March 17, 1936. E. F. TERRY 2,034,122

ROCK DRILL

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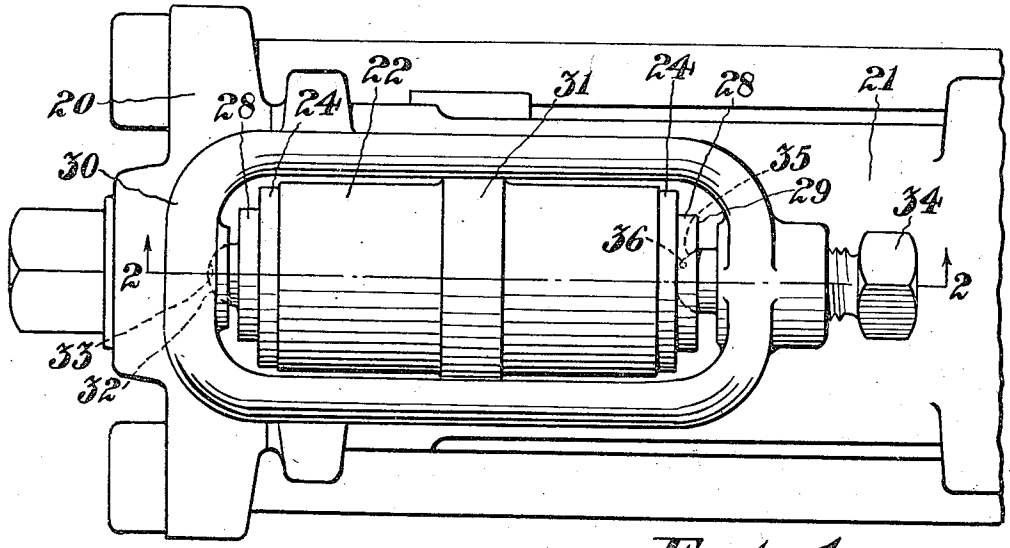

FIG.-1.

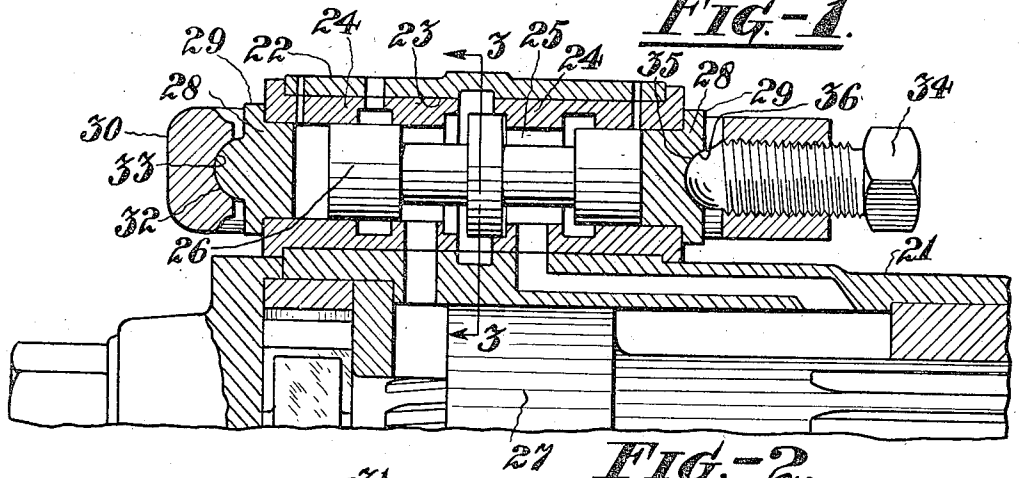

FIG.-2.

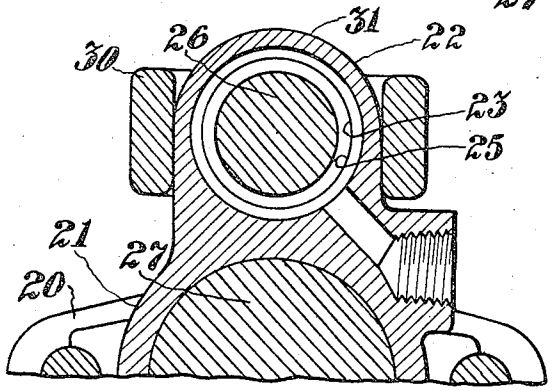

FIG.-3.

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ROCK DRILL

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2 Claims. (Cl. 121—1)

This invention relates to rock drills, and more particularly to a valve chest construction for rock drills of the fluid actuated type.

One object of the invention is to enable the valve chest parts to be assembled and disassembled with a minimum expenditure of time.

Other objects will be in part obvious and in part pointed out hereinafter.

In the accompanying drawing illustrating the invention and a practical application thereof,

Figure 1 is a plan view of a rock drill constructed in accordance with the practice of the invention,

Figure 2 is a transverse view through Figure 1 on the line 2—2, and

Figure 3 is a transverse view taken through Figure 2 on the line 3—3.

Referring more particularly to the drawing, 20 designates, in general, a rock drill comprising a cylinder 21 and a valve chest 22 which, for the sake of simplicity of illustration, is shown as being an integral part of the cylinder 21.

The valve chest may be of a conventional type having a bore 23 extending entirely therethrough to constitute a receptacle for the distributing valve mechanism comprising a pair of bushings 24 the interior of which serve as a valve chamber 25 for the accommodation of a distributing valve 26.

The valve 26 is of the spool type reciprocable in the valve chamber 25 for controlling the distribution of pressure fluid to the opposed pressure surfaces of a piston 27 in the cylinder 21. The ends of the valve chamber 25 are sealed by imperforate closures 28 which extend slidably part way into the bushings 24 and have flanges 29 that seat against the outer ends of the bushings 24.

In accordance with the practice of the invention means are provided for securing the closures 28 firmly in assembled position in the ends of the valve chamber. The means illustrated comprises an endless yoke 30 which encircles the valve chest, in a horizontal plane, and is held against rotary movement by a raised portion 31 on the exterior of the valve chest which engages intermediate portions of the inner surface of the yoke. As a preferred form of construction one of the closures 28 is provided with a trunnion 32 of which the end is rounded and extends into a depression 33 in the inner surface of the yoke. In the opposite end of the yoke is a set screw 34 having a ball end 35 which extends into a depression 36 in the outer end of the adjacent closure 29.

In practice, whenever it is desired to disassemble the valve mechanism the screw 34 is unthreaded to remove its rounded end from the depression 36. The yoke may then be lifted from the closures 28 and the closures may be removed from the ends of the valve chamber to permit access to the bushings 24 and the valve 26. As will be readily appreciated, this operation of disassembling the valve mechanism may be performed quickly since it requires the manipulation of only the one screw 34.

A further advantage of the present invention is that by securing the closures 28 in sealing position by means of a yoke disposed exteriorly of the valve chest, as distinguished from structures wherein the closures are held by a bolt or rod extending through the valve, the diameters of the various portions of the valve, and therefore of the valve chest may be held to small dimensions.

I claim:

1. In a rock drill, the combination of a casing having a chamber and closures inserted slidably into the ends of the chamber to seal said chamber, a retaining device exteriorly of the casing freely detachable from and acting against both closures to hold them in sealing relationship with the casing, and a portion on the yoke engaging the casing to prevent rotary movement of the yoke with respect to the casing.

2. In a rock drill, the combination of a casing having a chamber and imperforate closures inserted slidably into the ends of the chamber to seal said chamber, a retaining device exteriorly of the casing for locking the closures in sealing position having portions interlockingly engaging the closures and being freely removable from the closures, and portions on the yoke engaging the casing to prevent rotary movement of the yoke with respect to the casing.

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