(No Model.)

C. E. NORTON.

CAR WHEEL GRINDING MACHINE.

No. 596,336. Patented Dec. 28, 1897.

Fig. 1.

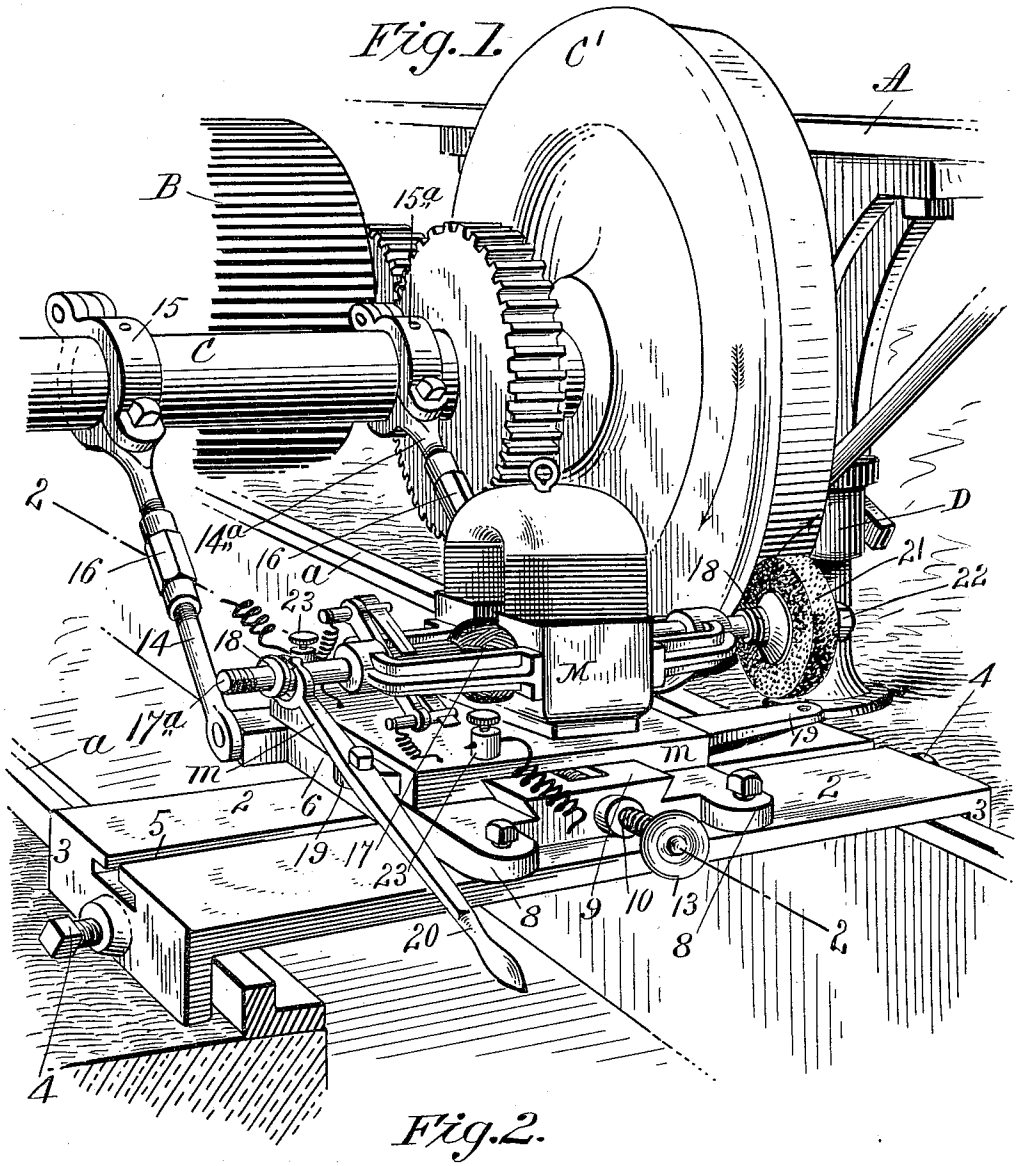
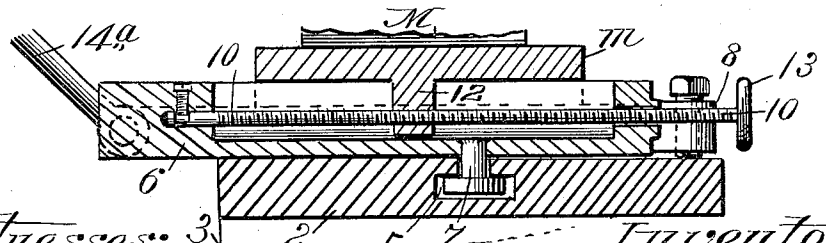


Fig. 2.



Witnesses:
J. A. Gaspfield
H. D. Clemons

Inventor
Charles E. Norton
by Chapin & Co
Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES E. NORTON, OF MANCHESTER, CONNECTICUT.

CAR-WHEEL-GRINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 596,336, dated December 28, 1897.

Application filed May 10, 1897. Serial No. 635,786. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. NORTON, a citizen of the United States, residing at Manchester, in the county of Hartford and State of Connecticut, have invented new and useful Improvements in Car-Wheel-Grinding Machines, of which the following is a specification.

This invention relates to car-wheel grinders, and more particularly to a machine of this class for grinding the wheels of electric cars, the object of the invention being to provide a grinding-machine adapted to grind the wheels of cars without removing the axles from the trucks; and the invention consists in the construction of the machine, as hereinafter described and claimed.

In the drawings forming part of this specification, Figure 1 is a perspective view of my improved grinding-machine, shown in operative relation to the wheel of an electric car. Fig. 2 is a longitudinal section through the base and bed-plate of the machine on line 2 2, Fig. 1.

Referring to the drawings, A represents a portion of a truck of an electric car; B, a portion of the motor having the usual gear connections to the axle C, on which the car-wheel C′ is secured. In Fig. 1 these parts of the car are shown in position over a pit, such as is ordinarily used in the repair-shops. *a a* represent the rails on which the car rests, the truck being shown raised out of contact with said rails by means of a jack-screw D. 2 represents a metal bed-plate extending over said rails *a* and having the downturned ends 3, in which set-screws 4 are located, by means of which said bed-plate is secured to the rails. A slot 5, T-shaped in cross-section, is located in said bed-plate 2 and extends from end to end thereof.

6 represents the base of the grinding-machine, in which is a stud 7, projecting downwardly from the under side thereof and having a suitable head thereon for engagement with said slot 5 in the bed-plate 2. Said base has a sliding movement lengthwise on said bed-plate 2 and is rotatable thereon on its said stud 7 to any desired degree. On the end of said base 6, lying over said bed-plate 2, two lugs 8 are cast, through which suitable set-screws may be screwed down into engagement with the upper surface of the bed-plate to lock said base 6 in any desired position thereon. On said base 6 is a slideway 9, having undercut edges, with which the base-plate *m* of the motor M has a sliding engagement substantially at right angles to the axle C. Said sliding movement is imparted to said base-plate and motor by a feed screw-rod 10, engaging with a stud 12 on the under side of said base-plate and projecting downwardly therefrom into a suitable slot in the base 6 between the sides of said slideway 9, one end of said screw being rotatably secured in said base-plate and the opposite end thereof provided with the hand-wheel 13.

On each side of the base 6, nearest to the axle C, are pivotally secured two arms 14 14ª. The opposite ends of said arms are provided with suitably-hinged connections 15 15ª for engagement with the axle C, said arms being made each of two sections and united by turnbuckles 16, whereby the length of each may be increased or diminished, as desired.

On the base-plate *m* is secured the motor M. Said motor may be one of any of the well-known constructions, the armature 17 thereof being suitably supported, as shown, whereby it may be given an endwise motion in its bearings through the field-magnet, and for that purpose a grooved collar 18 is fixed to the armature-shaft 17ª near each end thereof. Two lugs 19, on opposite sides of the base 6, are provided, on which may be pivoted a lever 20, the forked end of which engages with said grooved collar 18 for imparting to said armature-shaft 17ª its endwise motion. An emery-wheel 21 is secured on the end of said armature-shaft 17ª, in the usual manner, between suitable flanges, a nut 22 screwing onto the end of the armature-shaft 17ª to hold said emery-wheel in place. The grooved collars 18 serve as a shoulder against which the inner flange of said emery-wheel abuts when the nut 22 is screwed up to clamp said wheel to the end of the armature-shaft. In this construction the commutator of the armature 17 is made of sufficient length to permit of the endwise movement of said armature, as described. Suitable electric connections are made between the binding-posts 23 on the base-plate *m* with some convenient source of electricity, and suitable connections between

said posts and the commutator-brushes are also provided, whereby said armature 17 is made to rotate at suitable speed.

The operation of my invention is as follows: The end of a car-truck in which the wheel C′ is located (the tread of which is to be ground) is first raised off of the rails *a* in any convenient manner. The bed-plate 2 is then placed on the track substantially parallel with the axle 3 and in such position as will bring the face of the grinding or emery wheel 21 in proximity to the tread of the car-wheel. The arms 14 14ª are then connected to the axle, as described, and the bed-plate 2 is secured to the rails by turning up the set-screws 4. The armature-shaft 17ª is then brought into parallelism with the tread of the car-wheel by means of the turnbuckles 16 on the arms 14 and 14ª, and the base 6 is then secured to the bed-plate by means of the set-screws in the lugs 8 on said base. By manipulation of the feed screw-rod 10 in the base 6 the base-plate *m* of the motor and all of the parts secured thereto may be moved toward and from the axle C, and the grinding or emery wheel 21 having been set in motion by switching the current into the motor M the operator, by grasping the lever 20 and the feed screw-rod 10, may grind the face of the tread of the car-wheel, as desired, the latter having been set in motion at slow speed by its own motor and in a direction contrary to the direction of the rotation of the grinding-wheel. If desired, the arms 14 and 14ª may be removed after the device has been set in proper position for grinding the tread of a wheel. Furthermore, in some cases only one of said arms may be required to make the necessary adjustment or to act as an additional support for maintaining the proper relative positions of the grinding mechanism and the car-wheel during the operation of grinding.

Should it be desired to grind the wheel on the end opposite to that shown in the drawings, the base 6 is moved on the bed-plate 2 toward the other of said wheels and the emery-wheel 21 placed on the opposite end of the armature-shaft to that shown in the drawings and the lever 20 removed to the opposite side of the base-plate *m* and connected with the collar 18 on that side.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A machine for grinding car-wheels and for analogous purposes, consisting of a bed-plate, a base movable longitudinally, and rotatable thereon, a base-plate having an electric motor secured thereto, means for moving said plate transversely on said base, an armature-shaft for said motor which has an endwise movement in its bearings, a grinding-wheel, means for securing said wheel to either end of said shaft, and means on the latter for imparting thereto said endwise movement, substantially as described.

2. In combination with a suitable track and a car therefor, a car-wheel-grinding machine consisting of a bed-plate secured transversely across said tracks, a base for said grinding-machine movable longitudinally, and rotatable on said bed-plate, means for securing said base to the latter, an electric motor secured to a suitable base-plate which plate has a sliding engagement on said base toward and from one of the axles of said car, an armature and shaft for said motor having a sliding endwise movement through the field-magnet, a grinding-wheel on one end of said armature-shaft, means for imparting said sliding movement to said shaft, and suitable electric connections between said motor and a source of electricity, and means for rotating the weeels of said car, substantially as described.

CHARLES E. NORTON.

Witnesses:
WM. H. CHAPIN,
K. I. CLEMONS.