No. 702,598. Patented June 17, 1902.

R. H. SCHLACHTER.

FURROW OPENER FOR DISK GRAIN DRILLS.

(Application filed Dec. 31, 1901.)

(No Model.)

Fig. 1.

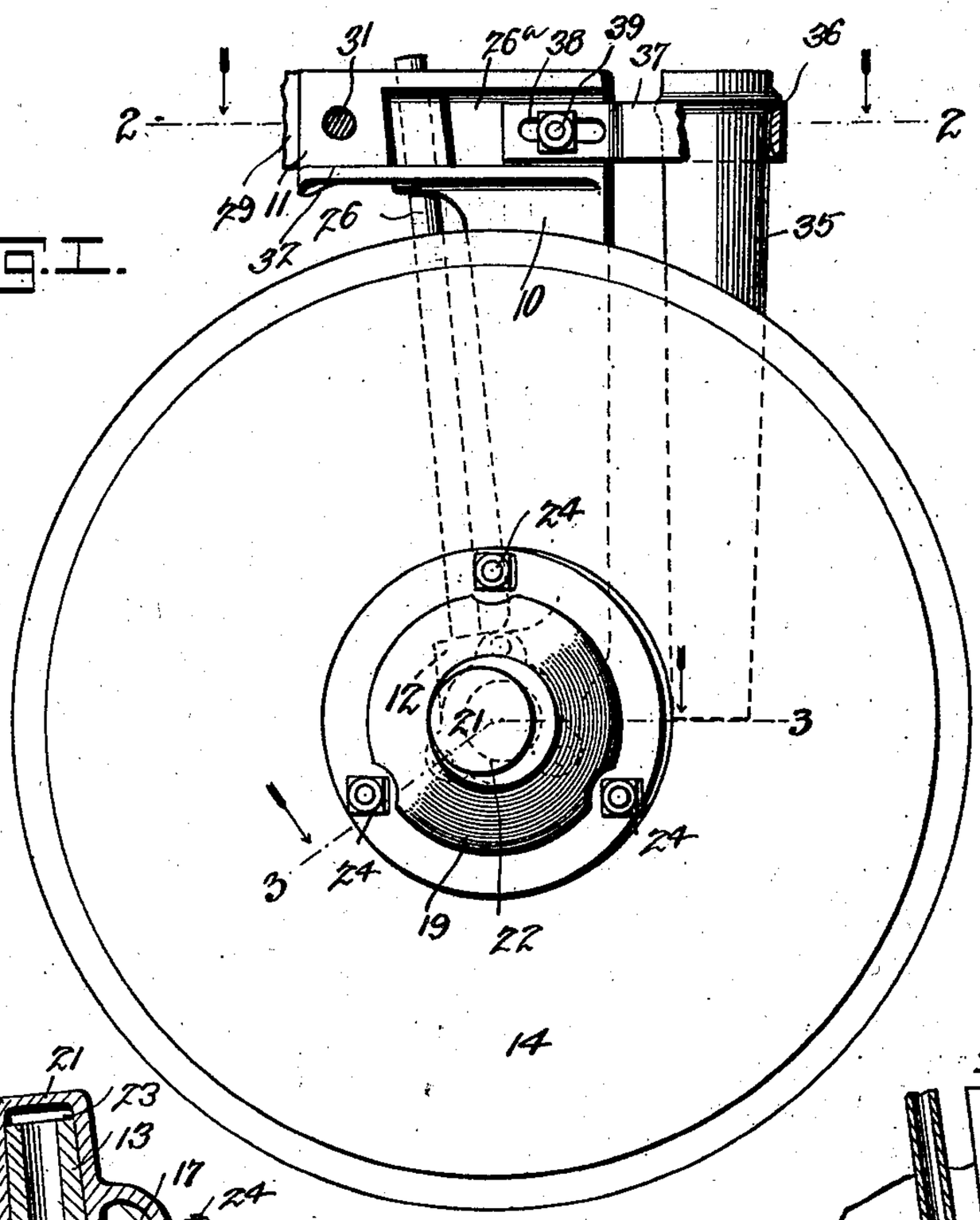


Fig. 3.

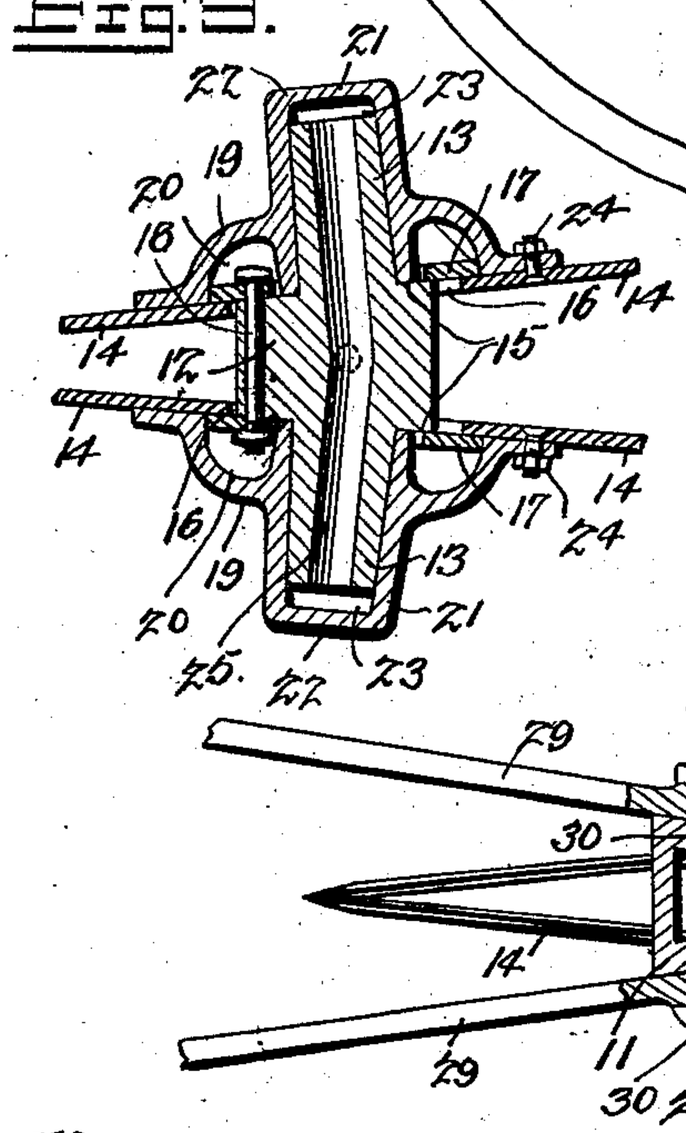


Fig. 2.

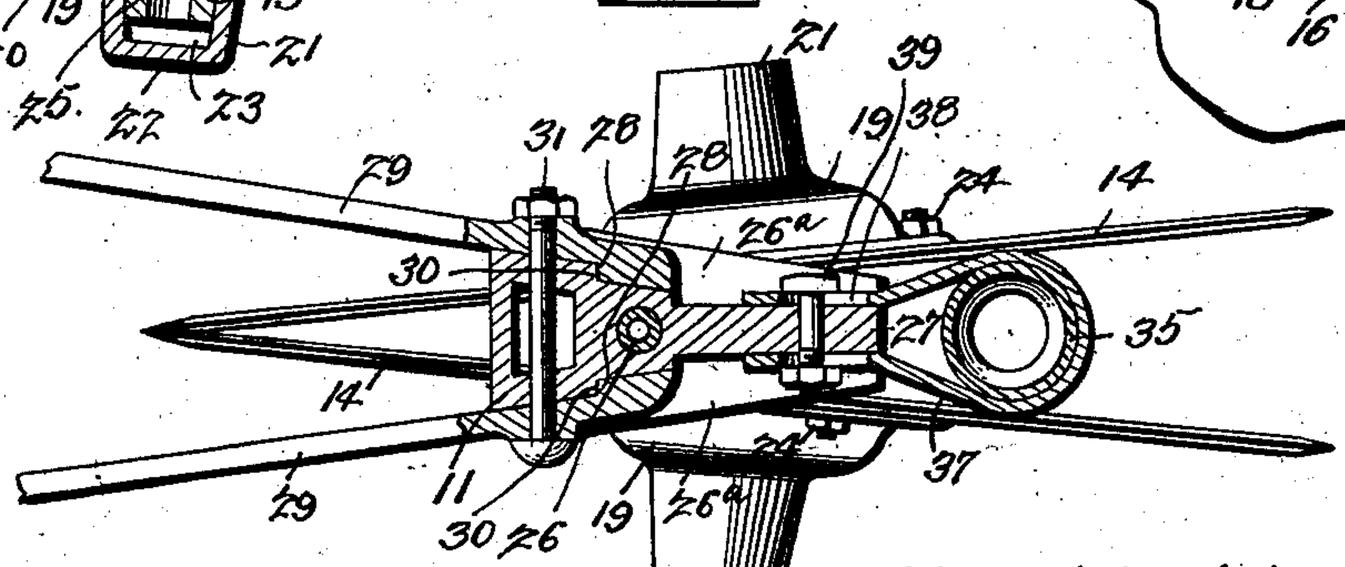
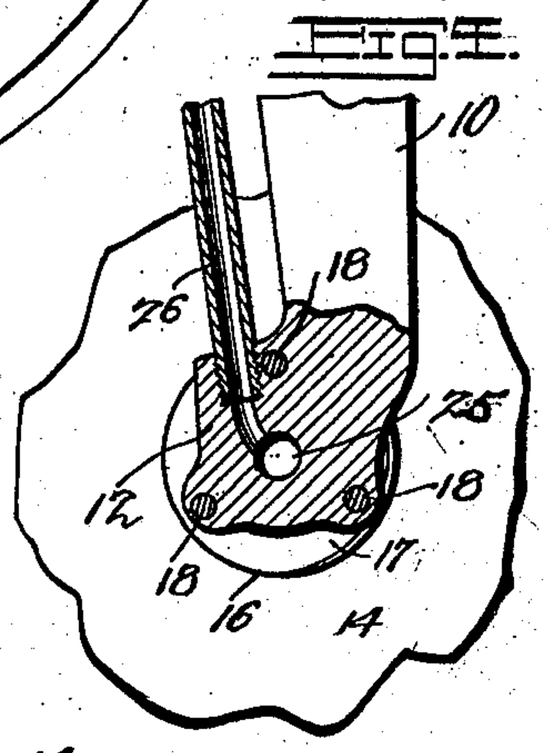


Fig. 5.



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ROBERT H. SCHLACHTER, OF CLAY CENTER, NEBRASKA.

FURROW-OPENER FOR DISK GRAIN-DRILLS.

SPECIFICATION forming part of Letters Patent No. 702,598, dated June 17, 1902.

Application filed December 31, 1901. Serial No. 87,950. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. SCHLACHTER, a citizen of the United States, residing at Clay Center, in the county of Clay and State of Nebraska, have invented a new and useful Furrow-Opener for Disk Grain-Drills, of which the following is a specification.

My invention is an improved furrow-opener for disk grain-drills; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a furrow-opener embodying my invention. Fig. 2 is partly a top plan view of the same and partly a horizontal sectional view taken on a plane indicated by the line 2 2 of Fig. 1. Fig. 3 is a detail sectional view taken on a plane indicated by the line 3 3 of Fig. 1. Fig. 4 is partly an elevation of the foot of the standard and partly a vertical central sectional view of the same.

In the embodiment of my invention I cast or otherwise form the standard 10 integrally with the forwardly-extending head 11 at its upper end and the forwardly-extending foot 12 at its lower end. Formed with the foot of the standard and projecting from opposite sides of the same are a pair of outwardly-tapered axle-spindles 13, which are disposed at a suitable angle with reference to each other, so that the furrow-opening disks 14, which are perpendicular to the axes of the said axle-spindles, converge toward each other on their front sides. The sides of the foot at the bases or inner ends of the axle-spindle are formed with shoulders 15, disposed in correspondingly forwardly converging planes. Each of the disks 14 is formed with a central opening 16 of sufficient diameter to clear the shoulder 15, and on the outer side of each disk at the center thereof is placed an annular plate 17, which is concentric with the disk. The said plates 17 bear on the shoulders 15 and are connected together by bolts 18, which pass through alined openings in the said annular plates and in the foot of the standard.

Circular caps 19, which bear against and are bolted to the outer sides of the disks, are formed on their inner sides with annular channels 20, which receive the annular plates 17, and the said caps are further formed with boxes 21, which bear on and are fitted snugly on the outwardly-tapered axle-spindles 13 and revolve upon them, the outer ends of the said boxes being closed, as at 22, and projecting a slight distance beyond the outer ends of the axles 13 to form chambers or spaces between the outer ends of the said axles and the closed outer ends of the boxes, as at 23. The heads of the bolts 18 which secure the annular plates 17 to the forwardly-converging sides of the standard-foot and the nuts on the said bolts bear against the sides of the annular channels 20 in the caps 19, and hence both the said bolts and the nuts thereon are prevented from turning and thereby the nuts are prevented from working loose on said bolts. Since the caps 19 revolve on the axle-spindles and the disks 14 are secured to the said caps by the bolts 24, the disks are adapted to revolve, as will be understood, and to open a furrow. The axle-spindles 13 are provided with axial bores 25, the inner ends of which communicate with each other and the outer ends of which communicate with the chambers or spaces 23 in the outer ends of the boxes 21. A lubricating-tube 26 passes downwardly through openings in the head and foot of the standard and at its lower end communicates with the bores 25, and hence oil or other suitable lubricant placed in the tube is conducted through the same and the bores 25 to the recesses or chamber 23 in the outer ends of the boxes 21, and hence lubricates said boxes and the axle-spindles. The construction of the boxes and the combination therewith of the axle-spindles, annular plates 17, and the disks 14 are such that dust and grit are effectually prevented from working between the journal-boxes and axle-spindles. Furthermore, there is no loss of the lubricant and a material economy thereof is effected.

The sides of the head 11 converge rearwardly and are formed with longitudinal recesses 26^a, between which is a web 27. At the front end of the said recesses the said web is formed with oppositely-faced shoulders 28. The rear ends of the draw-bars 29 are shouldered on their inner sides, as at 30, to engage the shoulders 28, the rear portions of the draw-bars being disposed in the recesses 26^a of the standard-head, and the said draw-bars are secured to the standard-head by a bolt 31. It will be understood that the lower sides of the draw-bars bear on the flanges 32, which project laterally from the standard-head and form the lower sides of the

recesses 26ª, and hence the said flanges, in coaction with the shoulders 28 30 and the bolt 31, effectually prevent pivotal motion between the standard-head and the draw-bars.

The drill-tube 35, which is disposed in rear of the standard, is provided with an annular flange 36 on its outer side. The said flange is engaged by a substantially U-shaped clevis 37, in which the drill-tube is disposed, and the arms of the said clevis, which extend forwardly, are disposed in the recesses 26ª of the standard-head 11, bear against opposite sides of the web 27, are provided with longitudinal adjusting-slots 38, and are secured to the standard-head by a bolt 39 in said slots and which extends through the web 27. By this means the clevis, which carries the drill-tube, is longitudinally adjustable, so that the drill-tube may be disposed as close to or as far from the rear side of the standard as may be required to appropriately scatter the seeds in the furrow made by the rearwardly-diverging furrow-disks, between which the lower end of the drill-tube is disposed.

Having thus described my invention, I claim—

1. In combination with a standard having an outwardly-projecting axle-spindle, and a shoulder at the base thereof, an annular washer-plate detachably secured to the standard, bearing on the said shoulder and disposed concentrically with relation to the axle-spindle, a cap having a box revoluble on the axle-spindle, bearing against the shoulder at the base thereof and having an annular channel in which the washer-plate is disposed and a disk having a central opening to clear the said shoulder, the said cap being secured concentrically to the said disk and the latter being disposed on one side of the washer-plate, substantially as described.

2. A standard having outwardly-projecting axle-spindles on opposite sides thereof, and formed with shoulders at the bases of said axle-spindles, in combination with washer-plates bearing on the said shoulders and detachably connected together and to the standard, disks, having central openings to clear the said shoulders, the said disks being disposed on the inner sides of the washer-plates, and caps formed with bearings revoluble on the axle-spindles and with recesses on their inner sides to receive the washer-plates, the said caps being detachably secured to the disks, substantially as described.

3. The combination with a standard having an axle-spindle, and a shoulder at the base thereof, of a washer-plate non-revolubly secured on the said shoulder, a disk having a central opening clearing the said shoulder and a cap detachably secured to the outer side of the disk, said cap being formed with a recess on its inner side to receive the washer-plate and with a journal-box revoluble on the axle-spindle, the outer end of the said journal-box being closed, substantially as described.

4. A standard having outwardly-extending axle-spindles, shouldered at their bases and provided with lubricant-conducting bores extending to their outer ends, and means to conduct lubricant to said bores, in combination with washer-plates non-revolubly secured on said shoulders, disks having central openings clearing said shoulders and caps detachably secured to the outer sides of the disks, said caps being formed with recesses on their inner sides to receive the washer-plates and with journal-boxes revoluble on the axle-spindles, substantially as described.

5. A standard having outwardly-projecting axle-spindles on opposite sides thereof, and formed with shoulders at the bases of said axle-spindles, in combination with washer-plates bearing on the said shoulders, bolts extending through the standard and the said washer-plates and having their heads and caps on the outer sides of said washer-plates, said bolts securing the washer-plates on the shoulders of the standard, disks having central openings to clear the shoulders, the said disks engaging the inner sides of said washer-plates, and caps detachably secured to the outer sides of said disks, said caps having journal-boxes revoluble on the axle-spindles, bearing against the shoulders of the standard and having channels or recesses to receive the washer-plates, the sides of the bolt-heads and nuts engaging the sides of said channels, whereby the said caps lock said bolts and nuts, substantially as described.

6. A standard having outwardly-extending axle-spindles, shouldered at their bases, in combination with washer-plates non-revolubly secured on said shoulders, disks having central openings clearing said shoulders, and caps detachably secured on the outer sides of the disks, said caps being formed with recesses on their inner sides to receive the washer-plates and spindles, substantially as described.

7. In a furrow-opener, the combination of a standard, a drill-tube, a clevis supporting the drill-tube, connected to the standard and adjustable longitudinally with respect to its own axis, on the standard, said clevis disposing the drill-tube on the rear side of the standard and adapting the drill-tube to be disposed at any desired distance therefrom, substantially as described.

8. A standard of the class described having a head with shouldered recesses in its sides, in combination with draw-bars secured to the head, disposed in said recesses and having shoulders engaging those of the head, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT H. SCHLACHTER.

Witnesses:
J. L. CAMPBELL,
H. E. MCDOWELL.