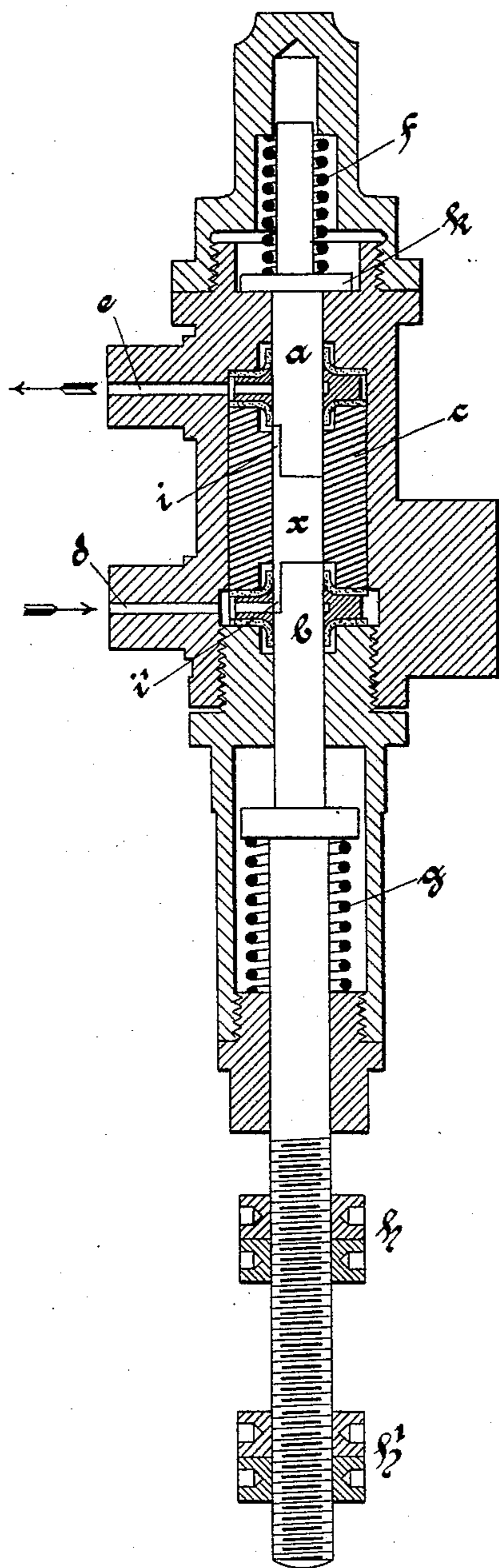


(No Model.)

O. BRÜNLER.  
PUMP.

No. 480,707.

Patented Aug. 16, 1892.



Witnesses:  
*Theodor Stendel.*  
*Saul Hirschke.*

Inventor:  
*Oscar Brünler.*  
per *Gerson and Sachs*  
his Attorneys.

# UNITED STATES PATENT OFFICE.

OSCAR BRÜNLER, OF EILENBURG, ASSIGNOR TO I. M. GROB & CO., OF  
EUTRITZSCH-LEIPZIG, GERMANY.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 480,707, dated August 16, 1892.

Application filed May 10, 1892. Serial No. 432,526. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR BRÜNLER, a subject of the Emperor of Germany, and a resident of Eilenburg, in the Empire of Germany, have invented a new and useful Improvement in Pumps, of which the following is a specification.

My invention relates more particularly to pumps for measuring and conveying the petroleum for petroleum-motors.

The here annexed drawing gives a longitudinal section of a pump constructed according to this present invention.

In the chamber *c* the pistons *a* and *b*, between leather sleeves or other convenient packing material, move air-tight up and down. Channel *d* is the inlet for the liquid and channel *e* the outlet for the same. On the piston *b* being pressed up by the spring *g* the communication between channel *d* and the notch *i'* in the piston *b* is interrupted. The quantity of petroleum contained in space *a* is compressed and pressed up, together with piston *a*, until the notch *i* in piston *a* communicates with the outlet-channel *e*. When this communication is established, the upper piston *a*, which might with respect to its technical effect be properly called a "slide," is stopped, while the lower piston *b* moves still farther upward and displaces a quantity of petroleum precisely measured, according to its advance.

When the piston has reached its highest position, the piston *b* is drawn down by a lever or other part acting upon the nut *h'*. At the same time the piston or slide *a* follows through the action of spring *f*, this movement simultaneously interrupting the connection of its notch *i* with channel *e*. The piston *a* is soon stopped, while *b* moves farther and is arrested subsequently by abutment *k*. This increase of space has a suctional effect and causes the space *x* to fill afresh with petroleum.

The quantity of petroleum to be conveyed at each stroke of the pistons *a* and *b* can be precisely determined by displacing the nuts *h* on the piston *b*. When the nuts *h* are screwed higher, the spring *g* will not press the piston *b* so high, as would be the case if the nuts *h* were screwed lower. Thereby the quantities of petroleum to be conveyed by the pump can be determined at pleasure.

What I claim is—

In a pump, the combination of the operated piston *b*, having a notch *i'*, with the piston *a* provided with a notch *i* and being under the action of the spring *f*, and with the chamber *c*, having an inlet-channel *d* and an outlet-channel *e*, as and for the purpose set forth.

OSCAR BRÜNLER.

Witnesses:

CARL BORNGRAEBER,  
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