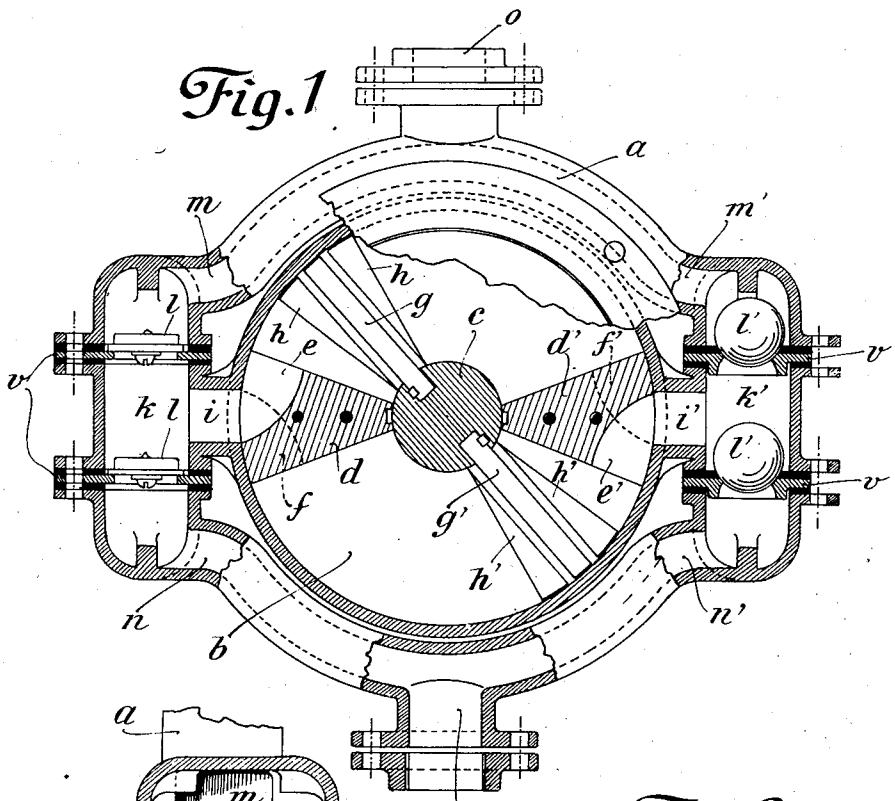
March 30, 1926. 1,579,054

S. ARMUTH

OSCILLATING PISTON PUMP

Filed Nov. 2, 1923

Fig. 1



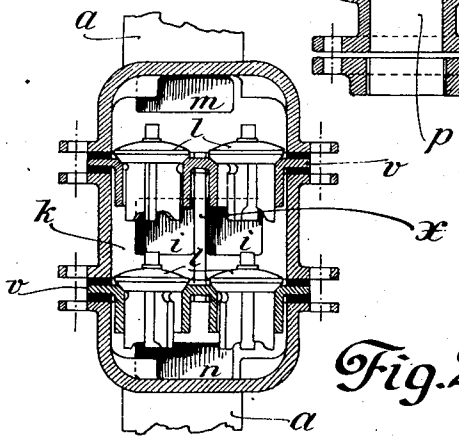
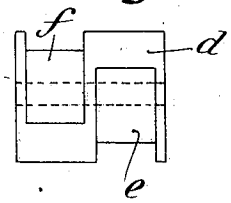


Fig. 2

Fig. 3



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Patented Mar. 30, 1926. 1,579,054

UNITED STATES PATENT OFFICE.

SAMUEL ARMUTH, OF WIEN, AUSTRIA.

OSCILLATING PISTON PUMP.

Application filed November 2, 1923. Serial No. 672,428.

To all whom it may concern:

Be it known that I, SAMUEL ARMUTH, a citizen of the Republic of Austria, residing at 2 Untere Viaduktgasse Wien III, Austria, have invented new and useful Improvements in Oscillating Piston Pumps, of which the following is a specification.

This invention relates to improvements in swing piston or winged pumps with two radial partitions in the casing or working room, dividing the same into two independent working parts, and with valve chambers arranged exteriorly of the casing, and has for its object to furnish a pump with effectively quadruple action. For this purpose the partitions in the working room are provided according to this invention each with two openings or channels toward the wall of the pump casing, the opening from above and the other from below on either side.

A further feature of this invention consists in dividing each of the lateral valve chambers by a partition in two parts independent of each other but connected with the interior or working room of the pump by means of corresponding openings in the casing wall, these openings communicating with the openings or channels in the partitions of the working room, so forming two independent double-acting but simultaneously actuated pumps, the operation of which involves quadruple-action of the oscillating swing piston pump.

In the accompanying drawing Figure 1 is partly an elevation and partly a vertical section of the pump, Fig. 2 is a detail vertical section, at right angles to the section of Fig. 1, and Fig. 3 a front elevation of one of the abutment partitions.

As illustrated in the accompanying drawing: *a* indicates the casing of the pump, *b* the cylindrical chamber therein, *c* the working shaft, to which the two double leather-packed oscillating pistons *g g'* are keyed, said pistons having these packings *h h h' h'*. A pair of radial abutment partitions *d d'* are secured in the said chamber, opposite each other, and are circle-sector shaped, and arranged between the piston wings *g*, *g'*, as shown; *e f* respectively *f' e'* indicate the openings or channels in the partitions *d*, *d'* respectively communicating with the openings *i i i' i'*, respectively through these with the exteriorly arranged valve chambers *k k'*, each of which is divided by a partition *x* into parts or spaces independent of each other; *l l'* respectively indicate the valves, which may be of any suitable kind and which are illustrated in the drawing as leather packed valves (the right valves in Fig. 1), as ball valves (the left valves in Fig. 1) and as tombac conic valves (in Fig. 2).

m m' indicate the pressure channels and *n n'* the suction channels communicating with the valve chambers on both sides and are respectively provided with the ports *o*, *p*.

The operation of the pump is as follows: When the shaft *c* oscillates and the pistons *g g'* are correspondingly oscillating, one side of each piston is sucking, whereas the other side of each piston is simultaneously pressing into respectively from the working rooms of the pump, whereby these four actions becomes separated in the valve chambers of both sides by the partitions *x x'*.

Having now described my invention what I claim is:

1. A pump of the class described comprising a casing providing a circular chamber, two pairs of valve chambers on opposite sides of said chambers, ports each connecting one pair of the valve chambers with said circular chamber, and channels connecting with said valve chambers, a valve in each valve chamber, all of said valves being arrnged to open in the same direction, a pair of sector shaped abutments in opposite sides of said circular chamber and each having a pair of channels opening in opposite sides and each channel communicating with one of said ports, an oscillating shaft extending through the center of said circular chamber and a pair of oppositely arranged pistons on said shaft and each arranged to oscillate in one of the spaces in the said circular chamber between the said abutments.

2. A pump with oscillatory pistons comprising a pump chamber having two radial partition walls provided with oppositely opening channels and also provided with

valve chambers, arranged exteriorly of said pump chamber, the space of each side of a piston wing in the pump chamber being connected by one of the channels in the partition walls, and in the casing walls with a chamber containing each a suction valve and a pressure valve, said chamber being located in the symmetrically disposed valve chamber which is divided by the partition walls so that each of the four sides of the piston wings automatically operates as a single acting suction and pressure pump.

In testimony whereof I affix my signature.

ING. SAMUEL ARMUTH.