

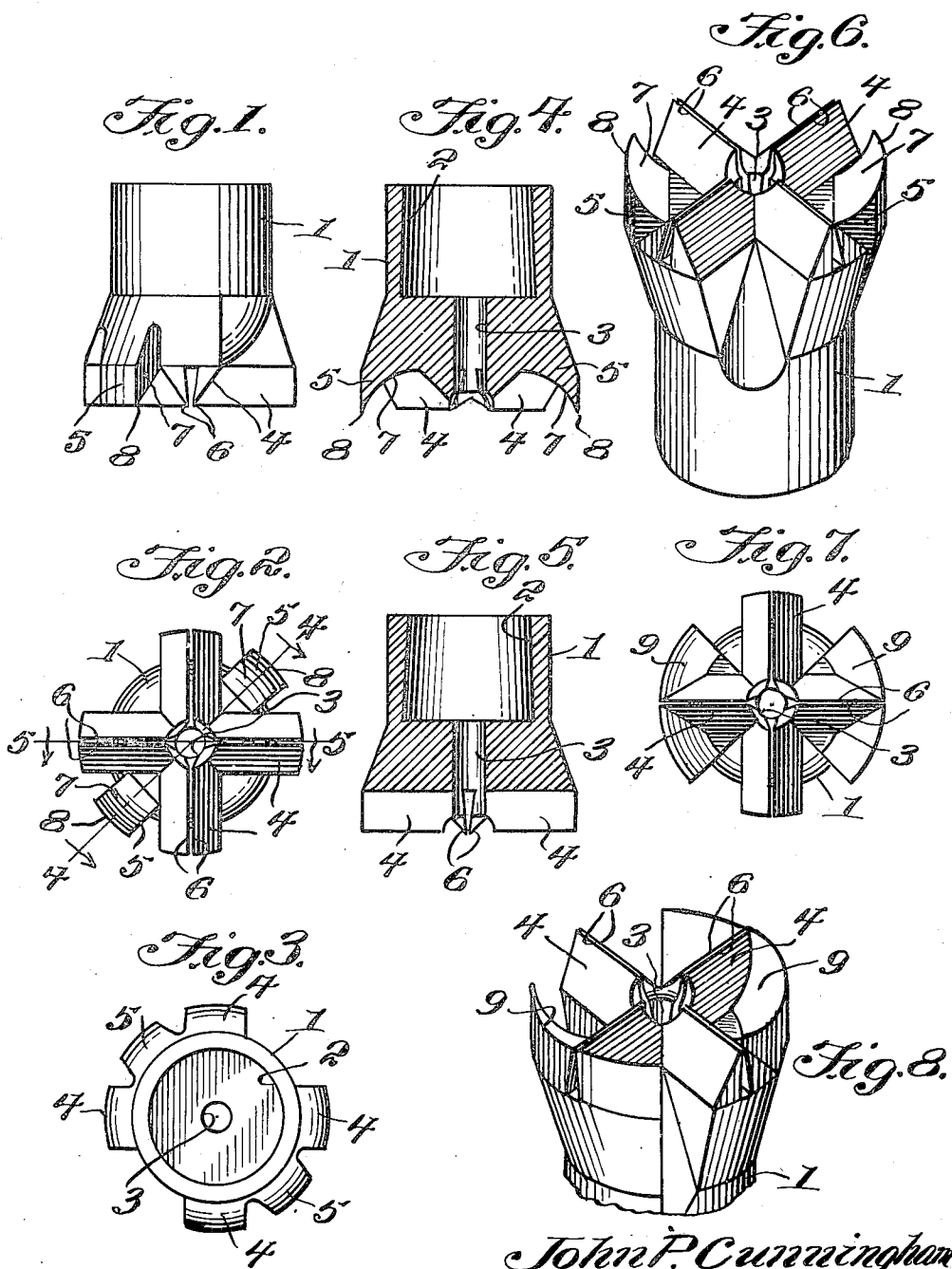
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J. P. CUNNINGHAM

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ROCK OR EARTH DRILL BIT

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J. L. Wright
WITNESS

John P. Cunningham
INVENTOR

BY *Victor J. Evans & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE

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ROCK OR EARTH DRILL BIT

John P. Cunningham, Kingman, Ariz.

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2 Claims. (Cl. 255—64)

This invention relates to drill bits and more particularly to cutters therefor, and has for the primary object the provision of cross cutters and peripheral cutters so arranged relative to each other that a hole formed thereby in rock or earth will be free of cornered or irregular wall formation so as to reduce drill sticking to a minimum and undue wear on the drill bit.

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which

Figure 1 is a side elevation illustrating a drill bit constructed in accordance with my invention.

Figure 2 is a plan view illustrating the cross and peripheral cutters.

Figure 3 is a top plan view illustrating the drill bit.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a perspective view illustrating the arrangement of the peripheral and cross cutters relative to each other.

Figure 7 is an end view illustrating another form of my invention.

Figure 8 is a perspective view illustrating the same.

This application is a continuation in part of my application filed March 19, 1936 and Serial No. 69,661.

Referring in detail to the drawing, the numeral 1 indicates the body of the bit having a socket 2 for the purpose of receiving a connector for the body to a drill stem and which forms the subject matter of the application heretofore referred to. The body has a bore 3 extending there-through through which fluid or air may pass for cleaning the hole. The body from the chambered portion 2 flares by increasing the thickness thereof to provide the cutting end of the body on which

are formed cross cutters 4 and peripheral cutters 5. The cross cutters 4 besides being integral with the body also are integral with each other with the bore 3 extending therethrough. The cross cutters 4 are of substantially triangular shape in cross section and each is slotted to define closely related cutting edges 6. As the cross cutters wear down, the cutting edges 6 move apart and tend to keep the cross cutters sharp until the bit is worn out doing away with the necessity of sharpening.

The peripheral cutters 5 are oppositely arranged on the body and each lies between pairs of the cross cutters and each has a beveled edge 7 presenting a cutting edge 8. The peripheral cutters coact with the cross cutters in drilling a hole in earth or rock free of irregular walls and also the peripheral cutters relieve undue wear on the cross cutters. The peripheral cutters are non-attached to the cross cutters; however, in my modified form of invention peripheral cutters 9 are provided which are integral with the ends of certain of the cross cutters and the peripheral cutters 9 project on opposite sides of said last-named cross cutters. The peripheral cutters 9 also converge towards the bore 3.

Having described the invention, I claim:

1. A drill bit comprising a body having an active cutting end, cross cutters integral with the cutting end of the body and each of triangular shape in cross section and each slotted to define closely related and spaced cutting edges, and peripheral cutters formed on said body.

2. A drill bit comprising a body having an active cutting end, cross cutters integral with the cutting end of the body and each of triangular shape in cross section and each slotted to define closely related and spaced cutting edges, and peripheral cutters formed on said body, said peripheral cutters being arranged between certain of the cross cutters and having beveled faces sloping in the direction of the center of the body, said cutters non-connected to the cross cutters.

JOHN P. CUNNINGHAM. 45