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1,486,796

R. E. PENISTON

ROTARY MOTOR

Filed May 10, 1921

Fig. 1.

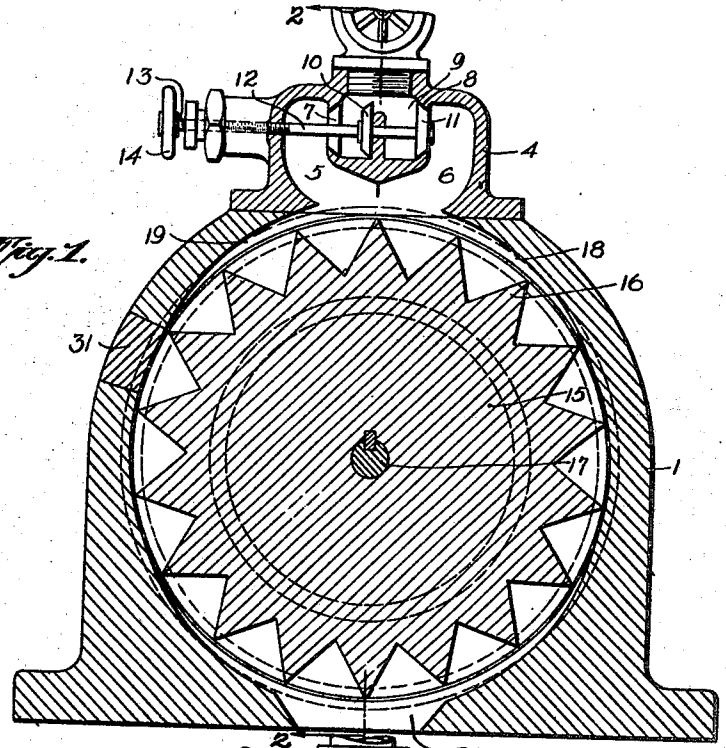
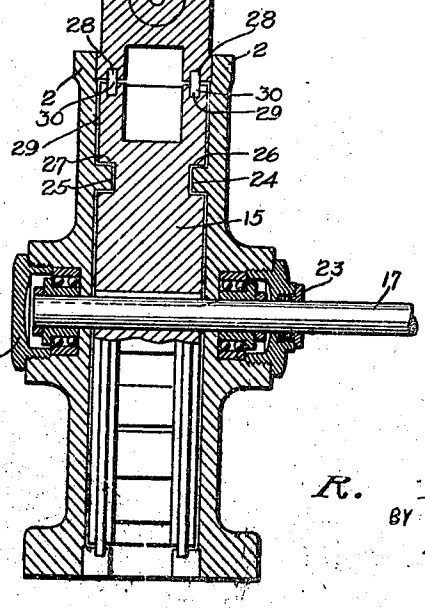


Fig. 2.



WITNESSES

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Patented Mar. 11, 1924. 1,486,796

UNITED STATES PATENT OFFICE.

RIENZI EVELYN PENISTON, OF LAKE CITY, COLORADO.

ROTARY MOTOR.

Application filed May 10, 1921. Serial No. 468,215.

To all whom it may concern:

Be it known that I, RIENZI E. PENISTON, a citizen of the United States, and a resident of Lake City, in the county of Hinsdale and State of Colorado, have invented a new and Improved Rotary Motor, of which the following is a full, clear, and exact description.

This invention relates to rotary motors and has for an object to provide an improved motor which may be quickly adjusted whereby it may rotate in either direction.

Another object of the invention is to provide a rotor structure arranged in a single casing with means for shifting the impelling fluid to either of two oppositely arranged impelling blades so that the rotor may be caused to rotate in either direction.

A further object of the invention is to provide a rotor with an impeller adapted to use either gaseous or liquid impelling mediums and which is formed with peripheral and side packing rings for maintaining the impelling fluid within the casing until it reaches the discharge opening.

In the accompanying drawing—

Figure 1 is a longitudinal vertical section through a motor disclosing one embodiment of the invention.

Figure 2 is a sectional view through Figure 1 approximately on line 2—2.

Referring to the accompanying drawing by numerals, 1 indicates a casing provided with side plates 2 secured to the casing by any desired number of bolts. The casing 1 is provided with a special valve casing 4 at the upper part in which is arranged a pair of oppositely extending passage-ways 5 and 6, said passage-ways having ports or openings 7 and 8 whereby an impelling medium from the chamber 9 may enter either passage-way. To cause the impelling medium to enter only one passage-way at any given time, valves 10 and 11 are provided and rigidly secured to a shaft 12, which shaft is threaded at 13 and is provided with a hand wheel 14. When it is desired to move the valves from the position shown in Figure 2, the hand wheel 14 is rotated until the shaft 12 and the valves 10 and 11 move over until valve 11 is resting against its seat 7. It will be noted that as one valve opens the other closes. This will permit the operator to quickly cause a reversal of the rotor 15 and, consequently, a reversal of the power shaft 17. Also, it will permit a quick slowing down of the motor by gradually turning the impelling fluid onto both sides of the blades 16 of the rotor.

From Figure 1 it will be observed that the respective passage-ways 5 and 6 in the casing 4 gradually merge into the grooves 18 and 19, which grooves taper until they entirely disappear at about the center of the casing 1. The rotor 15 is arranged with blades 16 having oppositely inclined faces, said blades rotating opposite each of the grooves 18 and 19 whereby the impelling fluid may act on the various blades for almost a half revolution. The impelling fluid is discharged out the outlet port 20 at the bottom of the casing 1, said port being of ample size to quickly relieve the rotor of the fluid or medium carried thereby. This medium may be water, steam or other suitable impelling medium. Preferably, the casing 1 and the plates 2 are both provided with ball bearings for the shaft 17 and a suitable cap 22 is provided for the bearings in one of the plates 2 whereby none of the water or steam may escape at that point while the other plate 2 is provided with a packing box 23 for preventing the impelling medium from escaping at that point. In addition to these auxiliary means of maintaining the impelling means in the casing, special means are provided which act as packing rings, said means being illustrated particularly in Figure 2.

By providing the blades 16 with oppositely inclined faces as indicated in Figure 1, there is formed a single row of buckets co-acting with the impelling fluid to produce rotary motion in the rotor 15. In order to prevent any loss of this impelling fluid, special packing means have been provided which includes annular ridges or beads 24 and 25 on each of the respective plates 2, said beads being arranged to fit into annular grooves 26 and 27 of the rotor 15. If desired, regular packing rings could be provided in the beads 24 and 25, though ordinarily this is not necessary. However, grooves 28 are provided on each side of each of the grooves 18 and 19 and similar grooves 29 are provided on each side of each of the blades 16 of the rotor while packing members 30 are arranged in these grooves. These packing members may be inserted in position in any convenient manner, as for instance, by providing a cut-away portion in the casing 1 through which one end of the packing may be inserted and secured in

place. After this has been done the rotor is rotated slowly for one revolution and then the opposite end secured. After all of the packing rings have been placed in position in this manner, the opening is closed and the apparatus is in condition for use. The closure 31 for the opening is preferably formed in such a manner as to conform in shape with the casing 1 to which it may be secured by suitable clamping screws. The valve casing 4 is held in place by suitable screws or other suitable means and if desired, may be removed and the packing 30 connected with the rotor through the opening provided in this manner. The packing may be secured to the rotor at both ends only as above described though preferably it is secured at intervals by any suitable form of securing means and is thoroughly oiled to permit easy running and at the same time provide a tight connection.

What I claim is:—

In a motor of the class described, a casing having aligned openings and provided with tubular bosses surrounding said openings, the bores of the bosses being larger than the said openings and having their outer ends screw-threaded, a rotor in the casing, a shaft upon which the rotor is mounted, said shaft extending through the openings of the casing with one end within one of the tubular bosses and its other end extending beyond the other boss, a bearing sleeve in the inner portion of the bore of each boss, bearing sleeves on the shaft within the bosses and having flanged outer ends, balls within the said sleeves, a flanged cap screwing into the boss through which the end of the shaft does not project and into engagement with the bearing sleeve therein, a flanged member screwing into the other boss into engagement with the bearing sleeve therein and provided with an opening through which the shaft extends, and a packing box through which the shaft extends and screwing into the opening of said member.

RIENZI EVELYN PENISTON.