

No. 630,353.

Patented Aug. 8, 1899.

W. F. HOYT.
DISK DRILL.

(Application filed Mar. 30, 1898.)

2 Sheets—Sheet 1.

(No Model.)

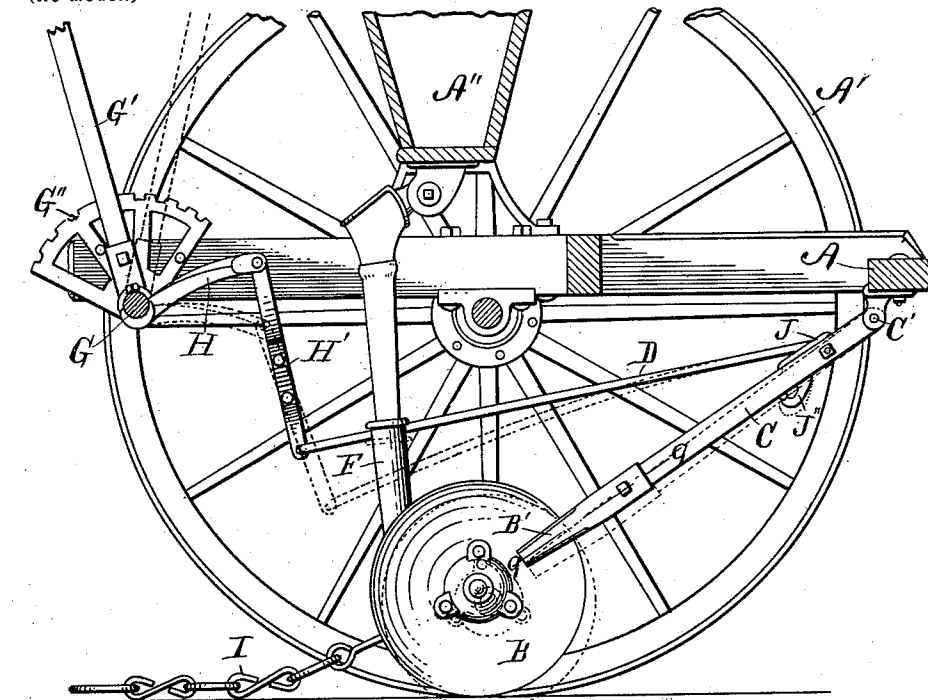


Fig. 1

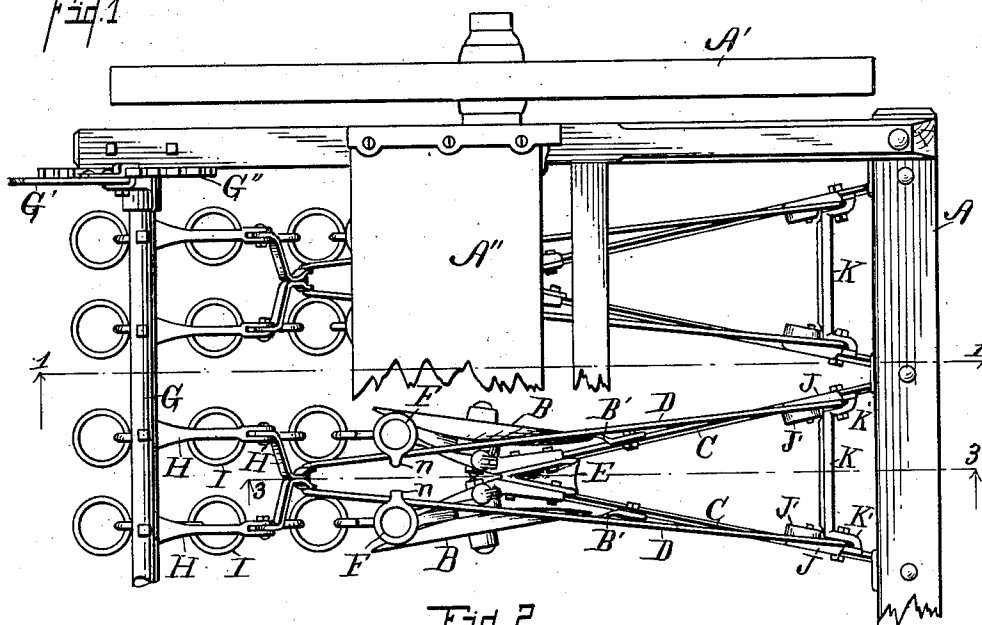


Fig. 2

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Att'y.

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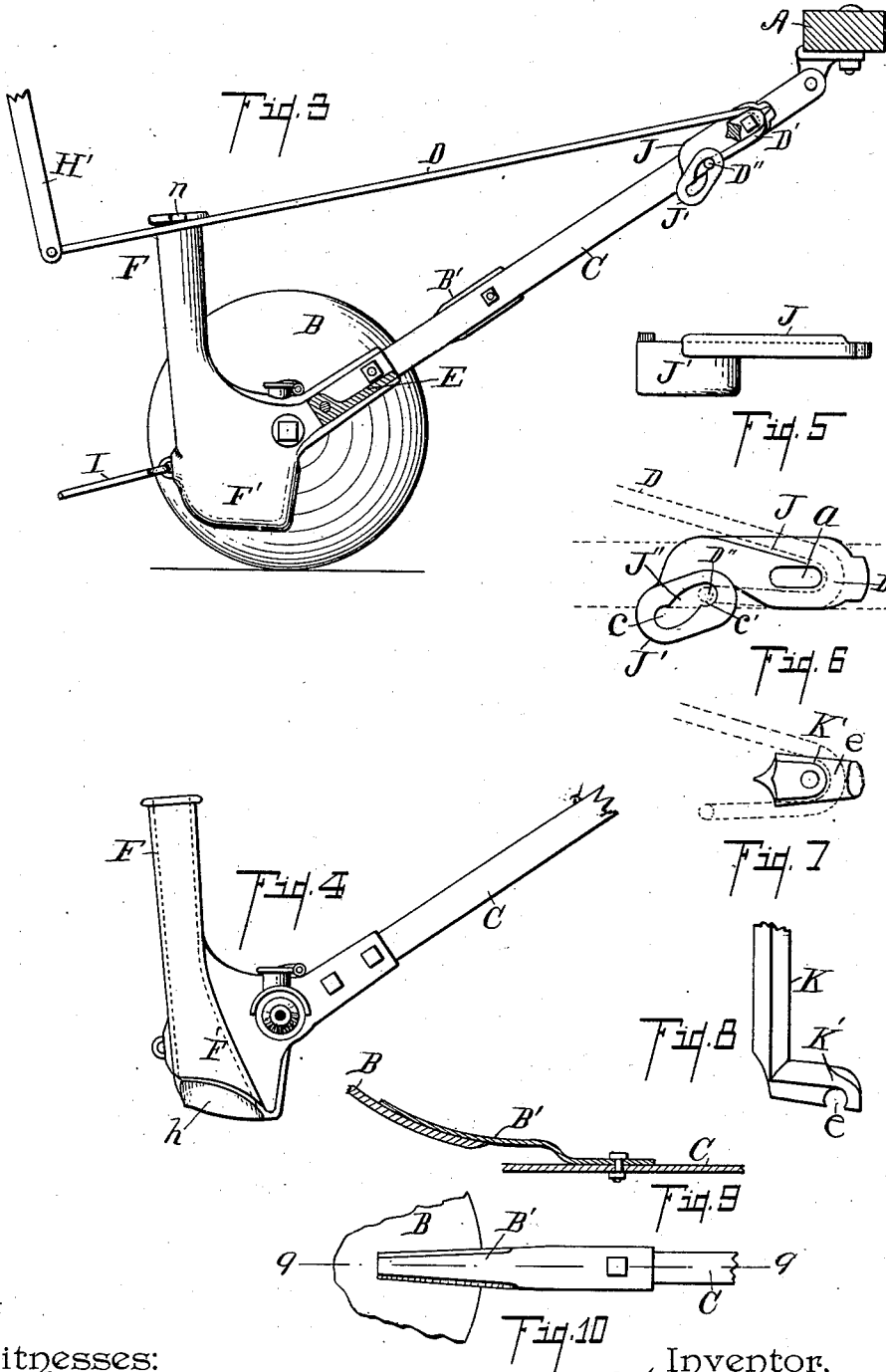
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UNITED STATES PATENT OFFICE.

WILL F. HOYT, OF DOWAGIAC, MICHIGAN, ASSIGNOR TO THE DOWAGIAC
MANUFACTURING COMPANY, OF SAME PLACE.

DISK DRILL.

SPECIFICATION forming part of Letters Patent No. 630,353, dated August 8, 1899.

Application filed March 30, 1898. Serial No. 675,825. (No model.)

To all whom it may concern:

Be it known that I, WILL F. HOYT, a citizen of the United States, residing at the city of Dowagiac, in the county of Cass and State of Michigan, have invented a certain new and useful Disk Drill, of which the following is a specification.

This invention relates to improvements in grain-drills, and more particularly to improvements in grain-drills using disks as furrow markers or openers, though certain parts of the device are capable of utilization in other relations.

The objects of this invention are, first, to simplify the construction of grain-drills generally; second, to provide an improved spring-pressure means for disk grain-drills; third, to provide improved means of varying the adjustment of pressure-springs on grain-drills generally; fourth, to provide an improved construction of scraper for the disks of grain-drills; fifth, to provide an improved yoke for joining a pair of grain-drill disks together, and, sixth, to provide an improved construction of conduit or boot for use in connection with a disk furrow-opener in a grain-drill.

Further minor objects will appear definitely in the detailed description to follow.

I accomplish these objects of my invention by the devices and means described in this specification.

The invention is definitely pointed out in the claims.

The portions of the structure to which my invention relates are fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail vertical sectional view from front to rear of a grain-drill embodying the features of my invention, taken on a line corresponding to line 1 1 of Fig. 2. Fig. 2 is a detail plan view of a portion of the structure appearing in Fig. 1, a part of the seed-hopper being broken away to show the details of construction of the disk and hangers beneath. Fig. 3 is an enlarged detail sectional elevation of one of the disks and hangers, taken on a line corresponding to line 3 3 of Fig. 2. Fig. 4 is an enlarged detail elevation of one of the seed-boots, conduits, and hangers and its connections to the drag-bar of one of the disks.

Fig. 5 is a plan view of the adjusting-bracket for attaching the forward ends of the pressure-spring to the drag-bar. Fig. 6 is a side view of the same with the adjacent parts indicated by dotted lines. Fig. 7 is an end elevation of one of the cross-braces K. Fig. 8 is a detail plan view of the end of the same. Fig. 9 is a sectional view through the scraper for the disk, taken on a line corresponding to lines 9 9 of Figs. 1 and 10. Fig. 10 is an inside detail elevational view of the said scraper.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the usual main frame of the drill. A' are the carrying-wheels for the same, and A'' the seed-hopper, all of which are in the usual form.

To the front bar of the frame are secured suitable hangers, to which are pivoted the drag-bars C C. A pair of drag-bars C C go with each pair of oppositely-facing concavo-convex disks B. The drag-bars are supported on oppositely-projecting pins C' and are retained on the same by the brace K, bolted between them. The drag-bars C are secured together at their lower ends by a yoke E.

The disk-hangers and boots F are made integral and are continued down and open below and to the rear of the trunnion carrying the disk, as clearly appears in Figs. 3 and 4. The opening *h* from the conduit is close to the disk and within the furrow formed by the same. The inner wall F' of the conduit extends well down toward the bottom to protect the conduit from becoming clogged by any soil adhering to the disk and to insure the even distribution and discharge of the grain into the bottom of the furrow. The opening of the conduit comes close down to the furrow, that the grain will not be disturbed by the machine passing over stubble or other obstructions. The convex sides of the disks are placed toward each other, and the hanger-plates, with their boots, are placed within the same, and they are secured to the drag-bars C by the bolts which secure the drag-bars to the yoke E. On the inner sides

of the upper end of the boots above are slight lateral projections *n* for engaging over the spring press-rods *D* when they are elevated to raise the disks from the ground in transporting the machine. The rear ends of the press-rods—two in number for each pair of disks—are secured by suitable link connections *H* to arms *H* on the usual rock-shaft *G* to the rear of the machine, which rock-shaft is controlled by the usual lever *G'*, engaging notched segment *G''*, all of which adjusting means are well known and in common use and need no further description here. The spring press-rods are secured at the forward end by the adjustable bracket *J*, having a notched ear *J'* below. The springs *D* at their forward ends are bent downwardly and rearwardly at *D'*, and the extreme end is turned at right angles at *D''* to form an engaging stud. The bracket *J* is retained by the bolt through the end of the brace *K* and is adjustable forward and back by the bolt entering a suitable slot *a*, as clearly appears in Fig. 6. By adjusting the plate the stud *D''* can be caused to rest either in the notch at *c'* or at *c*, thus varying the tension of the spring *D*, enabling the application of strong spring-pressure to the disks or making the pressure very light and, in fact, restrain or support the disks when they tend to go too deep. The end of the bracket *K* at *K'* is notched at *e* to securely locate the spring *D* at the end. The usual covering-rings and chain *I* are secured to the rear of the boots *F*, and it is needless to remark press-wheels might be utilized in the same relation.

I desire to state in this connection that my improved adjusting-brackets *J* could be used with other styles of drag-bar for adjusting the tension on the spring. I also desire to state that by making the disks and their connection of sufficient weight the spring-pressure might be dispensed with, though I prefer to utilize the spring-pressure with as light a construction as is consistent with the proper strength of the disks and hangers. I desire also to state that single disks could be constructed as I have here shown without yoking them together, though they would of course be subject to a strong lateral pressure and cause strain on the drag-bars. From these statements it will be observed that consider-

able variation in detail is possible without departing from my invention.

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

1. In a disk grain-drill the combination of the main frame, a pair of drag-bars *C*, pivotally supported at their forward ends by the said main frame; disk-hangers and boots *F*, formed integral with each other and forming a closed conduit to the lower end of the same and a yoke *E*, between the said drag-bars all secured together by suitable bolts; trunnions on the said hangers and concavo-convex disks secured to the said trunnions with their convex sides facing each other with the forward edges of said disks approaching each other at an angle and arranged at their rear in proximity to the conduit acting together for the purpose specified.

2. In a grain-drill, a draw-bar pivoted to the front part of the main frame; a rod-spring *D*, bent at its forward end downwardly and rearwardly with the extreme end turned at right angles to form an engaging stud, a bracket secured to said draw-bar to receive the loop at the forward end of the spring and receive the engaging stud for the purpose specified.

3. In a grain-drill, a draw-bar pivoted to the front part of the main frame, a rod-spring *D*, bent at its forward end downwardly and rearwardly with the extreme end turned at right angles to form an engaging stud, a bracket with a slot therein and with a series of notches for the stud and a bolt projecting through the slot for adjusting the same to vary the tension on the spring for the purpose specified.

4. In a grain-drill, the combination of a pair of draw-bars carrying a pair of boots and furrow-openers yoked together, springs secured to said draw-bars and extending between the boots one in contact with the boot on each side to engage the flanges at the top of the boots when the springs are elevated to raise the furrow-openers from the ground coacting as specified.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILL F. HOYT.

Witnesses:

E. S. McMASTER,
F. W. JONES.