A. E. SHINER.

ROTARY PUMP.

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1,271,377.

Patented July 2, 1918.

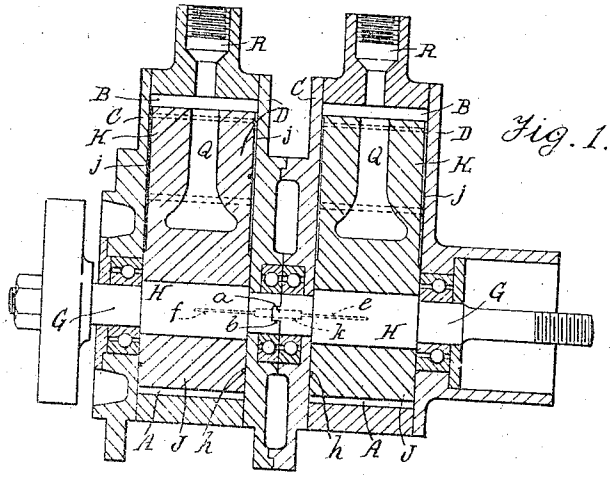


Fig. 1.

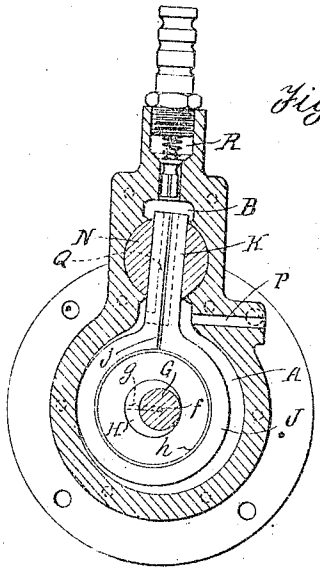


Fig. 2.

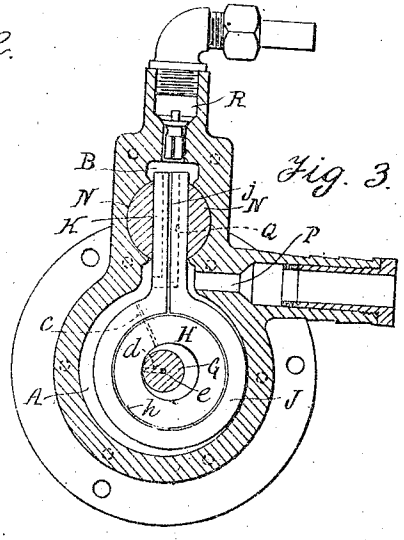


Fig. 3.

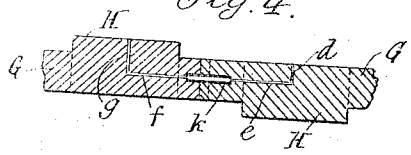


Fig. 4.

Witnesses

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ROTARY PUMP.

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To all whom it may concern:

Be it known that I, ALBERT EDWARD SHINER, a subject of the King of Great Britain, residing at London, England, have invented new and useful Improvements in Rotary Pumps, of which the following is a specification.

This invention relates to rotary pumps of the kind in which there is a pendulum rotor having a stem or rod which slides between cylindrical segmental blocks resting in seats formed in opposite walls of a radial extension of the pump chamber, the outlet for the fluid being through the stem of the rotor.

According to my present invention, I combine two or more such pumps by bolting their casings together and coupling their driving shafts. One of such pumps is intended to pump oil for lubricating purposes, and the other or others is or are intended for pumping liquid or air. Communications are provided as hereinafter described to enable the crank-shafts of the air and liquid pumps to be forcibly lubricated from the chamber of the oil-pump. Moreover the sides of the pendulum stem and bob are provided with grooves opening into the extension of the pump chamber so that oil or liquid may be forcibly introduced between the sides of the pendulum and the casing.

In the accompanying drawing

Figure 1 is a central longitudinal section taken through two pumps constructed and connected according to my invention.

Fig. 2 is a transverse section of the air pump showing the pendulum and bob in elevation, and

Fig. 3 is a similar section through the oil pump.

Fig. 4 is a detail view of a portion of the driving shafts and lubricating channels.

A is the pump chamber B the radial extension of said chamber; C, D the side covers of the casing; G the driving shaft; H the eccentric; J the pendulum bob or rotor; K the pendulum rod sliding between segmental blocks N, N; P the suction port; Q the delivery channel passing through the stem of the pendulum; R the outlet.

According to the present invention, the adjacent side covers D, C of the two pump casings are bolted together and are preferably constructed to fit one within the other as shown. The two driving shafts G, G are also constructed with a simple form of clutch, *e*, *g*. a transverse tongue *a* on one shaft engaging with a corresponding groove *b* on the other and serving to couple the shafts together. A small lubricating hole *c* is formed in the bob of the oil pump rotor leading from the periphery of the bob on the delivery side to the central aperture of the bob to lubricate the driving eccentric. Moreover a radial hole *d* is formed in the driving shaft of the oil pump communicating with a longitudinal hole *e* extending to the inner end of said shaft. Corresponding holes *f* and *g* are formed in the driving shaft of the air pump, so that oil will be forced from the oil pump through these holes to lubricate the driving eccentric of the air pump. Preferably the hole *d* leads from the side of the eccentric where the radius is smallest, and the hole *g* leads from the side of the eccentric where the radius is largest. Preferably a small tube *k* is fastened in the holes in the adjacent ends of the shafts G to prevent leakage of oil between the ends of the shafts.

Further each side of the pendulum bob of the rotor is provided with a circular groove *h* which communicates with a groove *j* extending along the side of the pendulum rod to the extreme end of said rod. It will be seen that oil or liquid as the case may be will be forcibly pressed into these grooves from the extension of the pump-chamber.

What I claim is:

1. A multiple rotary pump comprising a multiple number of pump casings bolted together, a driving shaft provided with an eccentric for each individual pump, said driving shafts being coupled together, each individual pump consisting of a pump chamber, a radial extension of said chamber, said extension having segmental seats formed in its opposite walls, segmental blocks resting in said seats, a pendulum rotor the stem of which slides between said segmental blocks, said stem being provided with a delivery channel extending longitudinally through it and opening at the side of the stem at a point adjacent to the bob of the rotor, an inlet port entering the pump chamber at a point between the cylindrical part of the chamber and the said segmental blocks, an outlet at the end of the radial extension of the pump chamber, one of the driving shafts having a longitudinal hole formed therein extending from the coupled end thereof and communicating with a radial hole opening out on the face of the eccentric at a point

of largest radius, the adjoining coupled driving shaft having a corresponding longitudinal hole, and a communicating radial hole opening out on the face of the eccentric at a point of smallest radius, the pendulum bob actuated by this latter shaft having a radial hole extending from the outer face of the bob to the inner face thereof.

2. A multiple rotary pump comprising a multiple number of pump casings bolted together, a driving shaft provided with an eccentric for each individual pump, said driving shafts being coupled together, each individual pump consisting of a pump chamber, a radial extension of said chamber, said extension having segmental seats formed in its opposite walls, segmental blocks resting in said seats, a pendulum rotor the stem of which slides between said segmental blocks, said stem being provided with a delivery channel extending longitudinally through it and opening at the side of the stem at a point adjacent to the bob of the rotor, an inlet port entering the pump chamber at a point between the cylindrical part of the chamber and the said segmental blocks, an outlet at the end of the radial extension of the pump chamber, the pendulum rotor having in each side of the bob a circular channel communicating with another channel extending along the stem of the pendulum and being open at its end.

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Witnesses:

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