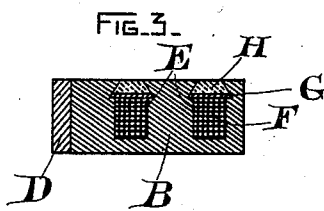
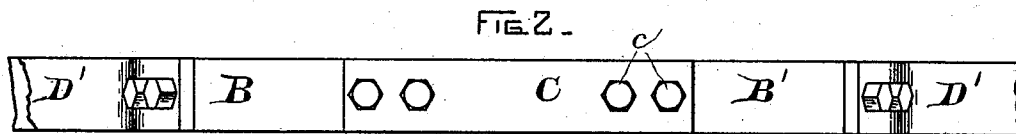
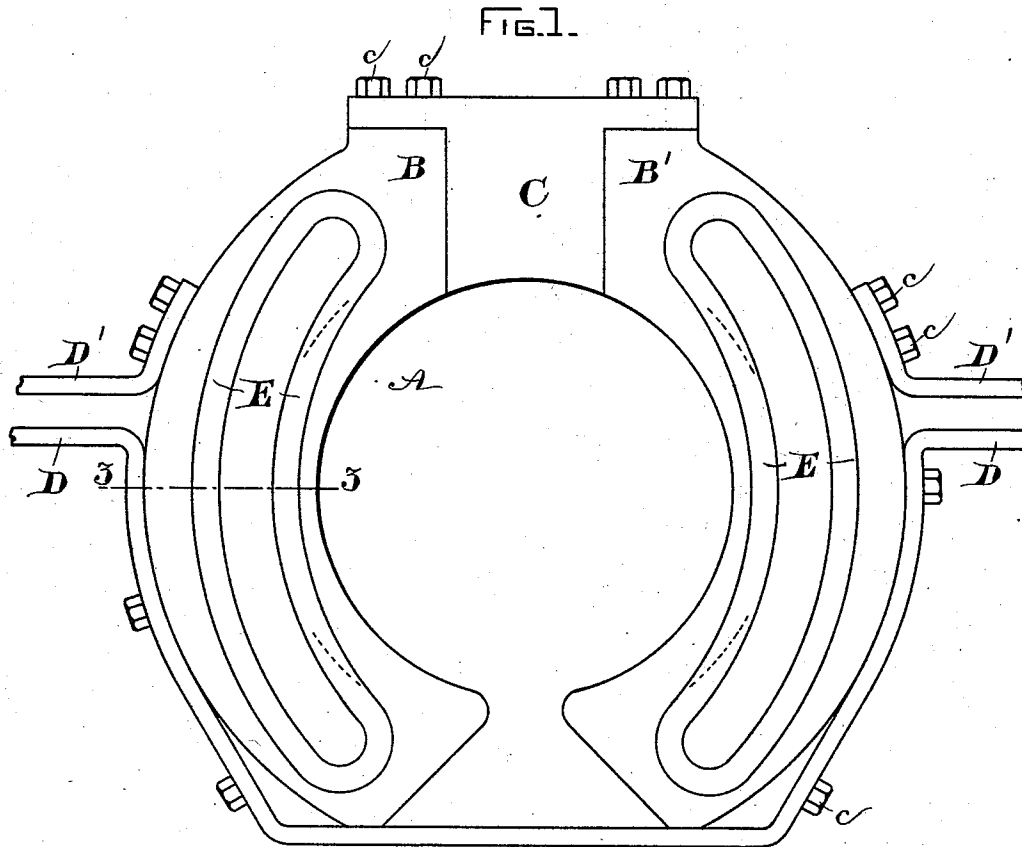


(No Model.)

W. G. CAREY.
BRAKE SHOE.

No. 539,855.

Patented May 28, 1895.



WITNESSES.

A. F. Macdonald.

B. B. Hill.

INVENTOR.
William Gibson Carey,
by
Geo. R. Blodgett,
Att'y.

UNITED STATES PATENT OFFICE.

WILLIAM GIBSON CAREY, OF SCHENECTADY, NEW YORK, ASSIGNOR TO THE
GENERAL ELECTRIC COMPANY, OF NEW YORK.

BRAKE-SHOE.

SPECIFICATION forming part of Letters Patent No. 539,855, dated May 28, 1895.

Application filed March 4, 1895. Serial No. 540,413. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GIBSON CAREY, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

My invention relates to electric brakes and the brake-shoes employed in such apparatus; and has for its object to so improve the construction of shoes of the class described, as to prolong their life and render their friction coefficient more uniform when in use.

To attain the ends pointed out, I construct my improved brake-shoe as shown in the accompanying drawings, with the coil chambers not concentric with the shoe.

The ordinary form of brake-shoe used in electric brake apparatus consists of a C-shaped friction member provided with coils, which, when energized, strongly magnetize the shoe. This is the fixed member, and has an abutment preventing its rotation at some point upon the car. Co-operating with it is a disk affixed to the axle and rotating with it, against which the brake-shoe bears when current is passed through it; and the magnetic attraction, by causing friction between the two surfaces sliding upon one another, acts to bring the car to a standstill.

In shoes of the class described, it has been customary to lay out the coil chambers concentric with the shoe. This however has disadvantages. These coil chambers are ordinarily surfaced over with some softer metal than iron, which is melted and poured in place after the coils are inserted. As a consequence, the iron faces of the shoe wear the surface of the disk with which they co-operate into a series of grooves, while the softer metal over the coils does not wear the disk, and as a consequence projections are formed between the grooves just referred to. The adhesion between the surfaces is thus in part destroyed or rendered uncertain, and air can be admitted between the co-operating parts to serve as a lubricant and thus further diminish the efficiency of the apparatus. It is to remedy these difficulties that I have devised my invention, which is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a brake-shoe of the general type described. Fig. 2 is a plan of the shoe, and Fig. 3 is a section upon the line 3 3 of Fig. 1.

A is the shoe. B, B' are cast-iron segments thereof, and C is a block or piece connecting the two segments. This block may be of any metal, either of iron or of some non-magnetic metal. Bolts c, c, &c., unite the parts of the shoe. D, D' are parts of the frame, preferably of wrought iron, carrying the cast-iron segments. All this forms no part of my invention.

E, E are the coil chambers which, as shown, are non-concentric with the segments of the shoe. The general form of these chambers is shown in section in Fig. 3, wherein F represents the coil. G is a sheet of suitable insulation therefor, and H the soft metal poured in the under-cut groove, serving to secure the coils in place.

Referring further to Fig. 1, the dotted lines show the course taken by any given point upon the co-operating disk. It will be seen that this is across the coil chamber from one side to the other, and the tendency of the grinding action is to keep the two surfaces flush and to diminish the evils which I have pointed out in my description.

While I have shown the coil chambers curved, it is manifest that if the sizes of the brake-shoe and coils be suitably selected, these coil chambers might be straight without affecting the essence of my invention. I have therefore used in the description the word "non-concentric" in preference to the word "eccentric," as indicating the fact that the path of a point on the disk will not register with the length of the coil chamber, whether this be obtained by making the coil chambers on a curve with a different center from the brake-shoe, or by making them straight.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. As a new article of manufacture, a substantially circular brake-shoe for an electric braking apparatus, having coil chambers sunk in the metal of the shoe non-concentric with its axis of rotation.

2. As a new article of manufacture, a segment of a built-up brake-shoe for an electric

55

60

65

70

75

80

85

90

95

100

braking apparatus, having coil chambers non-concentric with the radius of the segment.

3. As a new article of manufacture, a brake-shoe for an electric braking apparatus, composed of a framework supporting iron segments, provided with coil chambers, the coil chambers non-concentric with the segments.

In witness whereof I have hereunto set my hand this 19th day of February, 1895.

WILLIAM GIBSON CAREY.

Witnesses:

T. J. JOHNSTON,
A. F. MACDONALD.