No. 885,080. PATENTED APR. 21, 1908.

C. H. PELTON.

DISK DRILL.

APPLICATION FILED MAR. 4, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

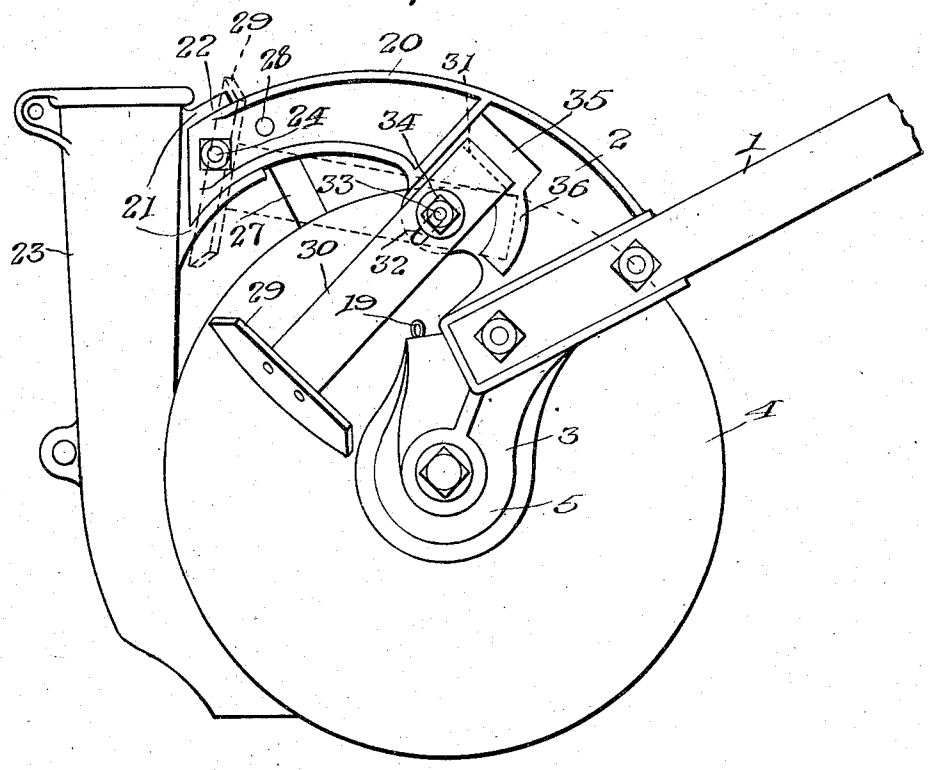
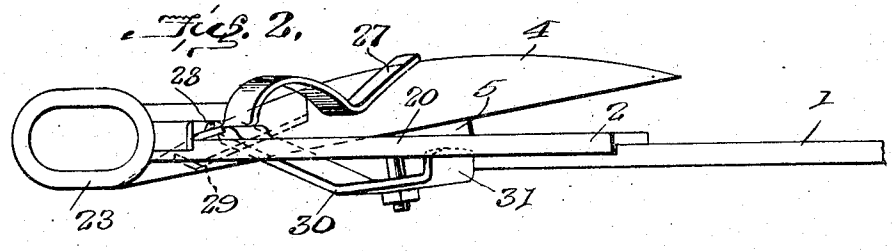


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

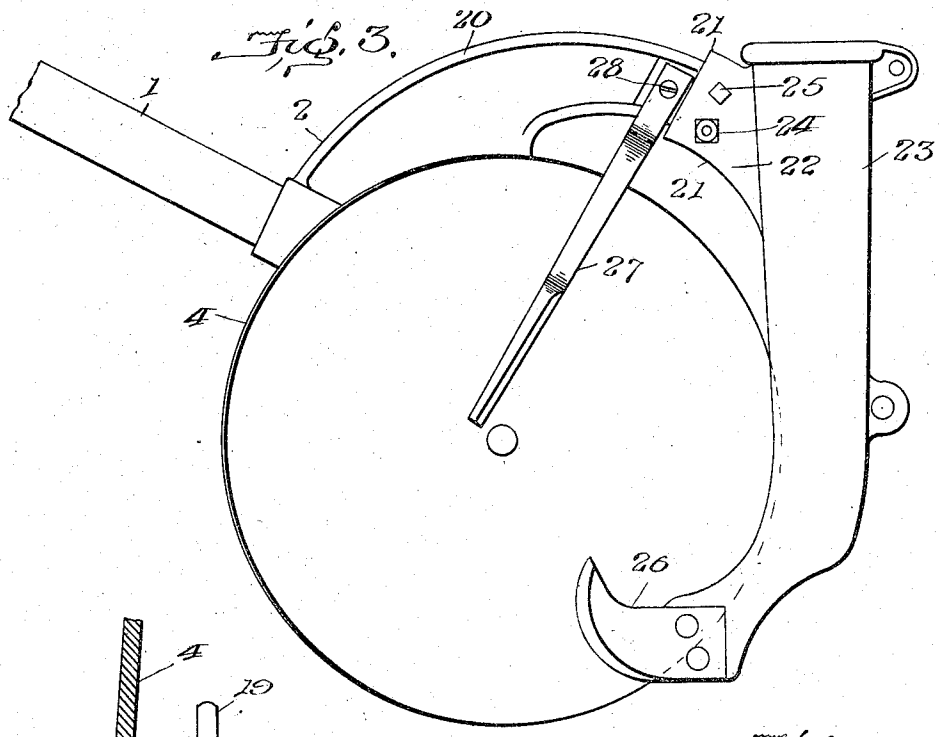


Fig. 4.

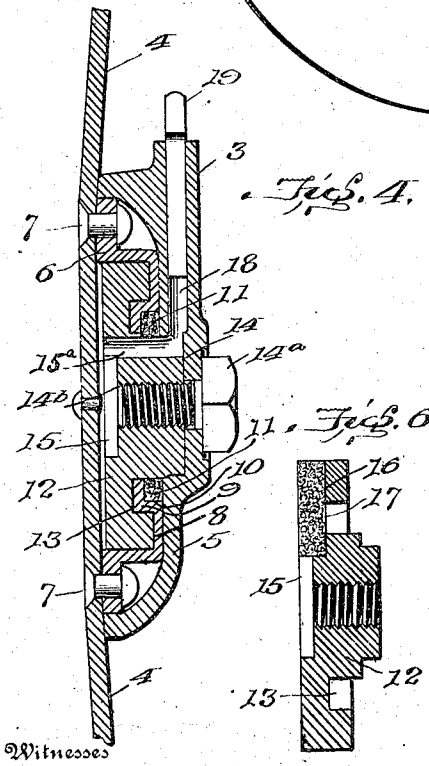
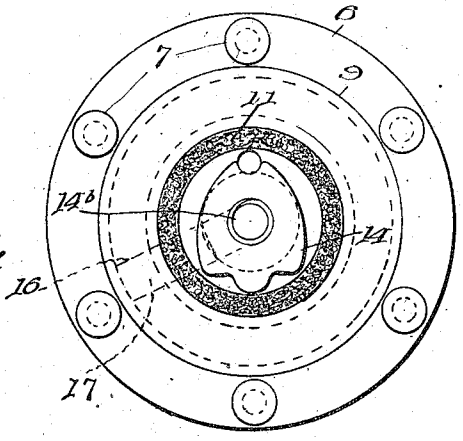


Fig. 6.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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DISK DRILL.

No. 885,080. Specification of Letters Patent. Patented April 21, 1908.

Application filed March 4, 1907. Serial No. 360,459.

To all whom it may concern:

Be it known that I, CHARLES H. PELTON, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Disk Drills, of which the following is a specification, reference being had therein to the accompanying drawings.

The present invention relates to disk drills, and the object of the invention is to provide a drill of this character in which the disk and boot will be supported in a very narrow, compact arrangement, thereby permitting the several disks to be adjusted in close relation one to the other and still allow ample clearance between the same. Further, to provide a common means for supporting both the disk and the boot and for supporting from this common means the several scrapers for cleaning the surfaces of the disks; and to improve the construction of these scrapers, to accommodate them to the supports, and to obtain better results in the operation thereof.

With these objects in view, my invention consists of certain novel features of construction to be hereinafter described and then more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of the device on the concave side of the disk. Fig. 2 is a top plan view of the device. Fig. 3 is a side elevation of the device on the convex side of the disk. Fig. 4 is a vertical section taken through the disk and bearing. Fig. 5 is a side elevation of the bearing with the cap removed. Fig. 6 is a detail sectional view of a portion of the bearing.

In these drawings, I have illustrated the preferred form of my invention, in which the reference numeral 1 indicates the dragbar, to the rear end of which is secured a bracket 2, comprising two arms, one extending rearwardly from the dragbar, as shown at 3, and forming the support for the disk 4. The rear end of the arm 3 is in the form of a cap 5, adapted to fit over the bearing proper and form a dust-tight cap for the same. The bearing consists of a bearing-plate 6, secured to the disk 4 by suitable rivets 7 and comprising a hollow bearing portion 8 which is provided with an inwardly-extending bearing flange 9 surrounding the central opening in the plate 6 and provided on its outer side with a rabbeted portion 10, adapted to receive a suitable packing 11 of felt or similar material to retain the lubricant within the bearing and to prevent the entrance of dust or dirt thereto. A suitable bearing block 12 fits snugly within the hollow portion 8 of the bearing plate and is provided with an annular groove 13 adapted to receive the inwardly-extending flange 9 of the bearing plate. The central portion of the bearing block 12 is of greater thickness than the bearing plate and extends through the walls of the bearing plate and is provided on its outer face with an irregular projection or face 14 adapted to engage a corresponding recess in the cap 5; the shape of the projection and recess being such that the projection can enter the recess in one position only, thus insuring the proper positioning of the parts when the same are assembled.

A bolt 14^a extends through the cap 5 and engages a screw-threaded aperture 14^b in the bearing block 12 and serves to retain the parts in their assembled position and to secure the bearing and its disk to the supporting arm 3. A recess or lubricant cup 15 is formed in the inner face of the bearing block 12 and is connected by channel 15^a with an inlet conduit 18, extending through the outer wall of the cap 5, and provided with a suitable stop or closure 19.

The bearing block 12 is provided with a radial conduit 16 of sufficient depth to intersect the annular groove 13 and is preferably provided with a suitable packing 17 and serves to conduct the lubricant from the cup 15 to the bearing surfaces.

The second arm of the bracket extends upwardly and rearwardly, as shown at 20 and is at its rear end held between the outwardly-extending flanges 21 on the projection 22 of the boot 23. A suitable bolt 24 serves to lock the two parts together, and a set-screw 25, extending through the upper part of the projecting member 22, serves to adjust the boot 23 relatively to the supporting arm 20. At the lower end of the boot 23 is provided an inwardly and upwardly extending scraper 26, which is of flexible material, preferably spring steel, and extends inwardly a short distance from the edge of the disk. In roll-

ing the disks in the process of manufacture the surfaces are often left very uneven, with the result that a rigid scraper will at times be entirely out of engagement with the surface of the disk and at other times will bear so heavily thereon as to seriously interfere with its rotation. To overcome this difficulty I provide the flexible scraper as herein shown and provide the means described for adjusting the boot which carries the scraper to bring the scraper into proper relation with the disk. To clean the remainder of the convex side of the disk I provide a resilient strip or bar 27, which is arched throughout a portion of its length and is so mounted that the extreme ends of the bar touch the bracket and the disk respectively when the bar is in its normal position. A suitable bolt 28 extends through the bar a short distance from the upper end thereof and serves to secure the same to the supporting arm 20, and by tightening down this bolt the bar 27 can be straightened to such an extent that the blade of the same will engage the surface of the disk from a point near the center to a point beyond that point reached by the scraper 26. The portion of the bar 27 extending over that part of the disk engaged by the scraper 26 is preferably arched to such an extent that it is held entirely out of contact with the disk.

It is sometimes necessary to provide the concave side of the disk with a scraper, but conditions sometimes change to such an extent while the machine is in the field that these scrapers are unnecessary and it is very desirable to remove the same or to move them out of engagement with the disks. This I accomplish by providing a scraper 29, mounted on a bar 30, extending equally on both sides thereof, and having one edge slightly curved to conform to the contour of the disk. The end of the bar 30 opposite the scraper 29 is bent inwardly at substantially right angles to the bar 30, as shown at 31, and the bar is provided immediately below the bent-over portion thereof with a longitudinal slot 32, adapted to be engaged by a bolt 33, mounted in the arm 20, of the supporting bracket and provided with a suitable nut 34. The adjacent face of the arm 20 is cut away as shown at 35 to permit of the bar 30 and its bent-over portion 31 sliding transversely of the arm 20. The recess 35 is provided with an extension or recess 36, preferably curved to conform to the arc of a circle, and adapted to receive the bent-over portion 31 of the bar 30 when the scraper is swung about the bolt 33 to move it out of its operative position, as shown in dotted lines in Fig. 1 of the drawings.

When the scraper is in use, the bent-over portion of the bar is pushed upward so that it lies within the narrow part of the recess 35 and is held against movement about its pivotal center, the tension of the spring bar 30 against the nut 34 on the bolt 33 being sufficient to hold the bar in its adjusted position. When it is desired to move the scraper out of engagement with the disk, the bar is moved downward until the bent-over portion comes opposite the extension 36 of the recess, and the scraper is then moved upward into the position shown and is retained in this position by the tension of the spring-bar 30, and in this position it is entirely out of the way of grass or trash through which the drill may be passing, and does not gather up such material.

Thus it will be seen that I have provided means for supporting the disk and the boot from a bracket carried by the drag bar in such a manner as to permit of a very compact and narrow arrangement, thus greatly reducing the obstruction of the parts between the several disks, and further, that I have provided this disk with an improved cleaning mechanism comprising a series of adjustable scrapers mounted upon the supporting bracket and each independently adjustable on the bracket relatively to the disk.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. In a disk drill, the combination, with a dragbar, a bracket rigidly secured to said dragbar comprising a plurality of arms, one of said arms extending downwardly and rearwardly, a disk rotatably mounted on said downwardly and rearwardly extending arm, a second arm extending upwardly to a point above said disk, thence rearwardly, a boot carried by said second arm, a resilient scraper carried by said boot, and a second scraper secured to said second arm at a point between said boot and said dragbar, said scrapers being adapted to engage different portions of the same side of said disk.

2. In a disk drill, the combination, with a dragbar, a bracket rigidly secured to said dragbar comprising a plurality of arms, one of said arms extending downwardly and rearwardly, a disk rotatably mounted on said downwardly and rearwardly extending arm, a second arm extending upwardly to a point above said disk, thence rearwardly, a boot carried by said second arm, a resilient scraper carried by said boot and adapted to engage the convex side of said disk, and a second scraper carried by said second arm and adapted to engage a portion of the convex side of said disk different from that engaged by the first-mentioned scraper.

3. In a disk drill, the combination, with a dragbar, a bracket secured thereto and having an arm, and a disk carried by said bracket, of a boot carried by said arm, a resilient scraper carried by said boot and adapted to engage a portion of the convex side of said disk, and a second scraper connected at one end of said bracket and supported at its other end near the center of the convex side of said disk and adapted to engage that portion of the convex side of said disk not engaged by the first-mentioned scraper.

4. In a disk drill, the combination, with a dragbar, a bracket secured thereto and having an arm, and a disk carried by said bracket, of a boot carried by said arm, a resilient scraper carried by said boot and adapted to engage a portion of the convex side of said disk, a second resilient scraper connected at one end to said bracket and supported on said disk at its other end and adapted to engage that portion of the convex side of said disk not engaged by the first-mentioned scraper, and means for adjusting the engagement of said last-mentioned scraper with said disk.

5. In a disk drill, the combination with the dragbar, of a bracket rigidly secured to said dragbar comprising a plurality of arms, one of said arms extending rearwardly, a disk rotatably mounted on said rearwardly-extending arm, a second arm extending upwardly and rearwardly, a boot secured to said second arm, a resilient scraper carried by said boot and adapted to engage a portion of the convex side of said disk, a second scraper secured at one end to said arm and supported at its other end near the center of said disk and adapted to engage that portion of the convex side of said disk not engaged by the first-mentioned scraper, and means for adjusting the engagement of said last mentioned scraper with said disk.

6. In a disk drill, the combination with the dragbar, of a bracket rigidly secured to said dragbar and comprising a plurality of arms, one of said arms extending rearwardly, a disk rotatably mounted on said rearwardly-extending arm, a second arm extending upwardly and rearwardly, a boot secured to said second arm, a resilient scraper secured near the lower end of said boot and extending towards the center of said disk on the convex side thereof, means for adjusting said scraper relatively to said disk, and a second scraper supported by said second arm and adapted to engage that portion of said disk on the convex side thereof lying between the inner end of said first mentioned scraper and the center of said disk.

7. In a disk drill, the combination with the dragbar, of a bracket rigidly secured to said dragbar and comprising a plurality of arms, a disk rotatably mounted upon one of said arms, a boot carried by the other of said arms, a plurality of scrapers supported from said boot and last-mentioned arm and adapted to engage the convex side of said disk, and a scraper adjustably secured to said last-mentioned arm and adapted to engage the concave side of said disk.

8. In a disk drill, the combination with the disk and a support having a recess therein, of a scraper comprising an arm, means for pivotally connecting said arm with said support, and a projection at one end of said arm adapted to enter the recess in said support.

9. In a disk drill, the combination, with a disk, a support having an elongated recess therein, and a lateral extension near the lower portion of said recess, of a scraper comprising an arm provided with an elongated aperture therein, a bolt extending through said aperture and connecting said arm to said support, and a projection near one end of said arm adapted to enter the recess in said support.

10. In a disk drill, the combination, with the drag bar, a bracket secured thereto and having an arm, and a disk carried by said bracket, of a boot having a projection, a bolt extending through said projection and said arm, a set screw extending through said projection and engaging said arm to adjust the position of said boot relatively to said disk, and a resilient scraper carried by said boot.

11. In a disk drill, the combination, with a drag bar, a bracket secured thereto, a rotary disk carried by said bracket, and a boot supported near said disk, of a scraper carried by said boot and adapted to engage a portion of the convex surface of said disk, and a second scraper secured to said bracket above said disk and adapted to engage a portion of the convex surface of said disk lying beyond the first-mentioned scraper and between the center of said disk and that portion thereof engaged by the first-mentioned scraper.

12. In a disk drill, the combination, with a drag bar, a bracket secured thereto, a rotary disk carried by said bracket, and a boot supported by said bracket, of a resilient scraper carried by said boot having its free end curved abruptly upward and adapted to engage a portion of the convex surface of said disk lying near the circumference thereof, and a second scraper secured to said bracket above said disk and adapted to engage a portion of the convex surface of said disk lying beyond the first-mentioned scraper and between the center of said disk and the portion thereof engaged by said first-mentioned scraper.

13. In a disk drill, the combination, with a dragbar, a bracket secured thereto, a rotary disk carried by said bracket, and a boot supported near said disk, of a scraper carried by

said boot and adapted to engage a portion of the convex surface of said disk, and a second scraper supported from said bracket, having a portion of its length adapted to engage a portion of the convex surface of said disk between the center thereof and the portion engaging said first-mentioned disk and having a portion of its length, lying between the point of engagement of said disk and the point of support, curved outwardly to extend above that portion of the disk engaged by said first-mentioned scraper.

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

CHARLES H. PELTON.

Witnesses:

E. O. HAGAN,

EDWARD L. REED.