E. W. SCHNEIDER.

DRIVING MECHANISM FOR ELECTRICALLY PROPELLED VEHICLES.

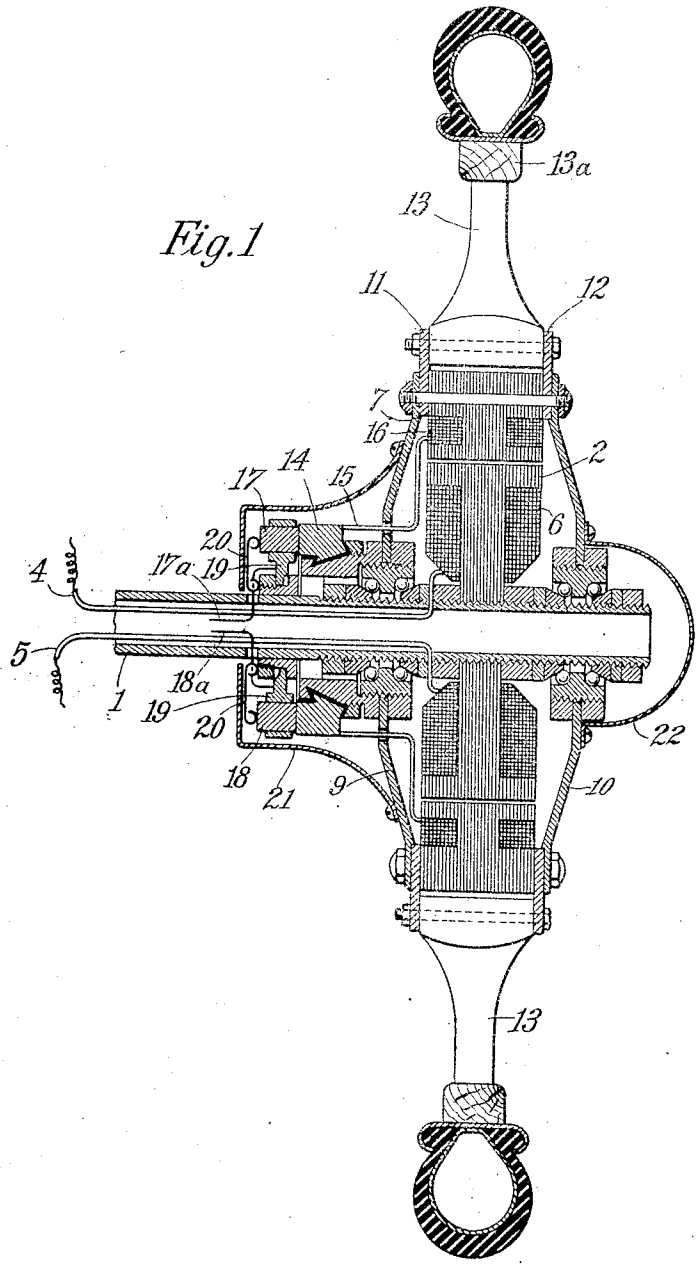
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1,093,149.

Patented Apr. 14, 1914.

2 SHEETS—SHEET 1.

Fig. 1



Witnesses:
Louis J. Schilling
A. D. Dunham

E. W. Schneider, Inventor

By his Attorneys
Kerr, Page, Cooper & Haymond

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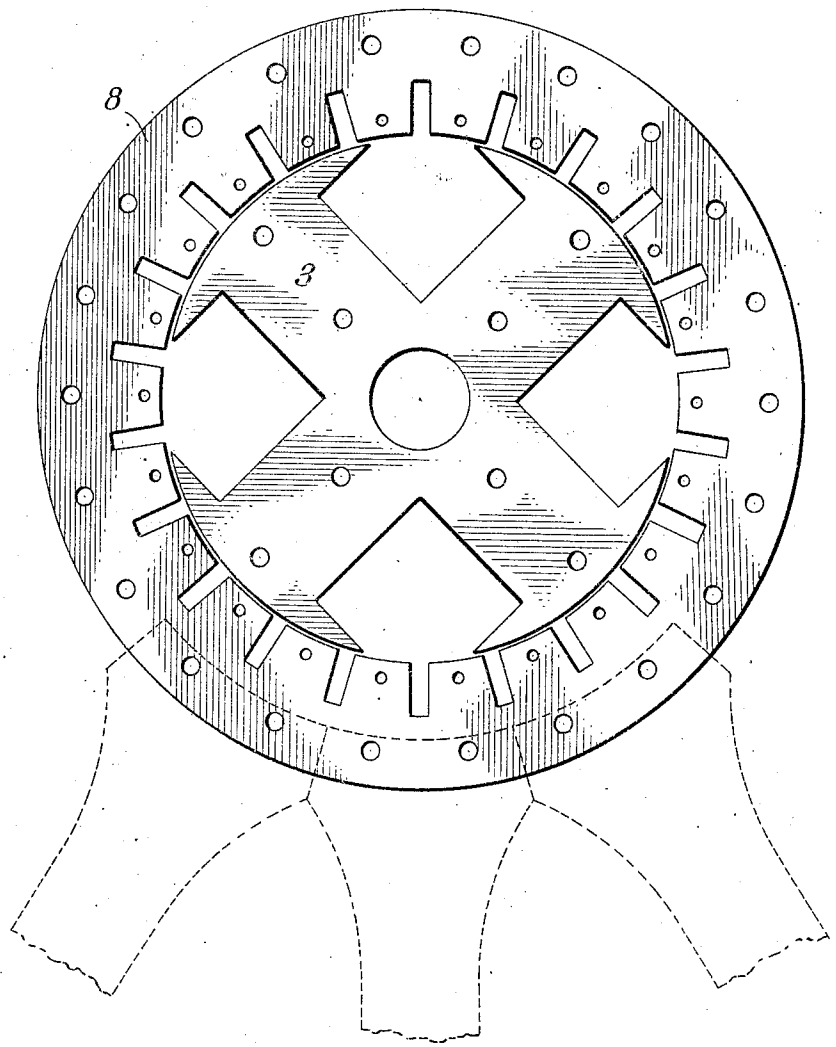
DRIVING MECHANISM FOR ELECTRICALLY PROPELLED VEHICLES.

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2 SHEETS—SHEET 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

EUGENE W. SCHNEIDER, OF NEW YORK, N. Y.

DRIVING MECHANISM FOR ELECTRICALLY-PROPELLED VEHICLES.

1,093,149. Specification of Letters Patent. Patented Apr. 14, 1914.

Application filed May 31, 1910. Serial No. 564,101.

To all whom it may concern:

Be it known that I, EUGENE W. SCHNEIDER, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Driving Mechanism for Electrically-Propelled Vehicles, of which the following is a full, clear, and exact description.

In the construction of electrically propelled automobiles the usual practice heretofore has been to mount the driving motor or motors on the body of the vehicle and transmit the power thereof to the driving wheels through the instrumentality of transmission gearing.

My present invention is designed primarily to do away with such transmission gearing, and to this end I make the driving motor, or each driving motor, a part of the wheel which it drives. This construction is thus advantageous not only in avoiding complicated and costly transmission mechanism and the concomitant loss of power therein, but also in affording a more flexible speed control with economical use of power, since the speed of the vehicle can be varied by the well known series-parallel control, and by cutting out one or more of the motors, when more than one motor is employed.

A convenient and efficient embodiment of the invention is illustrated in the annexed drawings, in which—

Figure 1 shows the combined driving wheel and motor in section. Fig. 2 illustrates the punchings or laminæ of which the field and armature cores are built up.

The axle 1, on which the driving wheel shown in Fig. 1 is mounted, is non-rotatably secured to the vehicle body in any convenient manner, and the field element of the motor, designated by 2, is rigidly fixed on the axle. The field core is preferably of the laminated type, built up of punchings such as are shown at 3, Fig. 2, bolted together in the customary manner. The axle is preferably tubular, and the field leads 4, 5, extend through the same to the field winding 6. The armature, 7, surrounds the field instead of being surrounded by the field, and is also of the laminated type, built up of punchings 8, Fig. 2. The driving wheel comprises a pair of convex plates 9, 10, between which the armature is rigidly mounted, these plates being rotatably mounted on the axle in any suitable way, as by means of the ball bearings shown. At the periphery of these plates, which in effect constitute the hub of the wheel, are two flat rings 11, 12, secured between the armature and the plates, and between the rings the spokes 13, carrying the felly 13^a, are secured in any suitable manner.

The commutator 14 is carried by the plate 9, on the inner side of the wheel, and its bars are connected by taps, as 15, to the proper portions of the armature winding 16. The carbon brushes 17, 18, are slidably mounted in a carrier or holder 19 on the axle 1 and are pressed against the side of the commutator by tension springs 20. The connections of the brushes to the motor circuit of course depend upon the type of the motor, whether series, shunt, or compound. The brush leads, 17^a, 17^a, may be led out through the tubular axle, as shown. A cap 21, detachably fastened to the hub-plate 9, protects the commutator and associated parts from dust, etc., and a cap 22, removably mounted on the hub-plate 10, performs a similar function at the other side of the wheel.

From the foregoing it will be seen that the wheel, being rigidly connected to the revolving element of the motor, revolves therewith; the electric power of the source of current, to which the motor is connected, being translated into mechanical power in the wheel without the employment of mechanical transmission devices such as gears, sprockets and chains, etc., with their concomitant losses.

It is to be understood that the construction herein specifically shown and described is merely the preferred form of the invention, which is capable of various other embodiments without departure from its proper spirit and scope.

I claim:

The combination with a non-rotatable vehicle-axle; of a field magnet rigidly mounted on the said axle; a hub comprising plates or disks rotatably mounted on the axle at opposite sides of the said field magnet, the disks being oppositely convex; an armature encircling the field magnet, between the said disks at the periphery thereof, and having a core composed of laminæ or plates perpendicular to the axle; flat binding rings on opposite sides of said core, between the same and the respective disks;

said rings extending radially beyond the edges of the disks and the outside of the armature core; binding bolts at the periphery of the disks, extending through the disks, the binding rings, and the laminæ of the armature core to bind all said parts firmly together; radial spokes having their inner ends arranged between the binding rings; binding bolts extending through the binding rings and the inner ends of said spokes to bind the same firmly between the rings; and a felly carried by the outer ends of the spokes.

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

EUGENE W. SCHNEIDER

Witnesses:

M. LAWSON DYER,

S. S. DUNHAM.