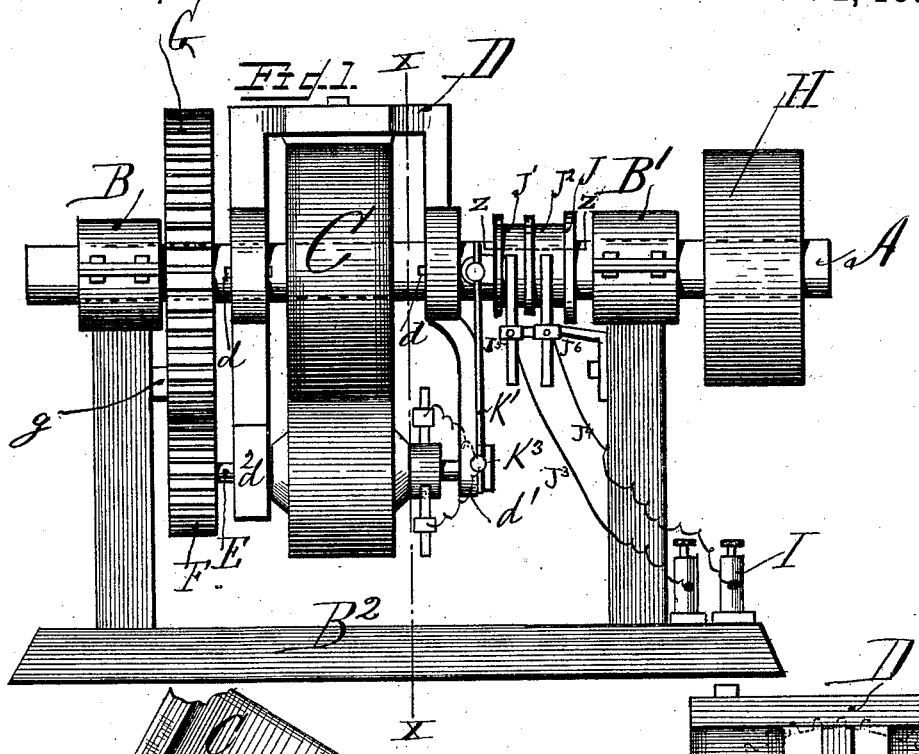
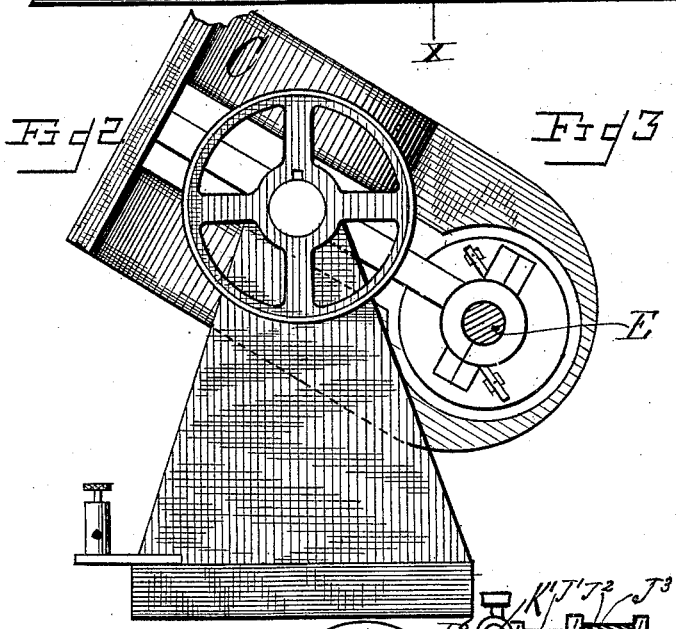
(No Model.)

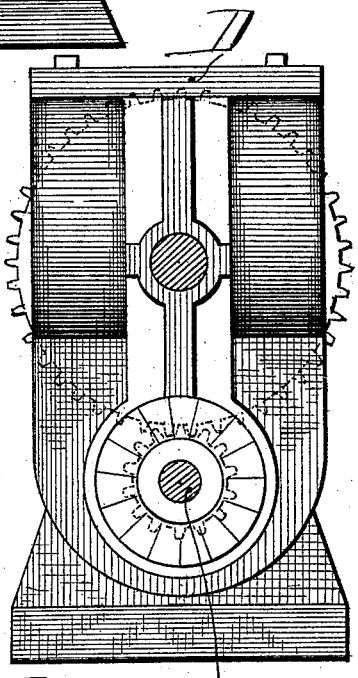
B. C. POLE.

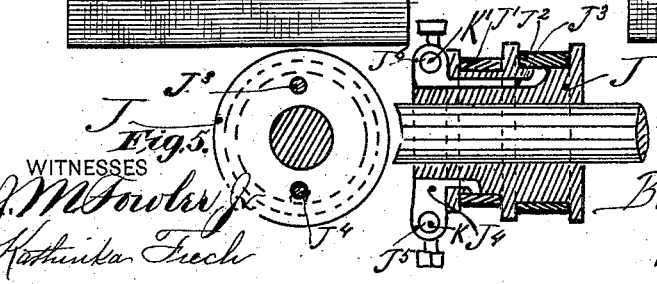
DIFFERENTIALLY GEARED ELECTRIC MOTOR.

No. 527,023. Patented Oct. 2, 1894.









WITNESSES

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DIFFERENTIALLY-GEARED ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 527,023, dated October 2, 1894.

Application filed November 12, 1892. Serial No. 451,767. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN CHARLES POLE, engineer, a citizen of the United States, residing at Deanewood, in the District of Columbia, have invented certain new and useful Improvements in Differentially-Geared Electric Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to electric motors, and consists in providing the electric motor with a non-revoluble wheel, around which a revoluble wheel moves, said revoluble wheel being on the armature shaft, and constructed so that the field magnets and sustaining frame will also be revolved; also in providing a means of supplying the electric current to and from the armature and field magnets of my electric motor, and in providing suitable counterbalances to compensate for the revolving parts of my motor.

In all the figures the same letters refer to the same parts.

Figure 1 is a side elevation of my motor. Fig. 2 is an end elevation of Fig. 1. Fig. 3 is a sectional elevation on line X—X of Fig. 1. Fig. 4 is a cross section of the rotary transmitter. Fig. 5 is a cross section in line Z—Z (Fig. 1) of the rotary transmitter.

The main shaft A is sustained in journals B and B′ which are held by the foundation, a bed plate B^2, of the motor. The field magnets C may be of any suitable construction and are mounted upon a revoluble frame D which is keyed at *d* to the main revoluble shaft A. Frame D is provided with journals *d′* d^2 which carry the armature shaft E and its pinion wheel F. This wheel F intergears with the non-revoluble wheel G which is bolted at *g* to the foundation B^2. The bore of the wheel G is sufficiently large to permit the free revolution of the main shaft A. The shaft A is provided with the rotary transmitter J and the driving pulley H. The electric current is brought to the stands I, and from thence to the rotary transmitter J, which is divided into two annular parts J′ and J^2. These are copper rings or other good conductors separated by the insulating material of which the rotary transmitter J must be made. The wires J^3 and J^4 connect with stand stubs J^5 and J^6. Two rods K and K′ are connected with the stand stubs J^5 and J^6 and carry the electric fluid to the stand stubs at K^3 (one on each side held by the frame D) and thence to the commutators on the armature shaft E of the motor and to the field magnets.

The armature and field magnets may be of any well known design, adapted to revolve on armature.

The operation of my invention is as follows: Upon the electric current being turned onto the motor, the armature shaft commences to revolve, and with it the pinion wheel F. This wheel intergears with the non-revoluble wheel G and causes the armature, field magnets and frame to all revolve around with and together with the main shaft A and give to the motor the vantage point of leverage for it to do its work with.

The wheels F and G can be of equal size and the balance of the armature and field magnets can be made up in the construction of the frame D. The teeth of the wheels G and F can be of raw hide, wood, or vulcanized fiber, to deaden their noise.

Having thus described the construction and operation of my invention, what I desire to secure by Letters Patent of the United States is as follows:

1. In an electric motor, a revoluble armature, combined with a revoluble wheel intergearing to a nonrevoluble wheel, the diameter of the revoluble wheel being all outside of the outside diameter of the non revoluble wheel, said armature revolving around a central supporting shaft, and with its field magnets also revolving substantially as and for the purposes set forth.

2. In an electric motor a revoluble armature and field magnet, parallel shafts to each other and revoluble supporting shaft substantially as and for the purposes set forth.

3. In an electric motor a revoluble central supporting shaft, attached and keyed to the field magnet part of the motor, and the armature carried by journals connecting to field magnets, a revoluble gear wheel intergearing to a non revoluble wheel the diameter of the revoluble wheel being all outside of the outside diameter of the non revoluble wheel to give the draft to the revoluble wheel

for the revolution of the motor substantially as and for the purposes set forth.

4. In an electric motor provided with revoluble and non revoluble wheels as hereinbefore set forth, the diameter of the revoluble wheel arranged to fall outside of the diameter of the nonrevoluble wheel and means to supply the electric currents to and from the motor, all arranged to revolve around the central supporting shaft, substantially as and for the purposes set forth.

5. In an electric motor a revoluble wheel on an armature of suitable material as raw hide, wood or vulcanized fiber, intergeared to a non revoluble wheel, all adjusted to revolve on a central shaft substantially as and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN CHARLES POLE.

Witnesses:
A. H. RAGAN,
A. M. POYNTON.