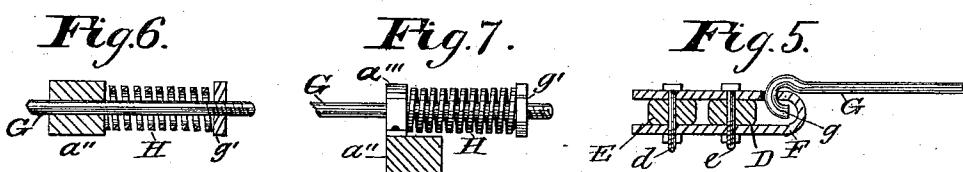
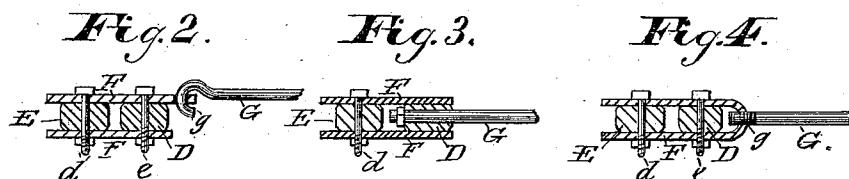
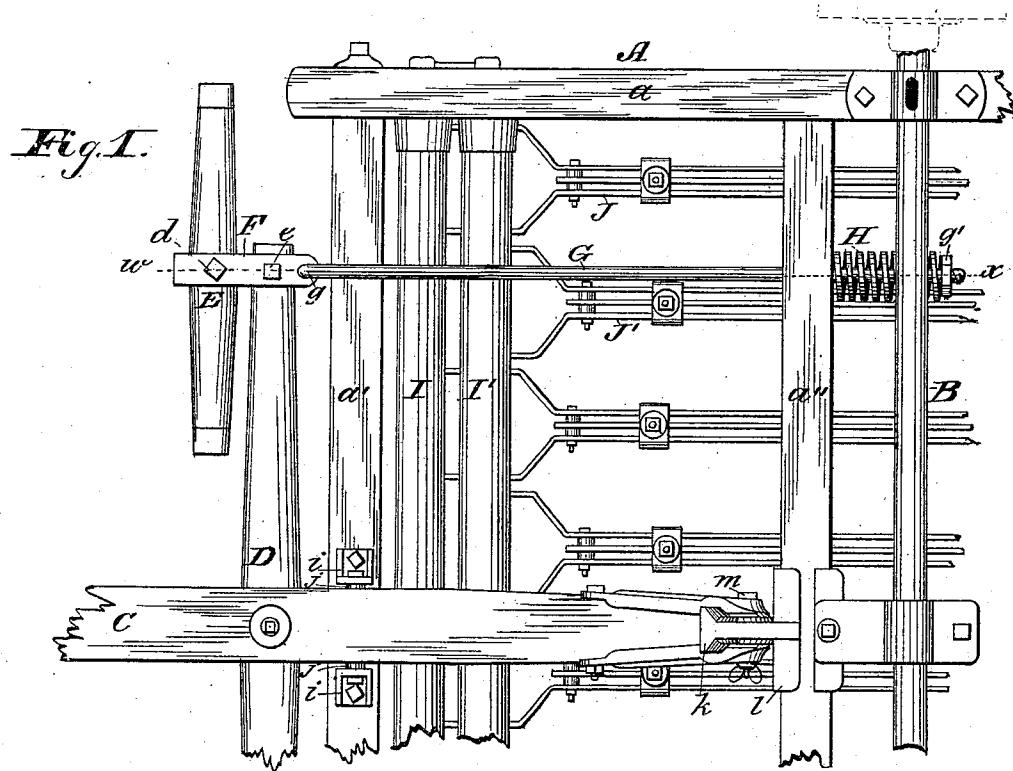
(No Model.)

J. F. KELLER.

## DRAFT MECHANISM FOR GRAIN DRILLS.

No. 313,341.

Patented Mar. 3, 1885.



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# UNITED STATES PATENT OFFICE.

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## DRAFT MECHANISM FOR GRAIN-DRILLS.

SPECIFICATION forming part of Letters Patent No. 313,341, dated March 3, 1885.

Application filed November 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN F. KELLER, a citizen of the United States, residing at Shepherdstown, in the county of Jefferson and State of West Virginia, have invented certain new and useful Improvements in Draft Mechanism for Grain-Drills, of which the following is a description.

The invention relates to means whereby the initial propulsive power is applied as near as possible to the point at which the resistance of inertia is greatest; and the invention consists in the combination, with the cross-tree or double-tree at the point of its connection with the single-tree, and with the rear cross-bar of the frame of the drill at a point near its outer extremity, of a draft-rod which connects these two parts together; and it also consists in the combination, with the double-tree, the rear cross-bar, and the draft-rod, of a relieving-spring which is applied upon the rod.

In the drawings, Figure 1 is a top plan view of a portion of the frame and running-gear of a grain-drill which has my improved draft mechanism applied thereto. Fig. 2 is a vertical section on the line *w*, Fig. 1, showing the connection of the draft-rod with the double-tree. Figs. 3, 4, and 5 are vertical sections representing modifications of the construction shown in Fig. 2. Fig. 6 is a vertical section on the line *x*, Fig. 1, showing the relation of the draft-rod to the cross-bar and to the axle-tree of the vehicle. Fig. 7 is a vertical section showing a modification of the construction shown in Fig. 6.

*A* designates the frame of the drill, *a* being one of the side bars, *a'* the front cross-bar, and *a''* the rear cross-bar, thereof. *B* is the axle-tree of the drill; *C*, the tongue or pole, *D* the cross-piece or double-tree, and *E* one of the single-trees, of the same, the two latter being connected by a coupling, *F*, and pivot-bolts *d* and *e*. *G* is the draft-rod, which connects the double-tree with the rear cross-bar, *a''*, of the frame. *g* is an engaging-hook upon the front end of the draft-rod. *g'* is a holding shoulder or head upon the rear end of the draft-rod, and *H* is a coiled relieving-spring, which, encircling the draft-rod, is secured between the head *g'* of the same and the rear face of the

cross-bar. *I* and *I'* are the coupling-bars, and *J* and *J'* are the drag-bars, of the drill.

In the practical use of this class of agricultural implements much difficulty is experienced in turning the vehicle about, as at the end of a land. The earth having been made loose in being prepared for seeding, the wheels of the vehicle sink into the same as the attempt is made to rotate it. The strain is brought upon the pole at its point of junction with the front cross-bar and upon the necks and shoulders of the animals, and the act of going about is thus performed slowly and with difficulty. The difficulty thus encountered is obviated by the provision of the draft-rod *G* and the spring *H*, the initial force under this construction being applied at the junction of the draft-rod with the rear cross-bar—a point as near as possible to the vertical and horizontal center of the wheel, which is the point of greatest resistance.

In my preferred construction (shown in Fig. 1) the engaging-hook *g* projects downwardly through a perforation in the coupling *F*; and the rod *G*, as represented in Fig. 6, extends through a perforation in the rear cross-bar. The draft-rod may, however, be extended horizontally through the double-tree, the opening being laterally enlarged toward the rear, and be secured by a nut, as in Fig. 3. Its hook *g* may be bent laterally to engage with a loop in the coupling, as in Fig. 4; or it may project downwardly through a perforation in the top of a loop, as in Fig. 5, and, instead of extending through the body of the rear cross-bar, the draft-rod may be passed through an opening in a keeper, *a''*, which is secured upon the upper surface of such bar, as represented in Fig. 7.

As shown in the drawings, the pole is pivotally attached to the front cross-bar by angle-irons *i* and a pivot-bolt, *j*, and it is adjustably connected to the rear cross-bar by a segment, *k*, a plate, *l*, and a bolt, *m*; but these features constitute no part of the invention herein claimed, and the means by which the pole and the two cross-bars are connected may be varied at will.

It will be seen that the axle-tree *B* is journaled upon the side bars of the frame at a

point but a short distance in the rear of the rear cross-bar, and that it is revoluble with the wheels, as is common in this class of implements.

5 It will be understood that by reason of the provision of the spring upon the rear portion of the draft-rod the force of the jerk upon the animals in starting the vehicle is cushioned and relieved.

10 Springs of this kind have before been applied in various ways in connection with draft apparatus; but I believe that they have never before been employed in the manner and to the end herein shown and described.

15 Having described my invention, I claim—  
1. The combination, with the double-tree D and with the rear cross-bar,  $a''$ , of the draft-rod G, connecting such double-tree and cross-bar.

20 2. The combination, with the double-tree D and the rear cross-bar,  $a''$ , of the draft-rod G and the relieving-spring H.

3. A frame, A, consisting of side bars,  $a$ ,

and cross-bars  $a'$  and  $a''$ , an axle-tree, B, journaled upon the frame, a pole, C, connected to 25 the cross-bars  $a'$  and  $a''$ , a double-tree, D, connected to the pole, and a draft-rod, G, connected at its front end to the double-tree and at its rear end to the rear cross-bar at a point near the outer extremity of the same, in combination. 30

4. A frame, A, consisting of side bars,  $a$ , and cross-bars  $a'$  and  $a''$ , an axle-tree, B, journaled upon the frame, a pole, C, connected to the cross-bars  $a'$  and  $a''$ , a double-tree, D, connected to the pole, and a draft-rod, G, provided with a relieving-spring, H, upon its rear portion, and connected at its front end to the double-tree and at its rear end to the rear cross-bar at a point near the outer extremity 40 of the same, in combination.

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Witnesses:

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