

No. 721,908.

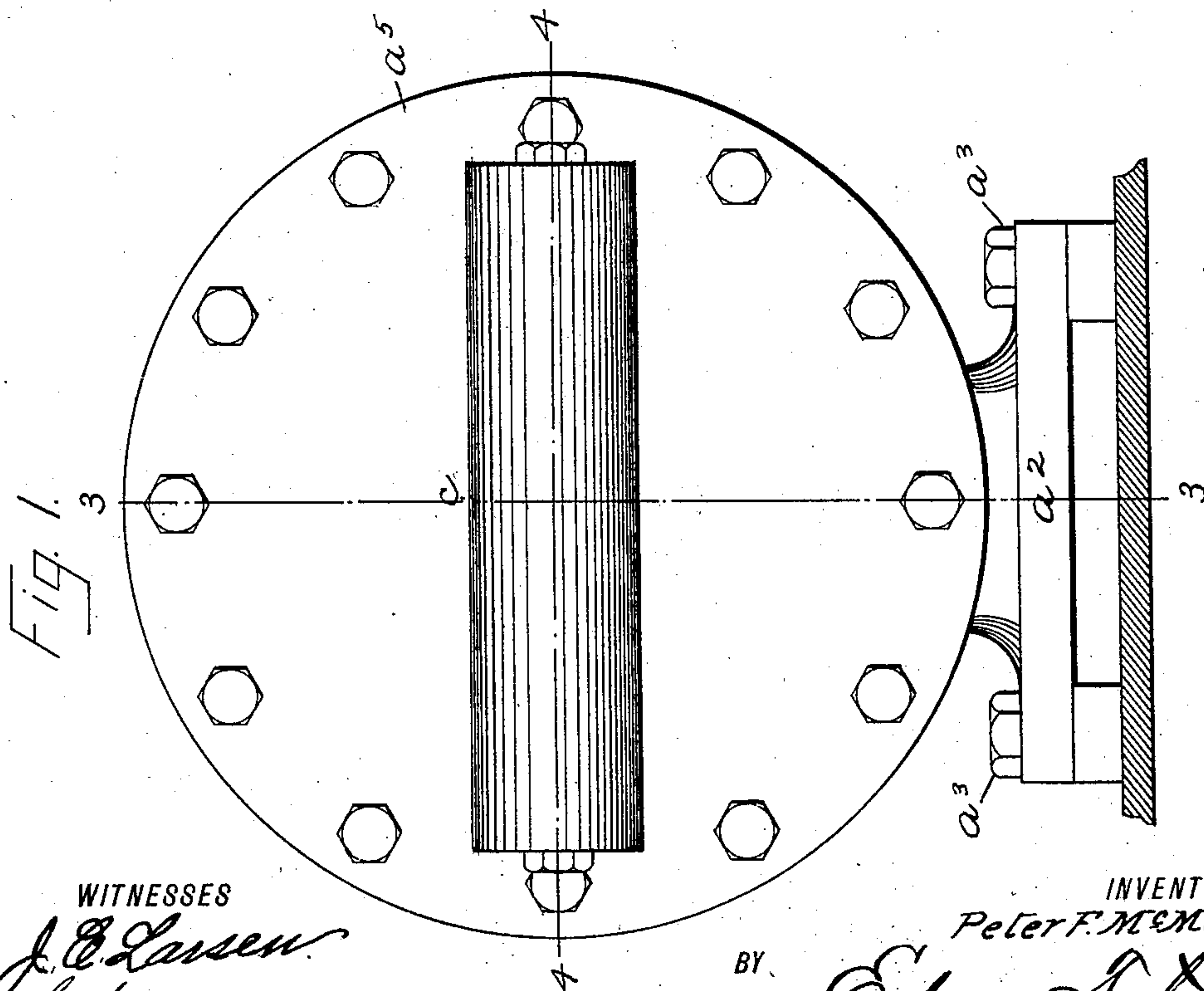
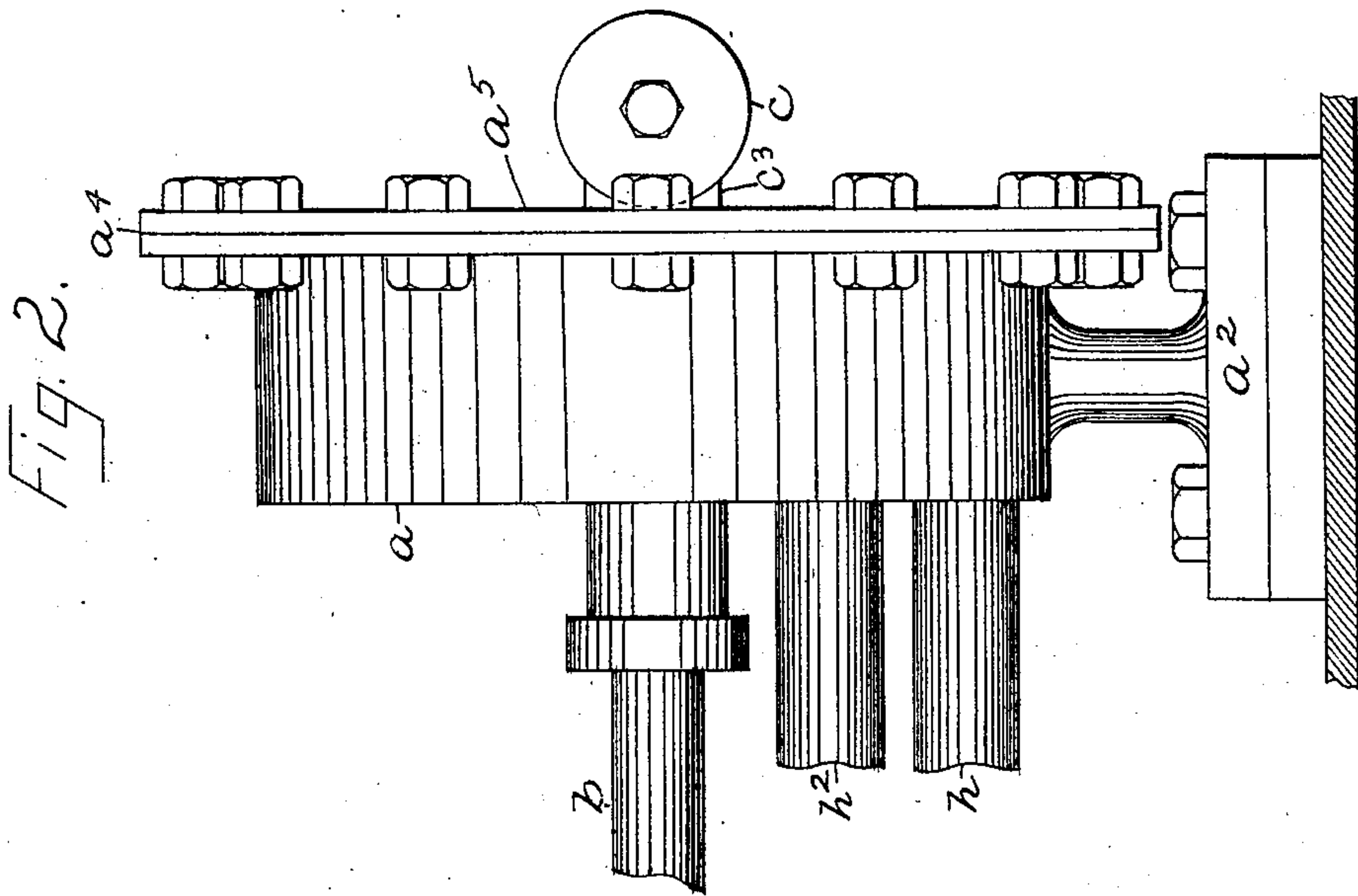
PATENTED MAR. 3, 1903.

P. F. McMONEGAL.
ENGINE.

APPLICATION FILED MAR. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES
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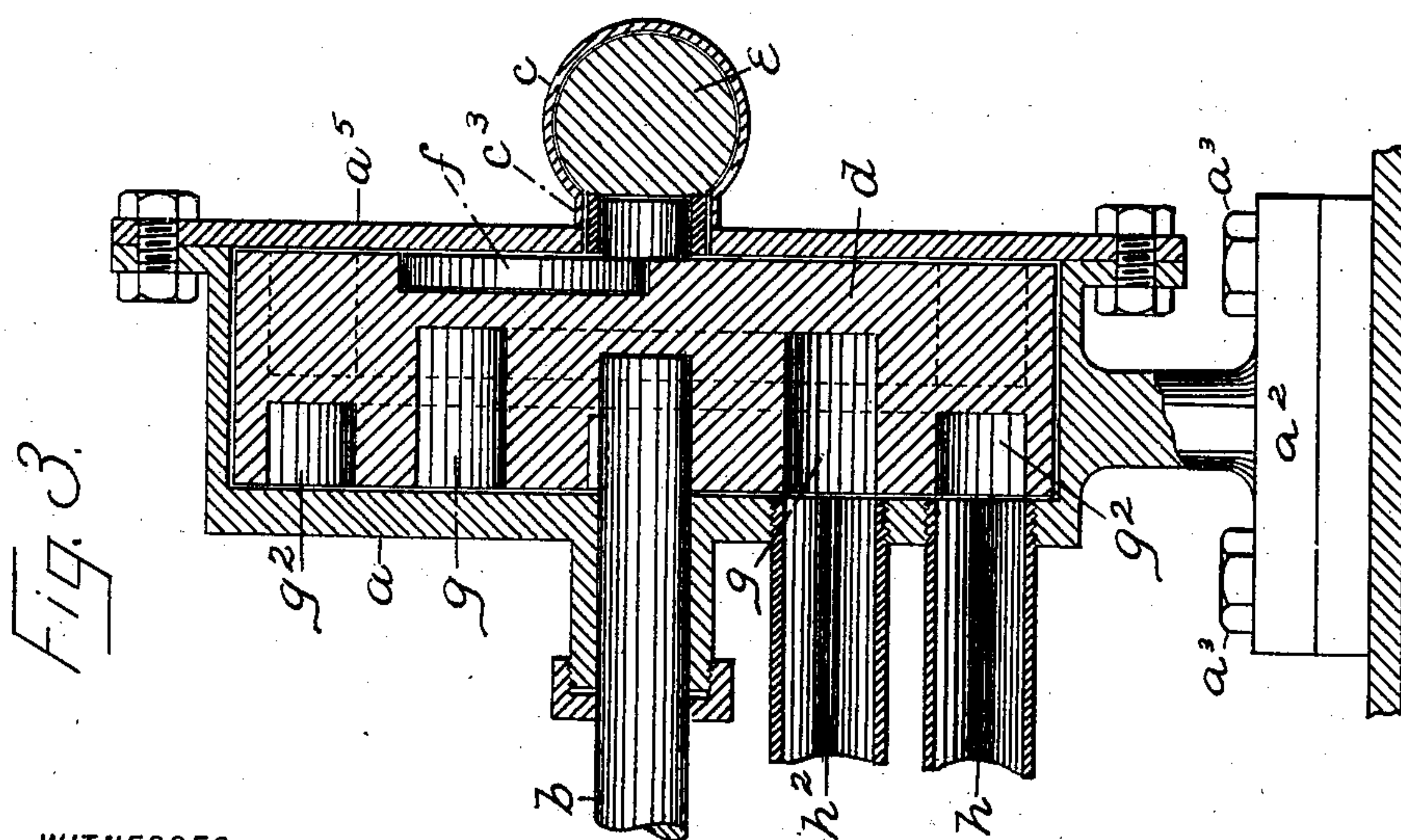
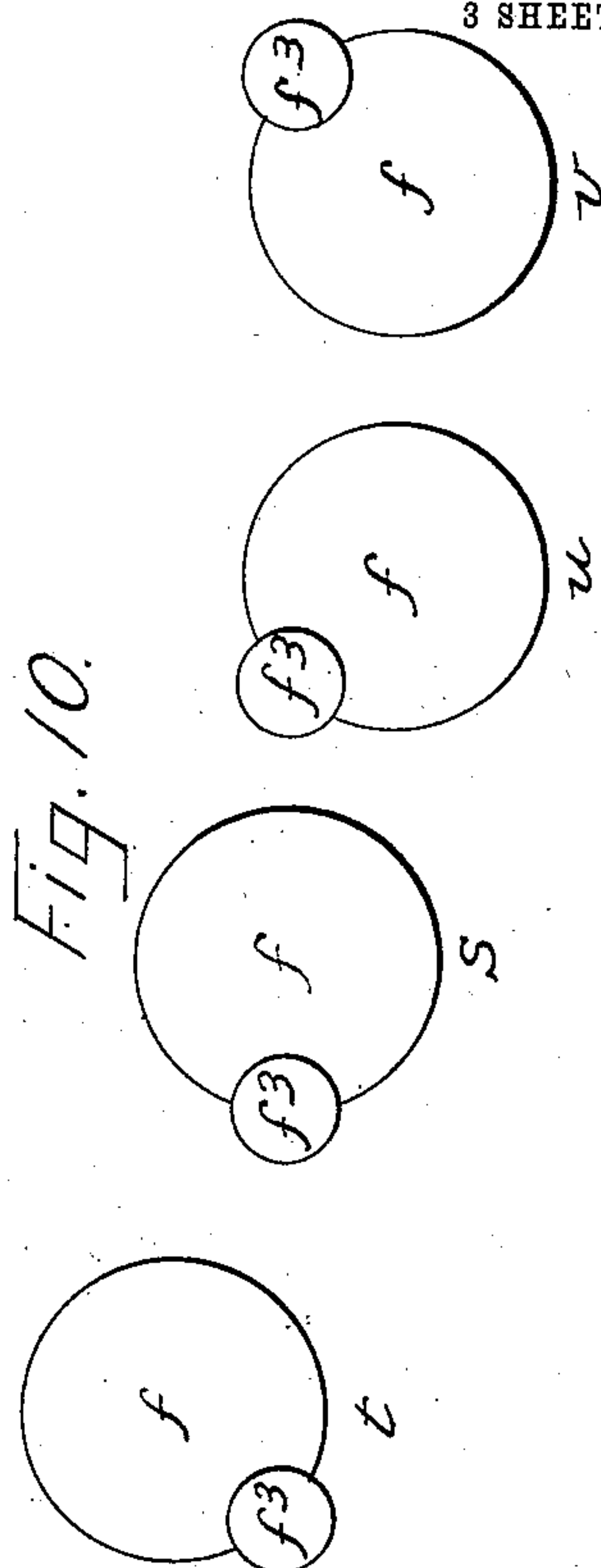
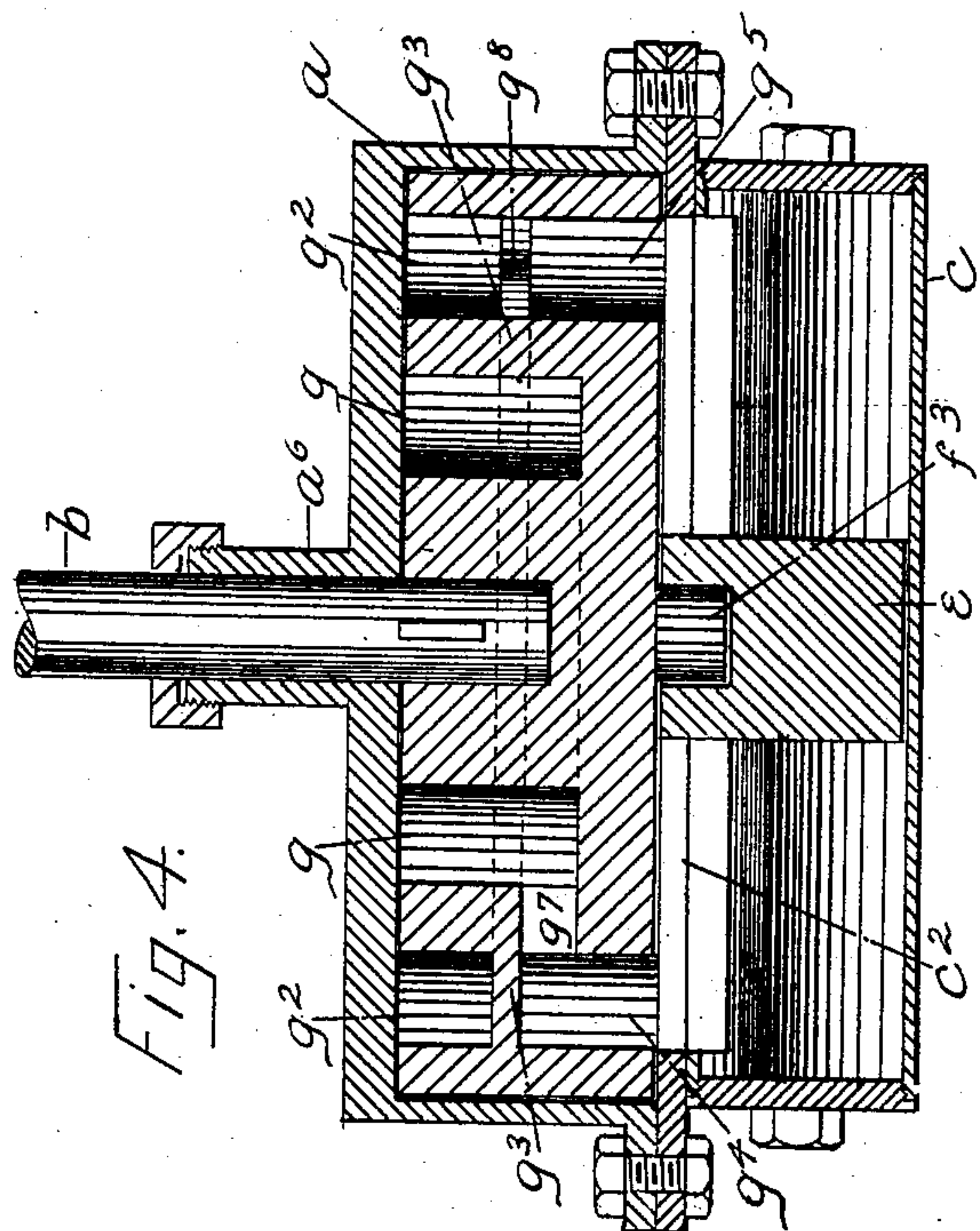
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ENGINE.

APPLICATION FILED MAR. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 2.



WITNESSES

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No. 721,908.

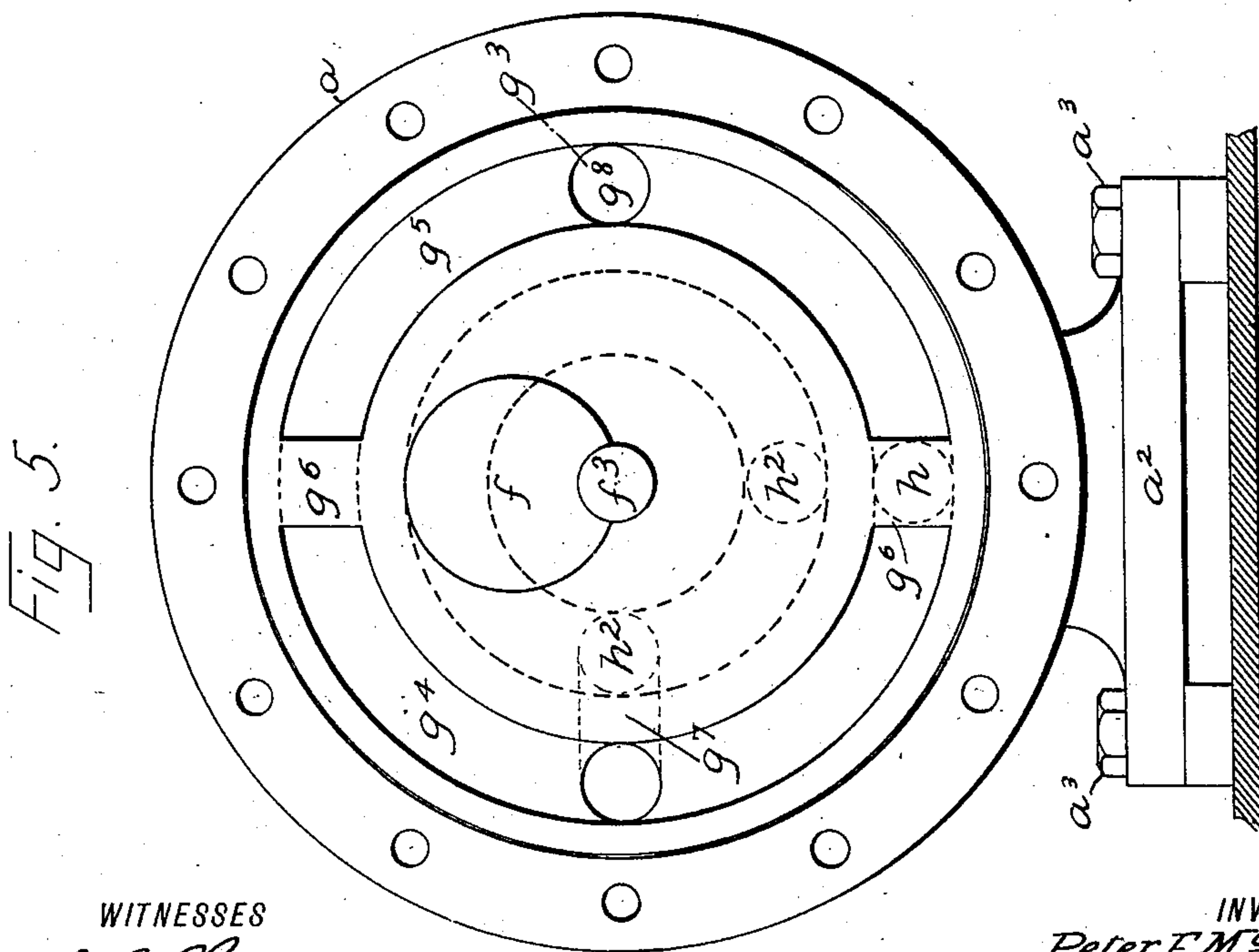
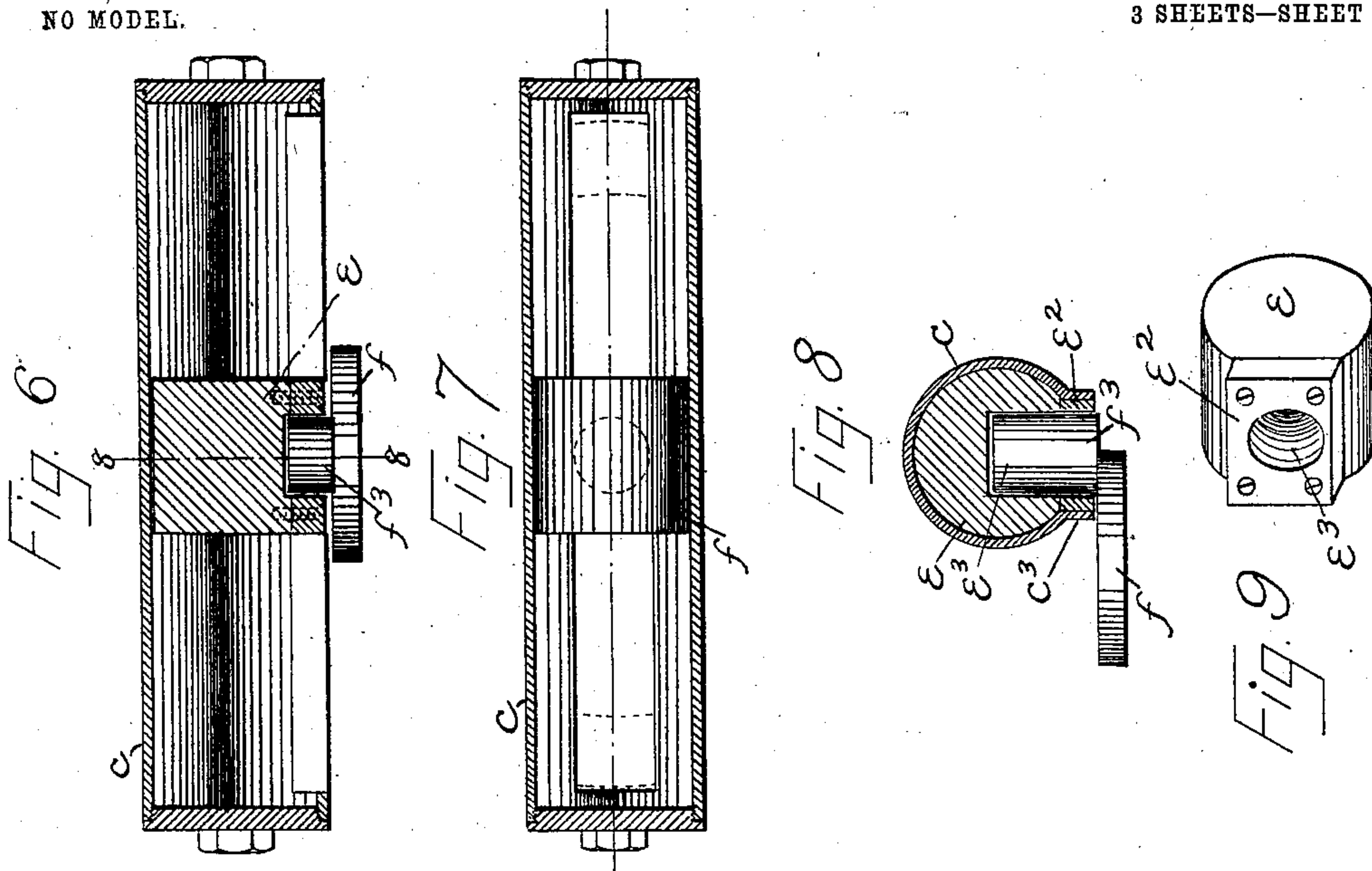
PATENTED MAR. 3, 1903.

P. F. McMONEGAL,
ENGINE.

APPLICATION FILED MAR. 18, 1902.

NO MODEL.

3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

PETER F. McMONEGAL, OF JERSEY CITY, NEW JERSEY.

ENGINE.

SPECIFICATION forming part of Letters Patent No. 721,908, dated March 3, 1903.

Application filed March 18, 1902. Serial No. 98,728. (No model.)

To all whom it may concern:

Be it known that I, PETER F. McMONEGAL, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Rotary Engines, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved rotary engine which is simple in construction and operation and which possesses a maximum of power and efficiency in proportion to the amount of steam or motive agent employed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same reference characters in each of the views, and in which—

Figure 1 is a back view of my improved rotary engine; Fig. 2, a side view thereof; Fig. 3, a section on the line 3 3 of Fig. 1; Fig. 4, a section on the line 4 4 of Fig. 1; Fig. 5, a back view with the back plate and piston-cylinder removed; Fig. 6, a horizontal and longitudinal section through the piston-cylinder; Fig. 7, a section at right angles to Fig. 6; Fig. 8, a transverse section on the line 8 8 of Fig. 6; Fig. 9, a perspective view of the piston removed from the cylinder, and Fig. 10 a diagrammatic view showing different positions of the crank-disk which I employ and illustrating the positions of the crank in the operation of the machine.

In the practice of my invention I provide a cylindrical casing a , having a base a^2 , which may be bolted to any suitable support, as shown at a^3 , and the cylindrical casing is open at the back and provided with an annular flange or rim a^4 , to which is bolted a back plate a^5 , which forms a part of the casing a and which when in position completes said casing.

The casing a is provided at the front side thereof and centrally thereof with a tubular bearing a^6 , through which passes the main power-shaft b , and said casing or the back plate thereof is provided with a transverse piston-cylinder c , the interior length of which

is preferably slightly less than the interior diameter of the casing a , and said piston-cylinder is in communication with the casing a and with the back plate a^5 by means of a slot or opening c^2 , formed both in the back plate a^5 and in said cylinder, and said slot or opening is slightly less in length than the interior length of the cylinder c , and the connection between said cylinder c and the opening in the back plate a^5 of the casing a is made by means of a longitudinal neck portion c^3 , formed on the inner side of said cylinder.

Within the casing a and rigidly secured to the power-shaft b is a circular head d , which exactly fits said casing and is free to turn therein, and within the cylinder c is placed a piston e , which is provided with a neck portion e^2 , which is rectangular in form and fits in and is adapted to move in the longitudinal neck portion c^3 of the cylinder c , and the neck e^2 of the piston e is provided centrally with a crank-pin opening e^3 , which is preferably extended into the central portion of the cylinder e , which, as shown in Figs. 3, 4, and 6, extends only through the neck of the cylinder, but which may extend into the central portion of the piston, if desired, as shown in Fig. 8.

Countersunk in the outer or back side of the head d and eccentric to the axis thereof is a crank-disk f , provided with a crank-pin f^2 , and the outer surface of the crank-disk f is flush with the outer back side of the head d , and the crank-pin f^3 enters the crank-pin opening e^3 in the neck e^2 of the cylinder e , as clearly shown in Figs. 3, 4, 6, and 8. The head d of the power-shaft b is provided at its front side with two annular chambers g and g^2 , which are arranged concentrically, and the inner annular chamber g is continuous or forms a complete circle, while the outer concentric chamber g^2 is complete or forms a complete circle at the inner side of said head, but is divided centrally by an annular partition g^3 , so as to form two segmental chambers g^4 and g^5 , as shown in Fig. 5, said segmental chambers g^4 and g^5 being separated by partitions g^6 , and the supplemental segmental chambers g^4 and g^5 open at the outer face or head d , but are closed by the plate a^5 of the casing a , and the supplemental or segmental chamber g^4 is in

communication with the annular chamber g at g^7 , as shown in Fig. 4, and the annular partition g^3 is provided with a port or passage g^8 , by which it is adapted to communicate with the annular chamber g at the front side of the head d . I have also shown at h in Fig. 3 a steam-supply pipe which communicates with the annular chamber g^2 through the front plate of the casing a , and at h^2 a steam-exhaust which communicates with the annular chamber g through said front plate of the casing a .

The operation will be readily understood from the foregoing description, taken in connection with the accompanying drawings and the following statement thereof: Suppose the parts of the apparatus to be in the position shown in Figs. 3, 4, and 5. If steam be admitted to the pipe h , it will enter the annular chamber g^2 and will pass from said chamber through the port or passage g^8 into the supplemental segmental chamber g^5 , from which it passes directly into the piston-cylinder at the right-hand end thereof, as shown in Fig. 4, and the piston e will be forced toward the opposite end of said cylinder. In this operation the head d of the shaft b is turned one-half a revolution and the crank-disk f turns in said head and moves diametrically across the back face of said head.

Suppose the parts to be in the position shown in Fig. 5. The position of the crank-disk and crank-pin at the extreme limit of the left-hand movement of said pin is shown at s in Fig. 10, while the intermediate position of the crank-disk f and crank-pin f^3 between the points shown in Fig. 5 and s in Fig. 10 is shown at t in Fig. 10, and as the crank-pin moves transversely of the head d , as before described, the said head is also turned, and when the said crank-pin reaches the extreme limit of its movement to the left the head continues to turn and the crank-pin starts back on its right-hand movement and at this time a new supply of steam enters the chamber g^5 and passes into the left-hand end of the cylinder c and at the same time the steam is exhausted from the right-hand end of the cylinder through the port or passage g^7 into the chamber g and out through the pipe h^2 , and the piston e moves to the right and the crank-pin f^3 completes its movement to the right, and in this operation the said crank-pin and crank-disk assume the intermediate position shown at u and v in Fig. 10 until it reaches the extreme movement to the right, which extreme movement is not shown, the extreme movement to the right, however, being the exact opposite of that shown at s , in which the crank-pin f^3 would be at the extreme right of the crank-disk f , or, in other words, the crank-pin f^3 would be at the right of the disk f , and it will be understood that this movement of the parts is repeated as long as the machine is in operation, the steam being alternately admitted into and exhausted from the opposite ends of the cylinder c .

The entire device is simple in construction and operation and particularly adapted to accomplish the result for which it is intended, and my invention is not limited to the exact form of the parts herein shown and described and the method for connecting the same, and I reserve the right to make all such alterations therein and modifications thereof as fairly come within the scope of my invention.

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

1. A rotary engine comprising a cylindrical casing provided at one side with a removable plate, a cylindrical head mounted in said casing and adapted to turn therein, a transverse piston-cylinder connected with said removable plate and provided with a longitudinal neck which opens therethrough into said casing, a piston mounted in said cylinder and provided with a neck which fits in and is adapted to move in the neck of said cylinder, a crank-disk revolubly mounted in said head eccentric to the center thereof and provided at one side with a crank-pin which fits in the neck of the piston, a power-shaft which passes through the side of the casing opposite the removable plate and is secured to said head and means for alternately admitting and exhausting steam through said head and to and from the opposite ends of said cylinder through said head, substantially as shown and described.

2. A rotary engine comprising a cylindrical casing provided at one side with a removable plate, a cylindrical head mounted in said casing and adapted to turn therein, a shaft which passes through the side of said casing, opposite said removable plate and is secured to said head, a piston-cylinder connected transversely with the removable plate and provided with a longitudinal neck which communicates with said casing through said plate, a piston mounted in said cylinder and provided with a neck adapted to move in the neck of the cylinder, a crank-disk eccentrically mounted in said head and adapted to turn therein and provided at one side with a crank-pin which fits in the neck of the piston, two annular chambers formed in the side of said head opposite said removable plate and concentrically arranged, two segmental chambers formed in the side of said head adjacent to said removable plate, one of which is in communication with the inner annular chamber at the opposite side and the other with the outer annular chamber at said side, said segmental chambers being also in communication with the opposite ends of the cylinder, and steam supply and exhaust pipes communicating respectively with the outer annular chamber and the inner annular chamber in the side of said head opposite the cylinder, substantially as shown and described.

3. A rotary engine comprising a cylindrical casing provided at one side with a removable plate, a transverse piston-cylinder connected

centrally with said plate and provided with a longitudinal neck which communicates with said casing through said plate, a piston mounted in said cylinder and provided with a neck
5 adapted to move in the neck of the cylinder, a cylindrical head mounted in said casing, and adapted to turn therein, a crank-disk rev-
olubly mounted in the side of said head adjacent said removable plate and adapted to turn
10 therein and provided at one side with a crank-pin which fits in the neck of the piston, and means for alternately supplying and exhaust-

ing steam through said head and to and from the opposite ends of said cylinder through said head, substantially as shown and de- 15 scribed.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 17th day of March, 1902.

PETER F. McMONEGAL.

Witnesses:

T. A. STEWART,
F. F. TELLER.