

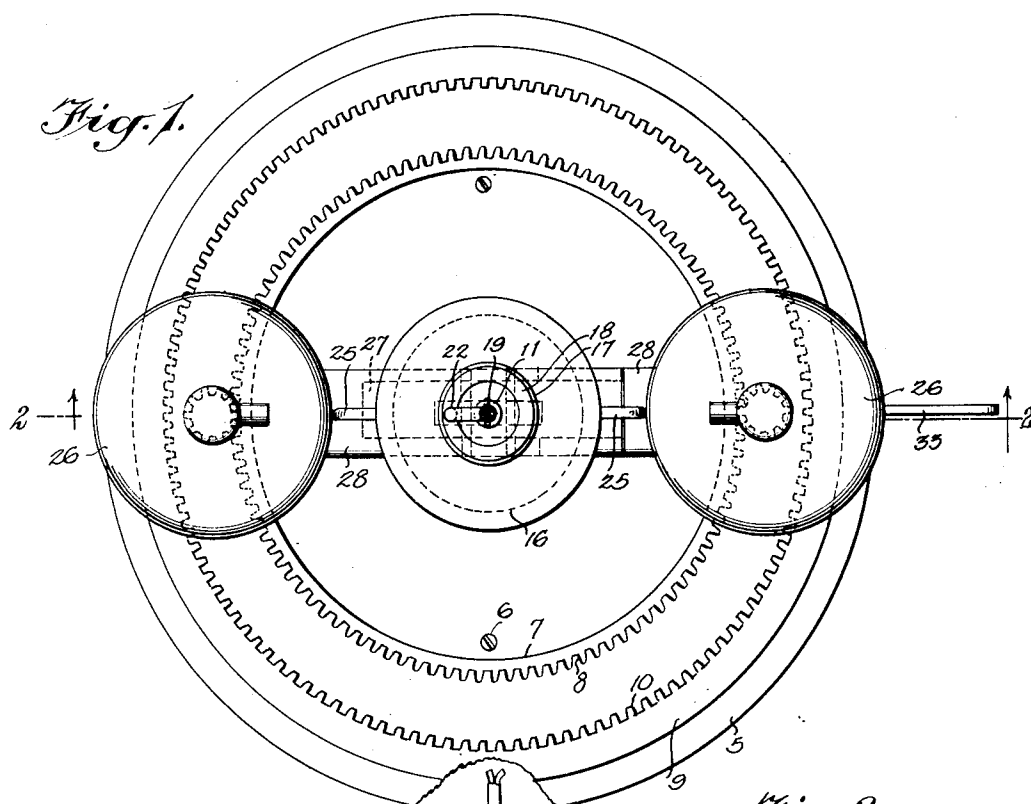
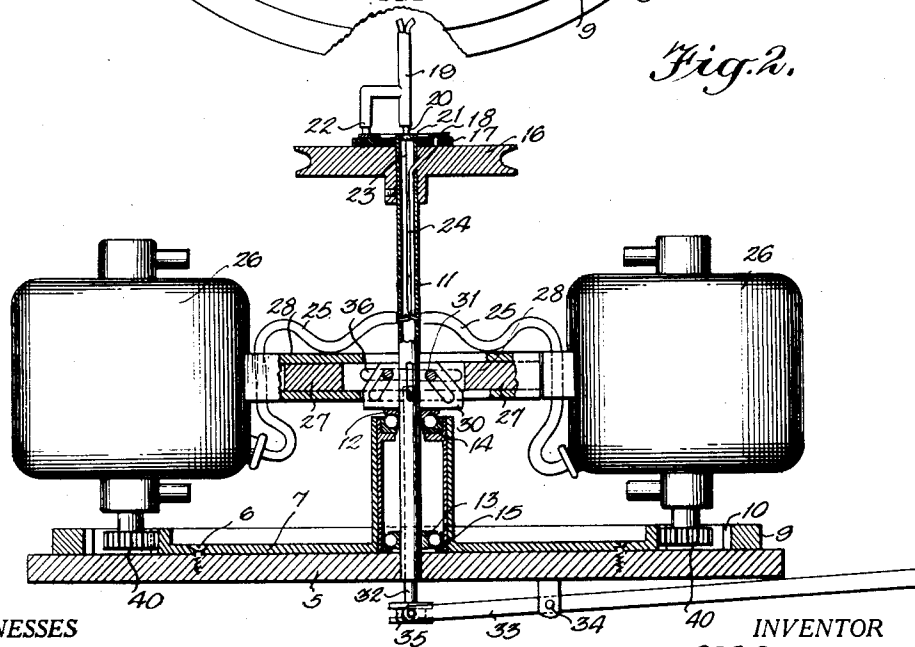
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A. W. SING

POWER DEVICE

Filed Oct. 26, 1923



WITNESSES

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UNITED STATES PATENT OFFICE.

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POWER DEVICE

Application filed October 26, 1923. Serial No. 671,059.

To all whom it may concern:

Be it known that I, ALBERT W. SING, a citizen of the United States, and a resident of Tarrytown, in the county of Westchester and State of New York, have invented new and Improved Power Devices, of which the following is a full, clear, and exact description.

The present invention relates to new and useful improvements in power devices, and it pertains more particularly to devices of this character especially adapted for use in connection with motors of any suitable type.

It is one of the primary objects of the invention to provide means whereby a plurality of motors may be supported in diametrically opposed relation and caused to travel about circular racks under the influence of their own power.

It is a further object of the invention to provide means whereby the direction of power may be reversed.

With the above and other objects in view, reference is had to the accompanying drawings, in which—

Figure 1 is a top plan view;

Fig. 2 is a view partly in section and partly in elevation, the section being taken on the line 2—2 of Fig. 1.

Referring more particularly to the drawings, in the present illustration the device comprises a base 5 and rigidly secured to the base 5 by means of screws, bolts, or the like, 6, there is a member 7 presenting a continuous series or rack teeth 8. Mounted exteriorly of the member 7, there is a concentric rack member 9 presenting a plurality of inwardly disposed rack teeth 10.

Extending vertically through the base there is a shaft 11, and such shaft has bearing members 12 and 13 supported in bearings 14 and 15, respectively. Mounted upon the upper end of the shaft 11 there is a pulley 16, by means of which the power of the device may be taken off, and carried by the upper face of the pulley 16 there is an insulating plate 17 upon which is mounted a commutator ring 18. The reference numeral 19 designates a conductor of the double type, and one end, 20, contacts with a plate 21 carried by the upper end of the shaft 11. The other end, 22, of the double conductor contacts with the commutator ring heretofore mentioned. Leading from the plate 21, there is a conductor 23 and leading from the commutator ring 18, there is a conductor 24.

These conductors pass by way of conductors 25 to motors 26 which in the present instance are shown as of the electric type. The motors 26 are each provided with arms 27, and such motor arms 27 are slidably mounted in a hollow guide 28, which hollow guide is in turn supported by the shaft 11.

The reference numeral 30 designates a vertically movable cone-shaped member carried by a frame 31, and such frame 31 is adapted to be elevated for the purpose of elevating the cone-shaped member 30 by means of a shaft 32 operated by a hand lever 33 pivotally mounted as at 34, the hand lever 33 engaging the conventional form of clutch collar 35 carried by the lower end of the shaft 32. Each of the motor arms 27 has its inner end beveled, as designated by the reference numeral 36, and as the cone member 30 is elevated the motor arms are moved outwardly of the hollow guide 28 in order to move the motors outwardly.

Each of the motors is provided on its shaft with a pinion 40, and as shown in the drawings, the pinions 40 are adapted under normal conditions to engage the inner rack member 7. As the motors are rotated they will travel about the inner rack member, rotating the shaft 11, and consequently the pulley 16 from which the power generated by the device may be taken off.

When it is desired to reverse the direction of travel, the lever 33 is rocked about its pivotal point 34, and through the medium of the shaft 32, the cone member 30 is rotated, and in the manner heretofore described the motors 26 are moved outwardly until their pinions engage the inner rack teeth 10 of the rack 9. Owing to the fact that the pinions 40 carried by the motor shafts engage the racks at the opposite end, the direction of travel of the motors is reversed without changing the direction of travel of the motor shafts.

It is apparent that during the operation of the device the conductors 19 and 22 contact at all times with the plate 21 and commutator ring 18, respectively, in order to feed current from a suitable source of power to the electric motors 26.

What is claimed is:

1. A device of the character described comprising a base, a pair of concentric racks carried by the base, a shaft disposed centrally of said racks, a cross arm carried by

said shaft, a plurality of motors carried by said cross arm, a pinion carried by each of said motors and adapted to mesh with either of said racks, and means for simultaneously moving said motors radially for engagement with either of said racks.

2. A device of the character described comprising a base, a pair of concentric racks mounted on the base and spaced with respect to each other, a plurality of revolving motors mounted above said base, a pinion carried by each of said motors and adapted to mesh with said racks, and means for moving the pinions into and out of engagement with said racks through the medium of bodily movement of said motors.

3. A device of the character described comprising a base, a plurality of concentric stationary racks carried by said base, a shaft centrally disposed with respect to said concentric racks, a plurality of motors, means

for supporting said motors with their axes parallel with the axes of said concentric racks, a pinion carried by the shaft of each of said motors and adapted to engage said racks, and means for causing engagement and disengagement of the pinions with said racks.

4. A device of the character described comprising a base, a plurality of concentric stationary racks carried by said base, a shaft centrally disposed with respect to said concentric racks, a plurality of motors, means for supporting said motors with their axes parallel with the axes of said concentric racks, a pinion carried by the shaft of each of said motors and adapted to engage said racks, and means for moving said motors radially of the concentric racks to cause their pinions to engage and disengage said racks.

ALBERT WILLIAM SING.