

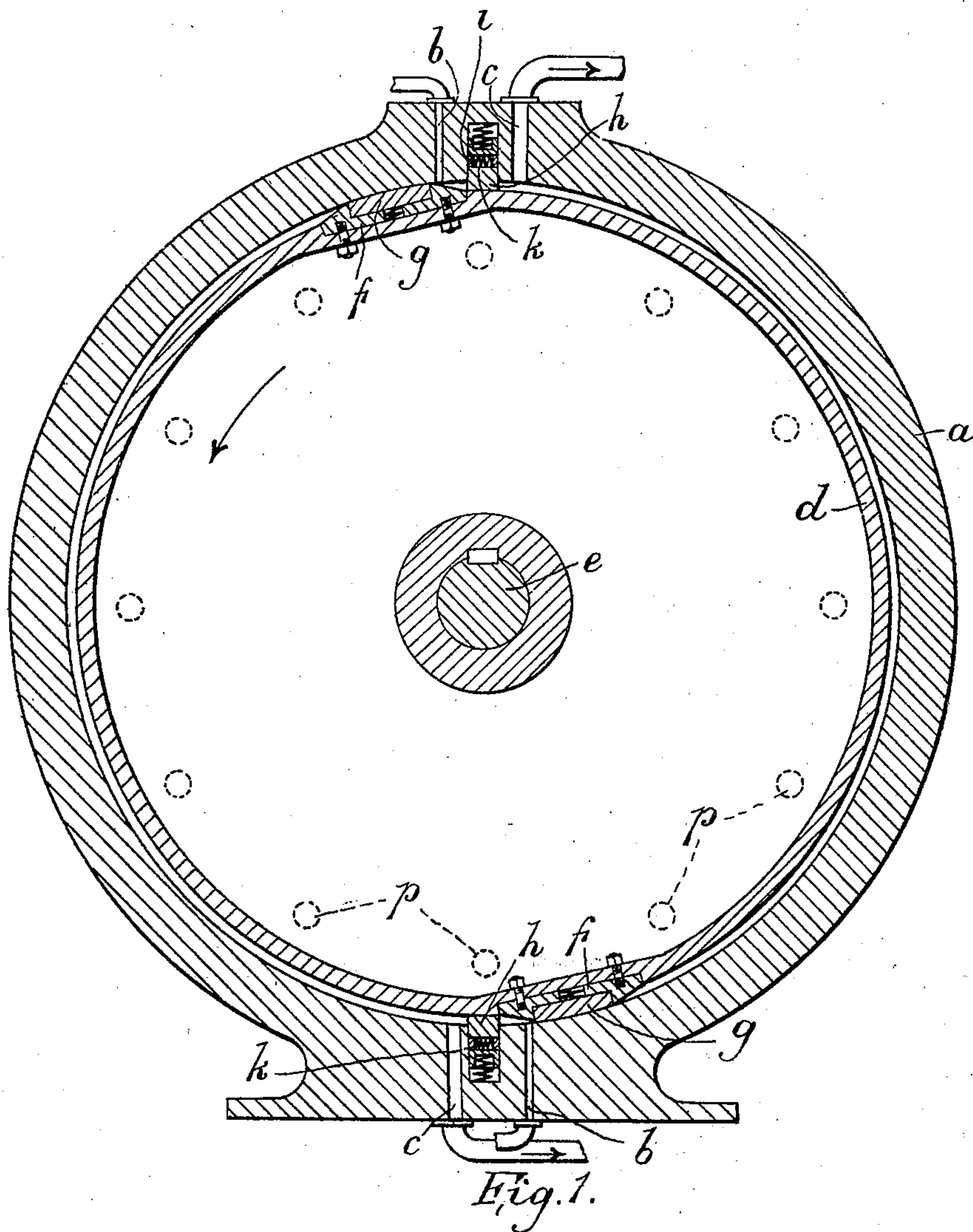
No. 886,919.

PATENTED MAY 5, 1908.

T. ASHLEY.
ROTARY ENGINE.

APPLICATION FILED MAR. 22, 1906.

2 SHEETS—SHEET 1.



WITNESSES :

W. M. Avery

A. H. Davis

INVENTOR

Thomas Ashley

BY

Mumford

ATTORNEYS

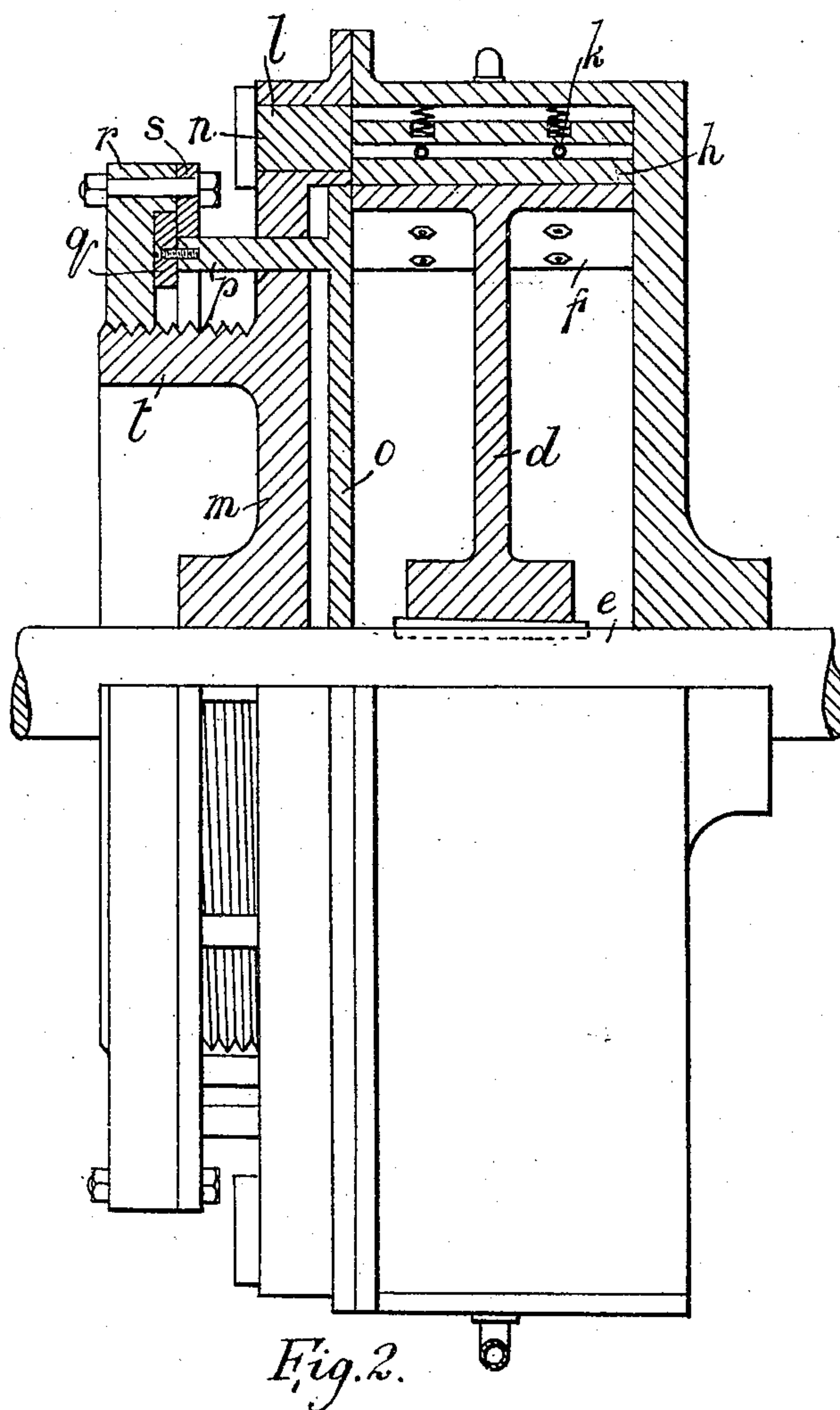
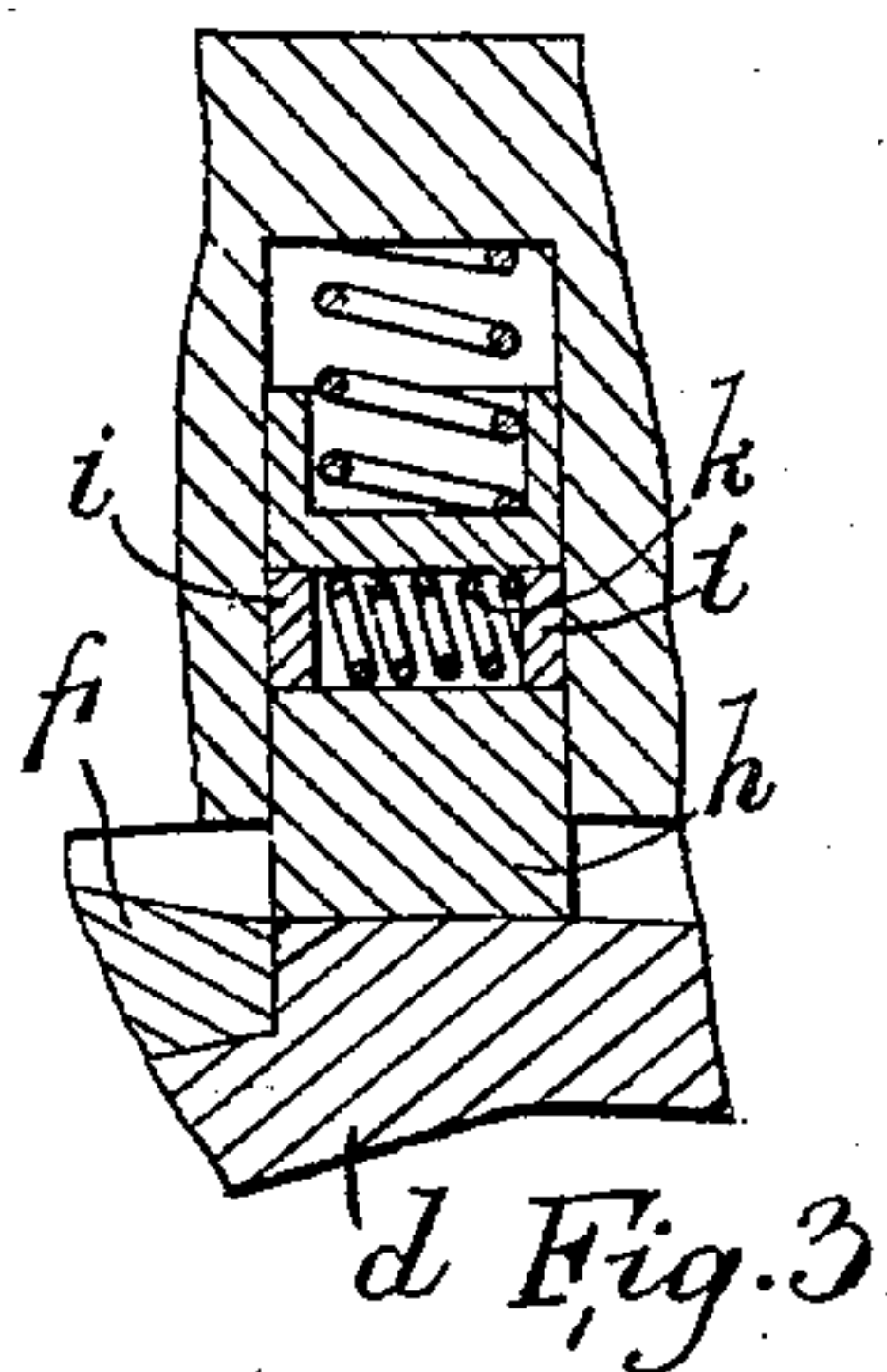
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UNITED STATES PATENT OFFICE.

THOMAS ASHLEY, OF LOUTH, ENGLAND.

ROTARY ENGINE.

No. 886,919.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed March 22, 1906. Serial No. 307,397.

To all whom it may concern:

Be it known that I, THOMAS ASHLEY, a subject of the King of Great Britain and Ireland, and residing at 8 Cemetery road, Louth, in the county of Lincoln, England, have invented certain new and useful Improvements in Rotary Engines and the Like, of which the following is a specification.

This invention relates to rotary engines, or motors of the annular chamber type, actuated by steam or other fluids, and especially to that type in which two or more abutments are provided in the piston according to the diameter of the cylinder, said abutments working in conjunction with a suitable form of cylinder thereby obtaining a cut off four or more times during one revolution.

By the present invention there is an adjusting device for actuating a steamtight packing device at the side of the revolving piston, and the sliding abutments in the cylinder walls are provided with steam tight packings which are also capable of being taken out of the cylinder through the side of the cylinder cover.

Referring now to the accompanying drawings, Figure 1 is a front sectional elevation, and Fig. 2 a side elevation partly in section. Fig. 3 is an enlarged detail.

In carrying the invention into effect in one mode, the cylinder, *a*, is provided with two or more inlet ports, *b*, and corresponding exhaust ports, *c*, arranged at the top and bottom of the cylinder as shown. Revolving in cylinder, *a*, is a rotary piston, *d*, keyed to the motor shaft, *e*, this piston carries the moving abutments, *f*, which are secured by means of studs, each abutment carrying a packing piece, *g*, held out against the cylinder walls by suitable springs.

Between the inlet and exhaust ports at the top and bottom of the cylinder, the sliding abutments, *h* are placed and are adapted to slide in and out against the action of a spring, so that they are always in firm contact with the surface of the rotary piston. The sliding abutments, *h*, are provided with metalstrips, *i*, and springs, *k*, for securing a steamtight joint between the abutment and the walls of its casing. An aperture, *l*, is provided in the cover plate, *m*, for the removal of the abutments from the cylinder, plugs, *n*, being provided for covering up the apertures when the engine is in use.

It will be obvious from the position shown in Fig. 1 that the incoming steam or fluid will

act on the moving abutment, *f*, and rotate the piston in the direction shown by the arrow, the steam or fluid on the other side of abutment being forced out through the exhaust port, *c*, this action simultaneously occurs at the top and bottom of the cylinder, so that four impulses are given to the piston at every revolution.

In order to make the cylinder steam-tight a metal plate or ring, *o*, is placed between the rotary piston, *d*, and cover plate, *m*. This plate, ring or nut, *o*, is provided with a number of pins, *p*, (as shown in Fig. 1) which project through the cover plate, *m*, and carry on their ends a ring, *q*, this ring is adapted to be held between two plates, *r s*, the plate, *r*, screwing in and out on threaded boss a very effective adjustment of great fineness may be thus obtained between the face of the plate ring or nut, *o*, and the piston, *d*.

Although I have described my invention as applied to a single cylinder motor, it is to be understood that two or more motors may be compounded, the exhaust from the first cylinder being led to the inlet of the one following and so on.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A cover plate for the cylinder of a rotary motor comprising in combination a fixed recessed main plate, an auxiliary plate adapted to be moved to and from such main plate, pins projecting from the back of the auxiliary plate and through the fixed plate, a screw threaded boss projecting from the back of the main plate, and a ring rotatable upon said boss engaging projecting heads upon the pins of the auxiliary plate.

2. A rotary motor of the annular chamber type comprising in combination an annular chamber or cylinder, a piston adapted to rotate therein, a plurality of abutments on said piston to fit the cylinder steam tight, a plurality of steam tight sliding abutments mounted in recesses in the cylinder wall, a fixed cover plate for the cylinder, an auxiliary plate adapted to be moved to and from such plate, pins projecting from the back of the auxiliary plate and through the fixed plate, a screw threaded boss projecting from the back of the main plate, and a ring rotatable upon said boss engaging projecting heads upon the pins of the auxiliary plate.

3. A rotary motor of the annular chamber type comprising in combination an annular

chamber or cylinder, a piston adapted to rotate therein, a plurality of abutments on said piston to fit the cylinder steamtight, a plurality of abutments in the cylinder wall, packing strips at the back of said abutments, springs for laterally expanding such packing strips, means for causing the abutments to reciprocate relatively to the cylinder wall, a fixed cover plate for the cylinder, an auxiliary plate adapted to be moved to and from such plate, pins projecting from the back of the auxiliary plate and through the fixed plate, a screw threaded boss projecting from the back of the main plate, and a ring rotatable upon said boss engaging projecting heads upon the pins of the auxiliary plate.

4. A rotary motor of the annular chamber type comprising in combination an annular chamber or cylinder, a piston adapted to rotate therein, a plurality of abutments on said piston to fit the cylinder steamtight, a plu-

rality of abutments in the cylinder wall, springs at the back of said abutment holes, extending transversely therethrough, packing strips in the ends of such holes, springs for laterally expanding such strips, means for reciprocating the abutments in the cylinder walls, a fixed cover plate for the cylinder, an auxiliary plate adapted to be moved to and from such plate, pins projecting from the back of the auxiliary plate and through the fixed plate, a screw threaded boss projecting from the back of the main plate and a ring rotatable upon said boss engaging projecting heads upon the pins of the auxiliary plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS ASHLEY.

Witnesses:

WALT. J. WOOD,
ERNEST BENTEN.