C. W. ROBINSON.

FEED CUP FOR GRAIN DRILLS.

APPLICATION FILED SEPT. 14, 1914.

1,291,151. Patented Jan. 14, 1919.

Fig. 1.

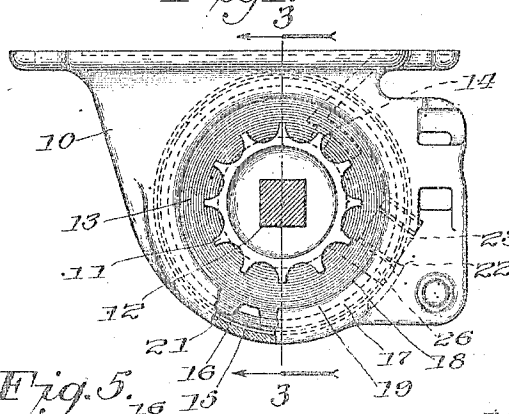


Fig. 2.

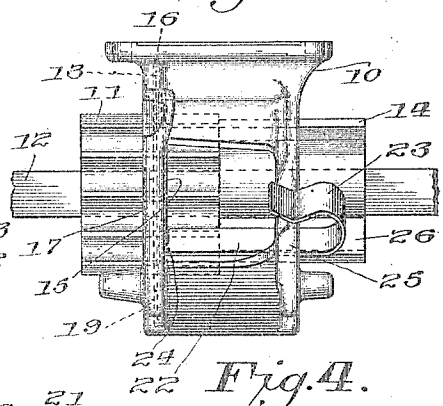


Fig. 5.

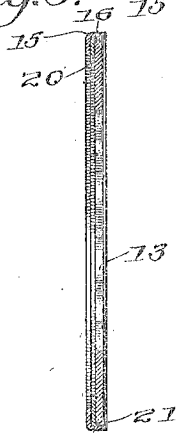


Fig. 4.

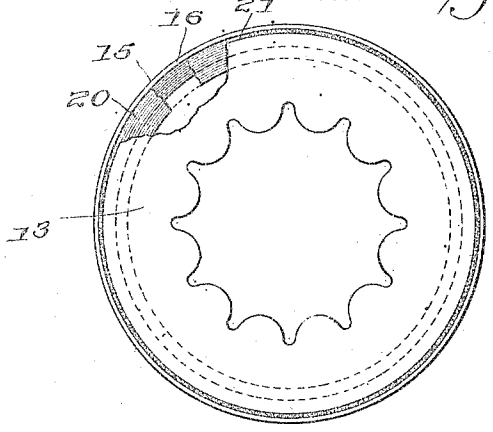
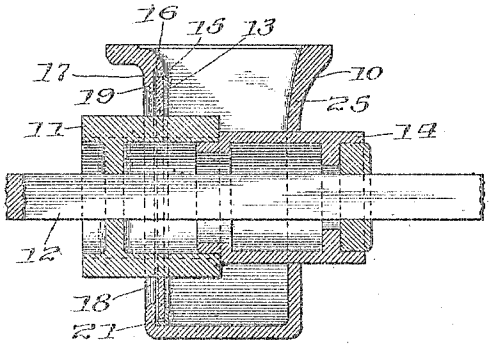


Fig. 3.



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UNITED STATES PATENT OFFICE.

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FEED-CUP FOR GRAIN-DRILLS.

1,291,151. Specification of Letters Patent. **Patented Jan. 14, 1919.**

Application filed September 14, 1914. Serial No. 861,524.

To all whom it may concern:

Be it known that I, CHARLES W. ROBINSON, a citizen of the United States, residing at Hamilton, Ontario, in the county of Wentworth and Dominion of Canada, have invented certain new and useful Improvements in Feed-Cups for Grain-Drills, of which the following is a full, clear, and exact specification.

My invention relates to feed cups for grain drills, and has for its object to improve and simplify the construction and operation of the particular type known as fluted feed cups.

The method and manner of securing the fluted washer in place on the side wall of the feed cup has hitherto been expensive and imperfect, and the fit has never been accurate in a degree to permit the sowing of small seed, such for instance as clover, grass, alfalfa and flax seed. My present invention contemplates the employment of a feed cup of simple and inexpensive construction so arranged and equipped as to be capable of planting the smallest seeds without loss through leakage, and doing this in a uniform and even manner.

One form of my invention is exemplified in the following description and illustrated in the accompanying drawing, in which—

Figure 1 shows a side elevation of a feed cup embodying my invention;

Fig. 2 shows a similar device in elevation, illustrating the discharge end thereof;

Fig. 3 shows a vertical central section view taken on line 3—3 of Fig. 1;

Fig. 4 shows the circumferential view of the fluted washer and retaining member employed in my device; and,

Fig. 5 shows a vertical cross sectional view of the same.

Referring in detail to the form of my invention illustrated herewith it will be seen to comprise a body portion 10, a fluted feed wheel 11 carried upon a square driving shaft 12, a fluted washer 13 coacting with the feed wheel and rotatably mounted in one side of the body portion, and a flanged follower block 14 arranged upon the shaft 12 adjacent to the feed wheel and designed to regulate the quantity of seed sown. For retaining the fluted washer or rosette 13 in position within the body portion I employ a retaining member 15 provided with an annular ring 16. The side wall 17 upon which the washer is carried is provided with a circular opening 18 having an annular shoulder or flange 19 against which the washer is normally held.

The method of securing the washer in rotatable position is accomplished in the following manner: The body portion 10 is, of course, cast separately in its entirety, and the washer 13 and retaining member 15, being preferably formed of sheet metal, are stamped or cut in separate operations. The operator then procures a circular strip of asbestos paper or other non-combustible fibrous material 20 which he arranges between the rosette and its retaining member, as shown in Fig. 5. The annular space 21 between the periphery of the rosette and the rim 16 of the retaining member is then filled with a foundry black wash, sand or other suitable separating material, and the parts are then used as a core in the mold and the body portion, including the side wall 17, cast around them. The metal, of course, will not run into the groove 21, nor adhere to the washer on account of the presence of the foundry wash, and when the casting is tumbled the asbestos separating strip is destroyed and the washer is then left free to turn within the wall and retaining member. The result is an exceedingly accurate fit between the movable parts, which in use will prevent fine seeds from leaking therethrough.

In sowing small seeds it is necessary, in order to insure a uniform feed, that the space between the fluted feed wheel and discharge end of the cup be restricted, and this is usually provided for by means of a hinged gate. However, in connection with my present invention I am enabled to employ a simple clip device for this purpose which is exceedingly inexpensive. This device is in the form of a strip of spring metal 22 with a looped end 23, and opposite the looped end provided with a projecting stud portion 24 upon its lower corner. No special provision need be made in the construction of the cup to receive this device, as on account of its thinness it can be inserted in the same slot in the side wall 25 of the cup now occupied by the flange 26 of the follower block 14. The studded end 21 of the clip, when in position, engages the project-

ing corner of the retaining member 15, and, in order to do so, that end of the clip must be swung outwardly a short distance, which will have the effect of inclining the entire device so that thereby the discharge of seed from the feed wheel comes not in spurts or jets, but is instead made regular and even. The looped end 20 when the clip is in position engages the edge of the side wall 25, and thereby retains the slip in position. Obviously it is a simple operation to remove or insert this cut-off device, and on account of its economy of construction and the fact that no special provision need be made in the formation of the feed cup to receive it, the device offers many advantages.

What I claim is:

1. A feed cup having a body portion, a fluted washer in one side thereof, a feed wheel within said washer, and a separate sheet metal retaining member having said body portion cast around it, for holding the washer in rotatable position.

2. In a feed cup, a body portion having a circular opening in one side thereof with an annular shoulder formed thereon, a washer located in said opening and lying against the annular shoulder, and a separate retaining member for the washer having an out-turned rim portion permanently secured to the annulus of said opening, and adapted to permit independent rotation of said washer.

3. In a feed cup, a fluted feed wheel and a detachable spring clip to project across the discharge end thereof and restrict the size of the outlet opening.

4. In a feed cup, a fluted feed wheel and a detachable clip member adapted to be inserted in a slot in one wall of the cup and project across the discharge opening, and provided with a loop on one end thereof to engage the end of the slotted wall and retain said clip in position.

5. In a feed cup, a fluted feed wheel, a fluted washer in position on said feed wheel and rotatably mounted in one wall of the cup, a retaining member for the washer having its corner projecting inwardly from the adjacent wall member, a cut-off device adapted to be inserted in a slot in the opposite wall of the cup and project across the discharge opening thereof, and a projecting lower corner portion on the cut-off device adapted to engage the projecting corner of the retaining member and hold said cut-off device in proper position.

6. In a feed cup, a fluted feed wheel, a flanged follower member and a clip device adapted to be inserted in the slot occupied by the flange on said follower member and project across the dicharge opening, and means for retaining said clip device in removable position.

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

CHARLES W. ROBINSON.

Witnesses:

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G. J. KELDAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."