E. GUERIN.

FLUID PRESSURE MOTOR.

APPLICATION FILED APR. 9, 1914.

1,119,425.

Patented Dec. 1, 1914.

2 SHEETS—SHEET 1.

Fig. 1

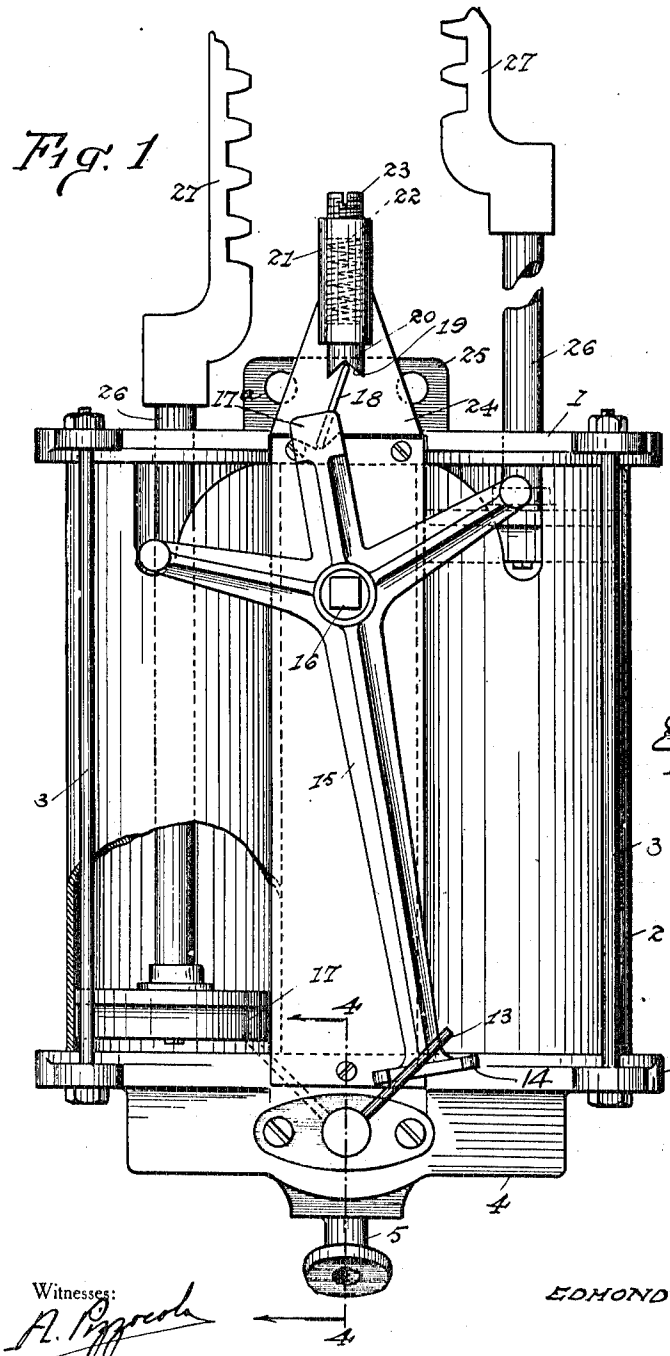
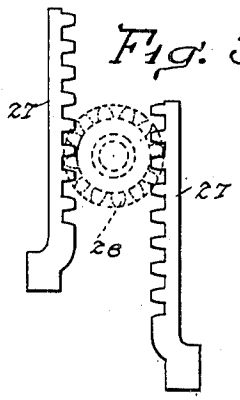


Fig. 3



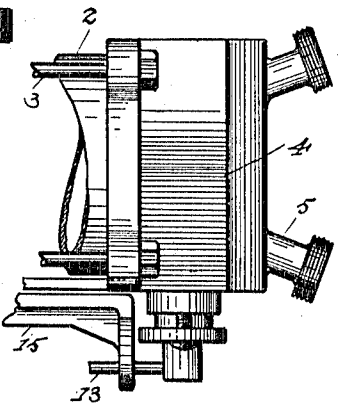


Fig. 2

Witnesses:

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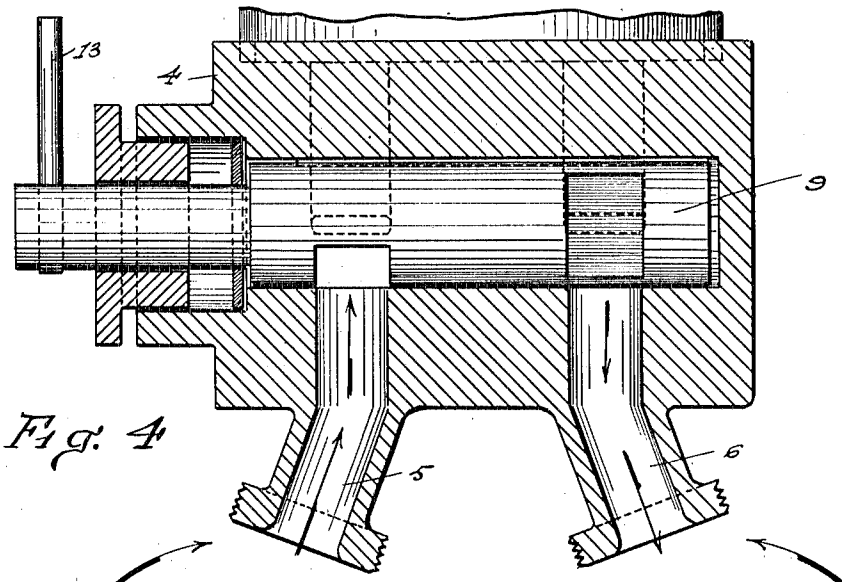


Fig. 4

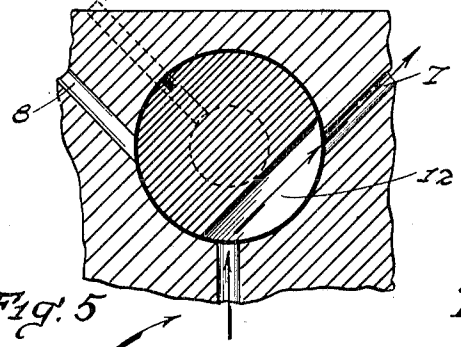


Fig. 5

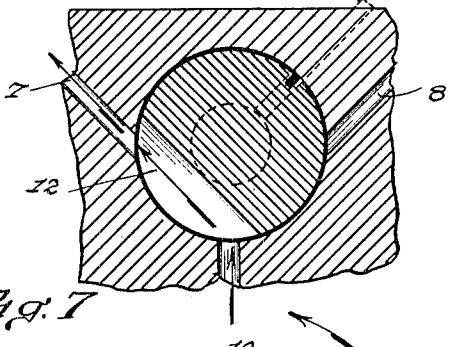


Fig. 7

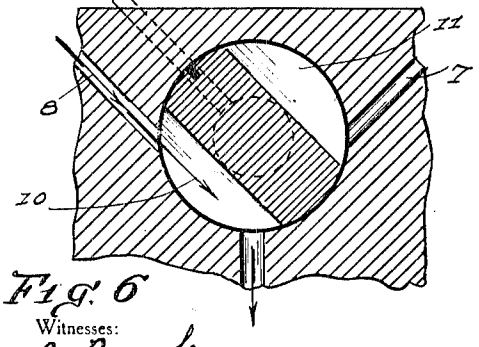


Fig. 6

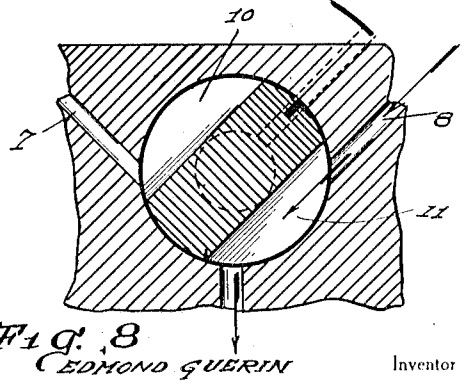


Fig. 8

Witnesses:

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UNITED STATES PATENT OFFICE.

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FLUID-PRESSURE MOTOR.

1,119,425. Specification of Letters Patent. Patented Dec. 1, 1914.

Application filed April 9, 1914. Serial No. 830,576.

To all whom it may concern:

Be it known that I, EDMOND GUERIN, a subject of the King of Great Britain, residing at No. 128 Bourbonniere street, Maisonneuve, Province of Quebec, Canada, have invented certain new and useful Improvements in Fluid-Pressure Motors; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention to be hereinafter described relates to fluid pressure motors.

In order to more clearly disclose the construction, operation, and use of the invention, reference should be had to the accompanying drawings forming part of the present application.

Throughout the several figures of the drawings like reference characters designate the same parts.

In the drawings: Figure 1 is a top plan view of the invention, partly broken away; Fig. 2 is a fragmentary side elevation of the lower end of Fig. 1, inverted; Fig. 3 is a plan view of the rack drive; Fig. 4 is an enlarged, central, longitudinal, cross section through the valve chamber; Figs. 5 and 6 are enlarged, lateral, cross sections through the valve chamber showing simultaneously feed and exhaust of the two cylinders; and Figs. 7 and 8 are like views with the feed and exhaust reversed.

The main objects of the invention are to provide a simple, efficient, economical, durable, and compact fluid operated motor having a simple valve mechanism automatically operated through mechanism actuated by the movements of the pistons.

Referring to the drawings in detail, 1 indicates head or end plates each provided with two cylinder heads and adapted to be drawn into operative clamping position on the ends of a pair of cylinders 2, by means of clamping rods 3. One of the head or end plates is provided with a box, casing, or casting 4 in which is provided a valve chamber having inlet and exhaust passages 5 and 6, respectively, for supplying pressure feed to the chamber and for permitting it to escape therefrom. Delivery and exhaust passages 7 and 8 lead from the valve chamber to each of the cylinders. Within the valve chamber is mounted an oscillating cylindrical plug valve 9 having two similar segmental cavities 10 and 11 on diametrically opposite sides and near the lower end, and a third similar segmental cavity 12 extending at right angles to the first cavities and arranged near the upper end of the valve. The outer end or spindle of the valve is provided with a short rod 13 adapted to be engaged by a fork 14 on the end of the long arm of a Y lever 15 pivoted at 16 on a plate 17 supported by and secured to the end plates or heads. The short arms of the lever are each provided with a pin or the like playing freely through a substantially triangular opening in the end of the cylinder and adapted to be engaged by the usual pistons as they approach the outer ends of their strokes, thus causing a rocking motion of the Y lever. It is advisable, of course, to maintain the Y lever in each of its two opposite positions until the instant that it is to be shifted. For this purpose, the long arm is extended longitudinally between the short arms and is provided with a V-shaped socket 17^a adapted to receive one end of a small plate 18, the opposite end of which is similarly seated in a corresponding notch 19 formed in the projecting end of a small block 20 which is slidably mounted in a tubular or other shaped box or casing 21. A coil spring 22, within casing 21, acts to maintain the block in operative engagement with the plate 18, and a set screw 23 is used to adjust the force of the spring on the block. An ear 24 extending from the adjacent end or head supports the casing 21 and also forms a rest for the lower edge of the plate 18 to prevent it from dropping out of the notch or socket. The same head may also be provided with a second ear or the like 25 for attachment to a suitable support.

As will be clear on reference to Fig. 1, the action of spring 22, block 20, and plate 18 will serve to yieldingly maintain the Y lever in either of its operative positions. Rocking of the Y lever causes a corresponding oscillation of the plug valve 9, with the resulting alternate feed and alternate exhaust to and from the two cylinders, causing simultaneously the opposite reciprocations of the pistons.

Each piston is provided with a piston rod 26 extended through and slidable in one end or head 1. To each rod is secured a rack section 27 adapted to engage and actuate a

pinion 28 secured to a suitable driving shaft for operating a washing machine or any other suitable apparatus.

It is thought that the construction, operation, and use of the invention will be clear from the preceding detailed description.

Changes may be made in the construction, arrangement, and disposition of the several parts of the invention without in any way departing from the field and scope of the same, and it is meant to include all such within this application wherein only a preferred form has been disclosed.

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

1. An apparatus of the character described comprising, two cylinders, pistons reciprocably mounted therein, a Y lever actuated by said pistons and provided with a yoke, an oscillating plug valve adapted to control admission and exhaust of pressure fluid to and from said cylinders, and a rod carried by said valve and adapted to be engaged and actuated by said yoke.

2. An apparatus of the character described comprising, two cylinders, pistons reciprocable therein, a valve for controlling admission and exhaust of pressure fluid to and from the cylinders, a Y lever operated by said pistons and adapted to actuate said valve, said Y lever being provided with an extension having a socket, a slidably mounted spring actuated block provided with a notch, and a plate having its opposite ends seated in the aforesaid socket and said notch, respectively.

3. In valve gear adapted to be operated by a double cylinder engine, a Y lever having its diverging arms respectively connected to the piston rods of said engine and alternately thereby actuated, an oscillating valve connected loosely to the long arm of said lever and also connected to said valve, an arm of said lever extending upward and having a V-shaped recess in its end, a spring pressed part above the same having an opposed similarly formed recess, and a plate having its ends set into these recesses, said plate, recesses and spring serving to hold the said lever temporarily in either one of the positions to which it may be tilted.

4. An oscillating tilting lever, in combination with an oscillating valve, means operating said lever but governed by said valve, devices for holding said lever temporarily in either one of its positions of inclination and a loose connection between valve and lever.

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Witnesses:
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