J. PASZKO.
COAL DRILL.
APPLICATION FILED NOV. 9, 1920.

1,376,224.

Patented Apr. 26, 1921.

FIG. 3.

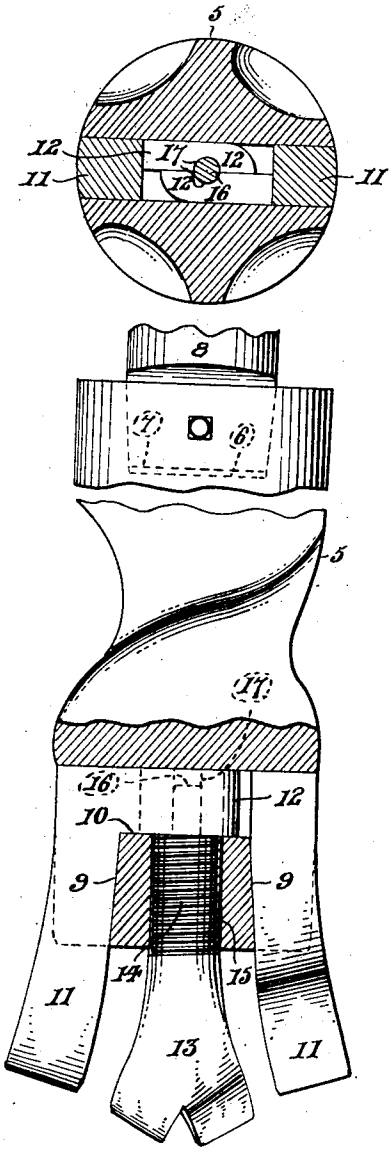


FIG. 1.

FIG. 4

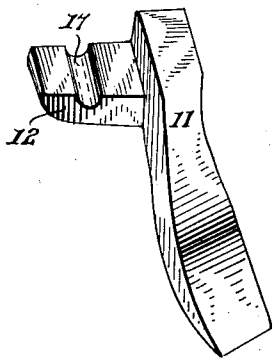
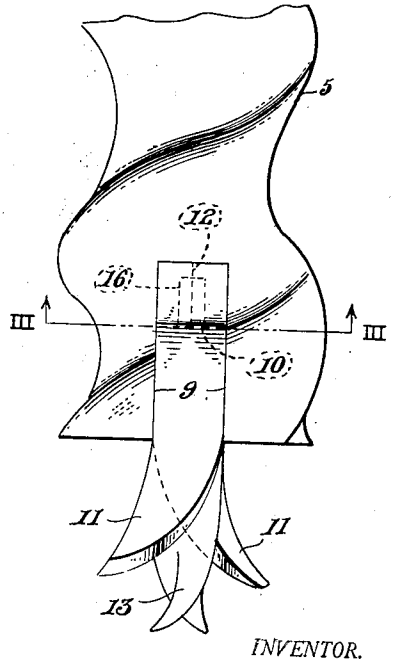


FIG. 2.



INVENTOR.
J. Paszko
BY
J. L. Bryant,
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN PASZKO, OF TAMAROA, ILLINOIS.

COAL-DRILL.

1,376,224. Specification of Letters Patent. Patented Apr. 26, 1921.

Application filed November 9, 1920. Serial No. 422,903.

To all whom it may concern:

Be it known that I, JOHN PASZKO, citizen of the United States of America, residing at Tamaroa, in the county of Perry and State of Illinois, have invented certain new and useful Improvements in Coal-Drills, of which the following is a specification.

This invention relates to certain new and useful improvements in coal drills and has specific reference to the provision of a drill of this character with a novel form of detachable cutter points whereby the latter may be readily renewed from time to time when damaged or broken without requiring the entire drill to be discarded.

The principal object of the invention is to provide a coal drill of the usual spiral and rotatable type with outer and inner detachable cutter bits, the bits being so constructed to have the inner bit serve as a securing means for the outer bits.

Further objects of the invention will become apparent as the nature of the invention is better understood and the same consists in the novel form, combination and arrangement of parts hereinafter more fully described in connection with the accompanying drawing, in which like reference characters indicate similar parts throughout the several views.

In the drawing,

Figure 1 is a fragmentary side elevational view, partly broken away and partly in vertical section, of a drill constructed in accordance with the present invention,

Fig. 2 is an elevational view of the lower portion of the drill shown in Fig. 1 as seen looking toward the left of Fig. 1,

Fig. 3 is a transverse sectional view taken substantially upon line III—III of Fig. 2, and

Fig. 4 is a perspective view of one of the outer cutter bits.

Referring more in detail to the several views, the present invention embodies a drill body 5 formed spirally in the usual manner and having the usual socket 6 in its upper end for reception of the usual tang 7 of the link 8 which is employed for rotating said drill body.

The present invention consists in providing the lower end of the drill body 5 with a plurality of diametrically opposed longitudinal grooves 9 open at their lower ends which extend to the lower end of the drill body 5 and whose upper ends terminate in communication with a centrally arranged transverse opening 10 provided in the body 5. A pair of properly formed outer cutter bits 11 are snugly fitted in the grooves 9 and project downwardly beyond the lower end of the drill body 5. These bits 11 are provided with lateral lugs 12 arranged in overlapping relation and snugly fitting in the opening 10 when the bits 11 are properly disposed in the grooves 9.

An inner or central double cutter bit member 13 is rigidly carried by the lower end of the body 5 by having its threaded shank 14 screwed into the axle opening 15 of said body 5, said opening 15 being in communication with the transverse opening 10. The upper end of the cutter bit member 13 is provided with a reduced extension or dowel 16 which projects into the opening 10 between the lugs 12 when said member 13 is properly disposed. The dowel 16 is shaped to snugly fit and enter the space provided by the mating concavities or recesses 17 formed in the contiguous faces of the lugs 12, whereby the dowel 16 as an integral part of the member 13 performs the function of securing the outer bits 11 in operative position.

From the foregoing description, it will be seen that when any of the initial cutters 11 or 13 become so damaged as to be no longer of value, the same may be readily renewed by threading the cutter member 13 out of the opening 15 of the body 5. When this has been done, the dowel 16 is removed from between the lugs 12 so that either one of the cutters 11 may be withdrawn for being replaced by a new like cutter. It will also be seen that when the device is assembled, a quite rigid construction is presented as the cutters are well braced against lateral strains and efficiently held against relative movement.

In operation, the cutters 13 and 11 drill into the material in the usual manner in advance of the body 5 and efficiently serve the purpose of boring shot holes or the like when coal is blasted.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What is claimed as new is:

1. A drill of the class described comprising in combination with a spiral rotatable drill body having a transverse opening adjacent its lower end, a pair of outer cutter bits extending longitudinally of said drill

body at opposite sides thereof and projecting beyond the lower end of the same, a pair of lateral lugs rigid with the outer cutter bits and projecting into said transverse opening in overlapping relation, said lugs being provided with mating recesses, and an inner cutter bit member detachably connected to the lower end of the drill body and provided with a dowel formed to fit the space provided by said recesses of the lateral lugs whereby the outer cutter bits are rigidly detachably fastened in position.

2. A drill of the class described comprising in combination with a spiral rotatable drill body having a transverse opening adjacent its lower end, a pair of outer cutter bits extending longitudinally of said drill body at opposite sides thereof and projecting beyond the lower end of the same, a pair of lateral lugs rigid with the outer cutter bits and projecting into said transverse opening in overlapping relation, said lugs being provided with mating recesses, and an inner cutter bit member detachably connected to the lower end of the drill body and provided with a dowel formed to fit the space provided by said recesses of the lateral lugs whereby the outer cutter bits are rigidly detachably fastened in position, said drill body being provided with longitudinal grooves communicating with said transverse opening and within which said outer cutter bits are snugly fitted, whereby the latter are braced against lateral strains.

3. The combination with a rotatable drill body having outer cutter bits upon opposite sides of the lower end thereof, of an inner cutter bit member detachably carried by said drill body and having means interlocking with the outer cutter bits for detachably securing them in position, said means including laterally recessed lugs upon the outer cutter bits arranged in overlapping relation and provided with mating recesses, and a dowel member carried by the inner cutter bit member detachably received within said recesses of said lugs.

4. A drill comprising a drill body having a transverse opening adjacent its lower end and an axial opening communicating with said transverse opening, an inner cutter bit member threaded into said axial opening and having a rigid dowel pin projecting into said transverse opening, outer cutter bits arranged at diametrically opposite sides of said drill body at its lower end and projecting therebeyond, lateral lugs rigid with said outer cutter bits and projecting within said transverse opening in overlapping relation, said lugs each partially embracing said dowel pin whereby the outer cutter bits are securely fastened to the drill body.

5. A drill comprising a drill body having a transverse opening adjacent its lower end and an axial opening communicating with said transverse opening, an inner cutter bit member threaded into said axial opening and having a rigid dowel pin projecting into said transverse opening, outer cutter bits arranged at diametrically opposite sides of said drill body at its lower end and projecting therebeyond, lateral lugs rigid with said outer cutter bits and projecting within said transverse opening in overlapping relation, said lugs each partially embracing said dowel pin whereby the outer cutter bits are securely fastened to the drill body, said drill body being provided with longitudinal grooves within which the outer cutter bits are fitted for bracing the latter against lateral strains.

In testimony whereof I affix my signature.

JOHN PASZKO.