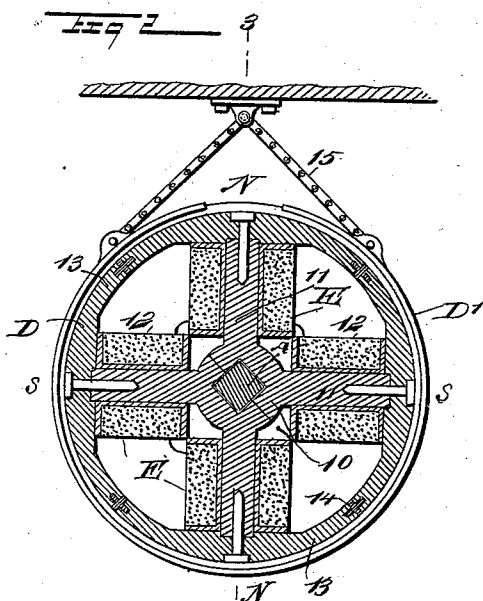
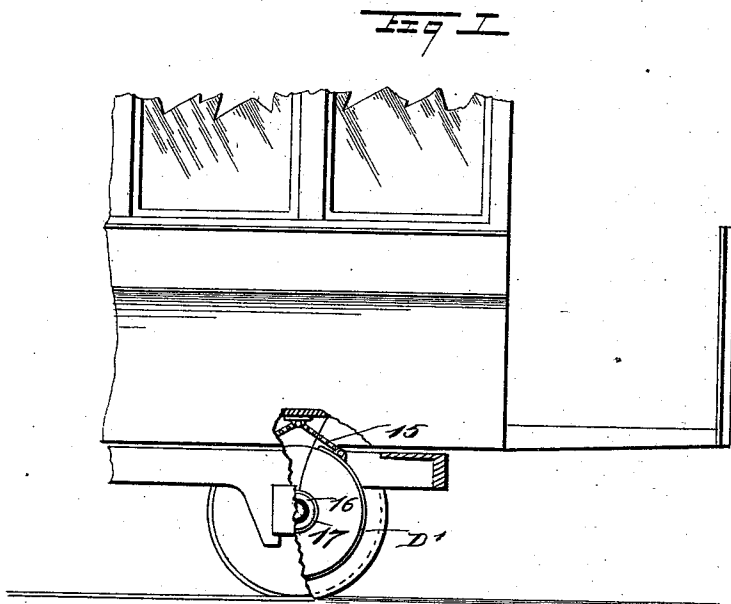


(No Model.)

B. DAVIS.
ELECTRIC FRICTION BRAKE.

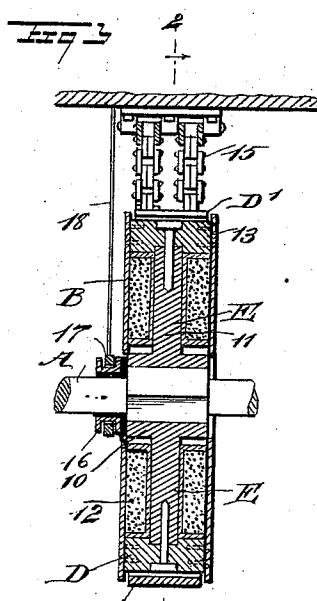
No. 526,966.

Patented Oct. 2, 1894.



WITNESSES:

H. Walker
W. A. Acker



D' INVENTOR

B. Davis

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

BERGEN DAVIS, OF NEWARK, NEW JERSEY.

ELECTRIC FRICTION-BRAKE.

SPECIFICATION forming part of Letters Patent No. 526,966, dated October 2, 1894.

Application filed March 28, 1894. Serial No. 505,462. (No model.)

To all whom it may concern:

Be it known that I, BERGEN DAVIS, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Electric Friction-Brake, of which the following is a full, clear, and exact description.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation, partly in section, of a portion of a car having the improvement applied thereto. Fig. 2 is a vertical section taken through the brake in direction of its width, and practically on the line 2—2 of Fig. 3; and Fig. 3 is a vertical section taken at right angles to the section shown in Fig. 2, essentially on the line 3—3 of said figure.

The brake is adapted to be secured upon the axle A of the vehicle, and may be within a casing B, which casing may consist of two plates or disks placed at suitable distances apart, attached to the side peripheral surface of the brake and insulated to totally disconnect the same from the axle.

The brake may be said to comprise a drum D, and a strap or shoe D' adapted for engagement with the periphery of the drum. The drum comprises a metal hub 10, by means of which it is attached to the car axle, arms or blocks 11 radiating from the hub, which in connection with the bobbins 12 carried by the arm form electro magnets E, and a peripheral or circumferential surface constructed in segments 13, each segment being a pole piece. The spokes or arms are magnetized by the bobbins, and each arm is connected with and supports a pole piece. The pole pieces are separated from each other by intervening diamagnetic blocks, connecting bars or plates 14, brass or copper being preferably employed. The strap D' loosely surrounds the periphery of the drum so that the drum may be revolved with but little friction. In the drawings, chains 15 are illustrated as attached to the strap near its ends,

and to a fixed support, the car truck for example, holding the strap in proper position. The bobbins are so wound that the consecutive poles shall be of opposite sign, as indicated by the letters "N" "S" in Fig. 2.

Connection may be made between the source of electrical supply and the drum, by securing a flanged ring 16 upon the axle, and insulated from it. This ring is surrounded by a second ring 17, which is connected to a wire 18 leading to a controlling box, for example. The current is led to the bobbins through the ring commutator 17, and then passes through the wheels to the earth. When the current is turned on, the magnetic circuit will go from one pole piece to the next, but as they are separated by the diamagnetic coupling the flux will be through the surrounding band D', thus increasing the force with which it is attracted and producing a maximum of friction. The amount of breaking effect from a gentle friction up to locking the wheels, is controlled by a rheostat on the platform of the car similar to those now in use for controlling currents to motors.

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

1. The combination with a rotatable axle, of a drum mounted fast thereon, the same consisting of a metal hub and radial arms, and a peripheral portion formed of separate sections attached to said arms and insulated from each other, bobbins placed on the arms, a magnetizable strap surrounding such drum, and an electrical circuit extending through said bobbins, as shown and described.

2. In an electric brake, the combination, with a magnetized drum consisting of a periphery composed of pole pieces separated from one another by diamagnetic material, and electro-magnets connected with the pole pieces having consecutive pole pieces of opposite polarity, of a metallic strap or shoe held for attraction to and for frictional engagement with the drum, the drum being adapted to be revolved, substantially as and for the purpose specified.

BERGEN DAVIS.

Witnesses:

G. D. VAN ARSDALE,
A. VAN ARSDALE.