No. 749,614. PATENTED JAN. 12, 1904.

G. KADLECSIK.

PUMP AND WATER POWER MOTOR.

APPLICATION FILED OCT. 16, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

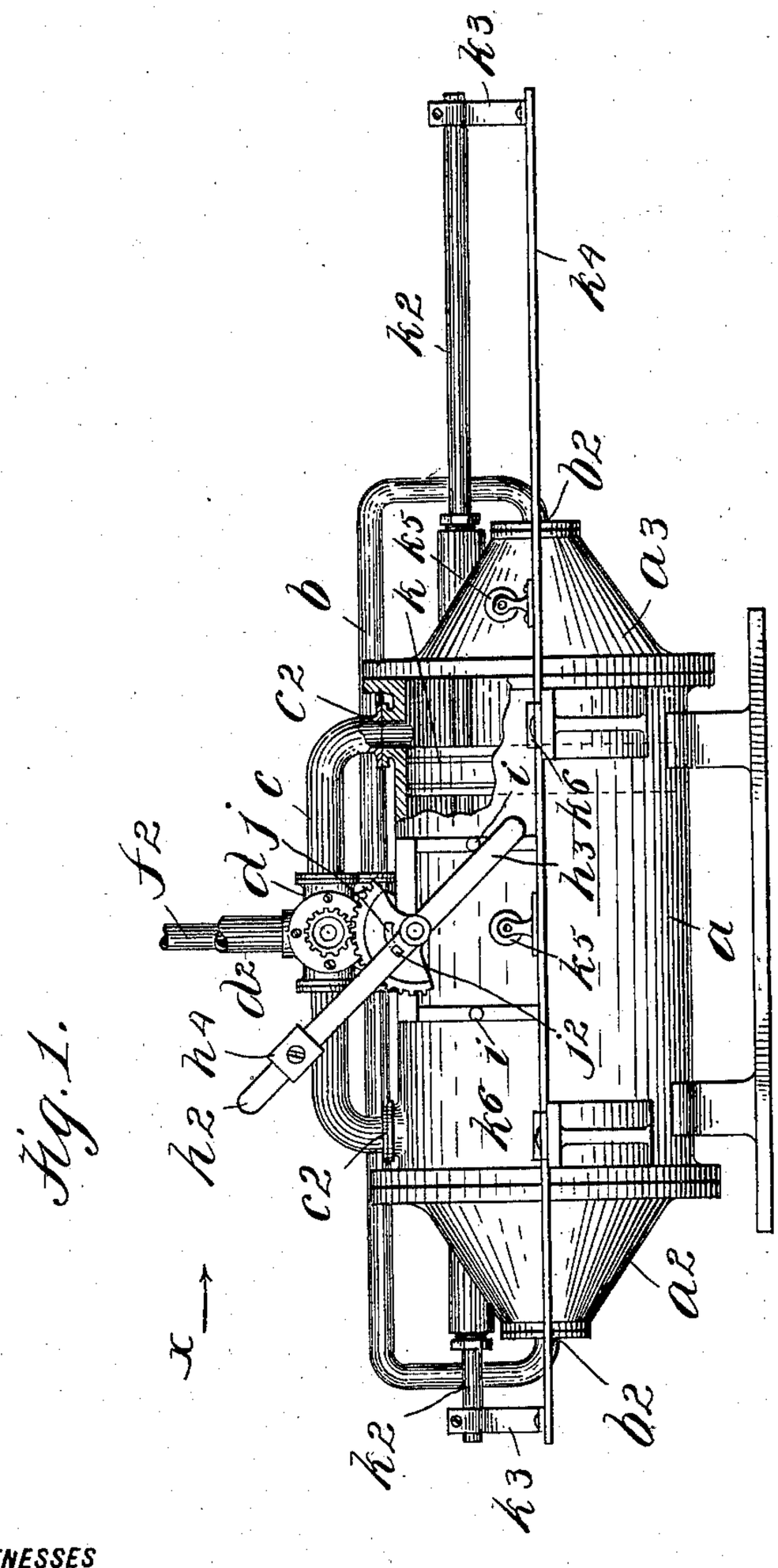

Fig. 1.

WITNESSES

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Fig. 2.

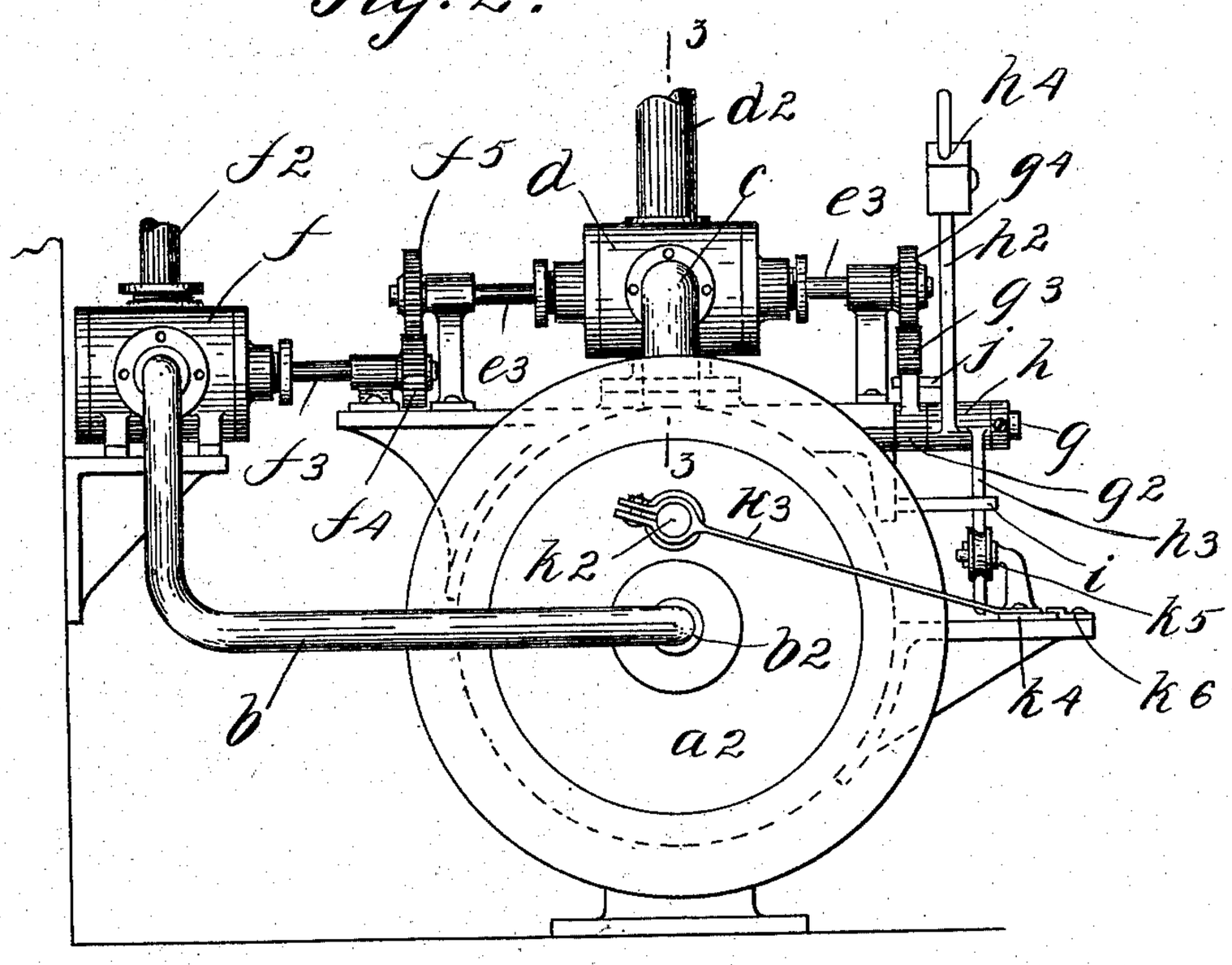
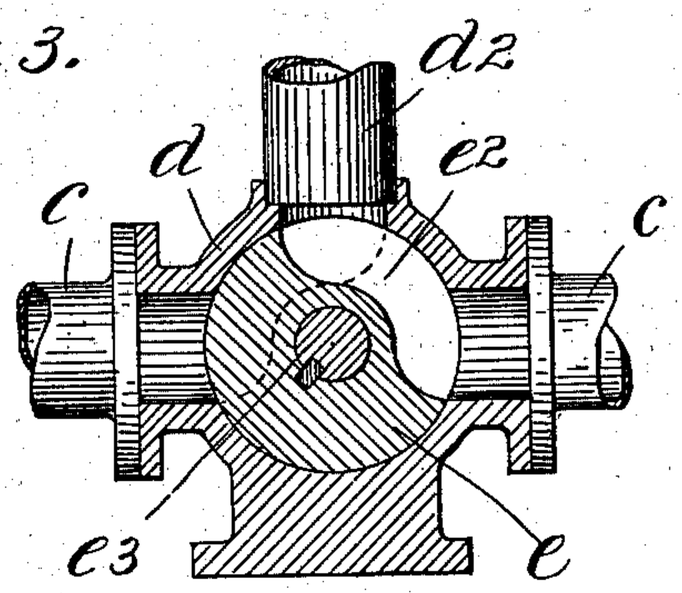


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE KADLECSIK, OF BROOKLYN, NEW YORK.

PUMP AND WATER-POWER MOTOR.

SPECIFICATION forming part of Letters Patent No. 749,614, dated January 12, 1904.

Application filed October 16, 1903. Serial No. 177,254. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KADLECSIK, a citizen of Austria-Hungary, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Pumps and Water-Power Motors, of which the following is a 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 power device which may be used as a pump or as a water-power motor for running machinery; and with this and other objects in view the invention consists in a device of the class specified constructed as hereinafter described and claimed.

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 suitable reference characters in each of the views, and in which—

Figure 1 is a side elevation of a device of the class specified involving my invention, part of the construction being broken away; Fig. 2, an end view looking in the direction of the arrow *x* of Fig. 1, and Fig. 3 a partial section on the line 3 3 of Fig. 2.

In the practice of my invention as shown in the drawings I provide a cylindrical casing *a*, which forms a piston-cylinder and the ends a^2 and a^3 of which are conical in form and secured thereto in the usual manner. Arranged parallel with and adjacent to one side of the cylinder *a* is a pipe *b*, the ends of which communicate with the ends a^2 and a^3 of the cylinder *a*, as shown at b^2. The opposite end portions of the cylinder *a* are also placed in communication by means of a horizontally-arranged pipe *c*, the ends of which communicate with said cylinder, as shown at c^2, and the pipe *c* is composed of two parts connected centrally by a valve-casing *d*, with which is also connected a vertically-arranged pipe d^2. Within the valve-casing *d* is a cylindrical valve *e*, this construction being best shown in Fig. 3, and this valve is provided in one side thereof with an annularly-arranged port or passage e^2, by means of which either end of the pipe *c* may be placed in communication with the pipe d^2. The pipe *b* is also composed of two parts connected centrally of the cylinder *a* and in the same vertical plane with the valve-casing *d* by a valve-casing *f*, with which is also connected centrally of the top thereof a vertically-arranged pipe f^2, and the valve-casing *f* is provided with a valve similar to the valve *e* in the valve-casing *d* and by means of which either end of the pipe *b* may be placed in communication with the pipe f^2, and the valve in casing *f* is provided with a shaft f^3, having a gear-wheel f^4, which meshes with a similar gear-wheel f^5, connected with a shaft e^3 of the valve *e*.

At the side of the cylinder *a* opposite the valve-casing *f* is supported a bearing *g*, on which is mounted a collar g^2, provided with a segmental gear g^3, which meshes with a gear-wheel g^4, secured to the shaft e^3 of the valve *e*, and on the bearing *g* is also mounted a sleeve *h*, provided with oppositely-directed arms h^2 and h^3, the first of which is directed upwardly and the second downwardly, and the arm h^2 is provided with an adjustable weight h^4, and secured to the cylinder *a* on one side thereof are two stops *i*, in connection with which the downwardly-directed arm h^3 of the sleeve *h* operates, and these stops are intended to limit the movement of the arm h^3, and the segmental gear g^3 is provided with a segmental slot *j* and the arm h^2 with a pin j^2, movable in said slot, and by means of the pin j^2, operating in the slot *j*, the arm h^2 is enabled, as hereinafter described, to operate the valve *e* in the casing *d* and the corresponding valve in the casing *f*.

Within the cylinder *a* is a piston *k*, and this piston is provided with two piston-rods k^2, which pass outwardly through the opposite ends of the cylinder *a*, or a single rod may be employed, passing through and secured to the piston *k* in any desired manner. It will be observed that the rod or rods k^2 are arranged eccentrically of the piston *k* and also eccentrically of the cylinder *a*, and secured to the ends thereof by means of arms k^3 is a horizontally-arranged sliding bar k^4, provided with two contact-rollers k^5, by means of which the

arm h^3 is operated, and the sliding bar k^4 is mounted in keepers k^6, connected with the side of the cylinder a.

In the operation of this device water under pressure is admitted to the cylinder a through the pipe d^2, and supposing the parts to be in the position shown in Fig. 1 the water enters the right-hand end of the cylinder and forces the piston k to the left. At the limit of the movement of the piston k to the left the arm h^3 is operated, the valve e is turned, and the water flows into the left-hand end of the cylinder, and the piston is moved to the right. In this operation the water in the cylinder or in the right-hand end thereof is forced out through the right-hand end of the pipe b and up through the pipe f^2, it being understood that the valve in the casing f is similar to the valve e in the casing d and is operated at the same time and in the same manner, and when the piston k reaches the limit of its movement to the right the operation is reversed and the water again flows into the right-hand end of the cylinder a and is forced out through the left-hand end of the pipe b and up through the pipe f^2, and in this manner the water may be raised to any desired point, according to the pressure of the water in the pipe d^2.

This apparatus or device may be used as a pump for raising water in buildings, and it may also be used as a power-generator for operating machinery of various kinds and classes, in which latter event the machinery will be geared in connection with the rod or rods k^2 of the piston k.

Although in the form of construction shown the piston rod or rods k^2 are arranged eccentrically of the cylinder a, it will be apparent that my invention is not limited to this exact arrangement, and the said rod or rods may be arranged centrally of the cylinder and of the piston, if desired, and other changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

A device of the class described, comprising a cylinder, a water-supply pipe communicating therewith near both ends thereof, a water-discharge pipe communicating with both ends of said cylinder, said pipes being both provided with valve-casings having valves which are geared in connection, means for supplying water under pressure to the valve-casing of the first-named pipe, means for discharging water from the valve-casing of the second-named pipe, a piston mounted in said cylinder and provided with a rod or rods which extend through the opposite ends thereof, and means whereby the operation of said rod or rods will operate said valves, comprising a sliding bar connected with said rod or rods, and an arm geared in connection with one of said valves and adapted to be operated by said sliding bar, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 15th day of October, 1903.

GEORGE KADLECSIK.

Witnesses:
F. A. STEWART,
C. E. MULREANY.