(No Model.)

W. C. LATHROP.

GRAIN DRILL ATTACHMENT.

No. 402,677. Patented May 7, 1889.

Fig. 1.

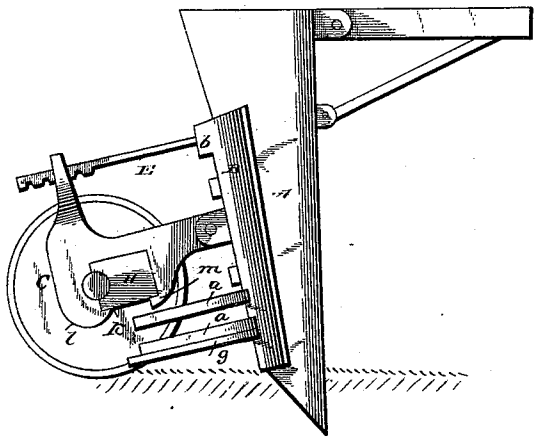


Fig. 3.

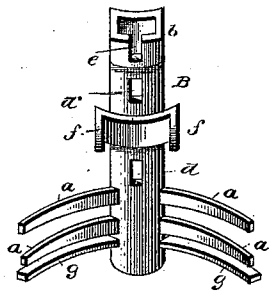


Fig. 2.

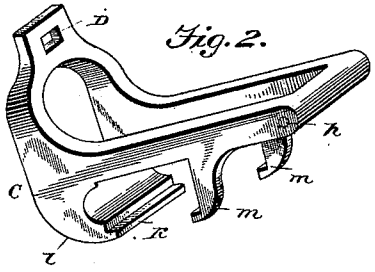


Fig. 5.

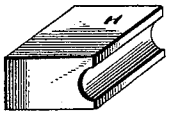


Fig. 6.

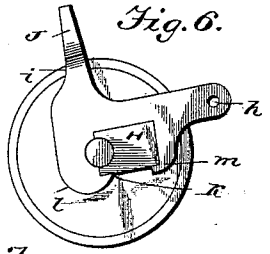
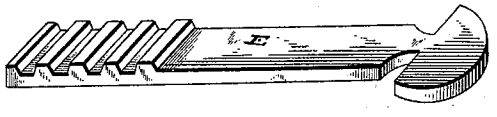


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM C. LATHROP, OF MILTON CENTRE, OHIO.

GRAIN-DRILL ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 402,677, dated May 7, 1889.

Application filed April 9, 1888. Serial No. 270,145. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. LATHROP, a citizen of the United States, residing at Milton Centre, in the county of Wood and State of Ohio, have invented certain new and useful Improvements in Grain-Drill Attachments; and I do 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 appertains to make and use the same.

This invention relates to grain-drill attachments, and is designed as an improvement upon the devices described and claimed in the Letters Patent granted to me July 14, 1885, and numbered 322,187.

The novelty will be fully understood from the following description and claims, when taken in connection with the accompanying drawings, in which—

Figure 1 is a side view of a drill-tooth with my improvements applied. Fig. 2 is a perspective view of the roller-supporting frame. Fig. 3 is a perspective view of the attaching-plate carrying the fenders and bearing-plate. Fig. 4 is a perspective view of the bar for adjustably connecting the roller-supporting frame with the attaching-plate. Fig. 5 is a perspective view of the bearing or filling block for the roller-supporting frame, and Fig. 6 is a side view of the roller-supporting frame with a roller arranged therein.

Referring by letter to the said drawings, A indicates a drill tube or tooth, which may be of any ordinary or approved construction.

B indicates a plate for the attachment of the roller-supporting frame and connecting-bar. This plate is provided at its lower end with a suitable number of lateral rearwardly-curved fenders, *a*, and beneath these fenders in a similar position is a corresponding shape bearing-plate, *g*, which latter is designed to serve as an auxiliary means of regulating the depth of the point as well as assisting in keeping clods or other obstructions from falling into the furrow in advance of the roller. This plate is also provided with slots *d* transversely through it to receive screws, bolts, or other devices whereby the said plate may be attached to the rear side of the drill-tooth. The slots are preferably elongated, so that they will permit of a vertically-adjustable connection of the said plate with the tooth.

b indicates a loop which is formed on the upper end of the plate B and extends rearwardly. This loop is provided in its rear side with a vertical slot, *e*, to receive one end of the connecting-bar, which will be presently referred to.

Formed upon the rear side of the attaching-plate, and preferably about midway of its length, are two parallel lug-journals, *f*, adapted to receive a bolt whereby the roller-supporting frame may be connected therewith in a hinged manner.

C indicates the roller-supporting frame, which is provided at its forward end with an eye, *h*, which is adapted to enter between the lug-journals *f* of the attaching-plate to receive a bolt or pintle. The opposite end of this frame is provided with a suitable bearing for a roller, preferably of the form shown in my Letters Patent above referred to.

In the present illustration of the invention I have shown this bearing as comprising a depending flange, *l*, having a rabbeted portion, K, and two depending lugs, *m*, flanged at their lower ends to receive a groove bearing or filling block, H, whereby the trunnion or axle of the roller may be confined between the groove of the block and the groove *m* of the said flange *l*. The upper rear end of this roller-frame is slotted, as shown at D, for the reception of the grooved end of the connecting-bar E, whereby the said frame, in addition to having a hinge-connection with the attaching-plate, may also have a rigid and adjustable connection therewith. This frame closes above the roller, and its edge turns rearwardly or downwardly, so as to clean said roller when used in tenacious soil.

The connecting-bar E is provided at its forward end with a cross-head, as shown, and may be reduced adjacent to the head, so as to enter the slot *e* in the loop *b* of the attaching-plate. By this means it will be seen that when it is desirable to raise or lower the roller with respect to the attaching-plate and drill-tooth it may be quickly accomplished by changing the notched portion of the connecting-bar in the slot of the roller-supporting frame.

In practice I usually employ a wedge in the slot above the connecting-bar E, so as to prevent the bar from moving in the said slot. It is obvious, however, that any suitable means may be employed for this purpose.

While I have illustrated the roller-supporting frame as being composed of two parallel branches connected at their forward ends by a cross-bar and their opposite ends curved upwardly, yet I do not wish to be confined to such form, as it is simply necessary to provide a means at the forward end to attain a hinge-connection with the drill-tooth, and means at the opposite end of the said frame for the adjustable attachment with the said plate.

It is preferred to form the attaching-plate with the bearing-plate and fenders entire; but it is obvious that the fenders may be removable and secured by any suitable means. It is also obvious that the attaching-plate may in some cases be dispensed with, in which event the fenders, bearing-plates, and means for attaching the roller-supporting frame would be cast with the drill-tooth. This latter construction may be preferred in the manufacture of new grain-drills.

Having described my invention, what I claim is—

1. The combination, with a drill-tooth, of the attaching-plate having a slot or loop in its upper end, the roller-frame hinged to said attaching-plate and having an upwardly-directed slotted branch, and the arm or bar connecting the upper end of the attaching-plate with the upper branch of the roller-frame, substantially as specified.

2. The attaching-plate having the rearwardly-curved fenders *a* and the lower similarly-formed bearing-plate, *g*, in combination with the roller-frame adapted to be hinged to said attaching-plate, substantially as specified.

3. The combination, with a drill-tube, of a plate slotted for the attachment to the drill, carrying lug-journals, fenders, and bearing-plates at one end, and a rearward loop at its opposite end, of a roller-supporting frame provided with means for receiving said roller, an eye at its forward end, whereby it may be hinged to the attaching-plate, and a slot at its rear upper end, and a connecting-rod having a cross-head at its forward end to enter the upper loop of the attaching-plate, and grooves and serrations at its opposite end, so as to be adjustably connected with the slot of the said frame, substantially as specified.

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

WILLIAM C. LATHROP.

Witnesses:
C. S. CURTIS,
N. CLOUSE.