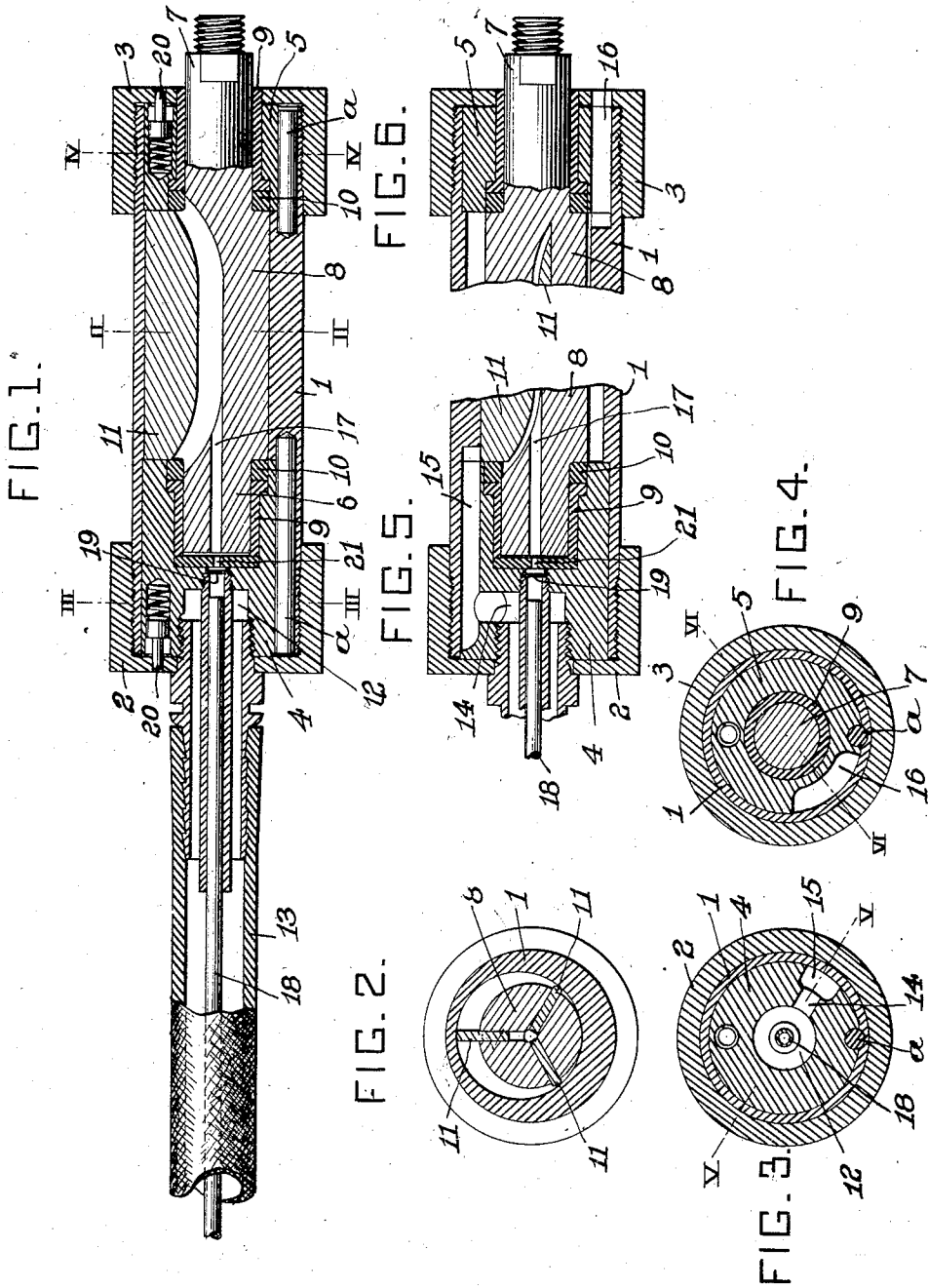


994,400.

Patented June 6, 1911.



WITNESSES:

J. Herbert Bradley.
 Charles Barnett.

INVENTOR

Harris B. Holt,
 by Christy & Christy
 Attys.

UNITED STATES PATENT OFFICE.

HARRIS B. HOLT, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE LAGONDA MANUFACTURING COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

ROTARY MOTOR.

994,400.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed April 13, 1909. Serial No. 489,652.

To all whom it may concern:

Be it known that I, HARRIS B. HOLT, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Rotary Motors, of which improvements the following is a specification.

The invention described herein relates to certain improvements in rotary motors which while capable of general use is especially adapted for driving the tools employed in cleaning boiler tubes, etc.

The invention is hereinafter more fully described and claimed.

In the accompanying drawing forming a part of this specification, Figure 1 is a sectional elevation of a motor embodying the invention described herein; Figs. 2, 3 and 4 are transverse sections on planes indicated respectively by the lines II—II, III—III and IV—IV Fig. 1; Fig. 5 is a longitudinal section of one end of the motor, the plane of section being indicated by the line V—V, Fig. 3, and Fig. 6 is a similar view of the opposite end of the motor, the plane of section being indicated by the line VI—VI Fig. 4.

The shell or cylinder 1 has its ends closed by caps 2 and 3, preferably screwed onto the ends of the shell. The inner walls of the shell adjacent to its ends are made concentric with each other and the axis of the shell, while the inner wall of the intermediate portion of the shell is made eccentric. Journal blocks 4 and 5 having dowel pins *a* are arranged in recessed concentric portions of the ends of the shell for supporting the journals 6 and 7 of the rotary member 8, one of said journal blocks, as 5, being annular to permit of the journal 7 projecting beyond the cap 3 for attachment to the tool or other device to be driven. The portions of the journal blocks in which the journals are mounted are provided with removable bushings 9, and between the inner ends of said bushings and the shoulders at the end of the rotary member 8, bearing rings 10 are arranged, so that in case of wear only the bushings and rings need be renewed.

The blades 11 are arranged to move freely in radial slots in the rotary member and are pressed outwardly by fluid pressure so that their edges will bear against the inner pe-

riphery of the shell, such periphery being eccentric to the axis of the rotary member, as clearly shown in Figs. 1 and 2. The journal block 4 is formed with a chamber 12 adapted to be connected to the fluid pressure supply, by a pipe 13, and is connected by a port 14 to a longitudinal passage 15 leading to the eccentric chamber in which the rotary member operates. An outlet from the opposite end of the chamber, is formed by passage 16 in the other journal block 5, said passage being located preferably at a point more than one hundred and eight degrees from the inlet port 15, measuring in the direction of rotation.

An axial passage 17 is formed in the rotary member, extending from the end adjacent to the supply chamber to a point where it will intersect the radial slots in which the blades or vanes 11 are arranged. This passage is connected to the fluid pressure supply so that such pressure may be employed for exerting a yielding outward pressure on the blades or vanes. This passage is also utilized for introducing a lubricant into the radial slots, and the working chamber, such lubricant being introduced with the stream of fluid into the passage 17, preferably as shown and described in Patent No. 951234, granted F. M. Cannon, March 8, 1910, in which construction a reservoir for the lubricant is connected to the part to be lubricated by a flexible tube independent of the tube for conducting the fluid under pressure to the motor, the lubricating tube being preferably arranged inside of the fluid pressure tube. Fluid pressure is admitted to the reservoir for the lubricant so that the latter is under a forced feed, and is also preferably subjected to an atomizing action. This lubricating apparatus can be conveniently used in connection with the motor described herein, the fluid pressure supply pipe 13 being connected as described to the chamber 12, and the tube 18 for the lubricant passing through the chamber 12 and being connected by a port 19 with the space in the journal block, in which the journal 6 rotates. The lubricant being atomized and carried along by the fluid flowing under pressure at least equal to that in the pipe 13 will be forced between the surfaces to which the lubricant should be applied.

In order to prevent the caps 2 and 3 from

becoming loose, they are locked by suitable means as against rotation, as for example by spring actuated pins 20 arranged in sockets in the ends of the journal blocks and adapted to engage holes in the caps 2 and 3. When it is desired to remove the caps, the pins can be forced in by a suitable tool.

It has been found that if the chamber in the journal block 4 into which the atomized lubricant passes be made large compared to small port 21 through which the mixed lubricant and fluid under pressure flow into said chamber, there will be a sudden expansion of the fluid producing a sufficient reduction of temperature as to prevent any heating of the adjacent parts.

I claim herein as my invention:

1. In a rotary motor, the combination of a shell having concentric end portions and an intermediate eccentric portion, independent blocks seated in said concentric end portions with means to prevent their rotation, a rotor journaled in said blocks, independent caps screw-threaded to the ends of said shell and adapted to hold said blocks from longitudinal movement, and means to lock said caps against rotation, substantially as described.

2. In a rotary motor, a shell having an admission port, a journal block seated in said shell, having an admission chamber formed therein and further adapted to form with said shell a port connecting said chamber with the admission port of the shell, a cap secured to said shell to hold said block in place and a supply connection to said admission chamber secured to said block and extending through an opening in said cap, substantially as described.

3. In a rotary motor, a shell having a journal block seated therein with an inlet

for the motive agent and a separate inlet for a lubricant and a double combined conduit to connect each inlet with its source of supply, substantially as described.

4. In a rotary motor, the combination of a shell, a block seated in said shell, a rotor journaled in said block, a cap screw-threaded to the shell to hold said block in place and a spring pressed locking device to hold said cap against rotation after the same has been screwed to the shell, substantially as described.

5. In a rotary motor, the combination of a shell having an admission port, a rotor having slots with radially movable blades therein, a block seated in said shell having a journal for said rotor, said block having an admission chamber formed therein with a port connecting said chamber with the admission port of the shell, said block further having a port opening to an axial opening in the rotor leading to said slots in the rear of said blades and supply connections, one arranged within the other, to said last named port and chamber, substantially as described.

6. In a rotary motor, the combination of a shell forming a working chamber, a rotor in said chamber, a block forming a journal for said rotor, said block having an admission chamber with a port connecting same to said working chamber, and an additional port with a reduced outlet opening to said working chamber and supply connections to said last named port and to said block chamber, substantially as described.

In testimony whereof, I have hereunto set my hand.

HARRIS B. HOLT.

Witnesses:

CHARLES BARNETT,
FRIEDA E. WOLFF.