No. 669,209. Patented Mar. 5, 1901.

J. WIESENBACH.

MEANS FOR CONVERTING MOTION.

(Application filed Oct. 30, 1900.)

(No Model.)

FIG. 1

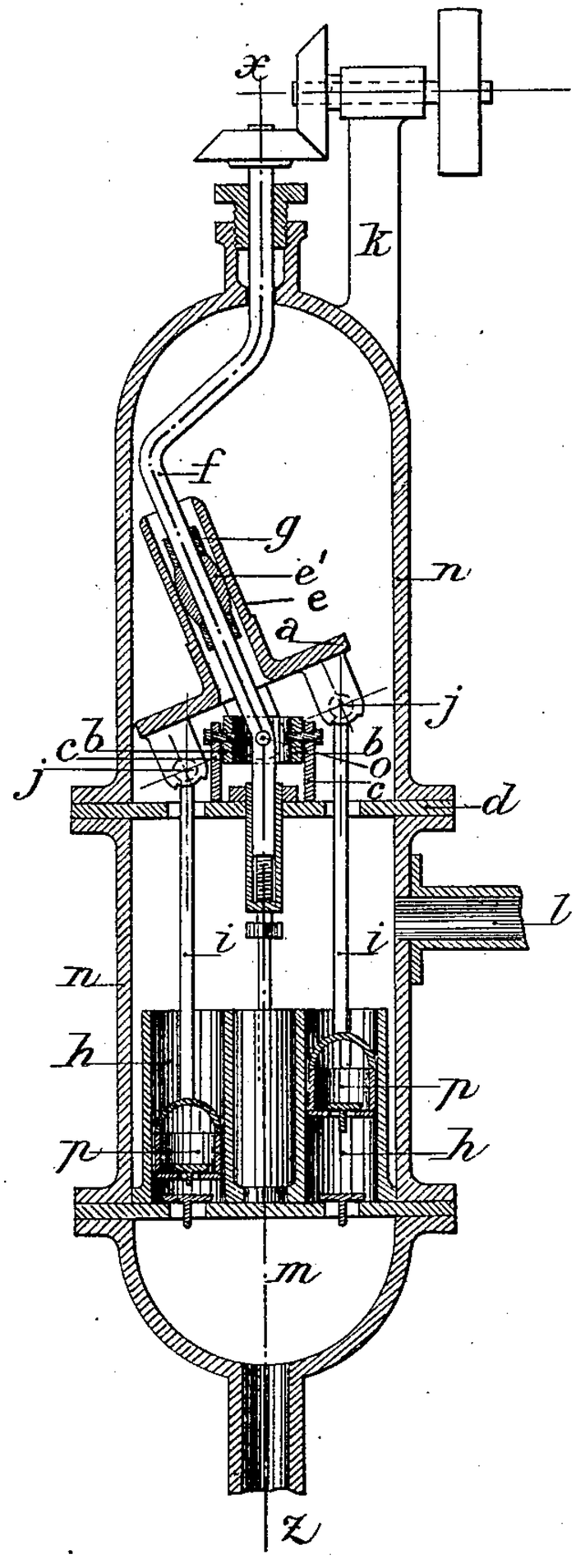
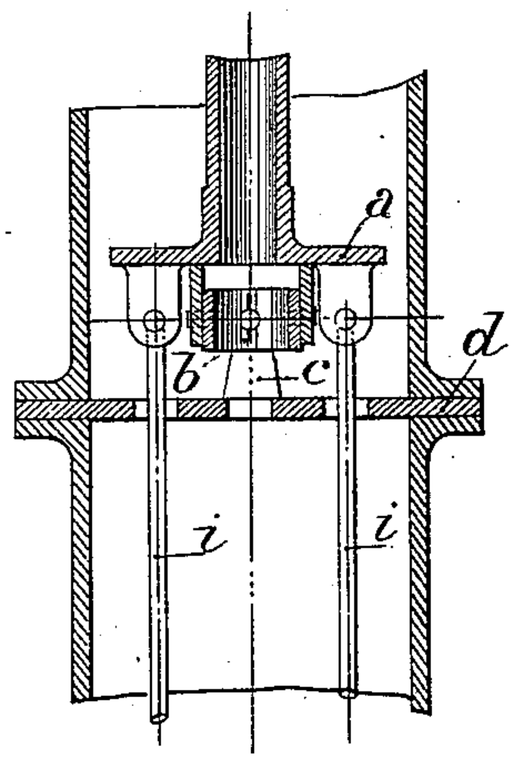


FIG. 2



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JEAN WIESENBACH, OF LYONS, FRANCE.

MEANS FOR CONVERTING MOTION.

SPECIFICATION forming part of Letters Patent No. 669,209, dated March 5, 1901.

Application filed October 30, 1900. Serial No. 34,905. (No model.)

To all whom it may concern:

Be it known that I, JEAN WIESENBACH, a subject of the Grand Duke of Luxemburg, residing at Lyons, France, have invented certain new and useful Means for Converting Motion, of which the following is a full, clear, and exact description, and for which I have made application for patent in France, dated April 12, 1900, No. 299,244.

My invention has for its object to convert a continuous circular motion into any given number of alternate rectilinear motions, the dead-points of which succeed each other at equal or unequal intervals, and, on the contrary, to convert the said alternate motions into a continuous circular motion. It is specially applicable to piston-pumps and motors with the object of obviating dead-points and of regulating their work.

The invention is represented in the accompanying drawings as applied to a four-piston pump.

Figure 1 is a central vertical section of the apparatus. Fig. 2 is a partial vertical section drawn at right angles to Fig. 1.

The apparatus comprises a circular plate *a*, oscillating in every direction around a fixed center *o*. It is for this purpose carried by a ring *b*, articulated on one axis to the plate *a* and on an axis at right angles to said former axis to two brackets or supports *c c*, attached to the fixed plate *d*. The oscillating plate *a* has at its center a cylindrical sleeve *e*, traversed by a crank-shaft *f*, the axis *x z* of rotation of which passes through the center *o*. The oblique part of the crank of the shaft *f* which passes through the sleeve *e* is furnished with an olive-shaped roller *e'*, which fits the sleeve and gives to the plate *a* a circular oscillating motion.

The bodies *h h* of the pump are arranged around the axis *x z* and below the fixed plate *d*. Their pistons *p p* are connected to the plate *a* by rods *i i*, having ball-joints *j j* or universal joints of other forms, said rods passing through the fixed plate *d* through openings having sufficient play. It will thus be seen that the rotation of the shaft *f* causes the circular oscillation of the plate *a*, that the latter will operate the pistons *p* successively, and that the raising of the water will be effected in a continuous manner without dead-points. If, on the other hand, a motive fluid is caused to act in succession beneath the pistons, they will cause the oscillation of the plate *a* and the rotation of the shaft *f*. In the case of a pump, the pump-bodies and the driving mechanism may be inclosed, as shown, in a hermetic case *n n*, through which the shaft *f* passes, and through a stuffing-box *k*. The liquid forced into this case will leave it by a tube *l*. The suction will take place in a single chamber *m*.

In the case of a motor the supply of the motive fluid beneath the pistons will be effected in any known and convenient manner. The exhaust can in the same way take place in the casing *n n*.

The apparatus may be horizontal, vertical, or inclined. Any number of pistons may be employed.

The stroke of the pistons may be varied within certain limits by moving the shaft *f* longitudinally within its supports, which has the effect of varying the height of the olive-shaped roller *e'* within the sleeve *e*.

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

In an apparatus for converting motion, the combination of a plate *a*, oscillating in every direction around a fixed center *o*, a rotating cranked shaft *f* a sleeve *e* attached to the center of the plate *a* through which the crank-shaft passes, a roller on the cranked part of said shaft fitting the sleeve, connecting-rods *i* articulated to the circumference of the plate *a* and reciprocating parts *p* attached to the connecting-rods *i*, substantially as herein set forth.

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

JEAN WIESENBACH.

Witnesses:

GASTON JEANNIAUX,

LOUIS FEYNAS.