

No. 836,051.

PATENTED NOV. 13, 1906.

J. M. PIERCE.

DISK DRILL.

APPLICATION FILED JULY 17, 1905.

2 SHEETS—SHEET 1.

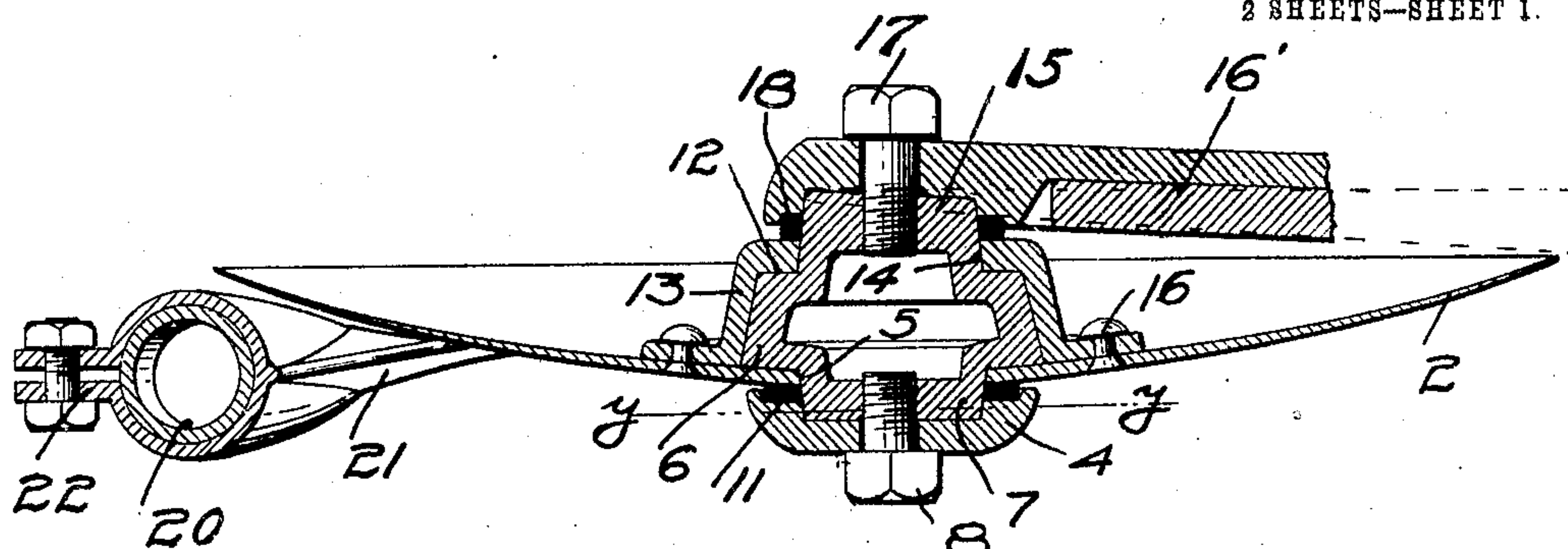
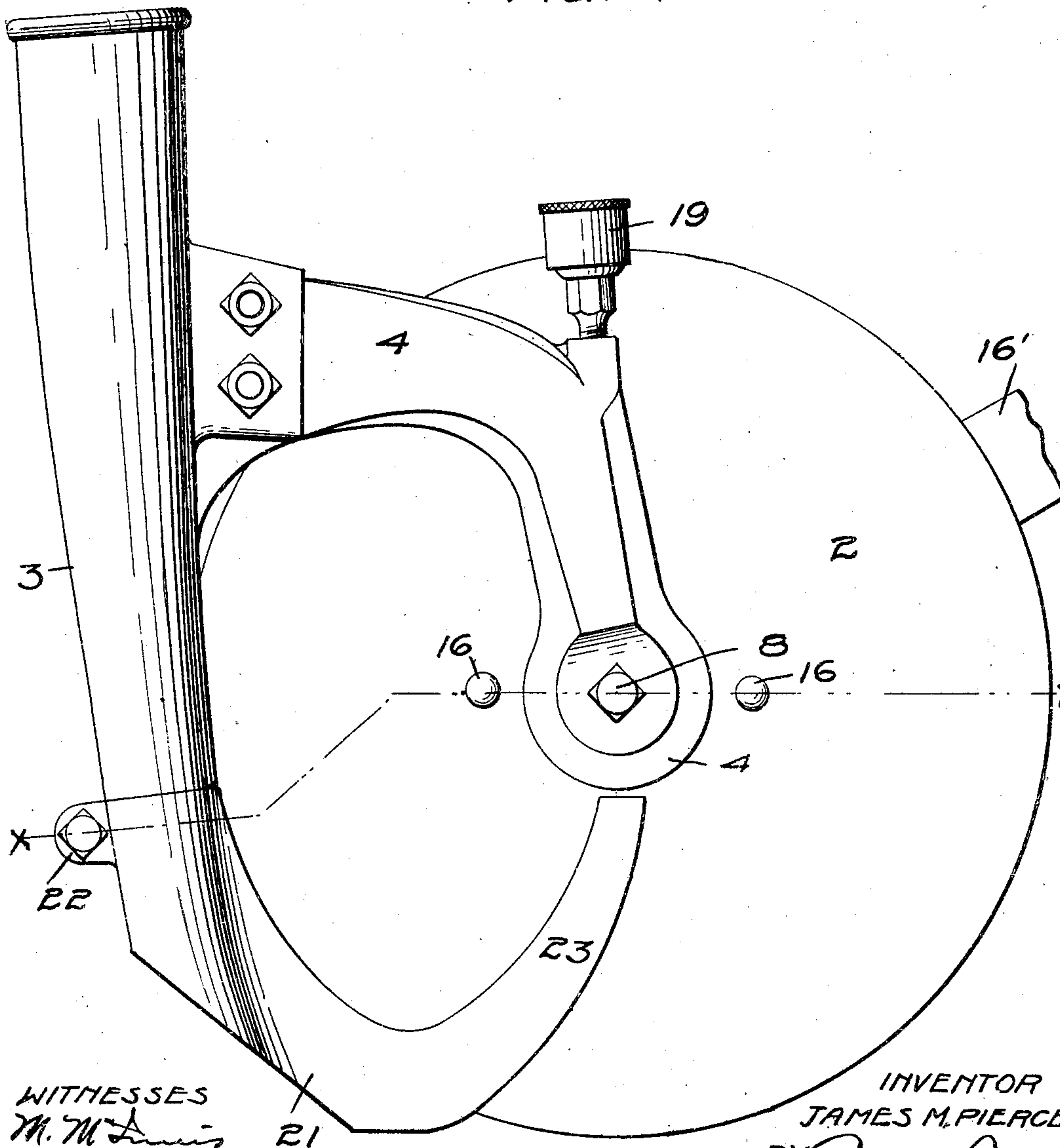


FIG. 2.



WITNESSES
M. M. Luning
C. M. M. M. M.

FIG. 1.

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BY *Paul & Paul*
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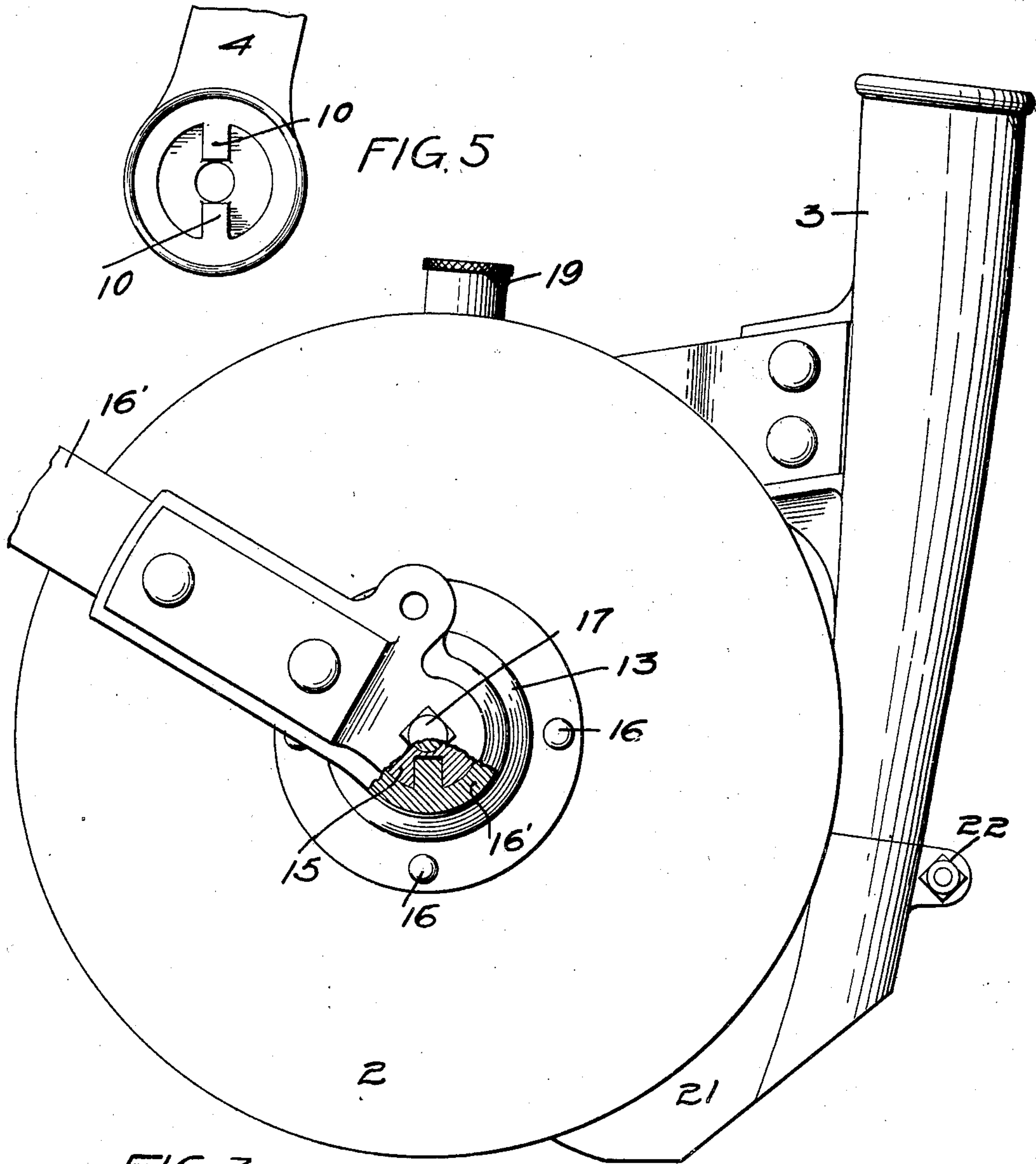
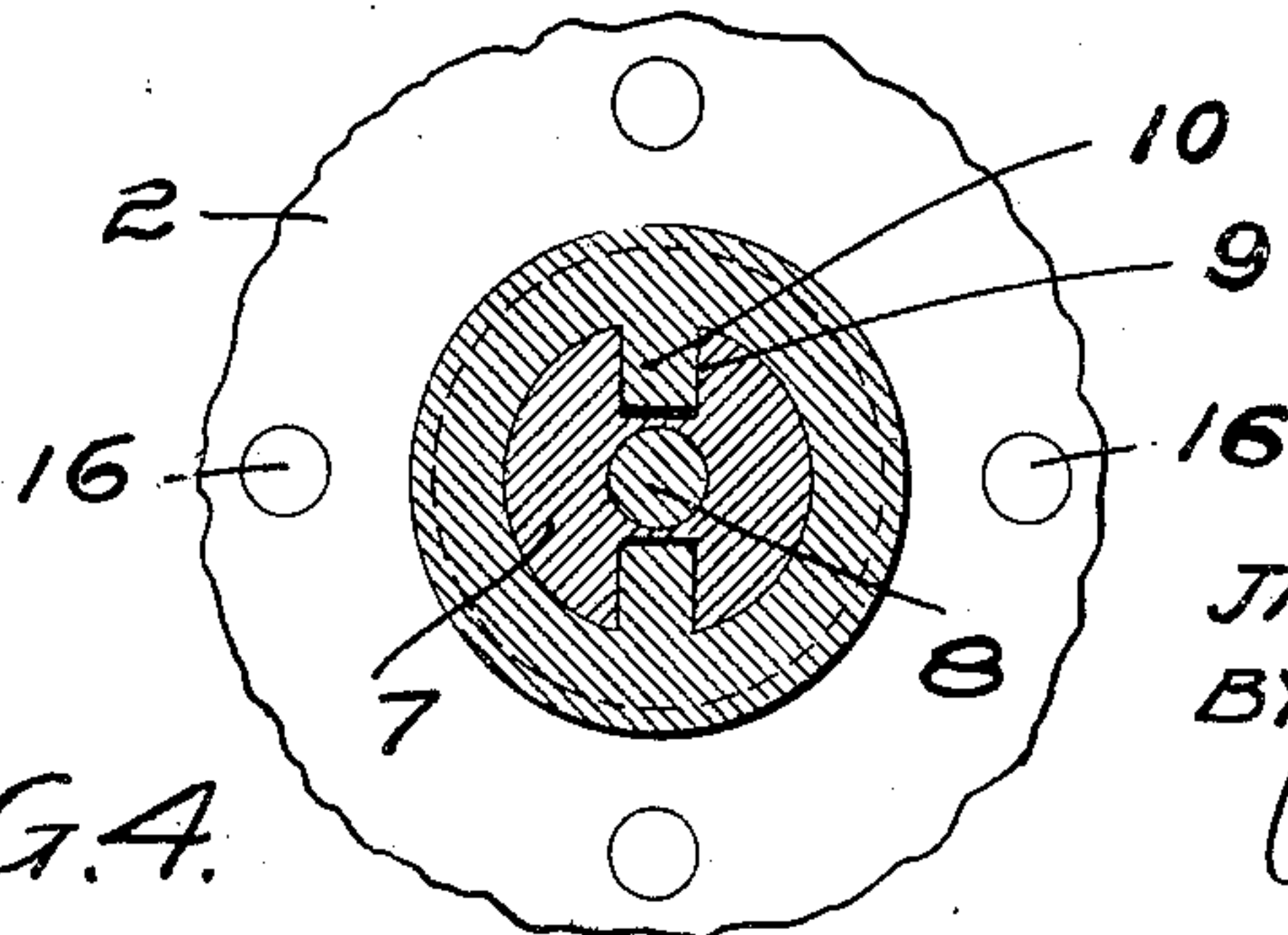


FIG. 3.



WITNESSES

M. M. Davis

C. M. Maman

FIG. 4.

INVENTOR

JAMES M. PIERCE

BY

Paul Paul
HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES M. PIERCE, OF OWATONNA, MINNESOTA, ASSIGNOR TO OWATONNA
MANUFACTURING CO., OF OWATONNA, MINNESOTA.

DISK DRILL.

No. 836,051.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed July 17, 1905. Serial No. 270,062.

To all whom it may concern:

Be it known that I, JAMES M. PIERCE, of Owatonna, Steele county, Minnesota, have invented certain new and useful Improve-
5 ments in Disk Drills, of which the following is a specification.

My invention relates particularly to single-disk drills.

10 The object of my invention is to provide an improved form of scraper for the convex surface of the disk.

A further object is to provide improved means for connecting the drag-bar to the disk and rendering the disk adjustable to
15 vary its angle with respect to the draft-line.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

20 In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a single disk and boot embodying my invention. Fig. 2 is a horizontal section on the line *xx* of Fig. 1. Fig. 3 is a side
25 elevation of a drill-disk and boot looking at the concave side of the disk. Fig. 4 is a sectional view on the line *yy* of Fig. 2. Fig. 5 is a detail view looking toward the inner side of the arm, showing the bearing therein.

30 In the drawings, 2 represents an ordinary concavo-convex disk, and 3 an open boot having a forwardly-extending downwardly-curved arm 4. (Shown in the drawings as bolted to the boot; but it may be formed integrally therewith.) The disk 2 has a central
35 orifice 5 and a hub 6 arranged on the concave side of the disk, having an end 7 projecting through said orifice and secured to the lower end of the arm 4 by a bolt 8. The end 7 has
40 slots 9 to receive lugs 10 on said arm, and a washer 11 is provided between said arm and the surface of the disk to form a dust-proof joint at that point. The lugs and slots prevent the arm from working loose and moving
45 back and forth on the hub. A shoulder 12 is provided near the opposite end of the hub, and a cap 13, having an orifice 14 to receive the end 15 of the hub, bears upon the said shoulder and is secured to the disk by rivets
50 16 or any other suitable means. The surface of the hub end 15 is beveled, as shown in Fig. 2, and a drag-bar 16' is secured to said surface by a bolt 17, a washer 18 being provided between the said drag-bar and the cap 13.

By loosening the bolt 17 and changing the
position of the hub with respect to the drag-
bar the angle of the disk with respect to the
line of travel may also be changed, the de-
gree of variation depending, of course, upon
the bevel on the end of the hub. This bevel
60 may be increased or decreased according to the desired adjustment of the disk. The bevel at the end of the hub is very slight and is hardly noticeable in the drawings, although
65 exaggerated, a little variation in the surface being sufficient to cause a considerable tilt of the disk one way or the other, according to the position of the hub with respect to the drag-bar. An oil-cup 19 is provided on the
70 arm 4 and communicates with a socket leading to the bearing. The lower end of the boot 3 is provided with a reduced extension or stem 20, whereon the scraper 21 is secured by means of a clamp 22. The blade 23 of
75 the scraper is upwardly curved and is substantially sickle-shaped and adapted to bear on the convex side of the disk and keep the same clean and free from mud and dirt. The clamp device allows the scraper to be easily
80 and quickly removed from the boot for substitution or repairs and also allows it to be adjusted about the longitudinal axis of the boot to take up the wear of the blade on the disk-
85 surface and permit the blade to be set up snugly against said surface. The upper edge of the scraper is provided with a gradual curve merging into the surface of the boot to prevent, as far as possible, the collection or
90 accumulation of refuse matter between the boot and the disk.

As shown in Fig. 1, a comparatively large oval opening is formed between the scraper-blade and the arched arm 4, and consequently there will be but little danger of mud and refuse lodging therein, a trouble that is frequently experienced where small openings
95 are provided with a sharp angle between the blade and the lower end of the pocket.

I claim as my invention—

1. In a single-disk drill, the combination, 100
with a boot provided with a forwardly-extending downwardly-curved arm, of a concavo-convex disk, a hub secured at one end to the lower end of said arm, the other end of said hub being beveled, means securing said
105 hub to said disk, and a drag-bar secured to the beveled end of said hub.

2. In a single-disk drill, the combination,

with a boot provided with a forwardly-extending downwardly-curved arm, of a concavo-convex disk having a central orifice, a hub having one end projecting through said orifice and secured to the lower end of said arm, the opposite end of said hub being beveled, a cap having an orifice to receive the beveled end of said hub and secured to the concave side of said disk, and a drag-bar secured to the beveled end of said hub, substantially as described.

3. The combination with a boot, of a scraper secured to the lower end of said boot and forming a continuation of the toe thereof, and said scraper being adjustable about the longitudinal axis of said boot.

4. In a single-disk drill, the combination with a boot provided with a forwardly-extending arm, of a concavo-convex disk mounted on said arm, and a scraper-blade secured to the lower end of said boot and forming a continuation thereof and adapted to bear on the convex side of said disk, and said blade being detachable from said boot and adjustable about the longitudinal axis of the same, substantially as described.

5. In a grain-drill, a boot, a disk journaled forwardly thereof, a scraper having a blade to bear on said disk, and a clamping device arranged to embrace the toe of said boot, and detachably securing said scraper thereon, substantially as described.

6. In a disk drill, the combination, with a boot provided with a forwardly-extending

arm, of a hub secured at one end on said arm, a disk journaled on said hub and a drag-bar connected with said hub, said connection being inclined with respect to the vertical plane of said disk, whereby upon rotating said hub the angle of said disk with respect to said bar will be changed to vary the width of the furrow.

7. In a disk drill, the combination with a boot provided with a reduced extension or stem at its lower end, of a concavo-convex disk, and a scraper having a clamp for securing it to said extension, and a blade to bear upon the surface of said disk, substantially as described.

8. In a grain-drill, a boot, a disk forwardly journaled thereof, a scraper having a blade to bear on said disk, and a clamping arrangement to embrace the toe of said boot and detachably and adjustably securing said scraper thereon, substantially as described.

9. In a grain-drill, a boot, a disk journaled forwardly thereof, a scraper having a blade to bear on said disk, and a clamping device embracing the toe of said boot and adjustably securing said scraper thereon, substantially as described.

In witness whereof I have hereunto set my hand this 11th day of July, 1905.

JAMES M. PIERCE.

Witnesses:

W. A. SPERRY,
F. C. KINYON.