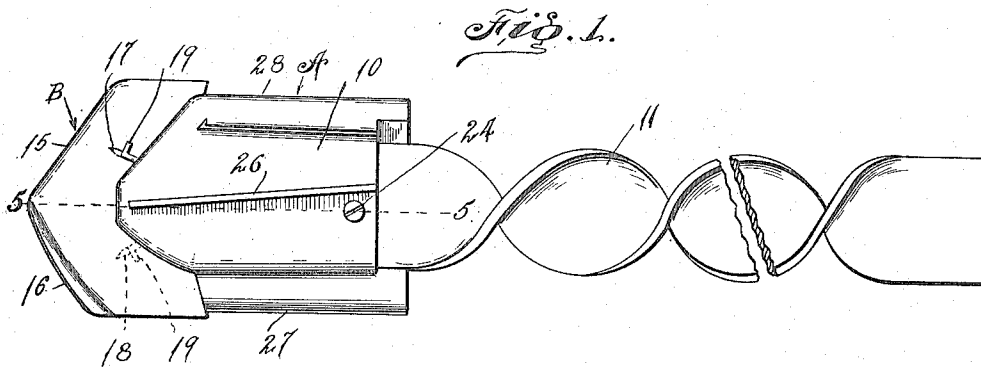
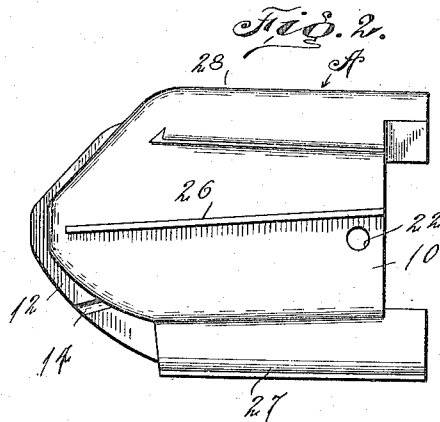
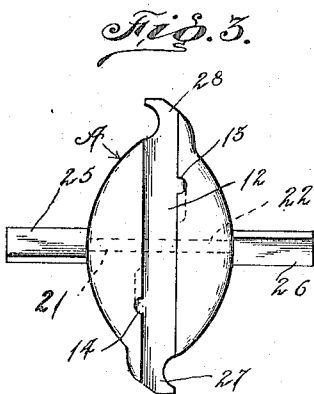
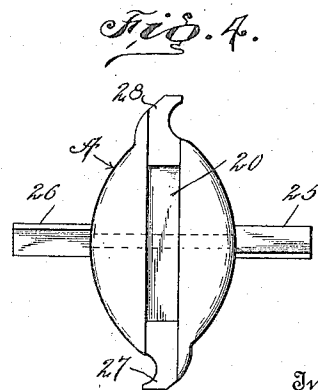


P. JOPLING.
COAL AND ROCK DRILL.
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1,135,530.

Patented Apr. 13, 1915.



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UNITED STATES PATENT OFFICE.

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COAL AND ROCK DRILL.

1,135,530.

Specification of Letters Patent.

Patented Apr. 13, 1915.

Application filed January 5, 1911. Serial No. 600,889.

To all whom it may concern:

Be it known that I, PEARSON JOPLING, a citizen of the United States, residing at Rock Island, in the county of Rock Island, State of Illinois, have invented certain new and useful Improvements in Coal and Rock Drills; 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.

This invention relates to coal and rock drills.

The object of the invention resides in the provision of a drill of the character named, embodying a novel construction designed to increase the efficiency thereof.

With these and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claim.

In describing the invention in detail, reference will be had to the accompanying drawings, wherein like characters of reference denote corresponding parts in the several views; and in which—

Figure 1 is a side view of a drill constructed in accordance with the invention, showing the same connected with the drive worm; Fig. 2, an enlarged side view of the head of the drill with the cutter blade and the drive worm detached therefrom; Fig. 3, a view of the head illustrated in Fig. 2, looking at the end thereof which receives the cutter blade; Fig. 4, a view of the head looking at the end thereof which receives the drive worm or other driving part.

Referring to the drawings, the drill is shown as comprising a head A and a cutter blade B. This head A is provided with a body portion 10 of substantially oval cross section, which tapers longitudinally from an intermediate point toward the end thereof to which is adapted to be secured a drive worm 11 in a manner that will hereinafter be referred to. The end of the head 10 which carries the cutter blade B is of tapered formation and has a transverse slot 12 extending thereacross in which the cutter blade is adapted to be seated. The walls of this slot are provided respectively with in-

wardly extending grooves 13 and 14 which open through the outer edges of said walls. The cutter blade B is provided with the usual oppositely disposed cutting edges 15 and 16 and also is provided on opposite faces with grooves 17 and 18 adapted to mate with the grooves 13 and 14 when the cutter blade is disposed in the slot 12. When these grooves are disposed in mating relation, cutter pins 19 are inserted in the recesses formed thereby and the cutter blade B thus detachably secured to the head A. The end of the head A which is opposite to that which carries the cutter blade B is provided with a recess 20, through the walls of which are formed alining openings 21 and 22. This recess 20 is of a size to snugly receive one end of the drive worm 11 and the latter is provided with a transverse opening 23 adapted to aline with the openings 21 and 22 when said drive worm is inserted in the recess 20. A pin 24 is then inserted through the alining openings 21, 22 and 23 so as to detachably secure the head to the drive worm. Mounted on opposite sides of the long transverse axis of the body portion 10 are guide wings 25 and 26. These guide wings extend substantially longitudinally of the body portion 10 and are inclined in opposite directions respectively to the longitudinal axis of the head. Mounted on opposite sides of the short transverse axis of the body portion 10 are additional longitudinal guide wings 27 and 28 which have their opposed side faces convexed and concaved respectively in contrast to the side faces of the wings 25 and 26 which are flat. These wings 25, 26, 27 and 28 serve to effectually cause the drill to move in a straight line during its operation.

What is claimed is:—

A drill comprising a head of elliptical cross-section provided with a recess in one end for receiving a drill bar and a transverse groove in its opposite end having its inner walls formed of portions diverging from the center of the head in the direction of the opposite end of said head, a pair of oppositely disposed guide wings formed with said head oppositely inclined to and crossing the lateral axis thereof and having corresponding ends terminating at the ends of said cutter receiving grooves, a second pair

of oppositely disposed guide wings formed
at each side of said head in the plane of its
longitudinal axis and projecting outwardly
from said recess, the several guide wings
5 comprising a plurality of radial arms dis-
posed about the longitudinal axis of the drill
bar.

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

PEARSON JOPLING.

Witnesses:

J. F. WITTER,
ERNEST RISTAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."