

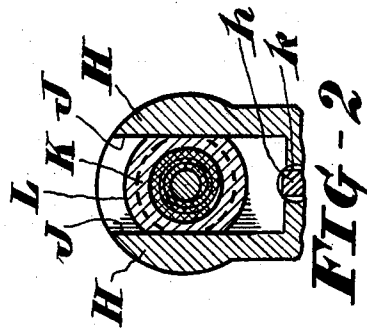
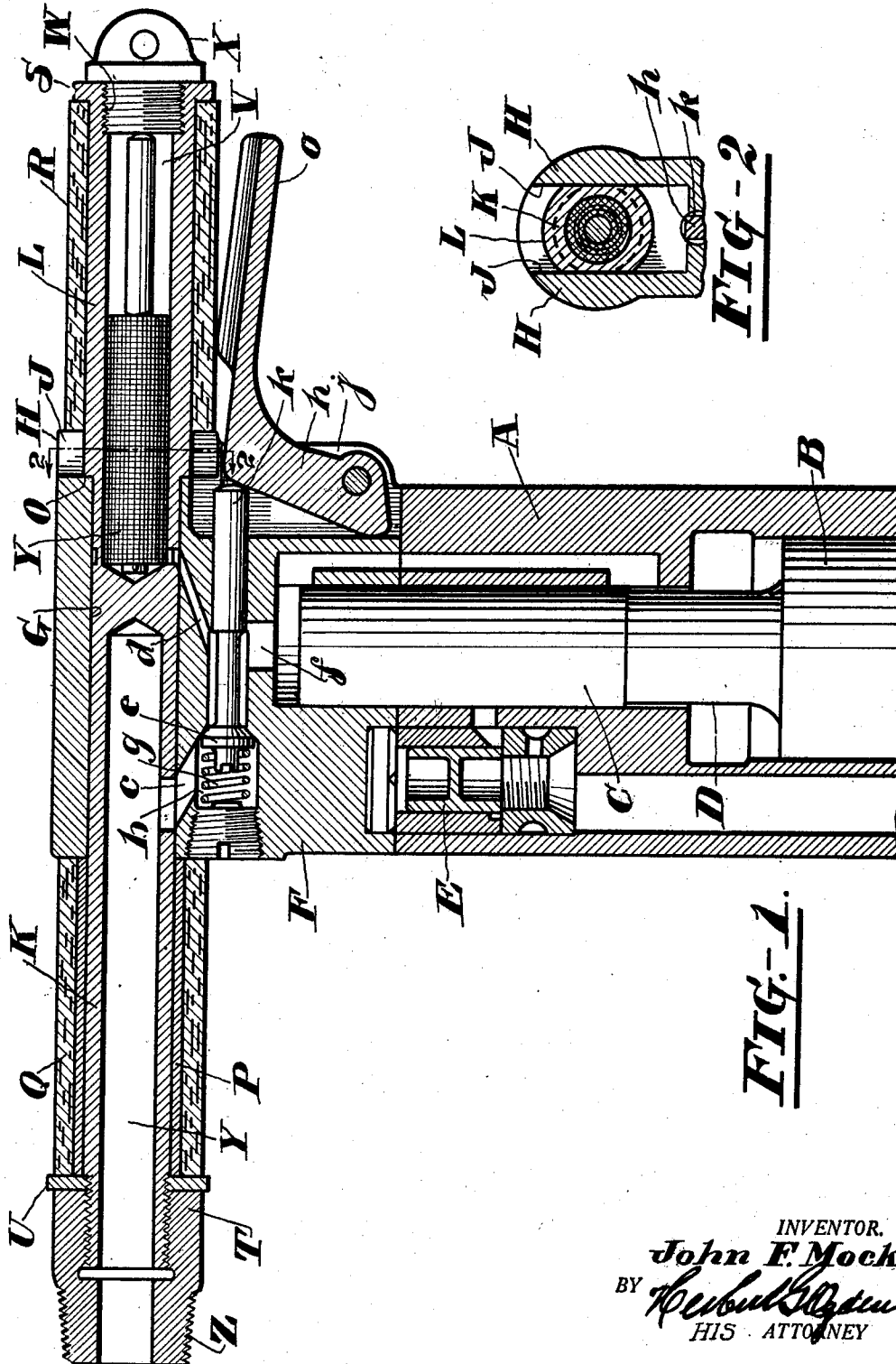
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HANDLE FOR ROCK DRILLS

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HANDLE FOR ROCK DRILLS

Application filed December 21, 1927. Serial No. 241,535.

This invention relates to rock drills, but more particularly to a handle for fluid actuated rock drills of the hand held type.

The objects of the invention are to form a rugged and compact handle and to reduce the cost of manufacturing handles of this type.

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

In the drawings illustrating the invention, Figure 1 is a sectional elevation of the rearward portion of a rock drill having the invention applied thereto, and

Figure 2 is a transverse view taken through Figure 1 on the line 2—2 looking in the direction indicated by the arrows.

Referring to the drawings, the invention is shown embodied in a rock drill of the hand held type having a cylinder A in which is disposed a reciprocatory hammer piston B. The rock drill illustrated is substantially like that described and claimed in United States Patent No. 1,096,087, entitled Fluid operated percussive tool granted to Lewis C. Bayles May 19, 1914. The piston B accordingly has a rearwardly extending shank C on which is formed a neck D adjacent the piston head for controlling the flow of pressure fluid into the rearward end of the cylinder. In the rearward end of the cylinder A is disposed a distributing valve E for controlling the admission of pressure fluid to the front end of the cylinder.

A closure is provided for the rearward end of the cylinder A by a back head F seated on the cylinder to which it may be secured in any suitable manner.

In accordance with the present invention, the back head F is provided with a transverse bore G near its rearward end. The bore G may be of uniform diameter throughout its length, and at one end of the back head F on opposite sides of the bore G are formed a pair of lugs H having flat surfaces J.

Disposed within the bore G is a rod K, the ends of which project beyond the opposite sides of the back head F. In order to assure the correct position of the rod K with respect to the back head F, said rod is pro-

vided with an enlarged portion L at one end thus forming a shoulder O at the innermost end of the portion L to abut the side of the back head F. On the opposite end of the rod K is disposed a sleeve P having an external diameter substantially equal to that of the enlarged portion L of the rod. Handle grips Q and R are disposed on the enlarged portion L of the rod and on the sleeve P. The handle grips are intended to be grasped by the operator for manipulating the rock drill and may consist of rubber or other flexible material to protect the operator's hand against the effects of the vibration of the rock drill.

The handle grips Q and R may be held in operative position in any suitable manner. In the present instance however, this is accomplished by means of a flange S on the enlarged portion L which bears against the outermost end of the handle grip R. The handle grip Q is similarly held by a hollow nut T screwed on the end of the rod K. A washer U is interposed between the nut T and the outer end of the handle grip Q and bears against the sleeve P to press the inner end of the sleeve together with that of the handle grip Q against the side of the back head F. Preferably the sleeve P is of the same length as the handle grip Q so that the washer U may bear thereagainst without distorting the said handle grip.

In one end of the rod K is formed an oil chamber V having a threaded opening W normally sealed by a filler plug X screwed into the opening W. An oil cartridge Y of a well known type is disposed in the oil chamber V to control the flow of oil therefrom. In the opposite end of the rod K is formed a passageway Y into which pressure fluid for operating the drill may be introduced. Such pressure fluid may be conveyed from a source of supply through a hose (not shown) but which may be connected to the threaded extension Z on the end of the nut T. The extension Z is hollow for admitting pressure fluid into the passageway Y.

Beneath the aperture G is a valve chamber Z which communicates with the passageway Y through a passage c and with the oil cham-

ber through a passage *d*. A throttle valve *e* is disposed in the valve chamber *b* to control communication between the passage *c* and an inlet passage *f* leading from the valve chamber *b* to the rearward end of the cylinder. The throttle valve *e* is normally held in closed position by a spring *g*.

To the end that the throttle valve *e* may be conveniently manipulated by the operator without releasing his hold on the handle grips a throttle valve lever *h* is pivoted in a slot *j* in the side of the back head and bears against a projecting end *k* of the throttle valve. The throttle lever is of angular shape and has an arm *o* which extends generally in the direction of the handle grip *R* against which it may be pressed to maintain the throttle valve *e* in the open position.

By means of the present invention a rugged handle structure may be obtained. The back head *F* may be relatively short as compared with other back heads of this type and the objectionable protuberances usually formed on back heads of this type are eliminated.

I claim:

1. A handle for a fluid actuated rock drill, comprising a back head having a transverse bore, a tubular rod in the bore extending on opposite sides of the back head, said rod having a chamber for oil and a passageway for pressure fluid, means in the back head for controlling the admission of pressure fluid from the rod to the back head, tubular handle grips on the ends of the rod, means on the rod interlockingly engaging the back head for preventing rotation of the rod with respect to the back head, an integral flange on one end of the rod forming an abutment for one handle grip, and a hollow nut on the opposite end of the rod for maintaining the other handle grip on the rod.

2. A handle for a fluid actuated rock drill, comprising a back head having a transverse bore, lugs on the back head disposed on opposite sides of the aperture, a tubular rod in the bore extending on opposite sides of the back head, said rod having an oil chamber in one end and a passageway for pressure fluid in the other end, flat surfaces on the rod to engage the lugs for preventing relative rotation between the back head and the rod, handle grips on the ends of the rod and abutting the back head with their inner ends, a flange on one end of the rod to act as an abutment for the outer end of one handle grip, and a nut on the opposite end of the rod abutting the outer end of the other handle grip, said nut having a threaded portion for connection to a pressure fluid supply line.

3. A handle for a fluid actuated rock drill, comprising a cylinder and a back head having a transverse bore, lugs on the back head disposed on opposite sides of the aperture, a tubular rod in the bore extending on opposite sides of the back head, said rod having an

oil chamber in one end and a passageway for pressure fluid in the other end, flat surfaces on the rod to engage the lugs for preventing relative rotation between the back head and the rod, handle grips on the ends of the rod and abutting the back head with their inner ends, a flange on one end of the rod to act as an abutment for the outer end of one handle grip, a nut on the opposite end of the rod abutting the outer end of the other handle grip, said nut having a threaded portion for connection to a pressure fluid supply line, a valve chamber in the back head, passages in the back head connecting the valve chamber to the oil chamber and the passageway, a throttle valve in the valve chamber controlling communication between the passages and the cylinder, and a lever pivoted to the back head adjacent one handle grip for manipulating the throttle valve.

In testimony whereof I have signed this specification.

JOHN F. MOCK.