

No. 727,411.

PATENTED MAY 5,

F. P. McBERTY.
ALTERNATING CURRENT MOTOR.
APPLICATION FILED JUNE 30, 1902.

NO MODEL.

Fig. 2.

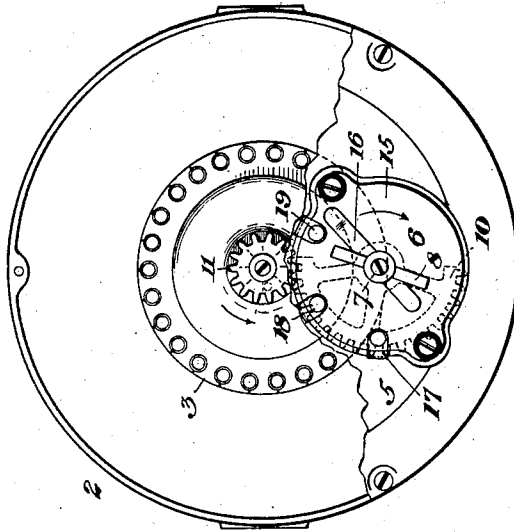
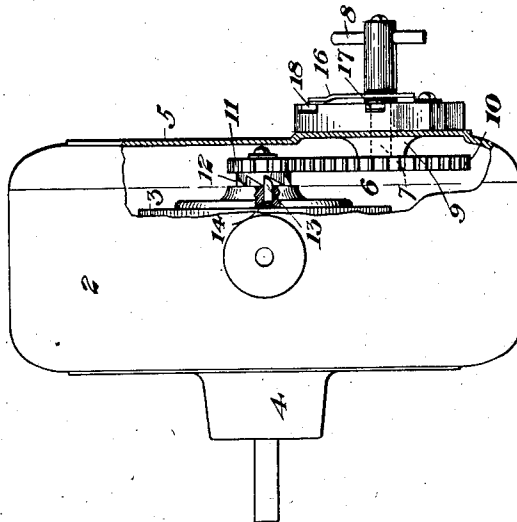


Fig. 1.



WITNESSES

James H. Baker
A. M. Sheen,

INVENTOR

Fred P. McBerty

UNITED STATES PATENT OFFICE.

FRED P. McBERTY, OF WARREN, OHIO, ASSIGNOR TO THE PEERLESS ELECTRIC COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

ALTERNATING-CURRENT MOTOR.

SPECIFICATION forming part of Letters Patent No. 727,411, dated May 5, 1903.

Application filed June 30, 1902. Serial No. 113,751. (No model.)

To all whom it may concern:

Be it known that I, FRED P. McBERTY, of Warren, in the county of Trumbull and State of Ohio, have invented a certain new and useful Improvement in Alternating-Current Motors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation, partly in section, of an electric motor provided with my improved starting mechanism; and Fig. 2 is a rear view showing the casing partly broken away and the field-coils omitted.

My invention relates to starting mechanism for electric motors, and particularly to that type of motor which is not self-starting.

It consists in providing an alternating-current motor with mechanism whereby the revolution of the armature is effected until such a speed is attained that the revolution is continued and accelerated by the current passing through the same.

It further consists in providing starting mechanism which switches the current on at the same time and by the same operation that gives the initial rotation to the armature.

My invention further consists in certain features of construction and combination of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the drawings, 2 represents the casing of the motor; 3, the armature, mounted in a suitable bearing 4.

5 is a removable cover-plate to which my improved starting mechanism 6 is attached, which consists of a shaft 7, mounted in a suitable bearing 9. At the outer end of the shaft 7 is a handle or thumb-piece 8, and at its inner end is secured a mutilated or segmental gear 10. This gear 10 is arranged to engage a loosely-mounted pinion 11 on the end of the armature-shaft. The hub of the pinion 11 is preferably provided with ratchet-teeth 12, which engage a suitable pin or dog 13, which is yieldingly secured in a hole 14 in the end of the armature 3.

15 is the usual base of the switch, which comprises the contact-finger 16 and the fixed contacts 17, 18, and 19, insulated from each

other and connected up in the usual way, so as to vary the speed of the motor.

The operation of my starting mechanism is as follows: The parts being in the position shown in the drawings, if the handle or thumb-piece be turned in the direction of the arrow the segmental gear 10 will rotate the armature 3 through its engagement with the pinion 11, the ratchet-teeth 12 of the latter engaging the pin 13, mounted in the armature 3. When the teeth of the segmental gear 10 have passed out of engagement with pinion 11, the contact-finger 16 has reached and been brought into engagement with the contact 17, and the current will flow through the motor, and the rotation given to the armature 3 by the gearing will be continued by the current supplied through the switch.

The advantages of my invention will be appreciated by those familiar with such devices, since it enables me to provide an alternating-current motor with a starting mechanism which is simple and not liable to get out of order, and which imparts the necessary rotation to the armature and by the same operation and without additional movements switches the current on so as to maintain the rotation of the armature.

The loose or ratchet connection between the pinion 11 and the armature prevents injury to the motor should the switch be turned backward while the armature is still rotating.

Many changes in the form and arrangement of parts will suggest themselves to the skilled electrician and may be made without departing from my invention, since

I claim—

1. In an electric motor, the combination with the armature, of starting mechanism comprising means for setting the armature in rotation, and a motor-switch connected to said starting mechanism so as to be moved to operative or inoperative position thereby, substantially as described.

2. A starting mechanism for electric motors comprising a segmental gear and means for rotating the same, in combination with an armature having a pinion with which said segmental gear in its movement engages for

setting the armature in rotation, and a motor-switch connected to said gear-operating means so as to be moved to operative or inoperative position thereby, substantially as described.

3. A starting mechanism for electric motors, comprising a segmental gear and means for moving the same, in combination with a pinion having a ratchet engagement with the armature of the motor and adapted to be engaged by said segmental gear for imparting an initial rotation to the armature, and a switch operated by said gear-actuating means for supplying current to the motor for continuing the rotation of the armature, substantially as described.

4. The combination with an alternating-current electric motor, of a mechanical starting device comprising a pinion loosely mounted on the armature-shaft and provided with ratchet-teeth adapted to engage a yieldingly-mounted pin in the end of the armature, substantially as described.

5. In starting mechanism for electric motors, the combination with the armature having a yieldingly-mounted projection upon the

end thereof, of a pinion loosely mounted in the armature-shaft and provided with means adapted on rotation of the pinion in one direction to engage said projection and to rotate the armature and upon movement in the other direction to glide over the projection without imparting motion to the armature, substantially as described.

6. In an alternating-current motor, the combination of an armature, a spring-pin, a loosely-mounted pinion on the armature-shaft having means adapted to engage said spring-pin, a segmental gear supported by the motor-case and adapted in some portion of its revolution to engage said pinion, thereby causing said pinion to rotate and the means thereon to engage said spring-pin so as to impart the initial movement to said armature, substantially as described.

In testimony whereof I have hereunto set my hand.

FRED P. McBERTY.

Witnesses:

T. H. GILLMER,
A. M. STEEN.