

O. HAJEK.

LUBRICATOR.

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953,609.

Patented Mar. 29, 1910.

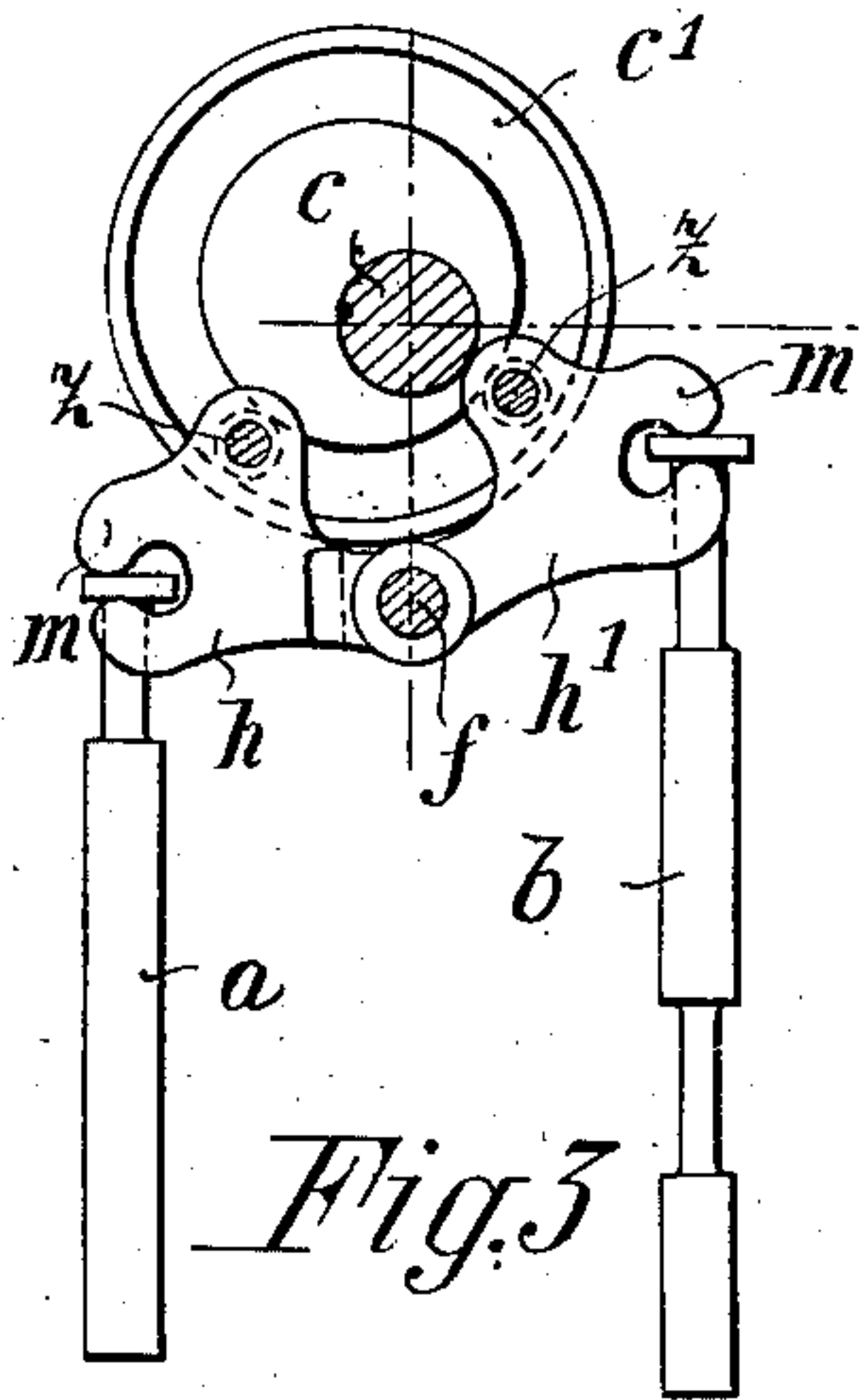


Fig. 3

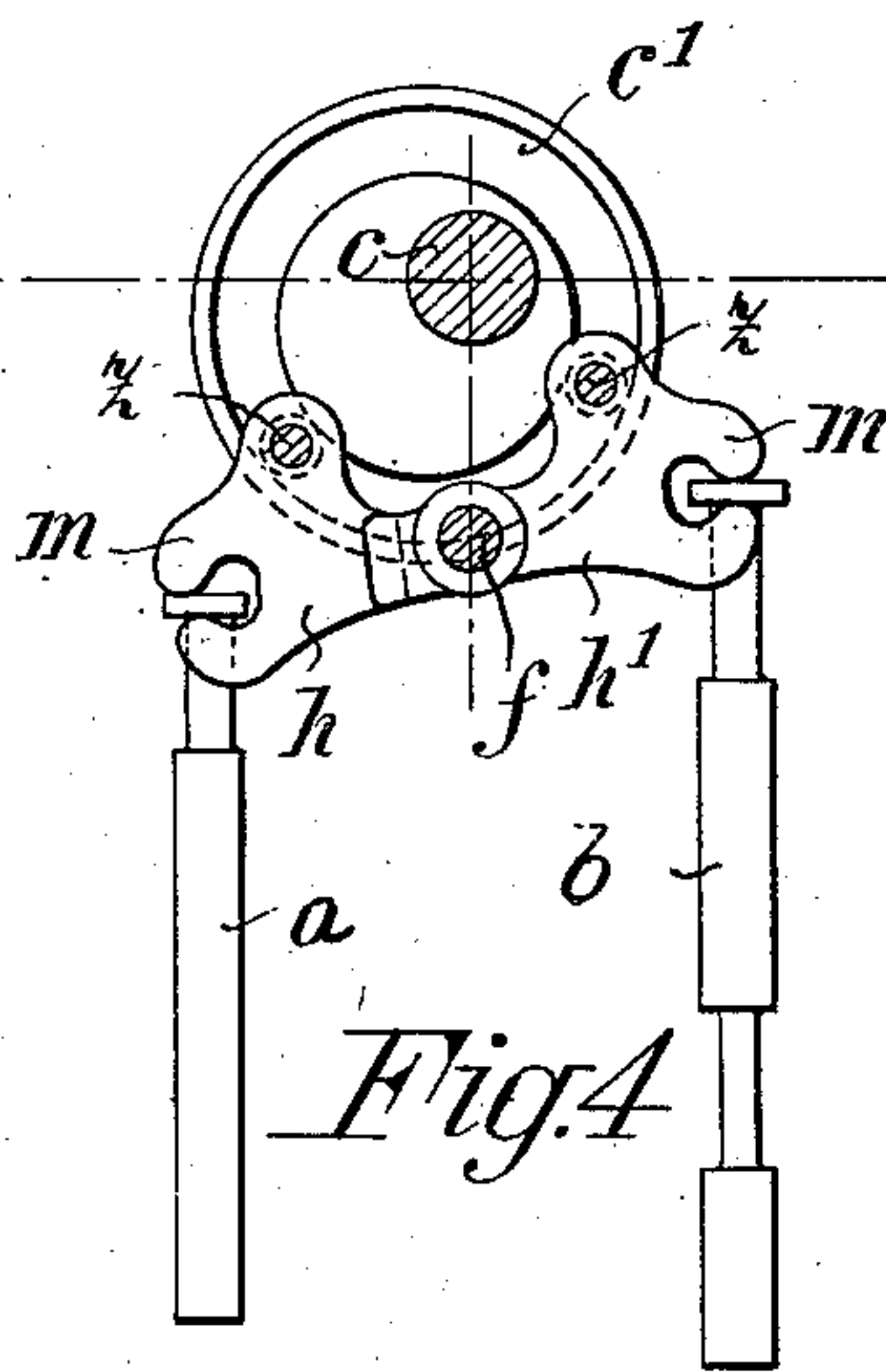


Fig. 4

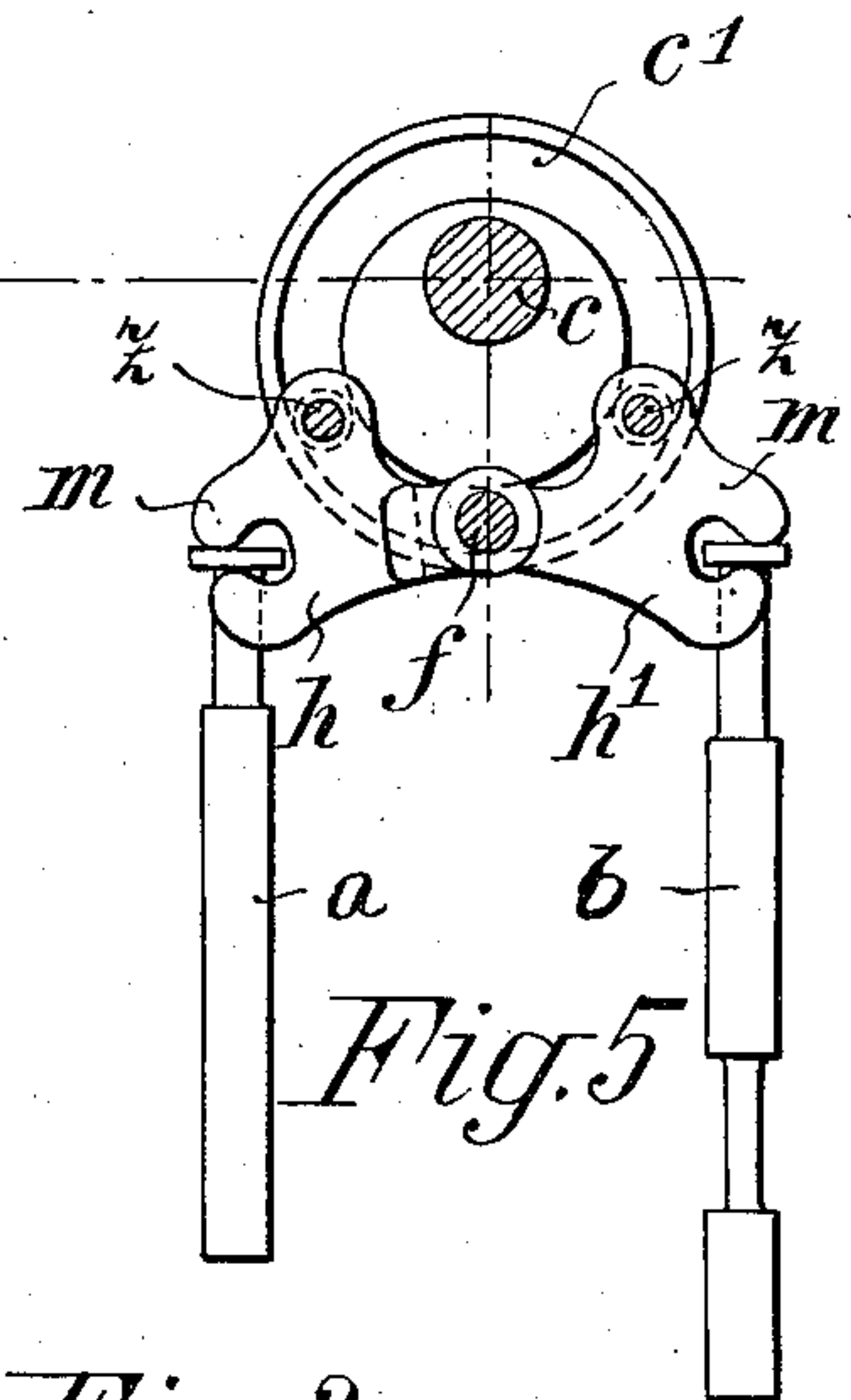


Fig. 5

Fig. 1

Fig. 2

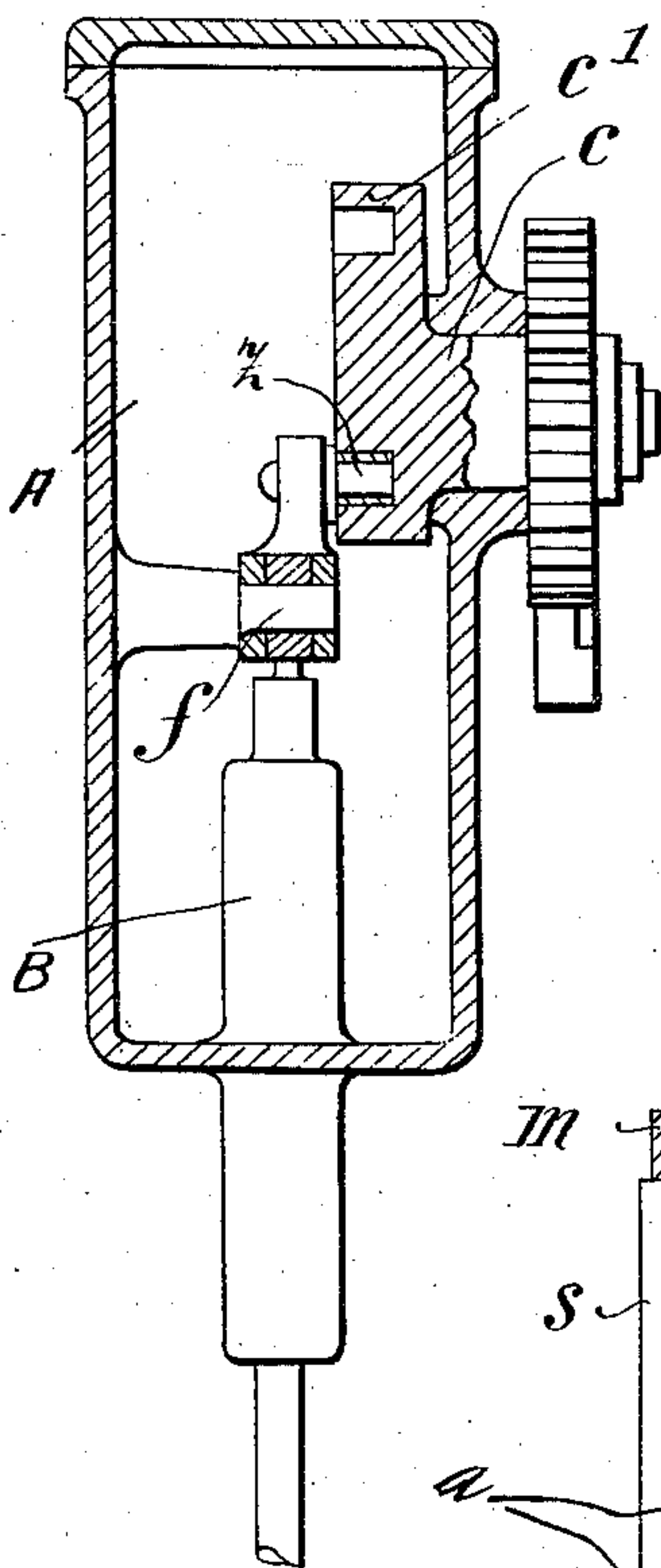
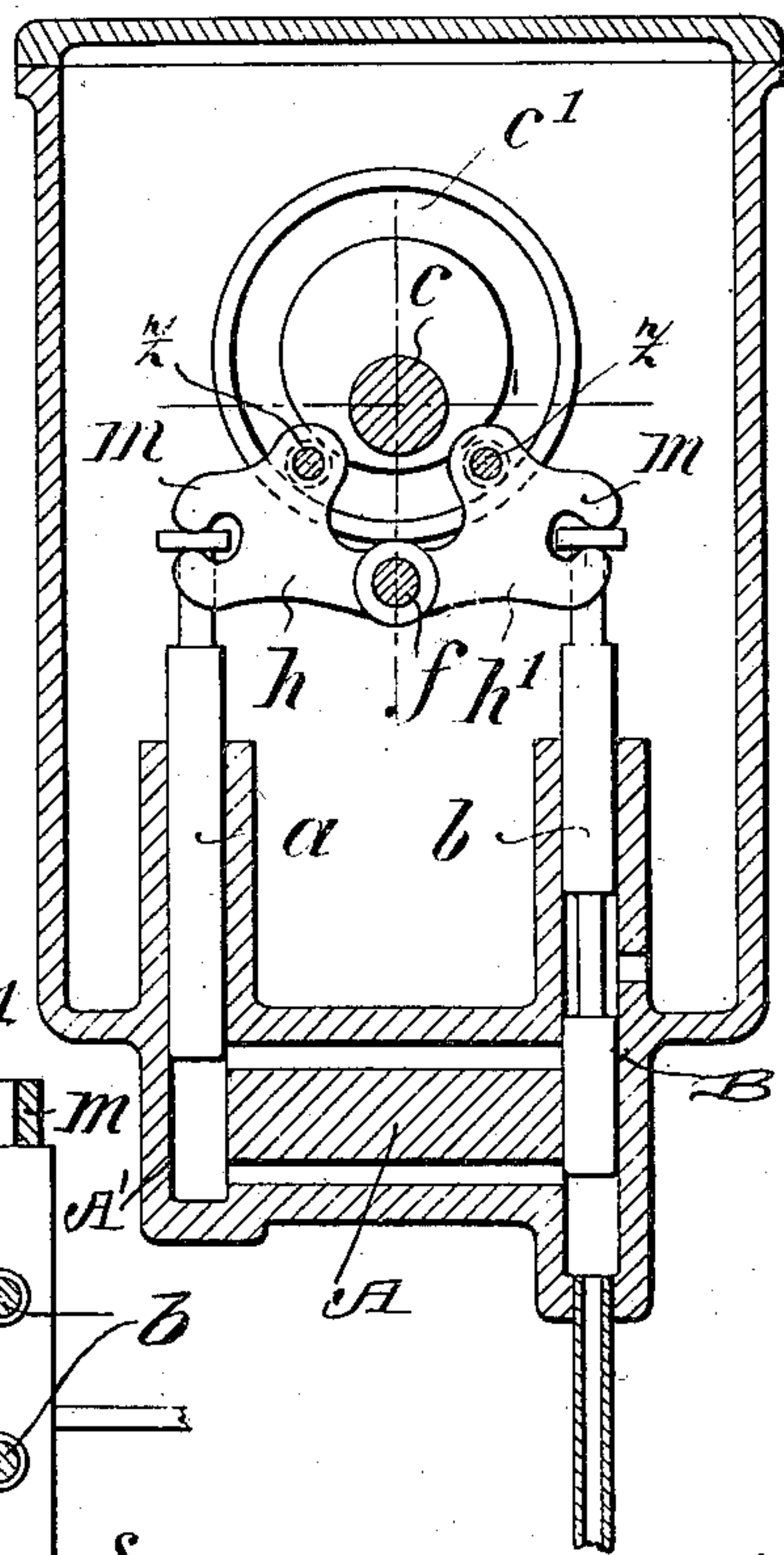


Fig. 6



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## LUBRICATOR.

953,609.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed March 9, 1908. Serial No. 419,967.

*To all whom it may concern:*

Be it known that I, OTTO HAJEK, subject of the Emperor of Austria-Hungary, residing at Vienna, Austria-Hungary, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

The present invention relates to a valveless pump provided with one pair or with several pairs of pistons; each pair of these pistons comprises a distributing piston and a feeding piston.

The invention has for its object to impart motion to the said pair or pairs of pistons in a simple manner by means of one common eccentric or by two eccentrics rigidly connected with one another and set at the same angle.

In the accompanying drawings Figures 1 and 2 show this arrangement in two sections at right angles to each other, Figs. 3, 4 and 5 show the eccentric and the pistons in different positions, Fig. 6 represents in horizontal section partly in plan the arrangement for imparting motion to three pairs of pistons.

In Figs. 1 to 5 A represents a casing having cylinders A' and B formed therein. *a* is the feeding piston, *b* the distributing piston of each pair of pistons, *c* is the shaft that carries the eccentric *c'*, *h*, *h'* are a pair of levers or arms both pivoted at *f* and engaging by the pins *z* in a groove of the eccentric, the two pistons being operatively connected to the arms *h*, *h'* by means of the parts *m*. In the form of construction shown by Fig. 6 the said parts *m* are connected in pairs by the connecting bars *s* by means of which the motion is imparted to the pistons. When the eccentric *c'* rotates, the two pistons of a pair of pistons *a* and *b* perform reciprocating motions of different phases, these motions producing the feeding of the lubricant. Assuming that rotary motion is imparted to the shaft *c*, the eccentric or cam device *c'* will be rotated and acting through the pins or projections *z*, the arms *m* will be oscillated about the pivot *f* as an axis. When the parts occupy the position shown in Fig. 3, the feeding piston *a* will be in its uppermost position and will receive a charge of the lubricant from the reservoir. As the eccentric *c'* continues to revolve, say in an anti-clockwise direction, the distributor *b*

will descend, causing a charge of lubricant below it to be forced beneath the feeding piston *a* and into the pipe which conducts the lubricant to the working parts to be lubricated. A further rotation of the eccentric will cause the distributor *b* to rise while the feeding piston *a* is descending, the feeding piston thereby serving to further force the lubricant into the conducting pipe. The groove of the eccentric may be shaped in the form of a circle, of an ellipse or of any other closed curve according to the intended motions of the pistons relatively to each other.

According to the arrangement shown in Fig. 6 the eccentric consists of two eccentric disks *c'* *c'* rigidly connected with each other by means of a shaft *c* and rotating around a common axis.

### Claims.

1. A lubricator of the class described comprising cylinders, feeding and distributing pistons mounted therein, the cylinder for the distributing piston communicating with the cylinder for the feeding piston and the distributing piston serving as a controlling valve for the feeding piston, an operating shaft, a pair of independently movable arms pivoted on a common axis intermediate said pistons and operatively connected thereto, and an eccentric mounted on said shaft and common to said pair of arms for imparting reciprocatory movements of different relative phases to the respective pistons.

2. A lubricating pump comprising a pair of feeding and distributing pistons and cylinders therefor communicating with one another and with a common outlet, an eccentric, a pair of independently movable levers operatively connected to the respective pistons, each lever being pivoted at one point, connected to its respective piston at a second point and coöperating with said eccentric at a third point.

3. A lubricator of the class described comprising a series of feeding pistons and a corresponding series of distributing pistons, cylinders for said pistons, each distributing piston being connected to deliver fluid to a corresponding feeding piston, such feeding piston being connected to return such fluid to the corresponding distributing piston for discharge thereby, a rotary shaft carrying a pair of eccentrics, a pair of bars connecting

the feeding and distributing pistons respectively, and means for imparting reciprocatory movements of different relative phases to the feeding and distributing pistons comprising pairs of levers, one pair of levers being provided for each eccentric, the levers of each pair being operatively connected respectively to the bars connecting the feeding and distributing pistons, said levers having  
10 projections coöperative with their respective

eccentric at different points in its circumference.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

OTTO HAJEK.

Witnesses:

JOSEF RUBASCH,

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