

2 Sheets—Sheet 1.

No. 559,283.

Patented Apr. 28, 1896.

Fig. 1.

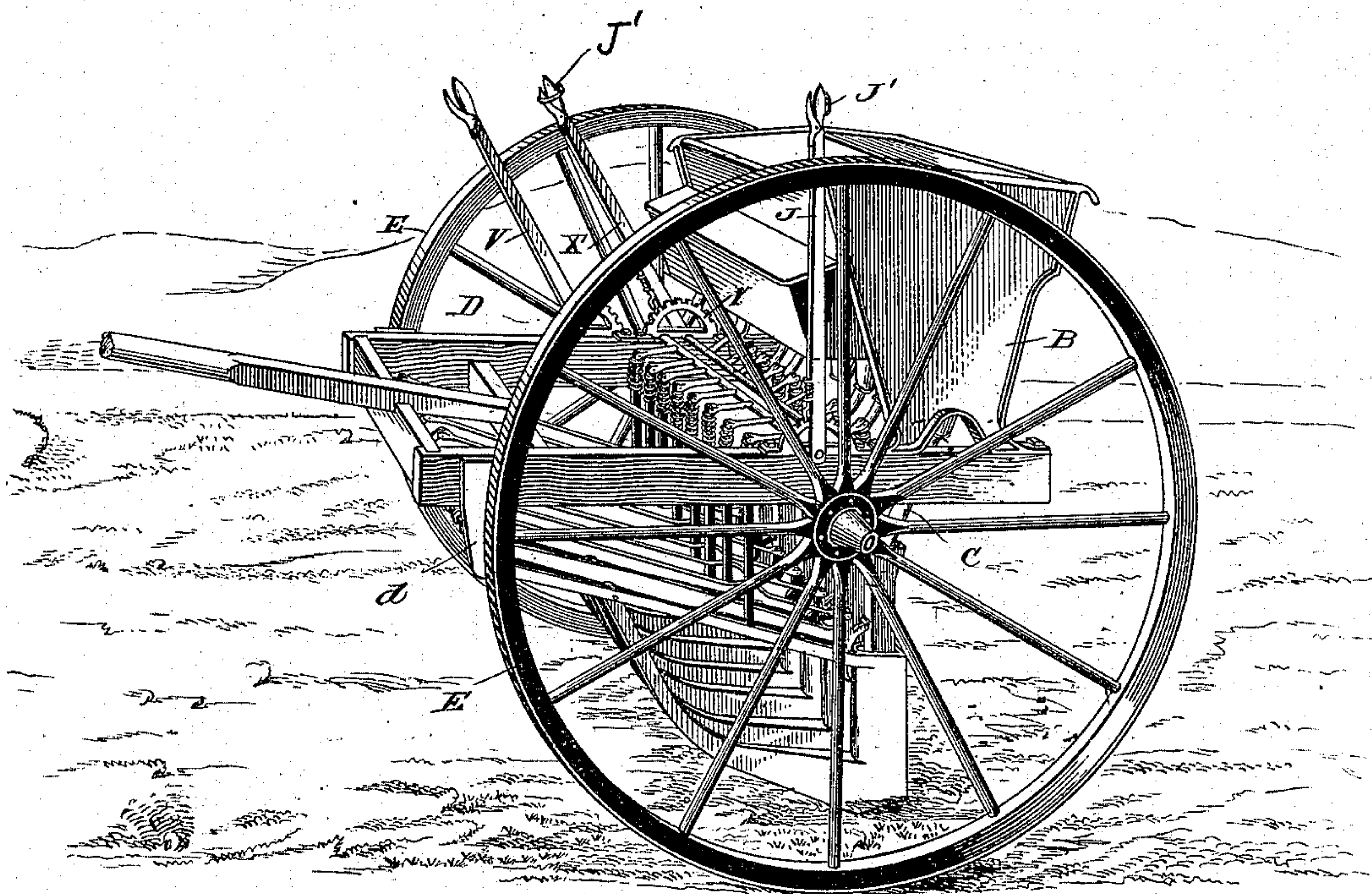
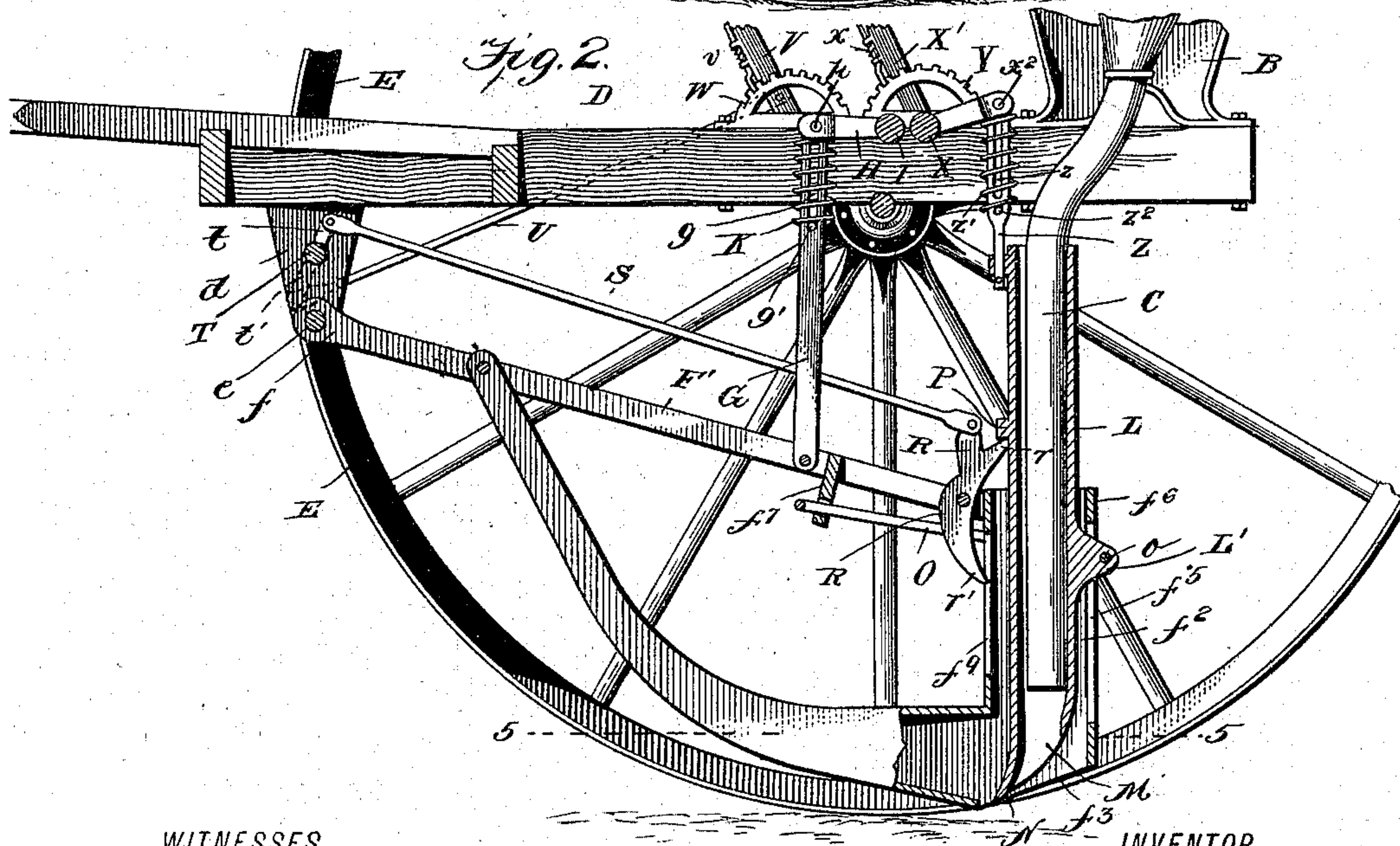


Fig. 2.



WITNESSES.

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WHEAT-DRILL.

SPECIFICATION forming part of Letters Patent No. 559,283, dated April 28, 1896.

Application filed January 18, 1896. Serial No. 576,009. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. HARPER, residing at Schochoh, in the county of Logan and State of Kentucky, have invented a new and Improved Wheat-Drill, of which the following is a specification.

My invention is in the nature of a combined runner and plow drilling machine; and it has for its object to provide a machine of this character of a simple and economical construction, in which the several parts can be quickly and easily manipulated to set the same in position to operate either as a runner or plow drill.

My invention also has for its object to provide a machine of this character in which the runner and plow devices are compactly combined, whereby they can be the more readily adjusted, and whereby they will the more effectively serve for their intended purposes.

With other objects in view, which will hereinafter be referred to, the invention consists in the peculiar combination and novel arrangement of parts, first described in detail, and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a drilling-machine constructed in accordance with my invention. Fig. 2 is a longitudinal section of one of the combined runner and plow drills and the operating devices therefor, the same being adjusted as a runner-drill. Fig. 3 is a top plan view of the parts shown in Fig. 2. Fig. 4 is a longitudinal section showing the drill arranged as a plow-drill. Fig. 5 is a horizontal section on the line 5 5 of Fig. 2. Fig. 6 is a detail perspective view of the latch device hereinafter referred to.

In Fig. 1, I have shown a drilling-machine having a number of drills A, constructed in accordance with my invention, and a grain-box B, common to all the drills, having the usual flexible or rubber-hose tubes C, which lead the grain from the box B to the drills.

As the construction of all the drill members and the means for setting the same in an operative position are the same, I shall describe but one drill and operating device therefor in detail.

Referring now more particularly to Figs. 2

and 4 of the drawings, D indicates the main frame of the machine, and E a drive or supporting wheel. The front end of the frame D has pendent ears *d*, in which is held a cross-rod *e*, upon which is pivotally hung the front end *f* of the upper bar *F'* of the runner-frame, the rear end of such bar *F'* being bifurcated, as at *f'*, and connected to a boot portion *f*², the lower end of which is joined to the rear spread ends *f*³ *f*³ of the runner *F*, the front end of which connects with the bar *F'*, as clearly shown.

Projected upward from the bar *F'* is a connecting-rod *G*, pivoted at its lower end to the bar *F'*, and having its upper end slotted, as at *g*, to receive the cross-pin *h* of a crank-arm *H*, projected from a rock-bar *I*, journaled in the top of the frame *D*, and having at one end an operating-lever *J*, having the usual spring-pawl or detent devices *j* to engage the segmental rack member *j'*, the handle portion of the lever having a pivoted link *J'*, adapted to engage and hold the detent devices *j* released from the rack *j'*, for a purpose presently explained.

K indicates a coiled spring disposed about the upper end of the connecting-rod *G*, between the end of arm *h* and a cross-pin or stop *g'*, the purpose of which will also presently appear.

L indicates a boot member or chute held for vertical movement in the boot portion *f*² of the runner, the lower end of which has a discharge-opening *M* and a front plow member *N*, its rear side having an apertured lug member *L'*, which projects through an elongated slot *f*⁵ in a pendent extension *f*⁶ of the boot portion *f*², as clearly shown in Figs. 2 and 4, such lug being connected with the cross-bar *o* of the bail or bracket rod *O*, the front end of which is pivotally joined to an ear *f*⁷, held pendent on the bar *F'*, such rod *O* serving to form a brace to steady the plow end of the boot or feed-chute *L*.

The front end of the boot portion *f*² is slotted vertically, as indicated by *f*⁹, while the boot *L* has a lug *P*, with which a latch member *R* is adapted to engage and which will serve, when properly adjusted, to keep the member *L* in its elevated or lowered position.

The latch *R* is pivoted to the bar *F'* and has

an upper toe portion r , which is adapted, when the parts are in the position shown in Fig. 2, to engage the under edge of the lug P and hold the boot L and plow elevated.

5 The lower end of the latch R is also formed into a toe member r' , which is adapted to project through the slot f^9 , and when the parts are in the position shown in Fig. 4 such member r' will engage the upper edge of lug P
10 and hold the boot L, with the plow, down in engagement with the ground.

The latch R has a crank portion or ear R', to which is connected one end of a pitman-rod S, the front end of which connects with
15 a crank member t on a rack-rod T, journaled in the pendent ears d , one end of which has a crank member t' , to which is pivotally connected one end of a pitman-rod U, the other end of which is pivotally joined to an operating-lever V, pivoted to the main frame D,
20 and having the usual spring-actuated detent devices v , which are adapted to engage the segmental rack W, as shown.

X indicates a rock-shaft journaled on top
25 of the main frame D, which has an upwardly-extending lever X', having the usual detent devices x to engage the rack Y and provided with a crank member x' , having a cross-pin x^2 passed through the slotted end z of a lift
30 member Z, secured to the front side of the upper end of the grain chute or boot L, such end Z also having a coiled spring z' disposed between the end of crank member x' and a cross-pin z^2 , as clearly shown.

35 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine as described, the combination with the main frame, of a runner pivotally connected at the front end to the frame
40 having at the rear a boot or pocket member, a vertically-adjustable boot held in the runner-boot having a plow at its lower end and means for adjusting such plow and boot, vertically holding the plow-boot locked to its
45 raised position substantially as shown and described.

2. In a machine as described, the combination with the main frame and the seed-box of
50 a vertically-adjustable boot having a plow at the lower end, a runner pivotally connected at the front end to the frame having at the rear a boot portion fitted over the plow-boot, a lever mechanism for raising the rear end of
55 the runner substantially as shown and described.

3. In a machine as described, the combination with the frame, the runner, a latch member carried thereby, hand-operated lever devices for operating same, a plow-carrying
60 boot having a locked member adapted to be engaged by the latch, a lever mechanism for raising the plow-boot and the runner in-

dependently of each other substantially as shown and described.

4. The combination with the frame and the runner having a boot member f^2 , slotted on the front as at f^9 , a pivoted latch having upper and lower toe-pieces r and r' , means for raising the runner and for operating the latch,
70 of the boot member L, having a plow N, at the lower end and the lug P, at the front and means for raising said boot member all arranged substantially as shown and for the purposes described.

5. The combination with the vertically-movable boot L, having a plow at the lower end, a hand-operated lever mechanism for adjusting said boot, the runner pivotally connected at the end of the main frame, a lever
80 mechanism for raising, said runner having a boot portion surrounding the boot L, substantially as shown and described.

6. The combination with the frame, the runner, said runner having a boot member f^2 ,
85 provided with a slot f^5 , and means for elevating such runner, of the boot member L, having a plow N, at the lower end and held for vertical movement in the boot portion f^2 , said boot L, having a projection L' , extended
90 through the slot f^5 , and the bail member O, pivotally connected at one end to the runner-frame having a member connected with the projection L' , all arranged substantially as shown and described.

7. The combination with the frame, the runner pivoted thereto and having a boot portion f^2 , provided with a slot f^9 , a latch member R, pivoted to the bar F', of the runner-frame, said latch having an upper toe r , and
100 a lower toe r' , the rock-shaft T, having a crank t , a pitman s , and the lever devices connected with the crank-shaft t , of the boot L, having a plow member N, at the lower end and held for vertical movement in the boot f ,
105 said boot having a lug P, and adapted to engage with either one of the toe members r and r' , of the latch, the rock-shaft X, the connections between such shaft and the boot L, and the lever mechanism for operating the shaft X, all arranged substantially as shown and described.

8. In a machine for the purposes described, the combination with the frame, a runner pivotally connected at the front end to the frame, lever mechanism for elevating the rear end of the runner, and a plow-carrying boot vertically adjustable a hand-operated latch mechanism for holding the plow-boot to an elevated position and to its lowered position
120 substantially as shown and for the purposes described.

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Witnesses:

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