

No. 665,404.

Patented Jan. 8, 1901.

E. P. CARPENTER.
ELECTROMAGNETIC BRAKE.

(Application filed Sept. 9, 1899.)

(No Model.)

Fig. 1.

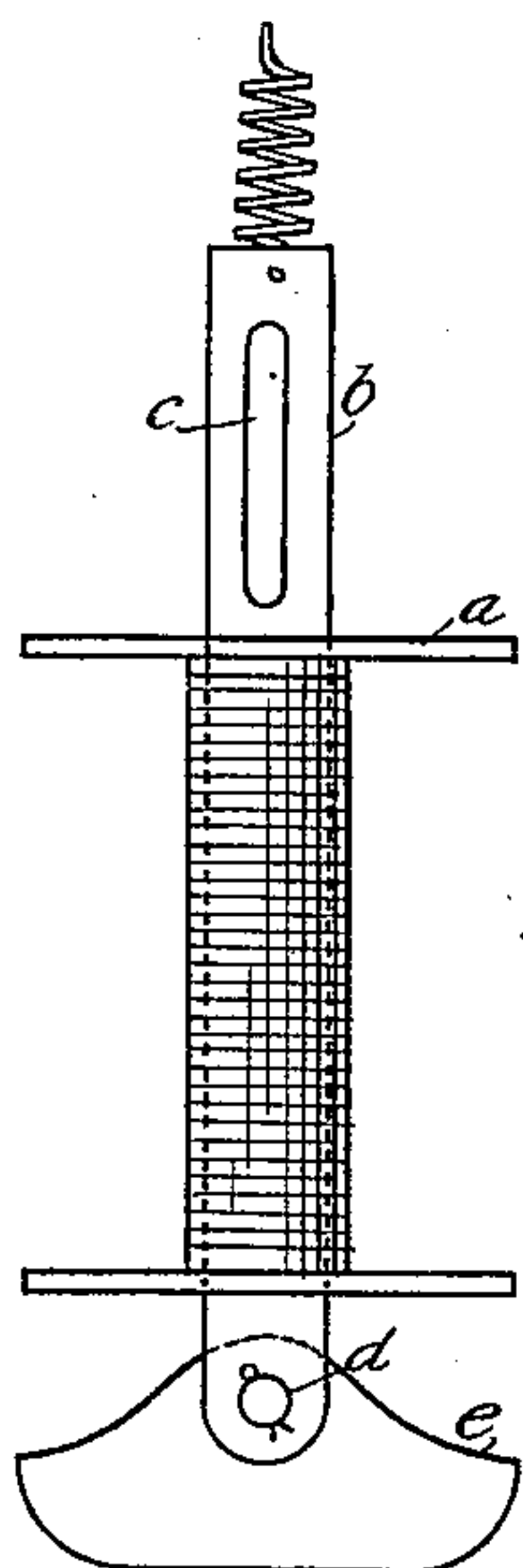
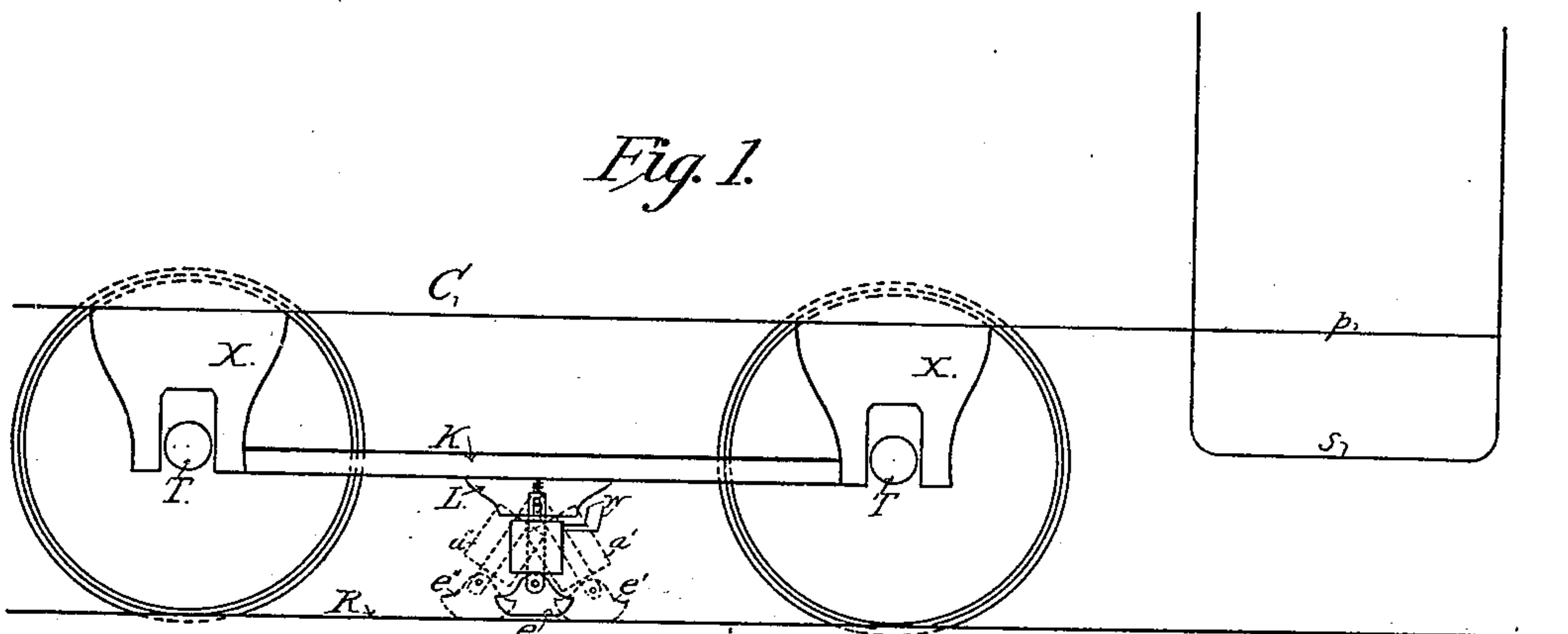


Fig. 2.

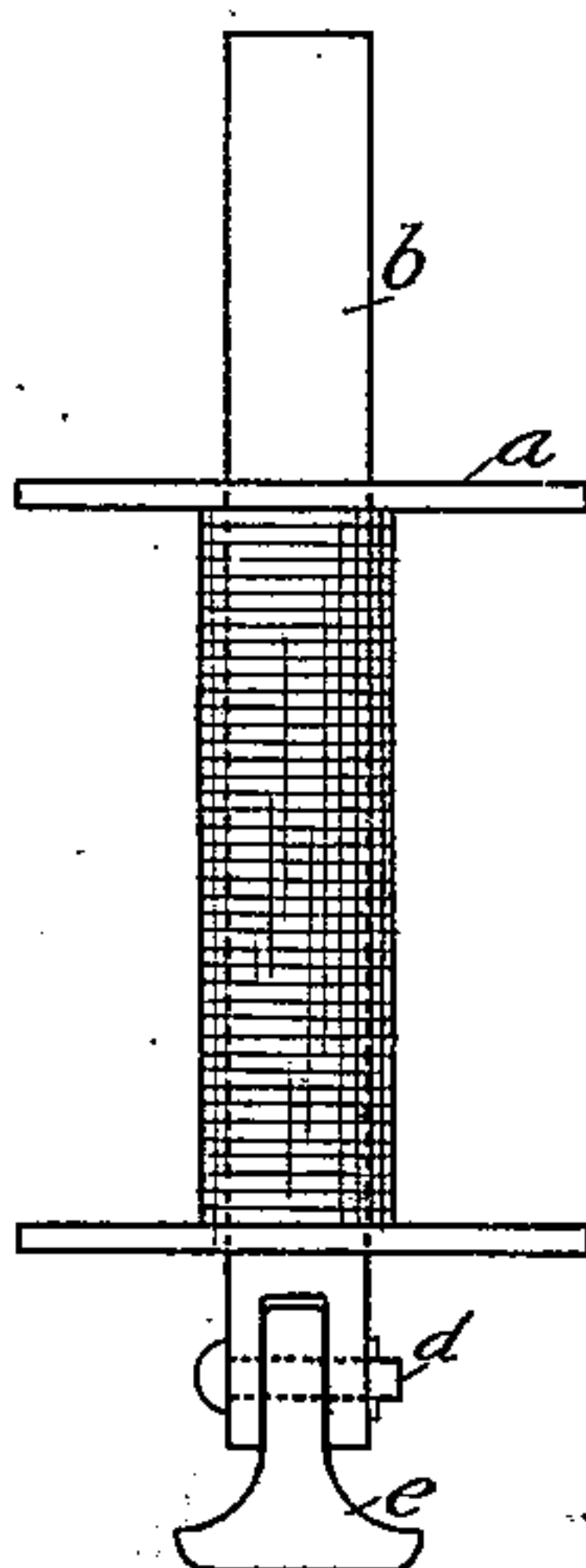


Fig. 3.

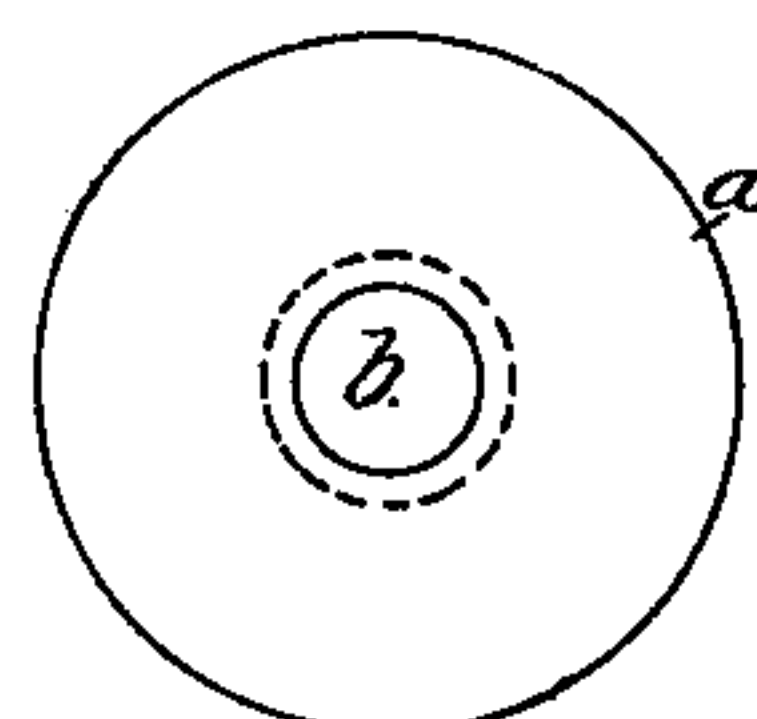


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

EDWIN P. CARPENTER, OF PAWTUCKET, RHODE ISLAND.

ELECTROMAGNETIC BRAKE.

SPECIFICATION forming part of Letters Patent No. 665,404, dated January 8, 1901.

Application filed September 9, 1899. Serial No. 730,043. (No model.)

To all whom it may concern:

Be it known that I, EDWIN P. CARPENTER, a citizen of the United States, and a resident of the city of Pawtucket, county of Providence, State of Rhode Island, have invented a certain new and useful Electromagnetic Brake, of which the following is a specification.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation illustrating the application of the brake to a car. Fig. 2 is an enlarged detail view, also in side elevation, of the rod and brake-shoe. Fig. 3 is a view at right angles to Fig. 2. Fig. 4 is a plan view, and Fig. 5 is a detail illustrating the lifting-spring.

The electromagnetic brake is the combination of a bar of soft iron, the size of said bar for an ordinary single electric passenger-car being two and one-half inches in diameter by eighteen inches long, (for a larger car, dimensions adjusted accordingly,) and the said bar of soft iron is to be wound with No. 28 magnet-wire, (where is five hundred volt pressure,) using ten inches of space, (where bar is eighteen inches long,) leaving four inches at each end of bar clear. The said coil of magnet-wire wound around said iron bar is to be wound for two hundred and fifty or five hundred volts pressure where such is the voltage or for any other voltage, and attached to one end of said bar is a steel or iron shoe which forms base of bar or magnet, and said shoe is twenty-four inches long by two inches wide, (for an ordinary single electric passenger-car,) the said shoe being detachable from said bar by means of a bolt so adjusted as to leave said shoe freedom of rotary motion, and at the upper end of said upright bar is a slot two inches long by one and one-fourth inches wide, and said upright bar is attached to a hanger, said hanger being attached to truck of car directly above track of iron or steel, and said upright bar being secured to said hanger by means of a bolt six inches long and one and one-fourth inches wide or in diameter passing through said slot and hanger, said bolt being for the purpose of allowing said upright bar, with the shoe attached, to be kept drawn up from the track when not in action as a brake, and also allow said upright bar

to swing in the same plane as the track, and the said upright bar at the top is to be secured by means of a spring or springs to the hanger, so as automatically to keep said upright bar and shoe clear from track when not in operation for braking. Connection is made with the magnet-wire coil or winding at the top or ends of said coil, thus receiving an electric current either from a rheostat or controller or a special reserve power for the operation of the brake or by storage batteries placed under the platform or other convenient point of the car, and by introducing said electric current into said described apparatus the upright bar and shoe are magnetized and by magnetic force drawn to track, the track thus becoming the armature for the said brake, and thus making an electromagnetic brake.

The object of the magnetic brake is to furnish a brake positive and sure in its action, as nothing can interfere with the electromagnetic action, and it is intended to brake an electric car or any car, especially on grades on a slippery rail caused by snow, hail, ice, rain, fog, leaves, or vegetable matter.

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

1. In combination with a car-truck, a vertically-disposed bar of soft iron having a pivotal connection between its upper end and the truck, said connection permitting also vertical movement of the bar, a brake-shoe also of soft iron pivotally connected to the lower end of said rod and a magnet-coil encircling said bar, substantially as described.

2. In combination with a car-truck, a bracket carried thereby, a vertically-disposed bar of soft iron having a slotted upper end, a pin passing through said slot and securing said bar to the bracket, a brake-shoe swiveled to the lower end of said bar, a spring exerting an upward tension on said bar and a magnet-coil on said bar, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

EDWIN P. CARPENTER.

Witnesses:

ARCHIE ELLIS,
WILMORE A. WINSTON.