

No. 712,687.

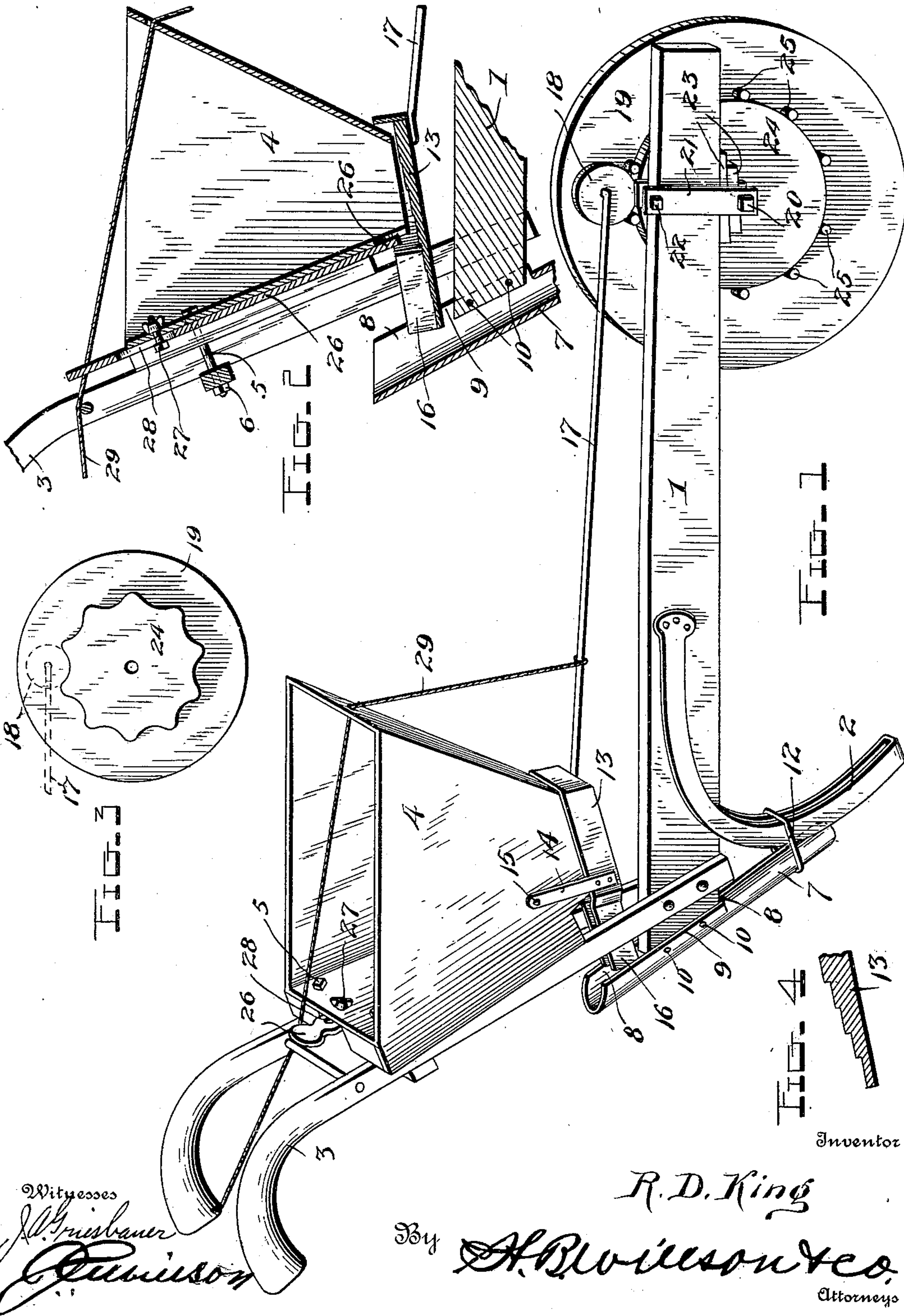
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R. D. KING.

SEED, GRAIN, OR FERTILIZER DRILL.

(Application filed July 31, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

RUFUS D. KING, OF BOWMAN, GEORGIA.

SEED, GRAIN, OR FERTILIZER DRILL.

SPECIFICATION forming part of Letters Patent No. 712,687, dated November 4, 1902.

Application filed July 31, 1902. Serial No. 117,895. (No model.)

To all whom it may concern:

Be it known that I, RUFUS D. KING, a citizen of the United States, residing at Bowman, in the county of Elbert and State of Georgia, have invented certain new and useful Improvements in Seed, Grain, or Fertilizer Drills; 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 has relation to grain, seed, and fertilizer drills, the object being to construct a device of this character which may be quickly attached and detached to and from an ordinary plow-stock, a further object being to construct such a device which will be simple in construction, durable in use, inexpensive of production, and which will be well adapted to the use for which it is designed.

With the above and other objects in view, which will readily appear as the nature of the invention is better understood, said invention consists in certain novel features of construction and combination and arrangement of parts, which will be hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the device applied to a plow or cultivator stock. Fig. 2 is a central longitudinal vertical section through the hopper and the immediate parts and a portion of the plow. Fig. 3 is a detail side view of a modified form of tappet-wheel. Fig. 4 is an enlarged detail vertical section through the shoe.

In the drawings, 1 denotes the beam of an ordinary plow or cultivator; 2, the plow-standard; 3, the handles. These may be of any approved construction and do not in themselves form a part of the invention.

4 denotes a hopper having inclined sides and which is securely clamped to the plow-handles by means of bolts 5, adapted to pass through the rear wall of the hopper and through a clamping-strip placed on the opposite side of the handles and to receive nuts 6, which when tightened up will securely clamp the hopper to the plow-handles.

7 denotes a drill-tube having formed in its upper end a slot 8, the edges of which are bent to form flanges 9. The rear end of the beam 1 is adapted to project between the

flanges 9, and bolts 10 are passed through said flanges and the end of the beam 1, thus securely attaching the upper end of the drill-tube to the plow. The lower end of said tube is further braced by means of a band or ring 12, placed around the same and around the standard of the plow.

13 denotes the hopper-bottom, which is in the form of a shaking-shoe, pivotally connected to the hopper by means of straps 14, fixed to the sides of the shoe and pivoted to the hopper, as shown at 15. The rear end of the shoe 13 is contracted or reduced to form a spout 16, which is adapted to project into the slot 8, formed in the upper end of the drill-tube.

The bottom of the shoe 13 is "stepped," as shown in Fig. 4 of the drawings, this construction of bottom greatly assisting in the rapid discharge of seed from the hopper to the drill-tube.

To the lower forward end of the shoe 13 is connected one end of a tappet bar or rod 17, carrying at its opposite end a tappet-engaging wheel or roller 18.

19 denotes a tappet-wheel arranged to one side of the forward end of the plow-beam and journaled upon a bolt 20, which passes through two clamping-plates 21, arranged on either side of the beam 1 and being connected at their upper ends by a bolt 22. The bolts 20 and 22 are adapted to receive nuts upon their outer ends, which when screwed up securely clamp the plates 21 to the beam and firmly support the tappet-wheel 19. Blocks 23 are adapted to be driven in between the bolt 20 and the lower side of the beam 1 or between the bolt 22 and the upper side of the beam, by which means the end of the beam is raised or lowered, thereby causing the plow to dig shallow or deep.

24 denotes a circular disk or boss centrally formed on the inner face of the tappet-wheel 19, and around the periphery of this boss is arranged a series of tappet-pins 25, driven into the face of the tappet-wheel at equidistant points. The wheel or roller 18 is adapted to rest upon the periphery of the disk 24, and when the tappet-wheel is turned, to ride over the tappet-pins, and thereby impart to the tappet-bar and the shoe a reciprocating rectilinear motion, the tendency of which is to

forcefully expel the contents of the hopper from the shoe into the drill-tube.

The end of the rear side of the hopper is formed with a discharge-opening, which is adapted to be closed by a gate 26, which slides between guides on the back of said hopper and is held in place and limited in its movement by a bolt 27, passing through the back side of the hopper and through a vertical slot 28, formed in the gate 26, which is formed at its upper end into a handle. By raising and lowering the gate a larger or smaller opening may be formed and more or less grain will be delivered onto the shoe, as desired.

29 denotes a cord or other flexible connection attached at one end to the tappet-bar 17 and passing upwardly through a guide-opening formed in the upper end of the front side of the hopper passes back within convenient reach of the operator and is connected at this end to one of the plow-handles.

In operation it will be seen that as the plow is drawn forward the tappet-wheel rotates and successively brings the tappet-pins into engagement with the roller on the tappet-arm, causing the same to vibrate in the manner herein described, which will forcibly expel the contents of the hopper into the tube, which operation is greatly facilitated by reason of the stepped bottom of the shoe.

When it is desired to throw the working parts of the apparatus out of gear, the cord 29 is drawn upon, thereby raising the tappet-arm and the roller 18 from engagement with the pins on the tappet-wheel.

In Fig. 3 of the drawings I have shown a different arrangement of tappet-wheel. In this instance instead of forming a circular disk or boss on the face of the tappet-wheel and arranging tappet-pins around the same I form the periphery of the disk with a corrugated or undulated surface, upon which

the roller 18 is adapted to work. By this construction the same movement of the shoe will be obtained.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, operation, and advantages of my improved grain or fertilizer drill will be readily apparent without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

In a machine of the character described, the combination with a plow-stock, of a hopper detachably secured to said plow-stock and having an adjustable feed-gate, a feed-shoe, pivotally suspended beneath said hopper, and having a stepped bottom, a drill-tube arranged in rear of said feed-shoe, a tappet-wheel detachably and adjustably secured to the beam of said plow-stock, a circular disk or boss and a series of tappet-pins carried by said tappet-wheel, a tappet-arm secured to said feed-shoe and carrying at its opposite end a roller which is adapted to engage the pins and disk on said tappet-wheel, and means for raising said tappet-rod and roller out of engagement with said tappet-pins, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

RUFUS D. KING.

Witnesses:

GEORGE HASLETT,
L. L. BAELLY.