

No. 622,798.

Patented Apr. 11, 1899.

E. E. F. FAGERSTRÖM.
REGULATING DEVICE FOR PETROLEUM MOTORS.

(Application filed May 10, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig: 2.

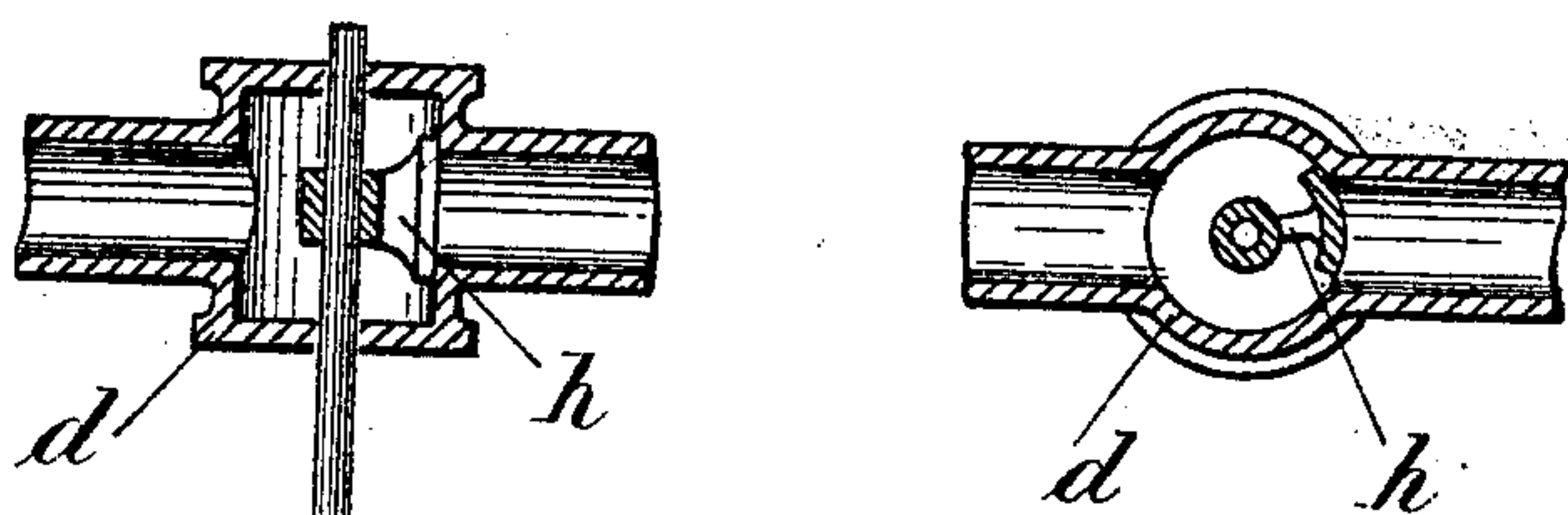


Fig: 1.

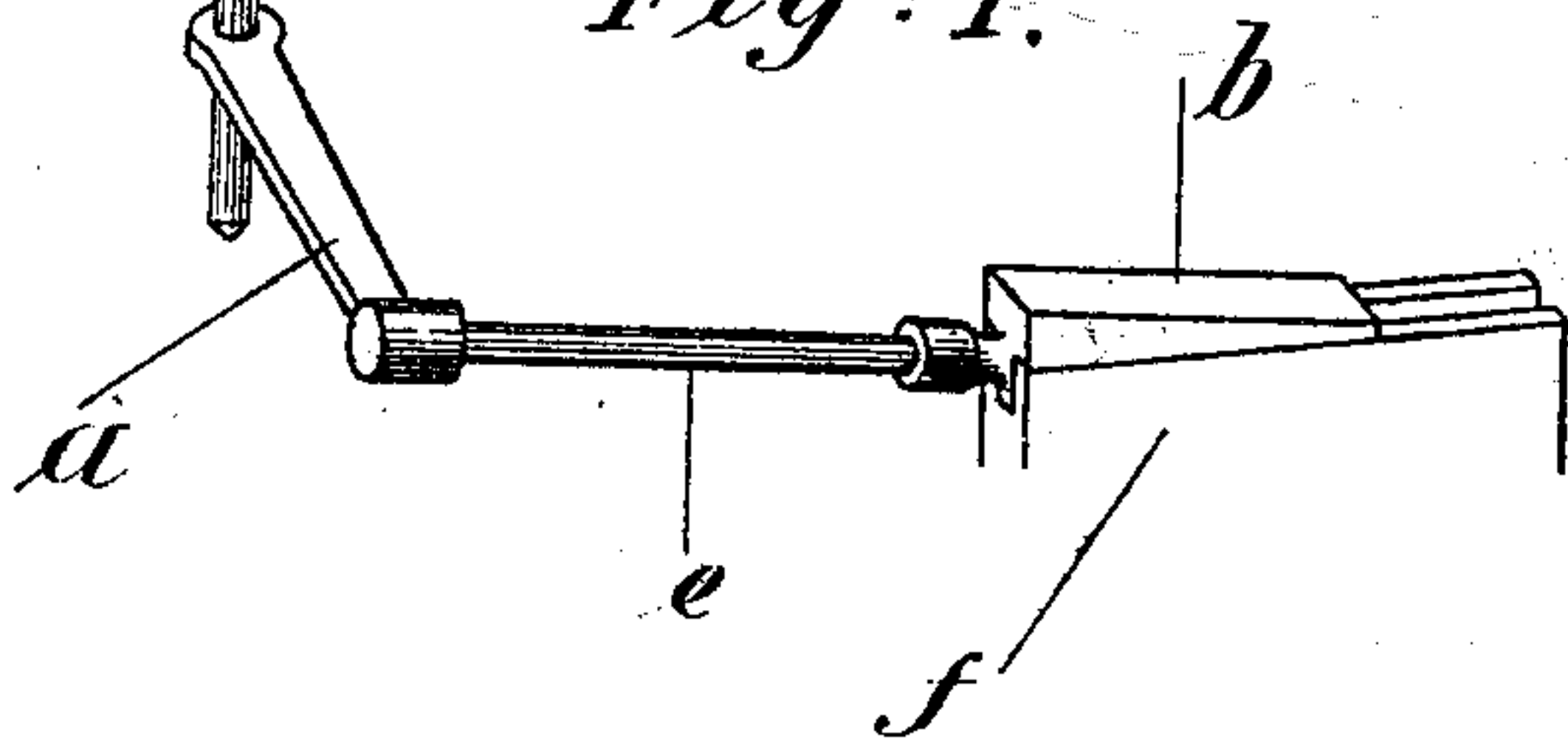
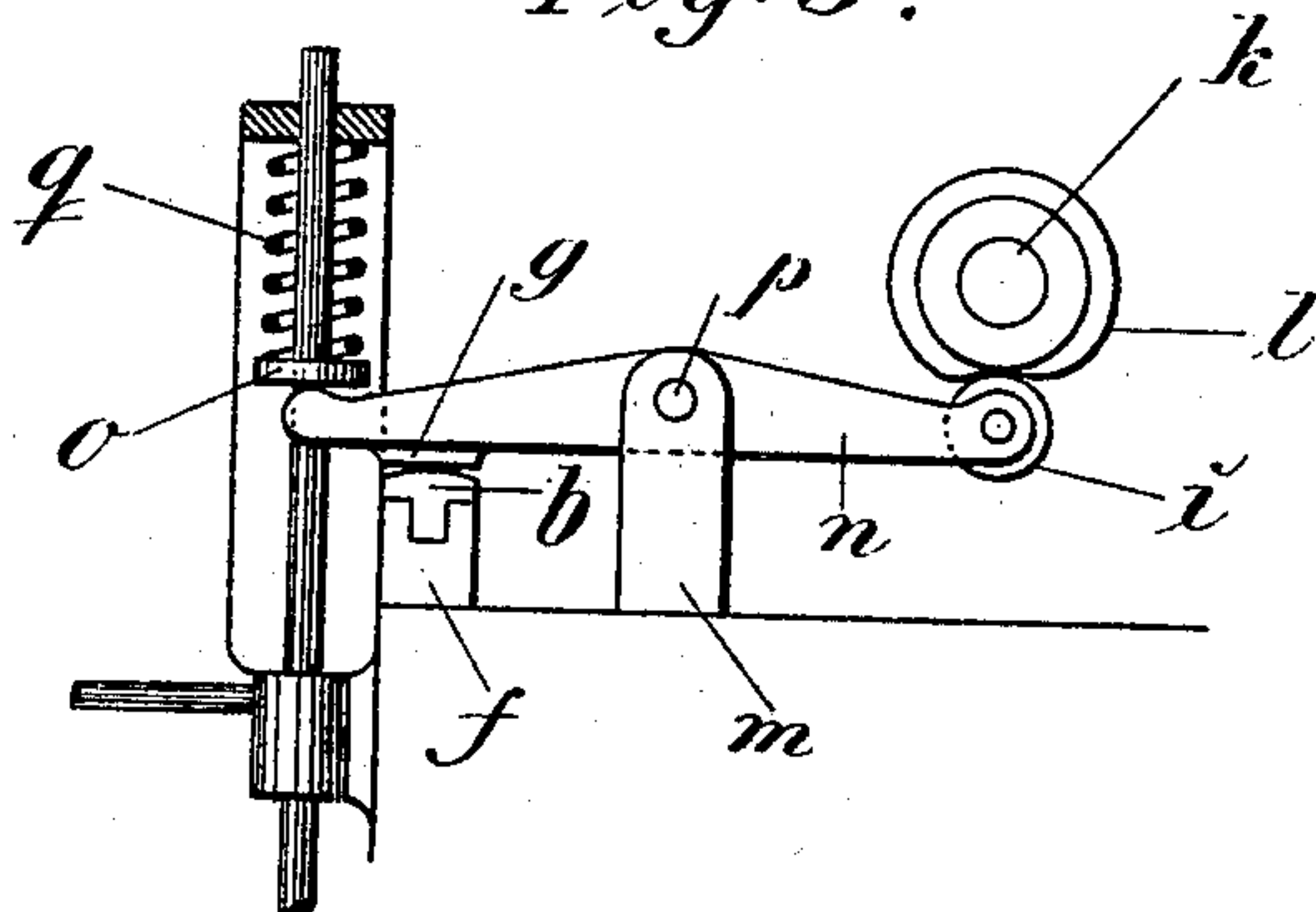


Fig: 3.



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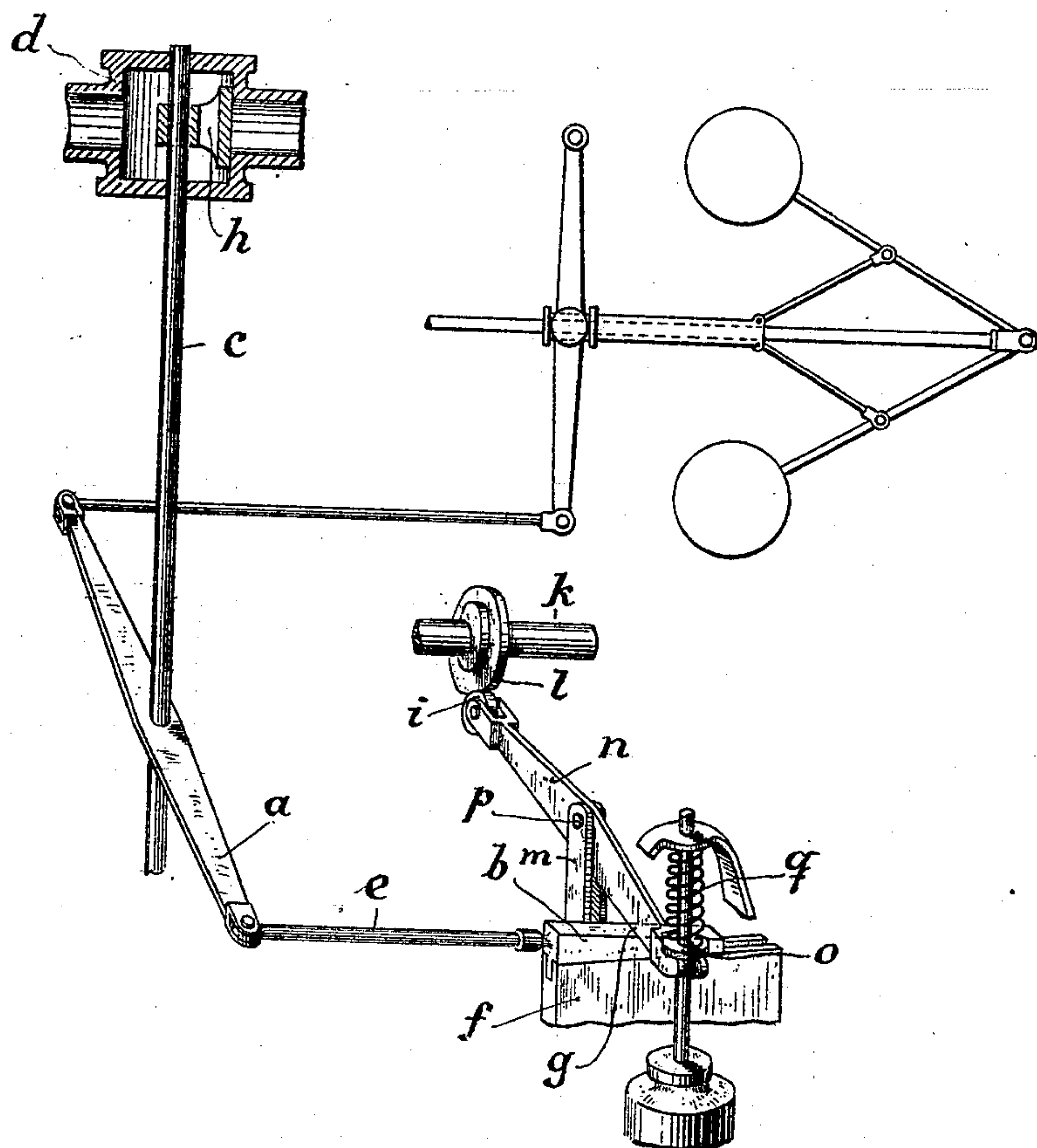
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2 Sheets—Sheet 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

ERNST ELIS FRIDOLF FAGERSTRÖM, OF STOCKHOLM, SWEDEN.

REGULATING DEVICE FOR PETROLEUM-MOTORS.

SPECIFICATION forming part of Letters Patent No. 622,798, dated April 11, 1899.

Application filed May 10, 1898. Serial No. 680,248. (No model.)

To all whom it may concern:

Be it known that I, ERNST ELIS FRIDOLF FAGERSTRÖM, mechanical engineer, of 22 Pipersgatan, Stockholm, Sweden, have invented an Improved Regulating Device for Petroleum-Motors, of which the following is a specification.

Petroleum-motors usually are so regulated thereby that the governor, when the velocity of the machine increases above the normal one, actuates an arrangement that shuts off the supply of petroleum and keeps the discharge-valve open, an explosion being thus passed and the piston only sucking in air. The principal inconveniences of this mode of regulating such petroleum-motors as are not provided with a lamp for heating ignition-tube and vaporizer are irregular running when the load is irregular and the necessity of readjusting the regulator when the load is increased or decreased to any material extent.

The present invention relates to a regulating device by which the supply of petroleum is not cut off, but only diminished, and the supply of air is decreased in the same ratio. By this device the inconveniences above referred to are avoided.

Figure 1 shows the air-valve in section and the controlling-wedge for the oil-pump in connection therewith and in perspective. Fig. 2 is a sectional view through the air-valve. Fig. 3 is a detail view, partly in section, of the means for controlling the action of the pump-plunger. Fig. 4 is a perspective view showing the parts of Figs. 1 and 3 connected with the governor.

A rod *c*, Fig. 1, which can oscillate about its axis, is actuated by means of a rod or means to the same effect by the governor of the motor. On the rod *c* is fixed an arm *a*, which, by means of a rod *e*, is connected with a wedge-shaped slide *b*, which can be shifted on a plane *f*. The upper end of the rod *c* enters into a valve-chamber *d*, arranged in the air-supply conduit, Figs. 1 and 2. On the rod *c* is fixed a valve-piece *h*, which slides in front of one of the orifices of the valve-chamber as the rod is turned. The rod *c* may also be made to actuate a valve in some other

manner. A cam *l* is fixed to a shaft *k*, Fig. 3, which is rotated from the crank-shaft of the motor. In the path of said cam is located a lever *n*, which is provided at one end with a roller *i* and is fulcrumed on a pin *p*, mounted on a bracket *m*. The other end of the lever bears against a collar *o* on the plunger-rod of the pump which supplies the petroleum. The plunger-rod is kept depressed by a spring *q*. Underneath this end of the lever is located the plane *f*, previously mentioned, and the slide *b*, that can be shifted thereon, said slide bearing against the part *g* of the lever *n*. The slide *b* and the plane *f* may equally well be located at the other end of the lever, but in such a case above the latter with the slide inserted between the lever and the plane. The slide may also be adapted to be shifted between the plane *f* and a collar, arm, or the like located above it and attached to the plunger-rod, and the lifting of the plunger-rod may likewise be brought about in some other manner besides that here described.

When the governor oscillates, the rod *c* is turned, and by this means both air-supply and petroleum-supply are regulated, the former by the valve *h* being moved, so as to cover more or less of the orifice of the valve-chamber *d*, and the latter by the slide *b* being shifted on the plane *f*, thus limiting the length of stroke of the plunger.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

In combination, the air-valve, the pump-plunger, a rock-shaft *c*, connected with the air-valve, a lever *n* and cam for operating the pump-plunger, a plane *f* below the lever *n*, a wedge *b* to be inserted between the plane and the lever and connections between the said wedge and the rock-shaft *c*, substantially as described.

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

ERNST ELIS FRIDOLF FAGERSTRÖM.

Witnesses:

H. TELANDER,
T. RISBERG.