

W. H. NAUMAN.
GRAIN DRILL.

No. 181,588.

Patented Aug. 29, 1876.

FIG. 1.

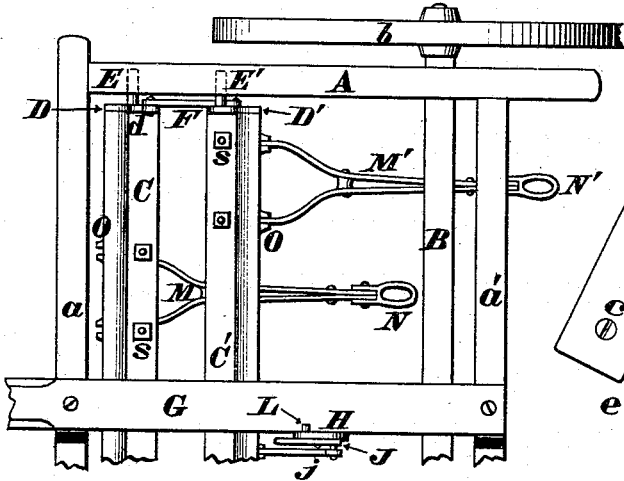


FIG. 4.

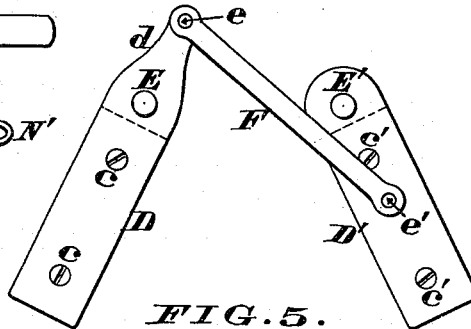


FIG. 5.

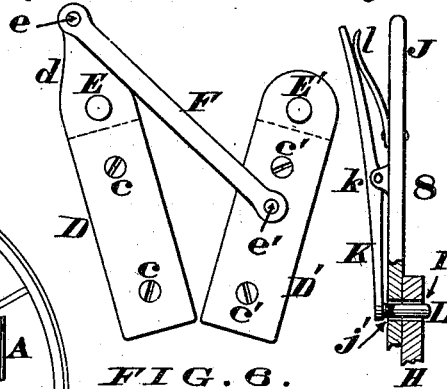


FIG. 6.

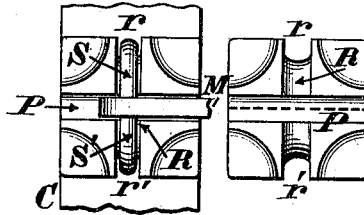


FIG. 2.

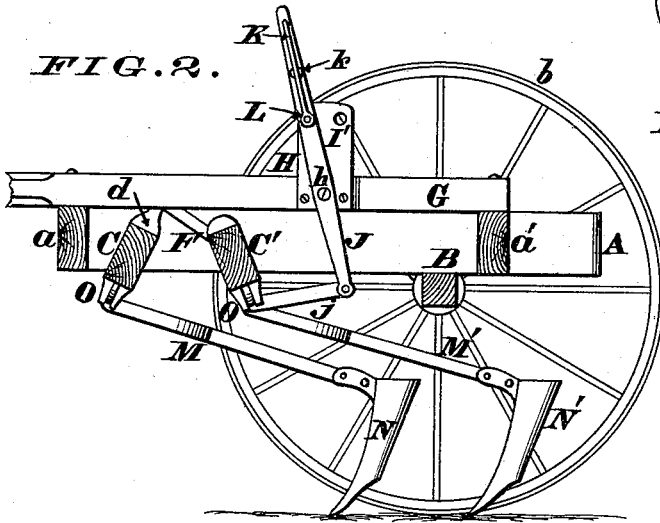


FIG. 3.

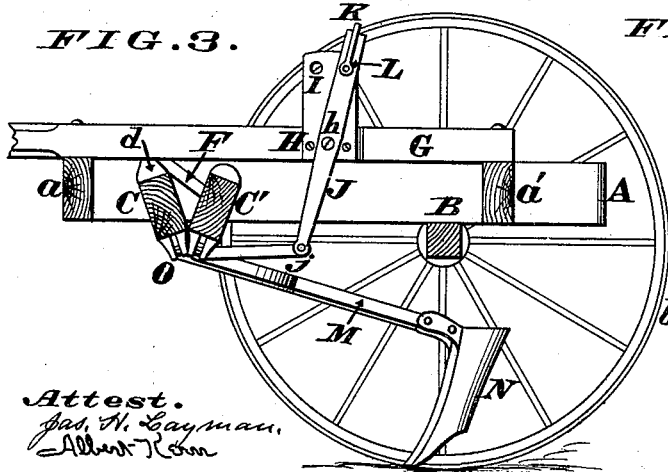
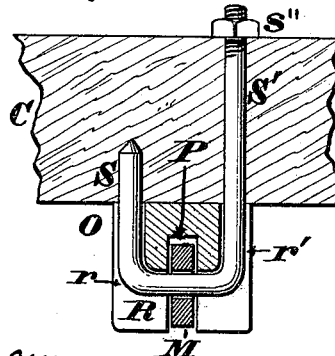


FIG. 7.



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WILLIAM H. NAUMAN, OF DAYTON, OHIO.

IMPROVEMENT IN GRAIN-DRILLS.

Specification forming part of Letters Patent No. 181,588, dated August 29, 1876; application filed July 10, 1876.

To all whom it may concern:

Be it known that I, WILLIAM H. NAUMAN, of Dayton, Montgomery county, Ohio, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification:

This invention relates to that class of grain-drills which are provided with two rocking bars capable of being locked in either one of two positions, for the purpose of maintaining the hoes of the implement in rank or else in a zigzag position with reference to one another; and the first part of my improvement comprises a novel construction of end bearing-plates for the aforesaid rocking-bars. These bearing-plates are constructed in such a manner as to allow the rocking-bars to vibrate in the main frame of the implement, and at same time to impart a simultaneous but opposite vibration from one bar to the other.

The second part of my invention comprises a novel form of clip, wherewith the forward ends of the drag-bars are coupled to the rocking bars, this clip being constructed in such a manner as to be secured with a single bolt, which latter serves as a pivot for the drag-bar, as hereinafter more fully described.

In the annexed drawings, forming part of this specification, Figure 1 is a half plan of a grain-drill embodying my improvements, the rocking-bars being set so as to dispose the two rows of hoes in a zigzag position with reference to each other. Fig. 2 is a vertical section of the implement. Fig. 3 is another vertical section, but showing the rocking-bars shifted to bring the hoes in rank. Figs. 4 and 5 are elevations of the end plates of the rocking bars, the positions of the plates corresponding with the disposition of said bars in Figs. 2 and 3 respectively. Fig. 6 is a plan showing one of the drag-bar clips attached to the rocking-bar; and Fig. 7 is a vertical section of the same in the plane of the retaining bolt or staple.

The main frame *A a a'*, axle *B*, and ground-wheels *b* may be of any approved construction and arrangement, as they constitute no part of my invention. Disposed transversely of the implement, and near the front end of the same, are two horizontal and parallel rocking bars or beams, *C C'*, which are journaled

in the sides *A* of the main frame in the following manner: Each bar is secured at its ends by means of screws or bolts *c* and *c'* to flat plates *D D'*, of which one of the plates has a prolongation, *d*. Projecting outwardly from plates *D* and *D'* are lugs or stumps *E E'*, which are capable of entering the sides *A* of the frame far enough to afford secure journal-bearings for the rocking-bars *C C'* to oscillate on. Furthermore, these plates are provided with outwardly-projecting wrists *e e'*, which are somewhat shorter than the studs *E E'*, as said wrists are not to come in contact with the frame of the machine, but they are intended as points of attachment for links or connecting-rods *F*, wherewith the two rocking bars *C* and *C'* are coupled together so as to vibrate in unison, but in opposite directions. By referring to Figs. 4 and 5 it will be observed that wrist *e* is situated above journal *E* and near the end prolongation *d*, while wrist *e'* is located below the other journal *E'*, which arrangement produces the opposite swinging of the bars *C C'*, as previously alluded to.

As a matter of economy of construction, I prefer to cast the journals *E E'* and wrists *e e'* with their respective end plates *D D'*, but said journals and wrists may be separate pieces, and be secured to the plates in any convenient manner. The bars *C* and *C'* may be rocked by a lever projecting vertically from either one of them; but I prefer to make use of the following devices:

The pole or tongue *G* is bolted securely to the cross-beams *a a'* of the frame, and thereby serves as a support for the standard *H*, which latter is pierced with two apertures, *I* and *I'*, that are concentric with pivot *h* of said standard. This pivot *h* is the fulcrum of lever *J*, whose lower end carries a link, *j*, that is coupled to either one of the bars *C* or *C'*, but preferably to the latter one. Pivoted to this lever at *k* is a short lever, *K*, whose lower end carries a pin, *L*, that is adapted to engage with either one of the apertures *I* or *I'* of standard *H*. *l* is a spring, whose stress maintains the pin *L* in either of the aforesaid apertures. (See diagram 3.) *MM'* are the customary forked drag-bars for the hoes *N N'*, of which latter as many may be used as is desired. The manner

of attaching the forward ends of these drag-bars to their respective rocking bars is as follows: O represents a clip, which is preferably made of a single piece of cast metal, although it may be made in two parts, as indicated by dotted lines in the plan at the right of Fig. 6. Passing diametrically through this clip, from front to rear, is a channel, P, of sufficient capacity to receive the head of the drag-bar M. This channel is crossed with a groove, R, at right angles to said channel. The groove R is not quite so deep as the channel, and is continued up the sides of the clip, as seen at *r r'* in Fig. 7. These said *r r'* are designed to receive the staple-shanks S S', whose bend passes through an eye in the head of the drag-bar M of these shanks S and S'. The one, S, is comparatively short, being adapted to enter the rocking bar C only about half an inch or so, while the other shank, S', passes completely through said bar, and is secured with a nut, S''. By this arrangement the staple not only prevents any lateral or longitudinal shifting of the clips O, but the bend of said staple serves as a secure bearing for the drag-bar. If preferred, the shank S may pass entirely through the bar C; but such a construction is not considered necessary, as it would weaken said bar without adding to the security of the clip O. The link *j* that connects lever J with rocking bar C' is attached to said bar with one of these clips, as seen more clearly in Fig. 2.

When it is desirable to arrange the hoes N' in a zigzag position with reference to each other the driver grasps lever J, and by a slight compression upon lever K he withdraws pin L from aperture I', and then forces the upper end of lever J forward. This act rocks the bars C and C' to the positions shown in Figs.

2 and 4, and consequently separates the hoes as far as possible. Having thus thrown the lever he quits his grasp thereof, and the stress of spring *l* at once forces pin L into aperture I of standard H, and thereby locks bars C and C' securely in position.

To throw the hoes into rank the above-described operations are reversed, and the pin L engaged with aperture I', which act brings the bars C and C' to the position shown in Figs. 3 and 5, and this engagement of said pin with rear aperture of standard H secures the hoes in their new position. As these acts can be performed while the driver occupies his seat it will not be necessary to stop the team before shifting the hoes.

As Figs. 4 and 5 show the opposite end plates to what are shown in Fig. 1, it will be apparent that the devices D *d*, E *e*, D' E' *e'*, and F are duplicated at the extremities of rocking bars C and C'.

I claim as my invention—

1. In combination with the rocking bars C C', the end plates D *d*, E *e*, D' E' *e'*, and connecting-rod F, whereby said bars C C' are caused to oscillate simultaneously, but in opposite directions, substantially as herein described, and for the purpose forth.

2. The clip O, made either in one or more pieces, and provided with a channel, P, and groove R *r r'*, which latter receives the staple S S' that couples said clips to the rocking bar C, and also serves as a bearing for the perforated head of drag-bar M, or its equivalent device, substantially as herein described and set forth.

WM. H. NAUMAN.

Witnesses:

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ALBERT KERN.