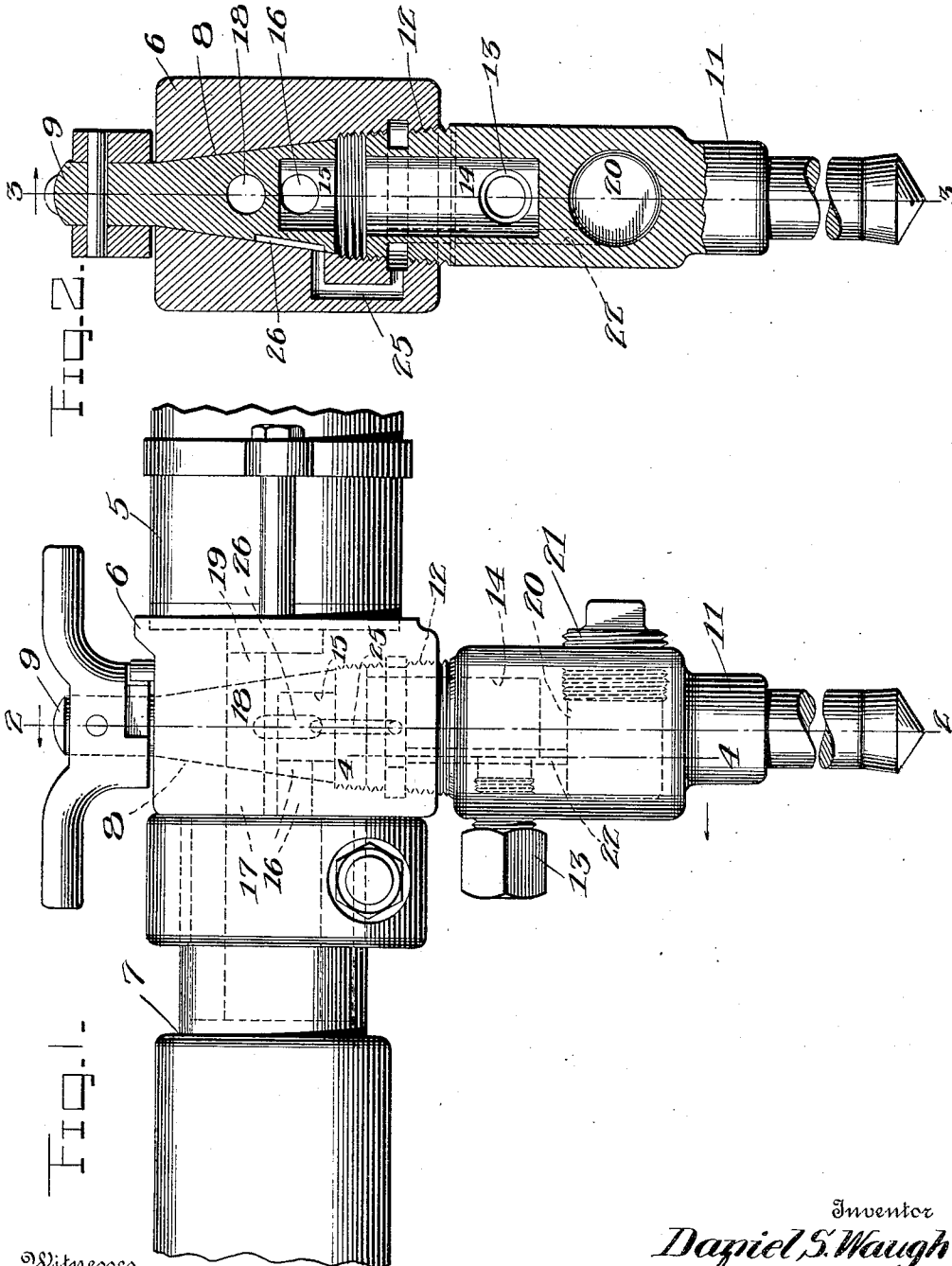


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MOTOR LUBRICATING MEANS.
APPLICATION FILED SEPT. 25, 1909.

1,049,010.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 1.



Witnesses

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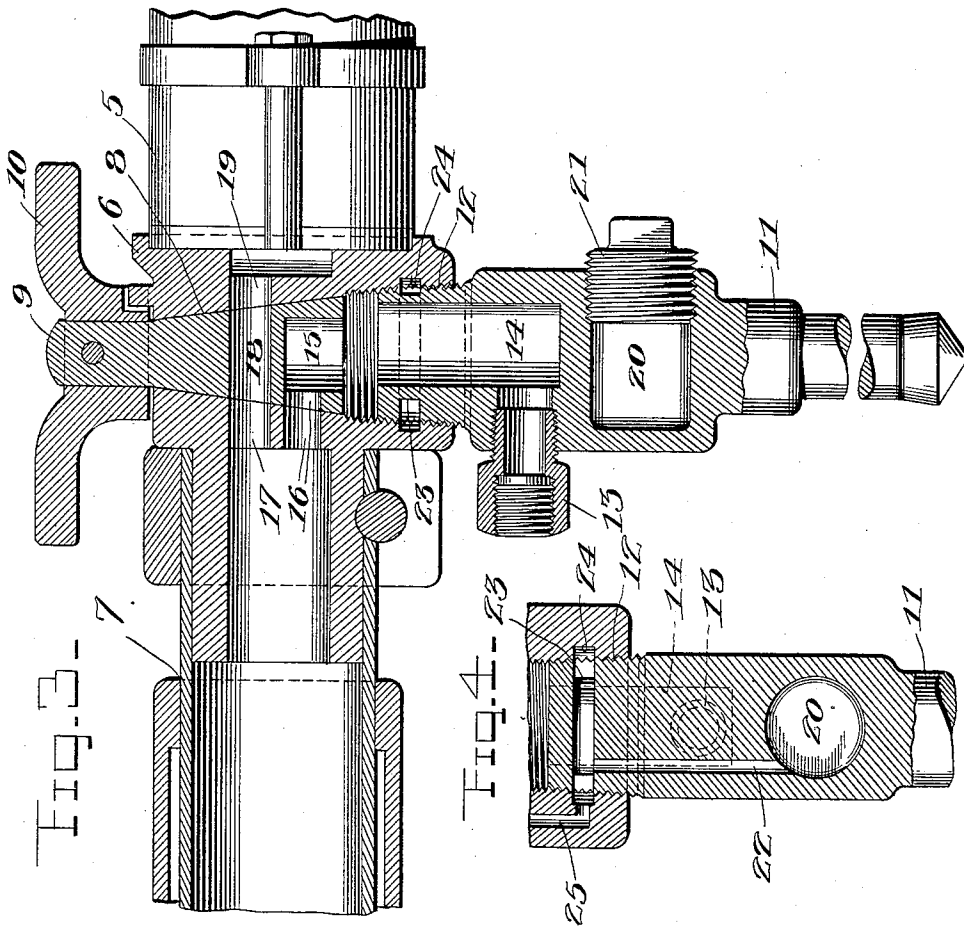
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UNITED STATES PATENT OFFICE.

DANIEL SHAW WAUGH, OF DENVER, COLORADO, ASSIGNOR TO THE DENVER ROCK DRILL & MACHINERY COMPANY, OF DENVER, COLORADO.

MOTOR-LUBRICATING MEANS.

1,049,010.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed September 25, 1909. Serial No. 519,544.

To all whom it may concern:

Be it known that I, DANIEL SHAW WAUGH, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Motor-Lubricating Means, of which the following is a specification.

The present invention relates more particularly to lubricating means for drilling apparatus, particularly of the type that employs motive fluid under pressure to actuate the same. It will be obvious, however, to those skilled in the art, that the invention is not necessarily limited to this particular type of machine.

One of the primary objects of the invention is to provide a structure which may be employed in connection with a well known type of valve mechanism, said valve mechanism constituting means for automatically supplying lubricant in a most satisfactory manner to the working parts of the motor or apparatus.

A further and important object is to so arrange the reservoir that it will not constitute an encumbrance against the practical and successful operation of the machine.

Still a further and important object is to so construct the lubricating means that a supply of lubricant is always delivered to the working parts of the mechanism upon their initial operation.

A simple embodiment of the invention is disclosed in the accompanying drawings, wherein:—

Figure 1 is a plan view of a portion of a drilling machine, showing the means applied thereto. Fig. 2 is a sectional view on the line 2—2 of Fig. 1. Fig. 3 is a sectional view on the line 3—3 of Fig. 2. Fig. 4 is a detail sectional view on the line 4—4 of Fig. 1.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment disclosed, a portion of a fluid pressure motor is illustrated at 5, and may be of any well known type. Secured to its rear end is a head 6, and clamped to this head is the usual motive fluid operated feeding means 7. The head 6 is provided with a valve casing 8 that receives a tapered rotary initial or throttle valve 9, said valve projecting from one side

of the head and having an actuating handle 10 secured thereto.

A handle 11 for rotating the drill projects from one side of the same, and is secured thereto by being threaded, as shown at 12 into the head 6 in line with the valve 9. This handle has a nipple 13 secured to one side of the same, and adapted to receive the hose for conducting a supply of motive fluid under pressure to the apparatus. The bore of the nipple communicates with a chamber 14 formed longitudinally in the inner end of the handle 11, and said chamber in turn communicates with a pocket 15 formed in the inner end of the throttle valve. Two ports 16 are formed respectively in the valve casing or head and the valve, and are adapted to register so that the motive fluid will be conducted from the pocket 15 into the motive fluid operated feeding means. From this feeding means, the motive fluid is in turn conducted through a port 17 in the head, through a port 18 in the valve, and the delivery port 19 also in the head, into the motor.

It will thus be obvious, as shown particularly in Fig. 3 that if the valve 9 is turned to a predetermined position, motive fluid will pass from the nipple 13, through the motive fluid operated feeding means and valve, through the delivery port 19 and into the motor to actuate the same.

A lubricant reservoir 20 is formed transversely in the handle 11, outside the chamber 14, and its outer end is normally closed by a removable plug 21. From the lower portion of this reservoir 20, as indicated in Fig. 2, and shown in Fig. 4, a channel 22 leads to an annular groove 23 formed in the inner threaded end of the handle. The groove 23 registers with another groove 24 arranged in the valve casing, and from this groove 24, as shown in Fig. 2, a channel 25 conducts the lubricant to the surface of the valve 9, said valve having a shallow pocket 26 that is arranged to register with the passage 25 and also with the delivery port 19.

It will be noted therefore that when the valve 9 is in the position illustrated in Fig. 3, and motive fluid is thus being supplied through the port 19 into the motor, the pocket 26 will be in communication with the lubricant-conducting passage 25, as shown in Fig. 2. When the valve 9 is turned to cut off the supply of motive fluid, then the

pocket 26 is brought into communication with the port 19. This port therefore constitutes a common delivery port for motive fluid and lubricant, and the valve 9 constitutes common means for controlling the supply of motive fluid and lubricant to the motor.

Briefly described, the operation of the structure is as follows. The reservoir 20 having been filled with lubricant and a suitable supply of motive fluid being introduced to the machine through the nipple 13, if the valve is in the position shown in Fig. 3, the motive fluid will enter the motor and effect its operation. At this time, the pocket 26 is in communication with the passage 25, so that the lubricant flowing from the reservoir through the above described channel will enter said pocket 26. If now the valve 9 is turned to cut off the supply of motive fluid, the pocket 26 will communicate with the port 19 and the lubricant in said pocket will flow into said port. Therefore as soon as the valve is turned to again supply motive fluid to the motor, such motive fluid will immediately drive the lubricant from the port 19 into the said motor.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. In apparatus of the character set forth, the combination with a motor, of a handle projecting from one side thereof for rotating the same, said handle having a lubricant reservoir and a motive fluid supply port, and a valve at the inner end of the handle for controlling the supply of lubricant and motive fluid to the motor.

2. In apparatus of the character set forth, the combination with a motor having a head, forming a valve casing, said casing having a common motive fluid and lubricant delivery port communicating with the motor, of a handle coupled to one side of the head, motive fluid supply means connected to the handle and having a passage communicating with the valve casing, a lubricant reservoir formed in the handle and having a passage communicating with the valve casing, and a rotary valve located in the casing and having a port which connects the motive fluid passage and delivery port, said valve also having a pocket which moves into and out of communication with the lubricant passage and the delivery port, the

motive fluid port and lubricant pocket being arranged to alternately communicate with the delivery port as the valve is turned.

3. In apparatus of the character set forth, the combination with a valve casing, of means for supplying motive fluid to the casing, a throttle valve in the casing controlling the passage of motive fluid through the casing, said valve having a handle projecting from one side of the casing, and a lubricant holding reservoir connected to and projecting from the opposite side of the casing, said reservoir having a port controlled by the throttle valve.

4. In apparatus of the character set forth, the combination with a motor, of means for supplying motive fluid thereto, a rotary throttle valve for the motive fluid having a handle projecting from one side of the motor, a handle for turning the motor projecting from the opposite side of the motor substantially in line with the throttle valve, and a lubricant reservoir located in the handle and having a port leading therefrom to the motor and controlled by the throttle valve.

5. In apparatus of the character described, the combination with a motor, of a rotary throttle valve having a handle projecting from one side of the motor, a handle for turning the motor projecting therefrom, means connected to the handle for supplying motive fluid to the motor, and a lubricant reservoir located in the handle and having a port leading therefrom to the motor at one side of the motive fluid supply passage in said handle.

6. In apparatus of the character set forth, the combination with a motor, of a valve casing carried thereby, said casing having an internal valve chamber and an outlet port leading to the motor from one side of the chamber, a handle closing one end of the chamber and having a motive fluid inlet passage opening into said end of the chamber, a lubricant reservoir formed in said handle and having a passage leading therefrom at one side of the motive fluid inlet passage and communicating with one side of the valve chamber, and a rotary valve in the chamber having a motive fluid port communicating with the inner end of the chamber and having a motive fluid outlet movable into and out of communication with the outlet port of the casing, said valve also having a pocket that moves into and out of communication with the said outlet port of the casing and with the said passage from the lubricant reservoir.

7. In apparatus of the character described, the combination with a motor, of a valve casing carried thereby, said casing having an internal open ended valve chamber and a port communicating with the motor, a rotary valve in the valve chamber con-

trolling the port and having a handle projecting from one end of said chamber, and a closure for the other end of the chamber having a lubricant reservoir therein and
5 having a passage leading from the reservoir and communicating with one side of the valve chamber, said valve having a pocket that moves into and out of communication

with the port of the casing and with the passage from the lubricant reservoir. 10

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

DANIEL SHAW WAUGH.

Witnesses:

WILLIAM H. LEONARD,
HERBERT E. FISKE.

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