No. 849,187. PATENTED APR. 2, 1907.

E. R. BEEMAN.

SCRAPER FOR DISK DRILLS.

APPLICATION FILED JULY 26, 1906.

Fig. 1.

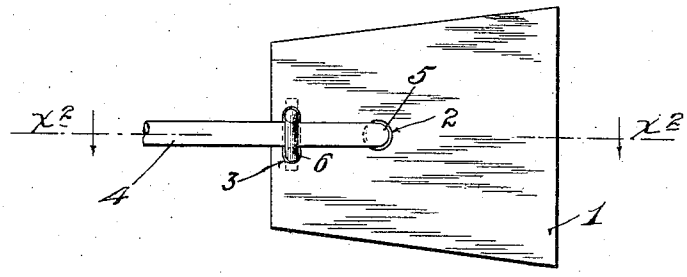


Fig. 2.

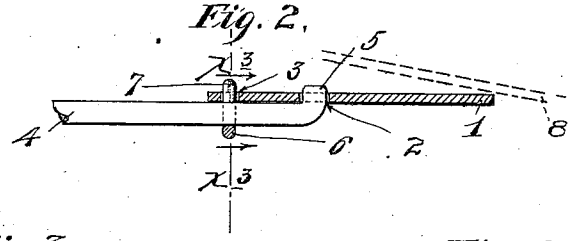


Fig. 3.

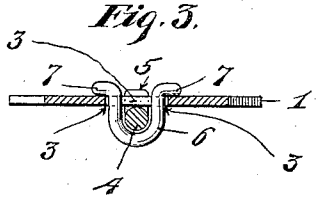


Fig. 4.

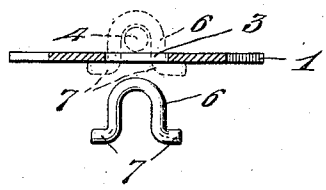
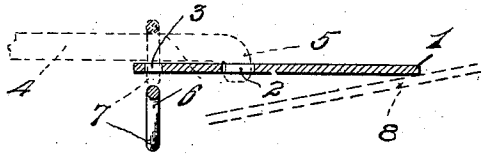


Fig. 5.



Witnesses.
H. D. Kilgore.
A. H. Opsahl.

Inventor.
Edwin R. Beeman.
By his Attorneys.
Williamson & Merchant

UNITED STATES PATENT OFFICE.

EDWIN R. BEEMAN, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO MONITOR DRILL CO., OF ST. LOUIS PARK, MINNESOTA, A CORPORATION OF MINNESOTA.

SCRAPER FOR DISK DRILLS.

No. 849,187. Specification of Letters Patent. Patented April 2, 1907.

Application filed July 26, 1906. Serial No. 327,946.

To all whom it may concern:

Be it known that I, EDWIN R. BEEMAN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Scrapers for Drill-Disks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a simple, cheap, and efficient scraper for drill-disks, the blade of which may be easily detached from and applied to its supporting-arm and reversed, so that either side of its scraping edge may be engaged with the disk.

To the above ends the invention consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in side elevation, showing the improved scraper, some parts being broken away. Fig. 2 is a horizontal section taken on the line x^2 x^2 of Fig. 1, some parts being left in full and some parts being broken away. Fig. 3 is a transverse section taken on the line x^3 x^3 of Fig. 2. Fig. 4 is a section taken on the same line as Fig. 3, but illustrating different positions of the parts; and Fig. 5 is a view corresponding in the line of its section to Fig. 2, but illustrating different positions of the parts and showing some parts in dotted lines only.

The scraper-blade 1 at its intermediate portion is provided with a perforation 2, and near its rear edge it is provided with a transversely-extended slot 3. The centers of the perforation 2 and slot 3 are alined on the longitudinal axis of the blade 1. The blade 1 is supported by an arm, preferably in the form of a spring-rod 4, the end of which is bent laterally at 5 and is adapted to be passed loosely through the perforation 2 of said blade. The other end of this spring-arm or supporting-rod 4 is adapted to be secured to the boot of the drill, to which the scraper is applied by any suitable means, not shown and not necessary for the purposes of this case to consider.

The numeral 6 indicates a rod-coupling device, preferably in the form of a staple, but which may be a yoke or loop in other form, having the proper passage for permitting the rod to be inserted therethrough when it is applied to the blade. This staple is of such transverse dimensions that it is capable of being freely passed through the slot 3 of the scraper-blade, and it is provided with outturned ends 7, that engage the body of the blade and prevent the said staple from being drawn completely through the said slot. When this staple is inserted into the slot 3, its bowed portion will project far enough to permit the rod 4 to be inserted endwise therethrough, an endwise angular movement thereof being of course necessary to cause the crooked end 5 thereof to pass through the said staple. When the rod 4 is inserted through the staple and its end 5 is turned into registration with the perforation 2, the said end 5 will freely pass into the said perforation. The scraping edge of the blade 1 being then pressed against the disk (indicated by dotted lines in Fig. 2 and marked with the numeral 8) by the spring-supporting arm or rod 4, it is evident that said arm and blade will be held interlocked. The perforation 2 is preferably of such size that the bent end 5 of the rod 4 will loosely engage the end 5, thereby permitting the blade 1 to move with a swivel action on the said arm, and thereby permitting said blade to adapt itself to all irregularities in the movements of the disk.

To reverse the scraper-blade, it is first necessary to remove the blade 1 from the rod 4, then to remove the staple 6 from the blade, and to reapply the staple thereto by inserting the same through the slot 3 from the opposite side of said blade. This being done and the blade being then again applied to the rod or arm 4 in the manner already described, it is evident that the blade will be applied in working position, with the opposite side of its scraping edge against the disk.

The improved scraper above described would usually be employed as an outside scraper for drill-disks, and of course with

double-disk-drill attachments two of such scrapers will be used for each drill attachment or boot.

Fig. 5 illustrates the manner in which the scraper-blade may be applied to an arm or supporting-rod 4, which is located on the opposite side of the boot from the device shown in the other views.

The device described, while of very small cost, may be very quickly put together and taken apart, so as to permit the scraper-blade to be reversed from time to time as the scraping edge thereof is worn off. Furthermore, the improved scraper is strong and durable and is highly efficient for the purposes had in view. A scraper of this kind is of course capable of a great many different uses, but is especially adapted for use in connection with furrow-opening disks of drills and other disk-equipped machines.

The important purpose of making a scraper-blade reversible side for side will be understood by most persons familiar with the use of disk drills and similar machines. For the benefit of those who do not know this to be a fact it may be stated that with a scraper made from a flat piece of metal with its scraping edge cut at a right angle the scraper will do its best work while the corner edge, which engages the disk, is quite sharp and unworn and will do its poorest work after the corner edge is worn off, so that there is quite an extended surface of the scraper worn into flat engagement with the disk. When a scraper is thus worn away, it should be reversed side for side, so that the sharp edge of the scraper will be brought into engagement with the face of the disk.

What I claim is—

1. The combination with a blade having an intermediate perforation or rod-seat and a transverely-extended slot near its rear end, of a loop or yoke like coupling element insertible through the slot of said blade from either side of said blade, and a rod or supporting-arm insertible through the projecting loop of said coupling element, and provided with a crooked end engageable with the perforation or seat of said blade, substantially as described.

2. The combination with a scraper-blade 1 having an intermediate perforation 2 and a transversely-extended slot 3 near its rear end, of a coupling-staple 6 insertible through said perforation 3 from either side of said blade, and having outturned ends 7 limiting its movement through said blade, and a supporting-rod 4 insertible through the projecting portion of said staple and having a laterally-bent end 5 insertible through the perforation 2 of said blade, substantially as described.

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

EDWIN R. BEEMAN.

Witnesses:
MALIE HOEL,
F. D. MERCHANT.