

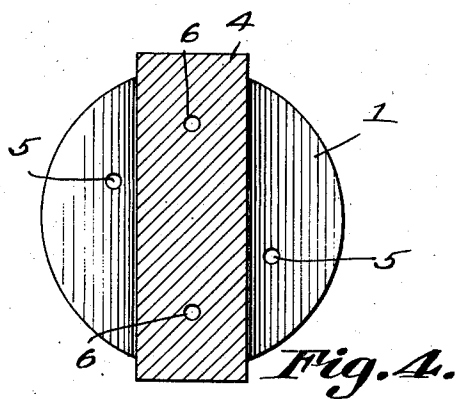
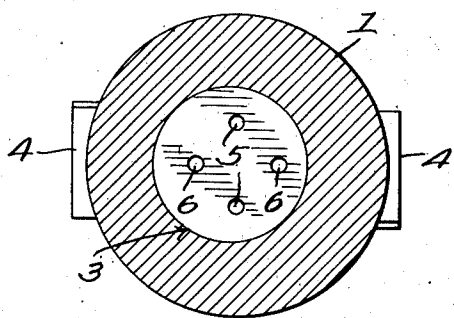
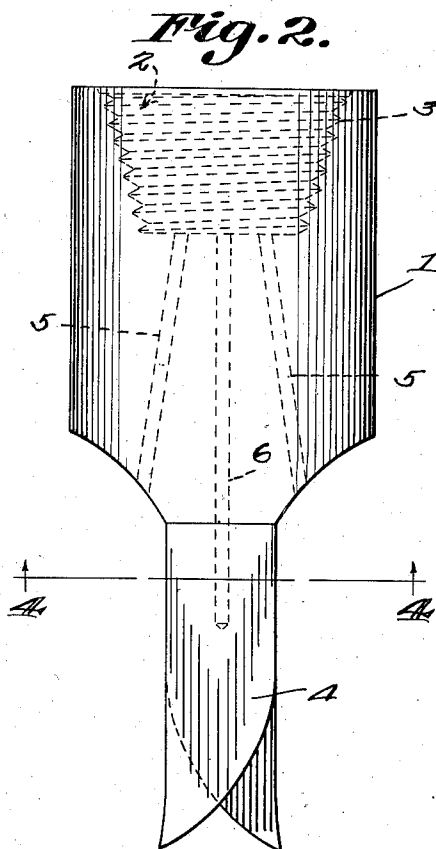
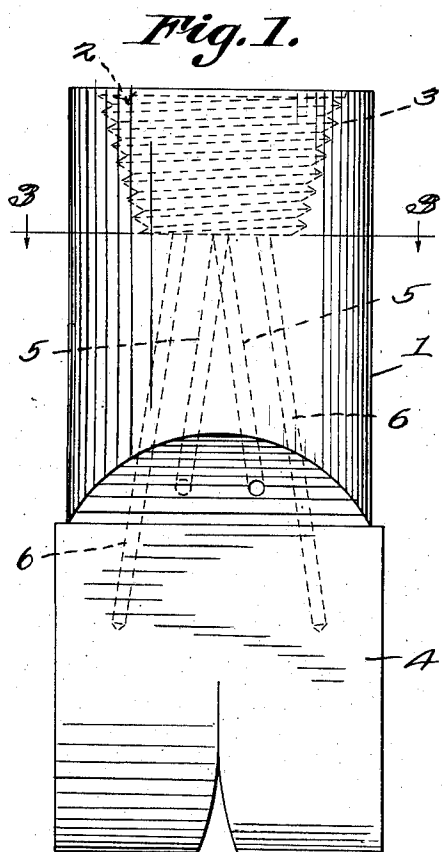
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Z. B. RICHARD

2,296,183

DRILL BIT

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2,296,183

DRILL BIT

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1 Claim. (Cl. 255—61)

By way of explanation, it may be stated that the bit of a drilling device often wears down to a place so located as to render the bit wholly or partially inoperative. Ordinarily, the only recourse is to haul out the bit and examine it. The present invention aims to provide a simple means whereby, when a bit is worn down to a predetermined place, the line of the circulating pump for the bit will be vented, thereby warning an operator, by pressure change, that the bit is not functioning properly.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:

Fig. 1 shows in side elevation, a device constructed in accordance with the invention;

Fig. 2 is an elevation wherein the device is viewed at right angles to the showing of Fig. 1;

Fig. 3 is a cross section on the line 3—3 of Fig. 1;

Fig. 4 is a cross section on the line 4—4 of Fig. 2.

The bit forming the subject matter of this application comprises a body 1, provided at its upper end with any suitable means 2 for coupling the body to the line of a circulating pump (not shown). The means referred to may be a threaded socket 3, in the upper end of the body 1, but that particular element of structure is not insisted upon.

At its lower end, the body 1 carries a bit 4. The bit 4 may be of any desired construction,

and may be assembled with the body 1 in any preferred way.

The body 1 is provided with longitudinal first ducts 5. The ducts 5 communicate at their upper ends with the socket 3, and with the pump line, in any event. At their lower ends, the first ducts 5 open outwardly through the body 1.

The body 1 is supplied with longitudinal second ducts 6. The ducts 6 extend into the bit 4, but are closed at their lower ends, since they terminate within the bit. The closed lower ends of the ducts 6 are disposed in the path of bit-wear, whereby, when the bit is worn to a predetermined place, the formerly closed lower ends of the ducts 6 will be opened, thereby admonishing an operator of bit-wear, through the instrumentality of pressure change in the pump line, the ducts 6 communicating at their upper ends with the socket 3, or with its equivalent.

The device forming the subject matter of this application is simple in construction, but will be found thoroughly efficient to carry out the objects stated in the opening portion of this specification.

What is claimed is:

A drill comprising a body provided with a reduced lower bit and with an upper means for connection with a circulation pump, the bit having edge surfaces, and continuous, plain, and approximately parallel side surfaces extended downwardly from the lower end of the body, the body being supplied with a first duct which opens downwardly and externally of the body, above the bit, the body having second ducts which open upwardly into said means, each second duct having a hermetically-closed lower end disposed between said approximately-parallel side surfaces and adjacent to the edge surfaces of the bit, the closed lower ends of the second ducts being disposed far enough below the lower end of the body so that they will be opened by bit-wear which is confined to so much of the bit as lies between said side surfaces.

ZACHARY B. RICHARD.