

(No Model.)

3 Sheets—Sheet 1.

O. B. PICKETT.  
GRAIN DRILL.

No. 538,276.

Patented Apr. 30, 1895.

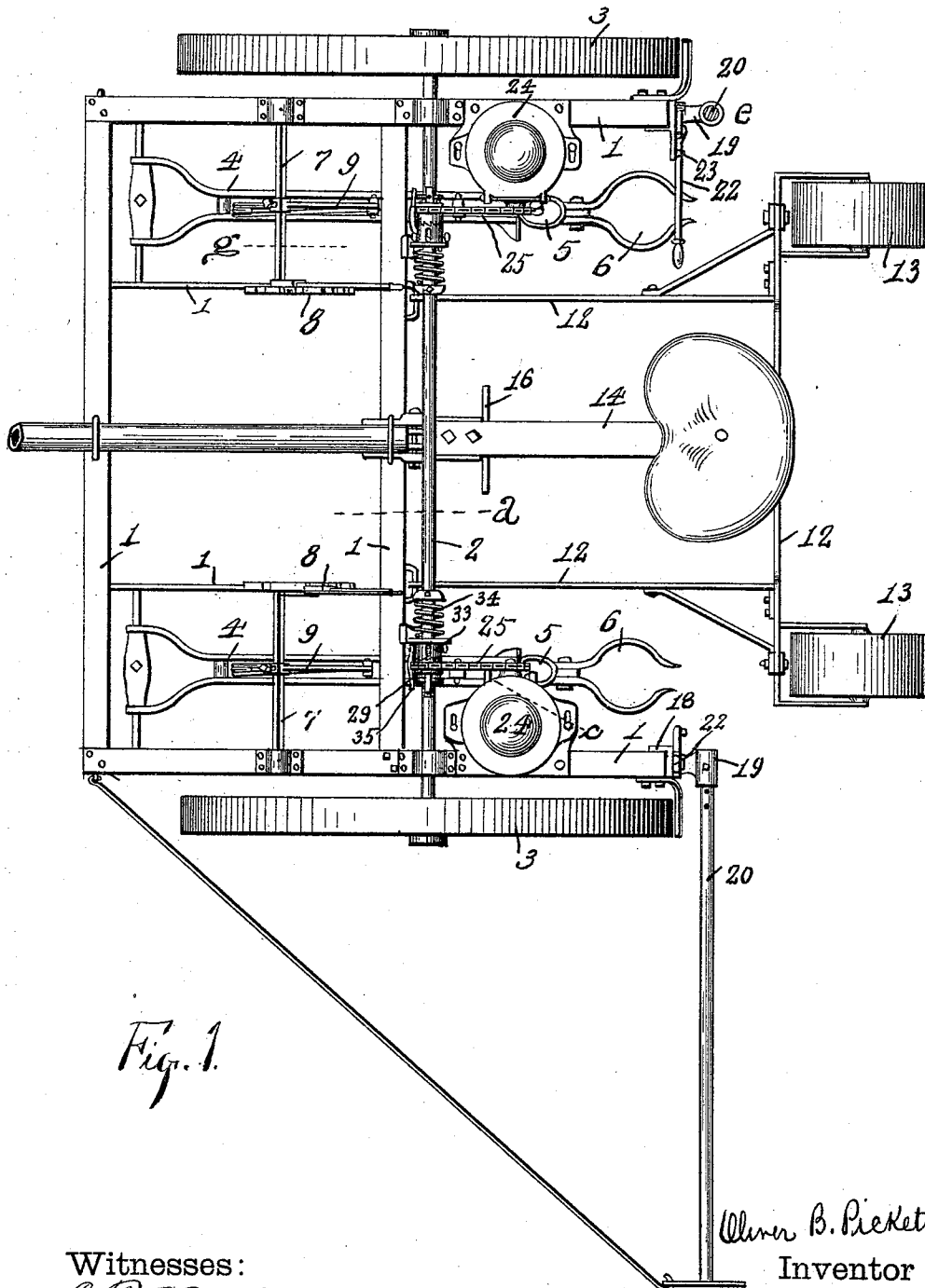


Fig. 1.

Witnesses:

*E. R. Shipley.*  
*C. M. Sherman.*

*Oliver B. Pickett*  
Inventor

*by James W. See*  
Attorney

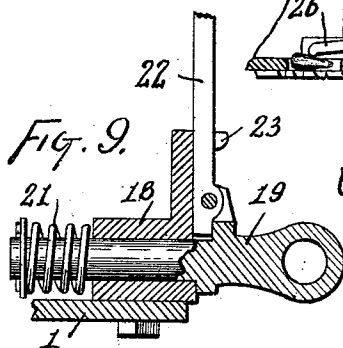
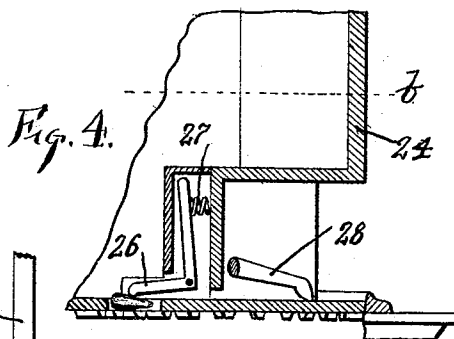
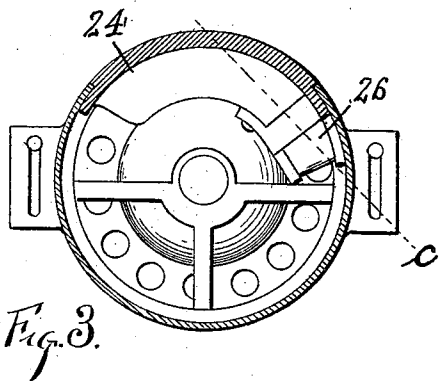
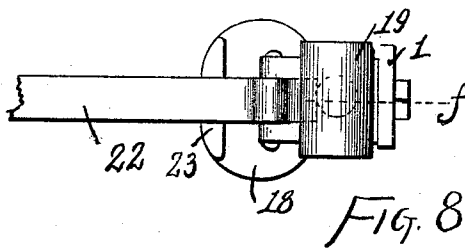
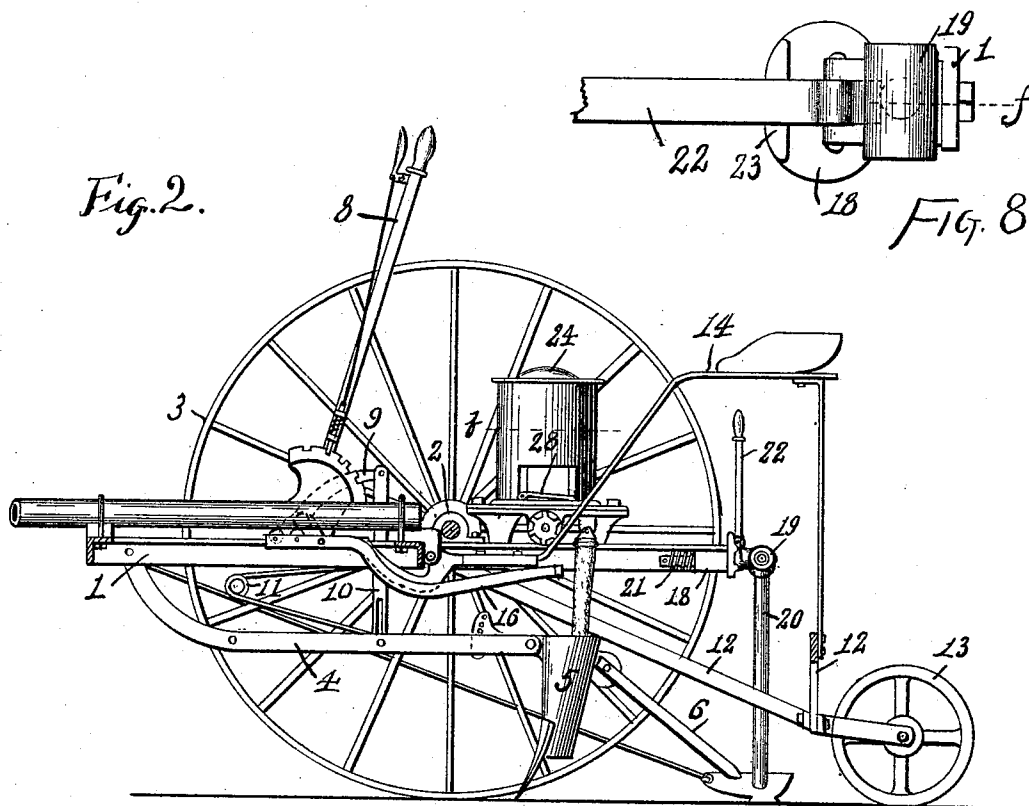
(No Model.)

3 Sheets—Sheet 2.

O. B. PICKETT.  
GRAIN DRILL.

No. 538,276.

Patented Apr. 30, 1895.



Witnesses:  
*E. R. Shipley.*  
*C. M. Shuman.*

*Olin B. Pickett*  
Inventor  
by *James W. See*  
Attorney

(No Model.)

O. B. PICKETT.  
GRAIN DRILL.

3 Sheets—Sheet 3.

No. 538,276.

Patented Apr. 30, 1895.

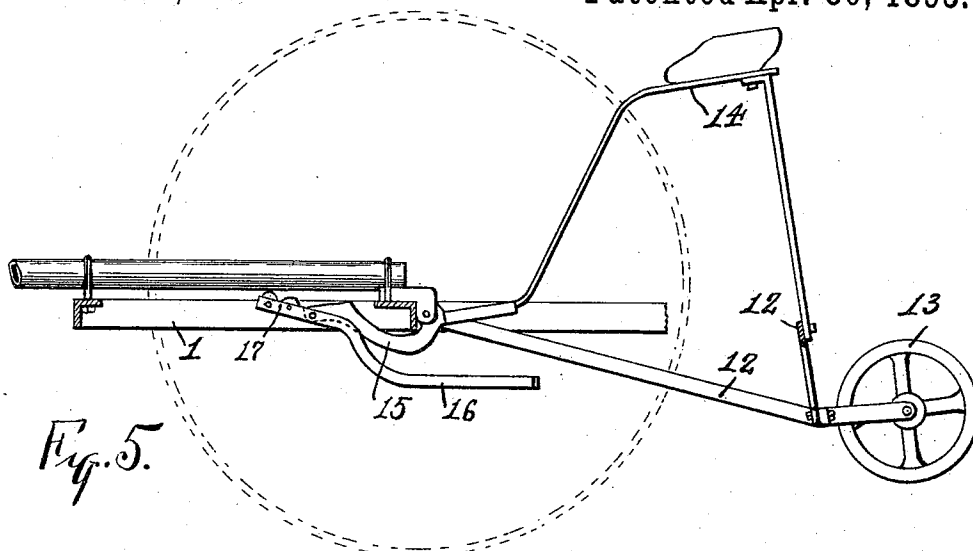


Fig. 5.

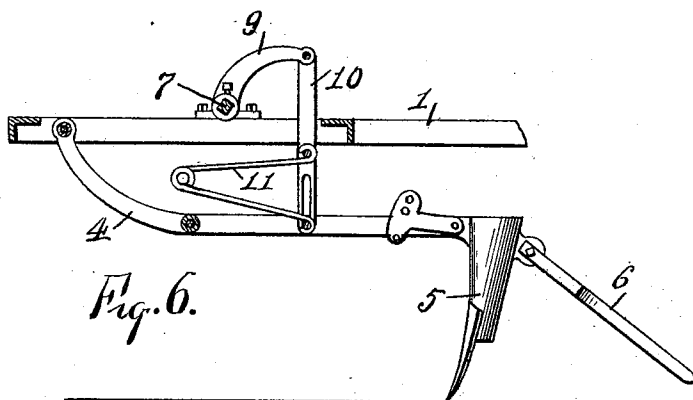


Fig. 6.

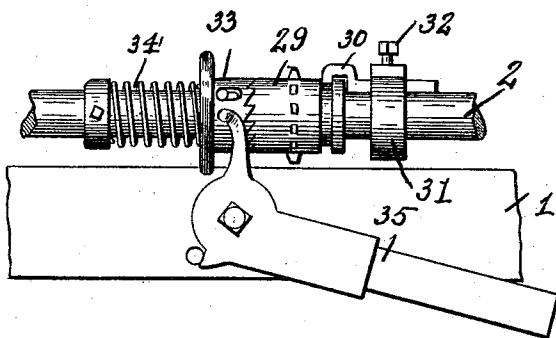


Fig. 7.

Witnesses:

E. R. Shipley.  
C. M. Sherman.

Olivier B. Pickett

Inventor

by James W. See

Attorney

# UNITED STATES PATENT OFFICE.

OLIVER B. PICKETT, OF LIBERTY, INDIANA, ASSIGNOR TO THE COLUMBIA  
DRILL COMPANY, OF SAME PLACE.

## GRAIN-DRILL.

SPECIFICATION forming part of Letters Patent No. 538,276, dated April 30, 1895.

Application filed November 8, 1894. Serial No. 528,192. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER B. PICKETT, of Liberty, Union county, Indiana, have invented certain new and useful Improvements in Grain-Drills, of which the following is a specification.

This invention pertains to grain drills and the improvements relate to the mechanism for raising and lowering the pressure wheels, for raising and lowering the drag-bars, for operating the driving clutches, for improving the reception and discharge of grain from the cells in the seed plates, and for operating the marker.

The improvements will be readily understood from the following description taken in connection with the accompanying drawings, in which—

Figure 1, is a plan of a grain drill embodying my improvements, the left hand marker of the machine appearing in operating position; Fig. 2, a vertical fore and aft section of the machine in the plane of line *a* of Fig. 1; Fig. 3, a horizontal section of a seed-box in the plane of line *b* of Figs. 2 and 4; Fig. 4, a vertical section of a portion of a seed-box in the plane of line *c* of Figs. 1 and 3; Fig. 5, a fore and aft section, similar to Fig. 2, but showing the crushing wheels elevated, this view being devoted mainly to parts pertaining to the crushing wheels; Fig. 6, a fore and aft section in the plane of line *g* of Fig. 1, showing mechanism pertaining to the drag-bars; Fig. 7, a rear elevation of one of the driving clutches, the drag-bar operating in vertical section in the plane of line *g* of Fig. 1; Fig. 8, a rear elevation at *e* of Fig. 1, of one of the marker-bearings; and Fig. 9, a horizontal section of one of the marker-bearings, in the plane of line *f* of Fig. 8.

In the drawings, giving attention to Fig. 1, except where otherwise noted:—1, indicates the general framing; 2, the axle journaled in the frame; 3, the main wheels, mounted upon the axle and arranged to give it continuous rotary motion as usual; 4, the two drag-bars, one at each side of the machine, with their forward ends pivotally supported by the frame; 5, the hoes carried as usual by the rear ends of the drag-bars; 6, the covering blades attached at the rear of the hoes; 7, a pair of

rock-shafts carried by the frame, one across over each of the drag-bars; 8, (Fig. 2) a lever for rocking the rock-shaft and provided with a detent for locking it in adjusted position, there being a lever for each rock-shaft; 9, (Fig. 6) an arm projecting from the rear of each rock-shaft; 10, links, one for each drag-bar, depending from arms 9 and having vertical slots in their lower ends engaging pins in the drag-bars; 11, a spring at each link, consisting of a double armed spring, preferably coiled at the juncture of the arms, the extremity of the lower arm being connected with the drag-bar and the extremity of the upper arm being connected with link 10, the spring tending to urge the drag-bar as far down as the slot in the link will permit; 12 (Fig. 1) a trailing frame with its forward end pivoted to the frame and having its rear portion extending across to the rear of the covering blades and arched or elevated at its center; 13, crushing wheels carried by this trailing frame, one wheel to the rear of each of the hoes; 14 (Fig. 5) a central portion of this trailing frame, serving to support the driver's seat; 15, an extension of this trailing frame forward of the pivotal axis which unites it to the main frame of the machine, parts 12, 14, and 15 thus forming a lever-like trailing frame pivoted to the main frame and carrying the crushing wheels; 16, a foot lever pivoted to the forward extremity of extension 15 and presenting its rear pedal end in convenient position for the driver's feet; 17, rollers carried by the forward end of lever 16, forward of the pivot which unites it to extension 15, these rollers bearing under the tongue of the planter; 18, (Fig. 1) a bearing at each rear corner of the main frame, with their axes in fore and aft lines; 19, marker sockets journaled in these bearings, the sockets being at right angles to the axes of the bearings; 20, a marker-rod rigidly secured in each socket and bearing at its outer end a marker blade, in such manner that when the rod is down the marker blade can engage the soil, each rod being provided with a hound rod to stay it in the direction of draft; 21, (Fig. 9) a spring on the journal of each marker socket 19, tending to draw the journal into its bearing as far as a collar provided upon it will permit; 22, a

lever pivoted to each marker socket, the pivot being at right angles to the axis of the socket journal, the lever projecting outwardly from the journal and having a handle at its outer extremity, the toe of the lever bearing inwardly against the rear face of the marker-bearing; 23, a pair of jaws carried by the rear face of each marker-bearing in position to be engaged by and lock the lever 22 when the lever is in position corresponding with the upturned position of the marker-rod; 24, the usual seed-boxes, one supported by the frame over each of the hoes; 25, sprocket-chains for communicating motion from the main axle 2 to the usual seed plate mechanism of the seed-boxes; 26, (Figs. 3 and 4) a bell crank lever pivoted within the seed-box, its horizontal arm lying over the seed plate in position to gently scrape the top of the seed plate and rake surplus grains from the cells therein as the plate rotates, the vertical end of this lever being housed in the wall of the seed-box; 27, a spring engaging the vertical arm of this lever and urging the horizontal arm of the lever properly to its scraping duty; 28, (Fig. 2) a hammer bar pivoted to the seed-box exterior to the seed chamber thereof, its free extremity or head resting upon the seed plate in the line of cells and tending, as the cells successively pass it, to knock the grain out of the cells; 29, (Fig. 7) the sprocket-wheels on the main axle 2 for giving motion to the chains which drive the seed mechanism, these sprocket-wheels being free to have the axle turn within them, and being provided with facial clutches and having each a peripherally grooved hub; 30, a claw engaging the hub groove of each sprocket-wheel and held to the axle so as to prevent endwise motion of the sprocket wheel upon the axle; 31, a collar at each claw, grasping the axle and the shank of the claw; 32, a set screw in each of these collars, serving to bind the collar and claw firmly to the axle; 33, a clutch-hub at each sprocket-wheel, splined to the axle and having facial clutches adapted to engage the clutches of the sprocket-wheels and having also a peripheral flange; 34, a spring upon the axle, one at each sliding clutch-hub and tending to hold the clutch into engagement; and 35, a bell crank lever pivoted to the frame, one at each clutch, one arm of this lever engaging against the flange on clutch hub 33 and the other arm extending substantially horizontally in position to be pushed upwardly by its appropriate drag bar as the drag bar is elevated.

In Fig. 2 the crushing wheels 13 are in position to engage the soil and crush it at the seed furrows. Fig. 5 shows these wheels elevated, as when a corner is to be turned. The driver accomplishes this by throwing his weight upon lever 16. Depressing the rear end of lever 16 depresses the forward end of extension 15 and results in raising the rear portion of the trailing structure.

In Fig. 6 the hoe has its point even with the ground. Assume it to be locked in that po-

sition by its lever 8. By rocking lever 8 further forward the hoe may be still further lifted and supported out of action. By adjusting lever 8 to the rear the hoe may be lowered as desired, being suspended by link 10 and pressed downward by spring 11. The hoe while thus limited in its downward motion by the slot in the link is at liberty to rise against the elastic resistance furnished by the spring, and the depressing action of the spring may be adjusted by adjusting the link downwardly, the length of the slot in the link still leaving sufficient breadth of motion for the hoe.

The main axle turns with the ground wheels and drives the seeding mechanism through the sprocket-chains. Referring to Fig. 7 it will be obvious that if a drag-bar is raised it will rock lever 35 and disengage the clutch and cause the stoppage of the seeding mechanism pertaining to that drag-bar, the two seed mechanisms thus starting or stopping independently as their respective drag-bars are raised or lowered from and to working position.

In Fig. 1 the left hand marker of the machine is in operative position to mark the soil. It is held to its work by its own gravity, being free to rise and fall upon its journal which unites its socket to the main frame. By taking hold of handle 22 and moving it toward the center of the machine the marker-rod may be turned up vertically into idle position, the handle then snapping into jaws 23 (Fig. 8) by means of which the marker is locked in idle position. Fig. 9 shows the handle so locked. If the handle be pulled rearwardly such action will be arrested by spring 21, the spring thus tending to hold the handle in locked position in the jaws. By pulling the handle rearwardly it can be disengaged from the jaws and the marker let down to marking position. Either marker may thus be brought into action as desired.

I claim as my invention—

1. In a grain drill, the combination, substantially as set forth, with the grain drill, of a trailing frame pivoted to the main frame, crushing wheels carried in the rear of the trailing frame, a seat upon the trailing frame and a lever engaging the trailing frame and serving to elevate the crushing wheels by the action of the driver's weight upon the lever.

2. In a grain drill, the combination, substantially as set forth, with the grain drill, of a trailing frame pivotally united to the main frame of the drill and having an extension forward of its uniting pivotal axis, crushing wheels carried by the rear of said trailing frame, a lever pivoted to said forward extension and having its forward end restrained downwardly by a portion of the main machine and having its rear end arranged as a pedal.

3. In a grain drill, the combination, substantially as set forth, with the grain drill, of a trailing frame pivoted to the main machine and carrying crushing wheels and the driver's seat, and a lever connected with the main ma-

chine and said trailing frame and presenting a pedal within reach of the driver's feet.

4. In a grain drill, the combination, substantially as set forth with the frame drag-bar and hoe, of a rock-shaft mounted on the frame and provided with a locking handle, an arm on said rock-shaft, a link pivoted to said arm and having a slot engaging a pin in the drag-bar, and a double armed spring engaging the drag-bar and the link one end of which is secured to the link and the other to the drag-bar.

5. In a grain drill, the combination, substantially as set forth, with the frame, a pair of drag-bars, and a hoe on each drag-bar, of a pair of rock-shafts mounted on the frame and provided each with a locking lever, an arm upon each rock-shaft, links pivoted to the arms and having slots engaging pins in the drag-bars, and double-armed springs engaging the pins on the drag-bars and the links.

6. In a grain drill, the combination, substantially as set forth, of the main frame, the rotary main axle, a pair of drag-bars pivoted to the frame and carrying hoes, a seed-box with operating mechanism for each hoe, a pair of clutches on the axle to serve in transmitting motion independently to said seeding mechanisms, and angular pivoted levers fulcrumed upon the frame, one arm of which engages the drag bars and the other the clutches connected with said clutches and adapted to be engaged by the respective drag-bars, whereby the elevation of either drag-bar serves to throw out of action its appropriate clutch and arrest the motion of its appropriate seeding mechanism.

7. In a grain drill, the combination, substan-

tially as set forth, of the main frame, the rotary main axle, a clutch part rotarily free on the axle, a clutch part splined to the axle and arranged to transmit motion to said seeding mechanism, a spring urging the clutch parts into engagement, and an angular lever pivoted to the main frame one arm engaging the splined clutch-part and the other the drag-bar and adapted to be engaged and operated to throw the clutch out of action by the rising of the drag-bar.

8. In a grain drill, the combination, substantially as set forth, with the grain drill, of a marker bearing at each side thereof, marker-rods journaled to said bearings and adapted to take positions for marking or to take idle positions of upward extension, and an operating lever for each rod secured to each bearing for rocking said marker-rods in their bearings and locking them in their idle position.

9. In a grain drill, the combination, substantially as set forth with the main frame of the machine, of a bearing carried thereby with its axis fore and aft, a journal capable of sliding therein, a marker-rod projecting at right angles from the journal, a lever pivoted to the journal and adapted to engage locking jaws when the marker-rod is turned to idle position, and a spring resisting the endwise motion of said journal in one direction and tending to hold said lever into engagement with its locking jaws.

OLIVER B. PICKETT.

Witnesses:

ROBERT E. BARNHART,  
FRANK B. HUSTED.