(No Model.)

B. KUHNS.

CORN PLANTER ATTACHMENT.

No. 358,401. Patented Feb. 22, 1887.

Fig. 4.

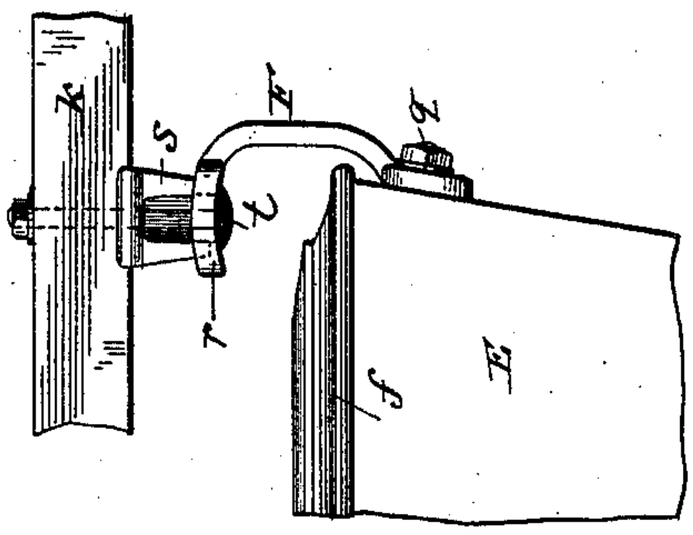


Fig. 5.

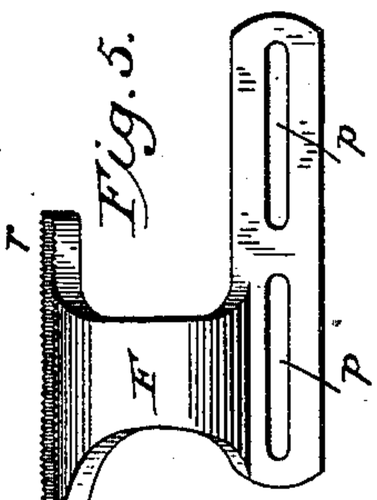


Fig. 3.

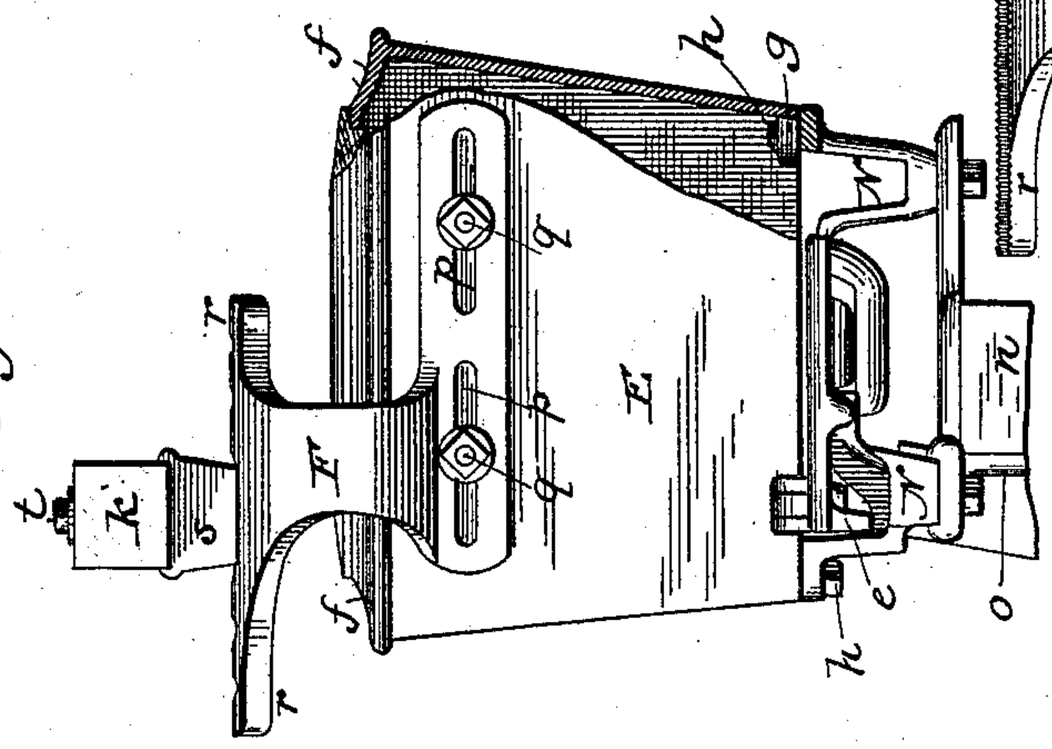


Fig. 6

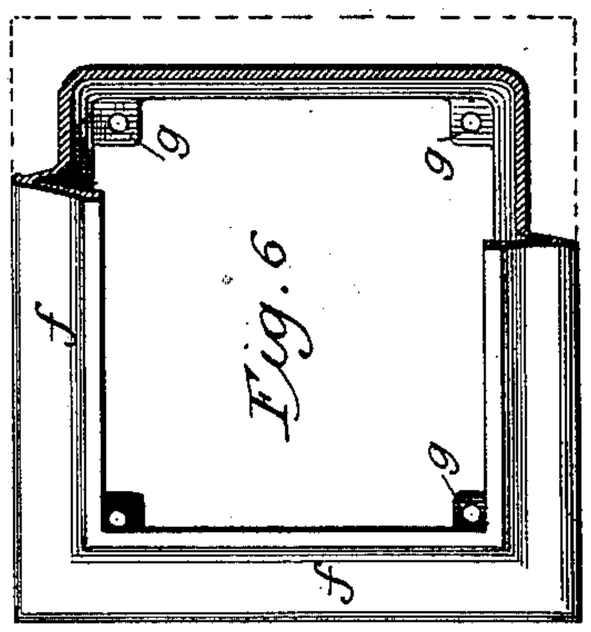


Fig. 2.

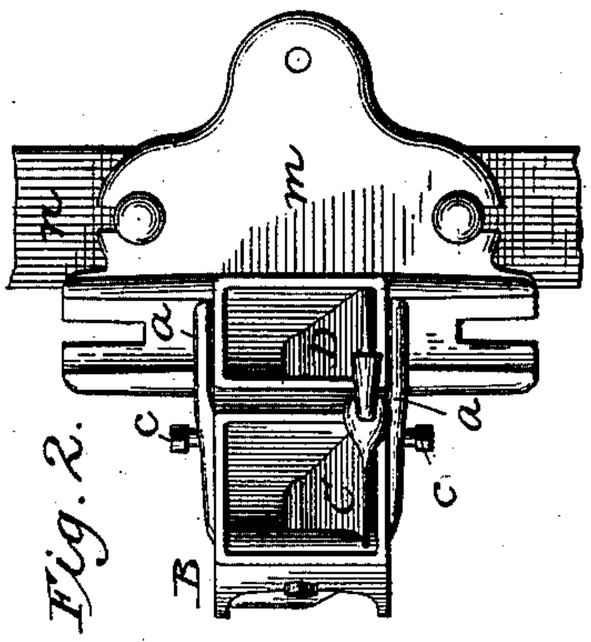
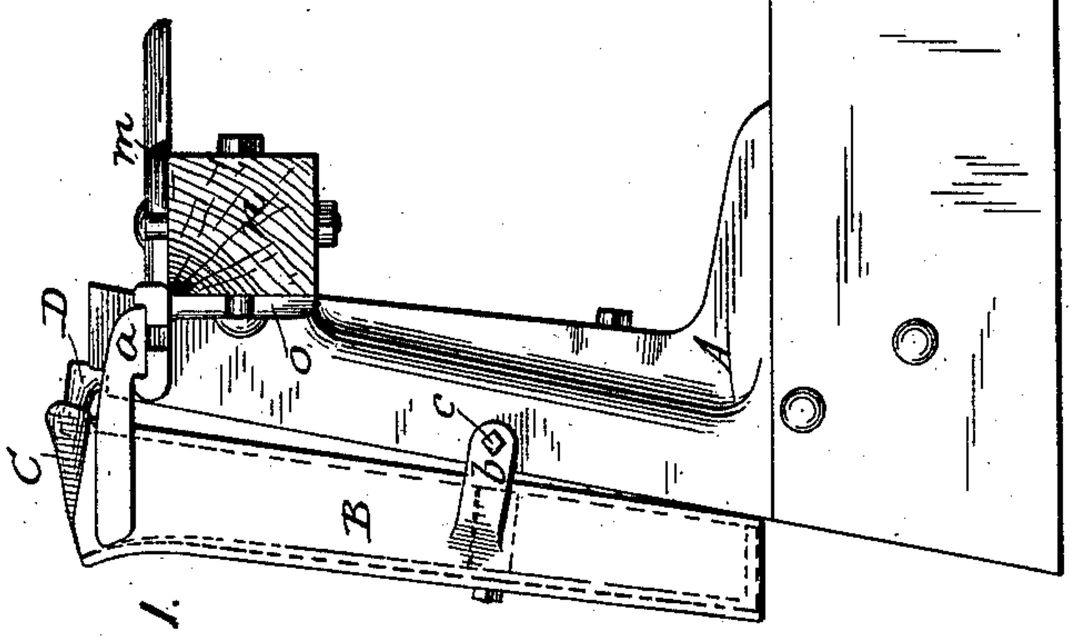


Fig. 1.



Attest.

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By his Atty.

Philip T. Dodge.

UNITED STATES PATENT OFFICE.

BENJAMIN KUHNS, OF DAYTON, OHIO.

CORN-PLANTER ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 358,401, dated February 22, 1887.

Application filed May 7, 1886. Serial No. 201,468. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN KUHNS, of Dayton, in the county of Montgomery and State of Ohio, have invented certain Improvements in Corn-Planter Attachments, of which the following is a specification.

My invention has reference to that class of two-row planters in which a front frame provided with furrow-opening runners and seed-dropping mechanism thereon is connected to a rear wheeled frame through the medium of flexible joints and adjusting devices under the control of the attendant, and in which the dropping of the seed is effected through tubes at the heels of the runners.

The invention consists in various improvements, hereinafter specifically described, having reference, principally, to a supplemental detachable tube on the runner to distribute fertilizing material, in a hopper cast complete in one piece with a flanged top, and in improved means for supporting the check-rowing mechanism from the hopper.

With the exception of the peculiarities hereinafter described, the planter may be of any ordinary or approved construction. In the accompanying drawings I have shown only such parts as are necessary to an understanding of my invention. The runner represented in the drawings is of ordinary form, having a spout or seed-tube at its heel end with a vibrating valve therein to retain the charges of seed momentarily near the surface of the ground, as usual.

Referring to the accompanying drawings, Figure 1 is a side elevation of the rear end of an ordinary corn-planter runner having my supplemental fertilizer-tube attached. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation of a hopper, partly in section, showing the check-row bar and its supporting-bracket and the hopper-support. Fig. 4 is an end view of the same. Fig. 5 is a side elevation of a bracket in a modified form. Fig. 6 is a plan view of one of the feed-hoppers, one side being shown partly in section.

When it is desired to deposit a fertilizer in connection with the seed, I provide for the seed-tube of each runner an attachment—such as represented in Figs. 1 and 2—consisting of a conductor-spout, B, containing a vibrating valve, C, substantially the same as that in the seed-tube. The spout or tube B is adapted to fit against the rear side of the seed-tube, and its valve C is notched at the upper end, or otherwise adapted to engage with the valve D of the seed-tube in order to receive motion therefrom.

When it is desired to drill the fertilizer, the valve C is removed.

Devices of any appropriate character are provided for securing the supplemental tube firmly in position and permitting its removal at will. I prefer to employ as a means of attachment hooks *a*, formed on the upper end of the spout B and adapted to engage with the upper end of the seed-tube. Ears *b* are also formed on the detachable spout and provided with set-screws *c*, to bear against the sides of the seed-tube and prevent the accidental separation of the parts. The fertilizer-spouts may be supplied through supplemental hoppers, or in any other appropriate manner.

In machines as at present known in the art the seed boxes or hoppers E are commonly constructed of wood with a metal top plate or flange, or with metal bodies, and a separate metallic flange secured thereto by bolts. For the purpose of simplifying and cheapening the construction, and of stiffening and strengthening the body of the hopper, so that it may be made of lighter material, I construct each of the hoppers complete in one piece of cast metal, with a flange or rim turned inward at the top to support the removable lid or cover. This construction of the hopper is plainly shown in Figs. 3 and 6, in which *f* represents the inwardly-extending flange at the top, and *g* lugs or ears cast in the inner corners to receive vertical fastening-bolts *h*, which are extended downward through the base-plate N, securing the hopper firmly thereto. The formation of the flange *f* integral with the body of the hopper avoids the necessity of molding and casting the parts separately and the labor of fitting and fastening said parts together.

The seed-tube, forming the heel end of the runner, is provided at its top with a horizontal flange, *m*, bolted to the top of a cross-bar, *n*, of the runner-frame, as usual. As difficulty is frequently experienced by the breakage of this casting in the angle at the upper corner of the bar, I provide it, as shown in Figs. 1

and 2, with laterally-projecting lugs *o*, which are seated against and bolted firmly to the rear vertical face of the bar *n*. This construction is found in practice to fully overcome the breakage before referred to.

At the present time it is a common practice to employ in connection with this class of machines check-rowing mechanism supported by a bar, *k*, sustained from the hopper. In order to support this bar firmly in place and to admit of its adjustment to different positions, as demanded, I have devised the improved bracket F, such as represented in Figs. 3, 4, and 5. At its foot the bracket is adapted to fit against the outer wall of the hopper, and is provided with horizontal slots *p*, which receive fastening-bolts *q*, passing through the wall of the hopper. This attachment permits the bracket to be adjusted horizontally forward and backward. At its top the bracket is formed with a horizontal arm, *r*, which supports one end of a cross-bar, *k*, or a metal block, *s*, which in turn supports one end of the cross-bar *k*, to which latter the check-rowing mechanism will be attached in any ordinary manner. The arm *r* is slotted longitudinally to receive a vertical bolt, *t*, by which the bar and its supporting-block are locked in position, and at the same time their adjustment forward and backward is permitted. The upper face of the arm *r* is notched, as shown in Fig. 3, or serrated, as shown in Fig. 5, and the under face of the block *s* made of corresponding form to interlock firmly therewith, and thus prevent the parts from being thrown out of adjustment.

I am aware that a hopper-body has been cast with inwardly-extending arms or lugs at its top to receive bolts for securing a separate top or rim thereto, and this construction I do not claim, my invention being restricted to a hopper which is cast complete in one piece, with a continuous inwardly-extending rim around its entire upper edge integral therewith, said rim adapted to reduce the top opening to receive the lid, and to stiffen or strengthen the side walls, thus avoiding the expense of forming and attaching the separate rim heretofore employed and giving to the side walls greater strength.

Having thus described my invention, what I claim is--

1. In a corn-planter, the metallic hopper cast complete in one piece with the upright walls, and the continuous inwardly-extending flange or rim around its entire top to reduce the top opening, receive the lid, and strengthen the walls.

2. In combination with the runner having the seed-tube and the vibratory valve D, the separable tube B and the valve C, mounted therein, and adapted, substantially as described, to engage and receive motion from valve D.

3. The attachment for a corn-planter runner, consisting of the tube or conductor B, provided with the suspending-arms *a*, and with the ears *b*, and screws *c*.

4. In a corn-planter runner, the seed-delivery tube provided with the horizontal flange *m* and the vertical ears *b*, whereby it is adapted for attachment to both the horizontal and vertical faces of the supporting-bar *n*.

5. In a corn-planter, the bracket horizontally slotted at its upper and lower ends and adjustably secured to the hopper, the bar to support the check-rowing mechanism, the block underlying said bar and adapted to interlock with the bracket, and the vertical connecting-bolt.

6. In a corn-planter, the supporting-bracket having at its top a horizontal arm provided with notches or serrations, in combination with the bar to sustain the check-rowing mechanism, the intermediate block ribbed or toothed to interlock with the bracket, and the connecting-bar.

In testimony whereof I hereunto set my hand, this 27th day of March, 1886, in the presence of two attesting witnesses.

BENJAMIN KUHNS.

Witnesses:

WALTER S. WOLLASTON,

CHAS. H. SCHAEFFER.