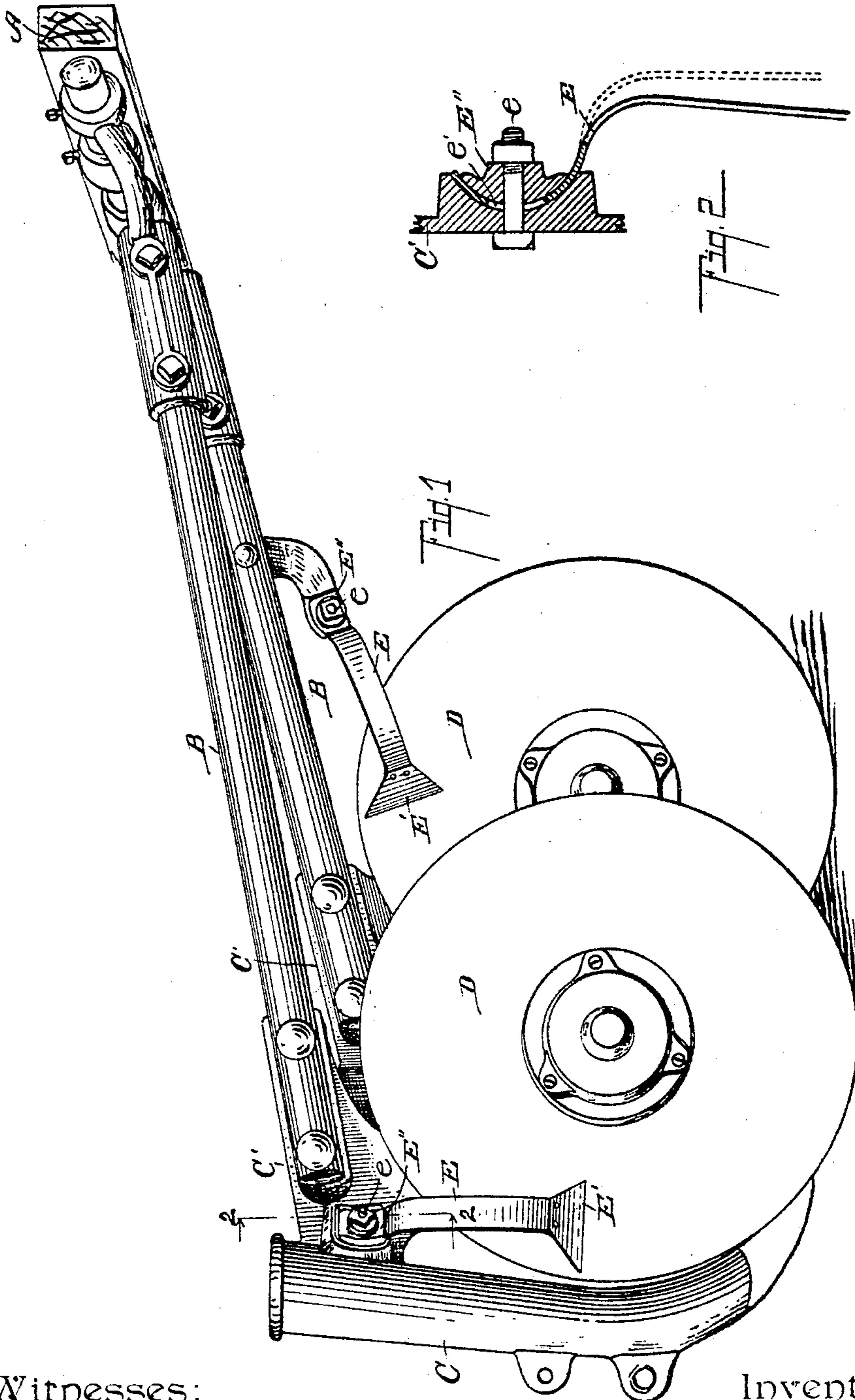


No. 795,276.

PATENTED JULY 25, 1905.

C. L. FOWLE.
DISK GRAIN DRILL.
APPLICATION FILED APR. 8, 1905.

2 SHEETS—SHEET 1



Witnesses:
Estel A. Vetter
Amelia J. Alber

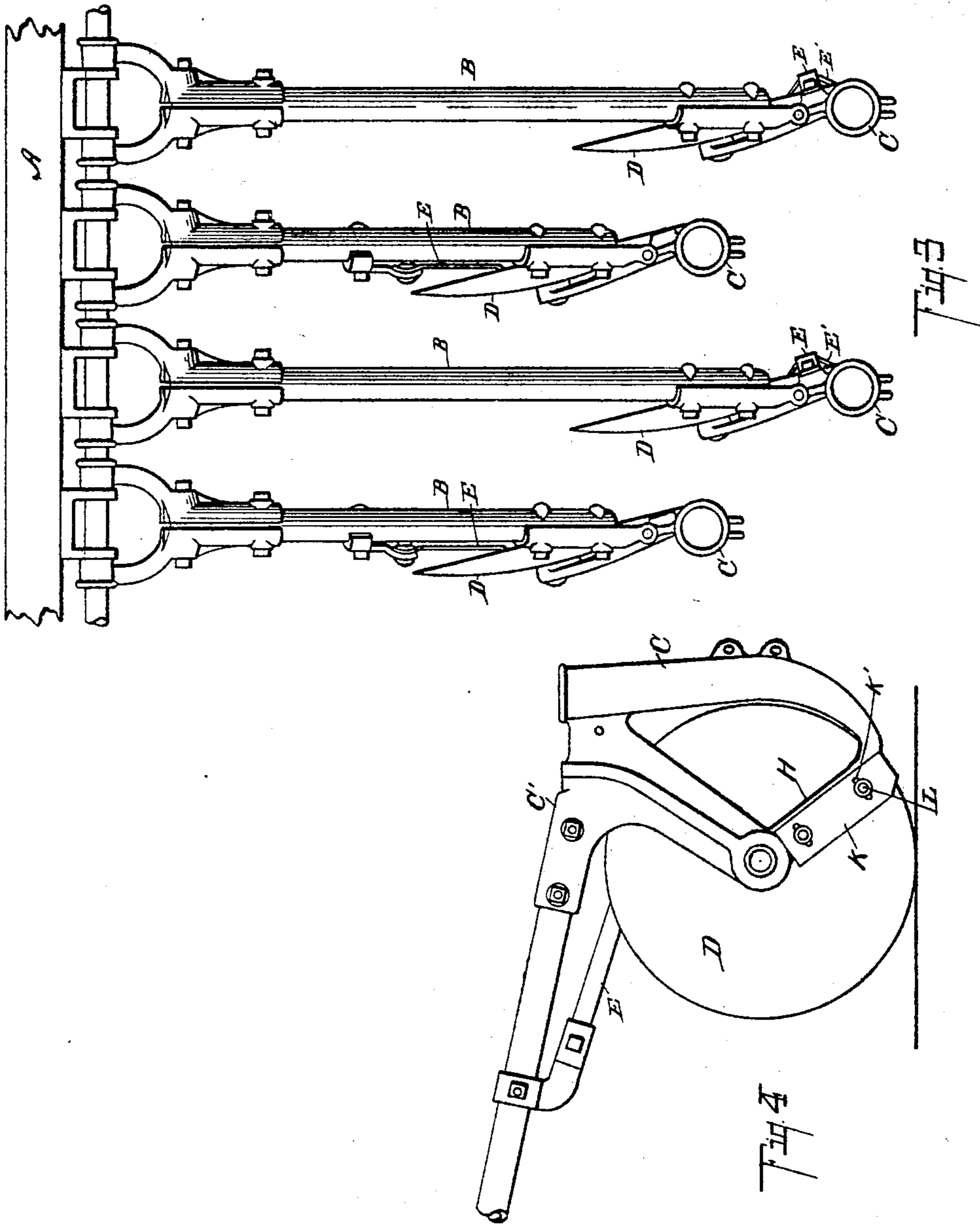
Inventor
Charles L. Fowle
By *Chappell & Earl*
Att'ys

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Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES L. FOWLE, OF DOWAGIAC, MICHIGAN.

DISK GRAIN-DRILL.

No. 795,276.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed April 8, 1905. Serial No. 254,464.

To all whom it may concern:

Be it known that I, CHARLES L. FOWLE, a citizen of the United States, residing in the city of Dowagiac and county of Cass, State of Michigan, have invented certain new and useful Improvements in Disk Grain-Drills, of which the following is a specification.

This invention relates to improvements in disk grain-drills, more particularly to improvements in what is known as "single-disk" grain-drills.

As heretofore constructed there has been considerable difficulty with disk grain-drills clogging with mud, particularly when used in what is known as "gumbo" soil, a very sticky soil common in the Northwest.

The objects of this invention are, first, to provide a disk grain-drill structure in which the liability to clog in adhesive soils is overcome; second, to provide an improved scraper means therefor.

Minor objects and objects relating to details of construction will definitely appear from the detailed description to follow.

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

The invention is clearly defined and pointed out in the claims.

Portions of a disk grain-drill showing my invention are clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation view of a pair of disks as arranged in a grain-drill involving my improvement. Fig. 2 is a detail sectional view of the scraper-attaching means enlarged, taken on a line 2-2 of Fig. 1. Fig. 3 is a detail plan view of a series of four of the disks with their draw-bars, showing the relation of the parts; and Fig. 4 is a reverse elevation view of one of the disk structures appearing in Fig. 1, showing the convex side of a disk and its scraper.

In the drawings similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, the frame A of a grain-drill of usual construction is carried by suitable carrying-wheels. (Not here illustrated.) The draw-bars B B, preferably of pipe, extend from the frame A, to which they are pivotally attached, rearwardly, and a disk furrow-opener structure is secured on the rear end of each

one. These disk furrow-opener structures in each instance consist of a boot C, provided with a bracket C', to which the pipe draw-bar B is connected and which extends downwardly and is connected to the axle at the center of the disk. A scraper K is placed on the convex side of each disk, as indicated in Fig. 4.

The draw-bars of different lengths and alternating with each other are of such length that the front edge of the rear disk will be about opposite the center of the forward disks. The mud adheres principally to the concave sides of these disks. The rear disks are provided with a scraper consisting of a spring-shank E and a suitable scraper-blade E', with its edge transverse to the side of the shank. The upper end of the shank is curved and fits into a curved seat in the bracket C'. The end of the shank E is perforated with an elongated hole e'. A block E'' corresponds to the curved seat and is retained in place by a bolt e therethrough, and the spring-scraper is consequently adjustable freely and readily, as will be seen from an inspection of Fig. 2. This scraper engages the disk in a horizontal line back of the center of the disk. An exactly similar scraper is secured to an arm on the shorter draw-bar and is so located that the edge of the scraper-blade in substantially vertical position engages the upper part of this forward disk at a point substantially above the center, although if the same were a little in advance or a little to the rear of the center it would not be of any particular moment. However, the farther forward it is located the more certain it is in its results.

Referring to Fig. 4, an arm H connects the lower end of the boot C to the portion of the bracket which supports the bearing at the center of the disk. On this arm H is a scraping-blade K, having slots K' therein, and suitable bolts L through these slots into the arm H, holding the scraper adjustably, so that it can be nicely adjusted to scrape the mud entirely from the convex surface of the disk. As the pressure of the disk is toward this scraper, naturally the scraper will become worn, and the adjustment enables the user to take up the wear and also insure the clean scraping of the convex face of the disk. It is necessary to keep the mud removed from this surface, for if the mud is allowed to accumulate at all thereon in the sticky soils where it is intended to use this drill a "bridge" of mud,

so to speak, will form between the convex side of one disk and the concave side of the next adjacent disk, thereby destroying the effectiveness of the machine. It will be seen by referring to Fig. 3 that as these disks are drawn forward by the advance of the machine the scrapers on the rear disks will scrape the mud off to the right and to the rear of the adjacent disk, which is on the shorter draw-bar. On the forward disk the momentum of the mud will throw it down in front of the rear disk, and by this arrangement a wide space will be left clear opposite the scraper on each disk, so that there will be no danger of the mud scraped from any disk filling the space between it and the next adjacent disk. By this arrangement, therefore, the clogging by the mud will be effectively avoided.

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 suitable pivoted draw-bars, with concavo-convex disk furrow-openers thereon, the draw-bars being alternately of different lengths; a scraper arranged to the rear of the center of the rear disk and pointing downwardly; a scraper arranged on the upper portion of the forward disk and pointing rearwardly; and an adjustable scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

2. In a disk grain-drill, the combination of suitable pivoted draw-bars, with concavo-convex disk furrow-openers thereon, the draw-bars being alternately of different lengths; a scraper arranged to the rear of the center of the rear disk and pointing downwardly; a scraper arranged on the upper portion of the forward disk and pointing rearwardly; and a scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

3. In a disk grain-drill, the combination of suitable pivoted draw-bars, with concavo-convex disk furrow-openers thereon, the draw-bars being alternately of different lengths; a scraper arranged to the rear of the center of the rear disk and pointing downwardly; and a scraper arranged on the upper portion of the forward disk and pointing rearwardly, all coacting for the purpose specified.

4. A disk grain-drill with the alternate draw-bars of different lengths for the disk-openers; a scraper to the rear portion of each rear disk; a scraper toward the front portion of each forward disk; and an adjustable scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

5. A disk grain-drill with the alternate draw-bars of different lengths for the disk-

openers; a scraper to the rear portion of each rear disk; a scraper toward the front portion of each forward disk; and a scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

6. A disk grain-drill with the alternate draw-bars of different lengths for the disk-openers; a scraper to the rear portion of each rear disk; and a scraper toward the front portion of each forward disk, for the purpose specified.

7. In a disk grain-drill, the combination of disk furrow-openers arranged alternately one forward and one back; a scraper arranged to scrape the rear portion of each rear disk to discharge the mud therefrom toward the rear of the center thereof; a scraper arranged to scrape each forward disk and to discharge the mud therefrom toward the front of the center thereof, whereby the scrapings from either disk will not be discharged against the next adjacent disk; and an adjustable scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

8. In a disk grain-drill, the combination of disk furrow-openers arranged alternately one forward and one back; a scraper arranged to scrape the rear portion of each rear disk to discharge the mud therefrom toward the rear of the center thereof; a scraper arranged to scrape each forward disk and to discharge the mud toward the front of the center thereof, whereby the scrapings from either disk will not be discharged against the next adjacent disk; and a scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

9. In a disk grain-drill, the combination of disk furrow-openers arranged alternately one forward and one back; a scraper arranged to scrape the rear portion of each rear disk to discharge the mud therefrom toward the rear of the center thereof; and a scraper arranged to scrape each forward disk and to discharge the mud toward the front of the center thereof, whereby the scrapings from either disk will not be discharged against the next adjacent disk, as specified.

10. In a disk grain-drill, the combination with disk furrow-openers arranged alternately one forward and one back, of a scraper arranged to scrape the rear disk and discharge the mud therefrom to the rear of the forward disk; a scraper arranged to scrape the forward disk and discharge the mud therefrom in front of the adjacent rear disk; and an adjustable scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

11. In a disk grain-drill, the combination with disk furrow-openers arranged alternately one forward and one back, of a scraper arranged to scrape the rear disk and discharge the mud therefrom to the rear of the forward disk; a scraper arranged to scrape the forward disk and discharge the mud therefrom in front of the adjacent rear disk; and a scraper on the convex side of said disk to the rear of the center and extending from the center to the periphery thereof, all coacting for the purpose specified.

12. In a disk grain-drill, the combination with disk furrow-openers arranged alternately one forward and one back, of a scraper arranged to scrape the rear disk and discharge the mud therefrom to the rear of the forward disk; and a scraper arranged to scrape the forward disk and discharge the mud therefrom

in front of the adjacent rear disk, coacting as specified.

13. In a disk grain-drill, the combination of a concavo-convex disk; a bracket to which the draw-bar is attached in carrying a boot at the rear, a portion of which extends to the center of the disk and thence to the lower end of the boot; and an adjustable scraper provided with transverse slots, secured to the said bracket and extending from substantially the center of the disk rearwardly to its periphery, as specified.

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

CHARLES L. FOWLE. [L. s.]

Witnesses:

W. F. HOYT,

E. S. McMASTER.