

(No Model.)

F. E. MAGEE.
ELECTRIC LIGHTING MECHANISM FOR BICYCLES.

No. 572,430.

Patented Dec. 1, 1896.

Fig. 1.

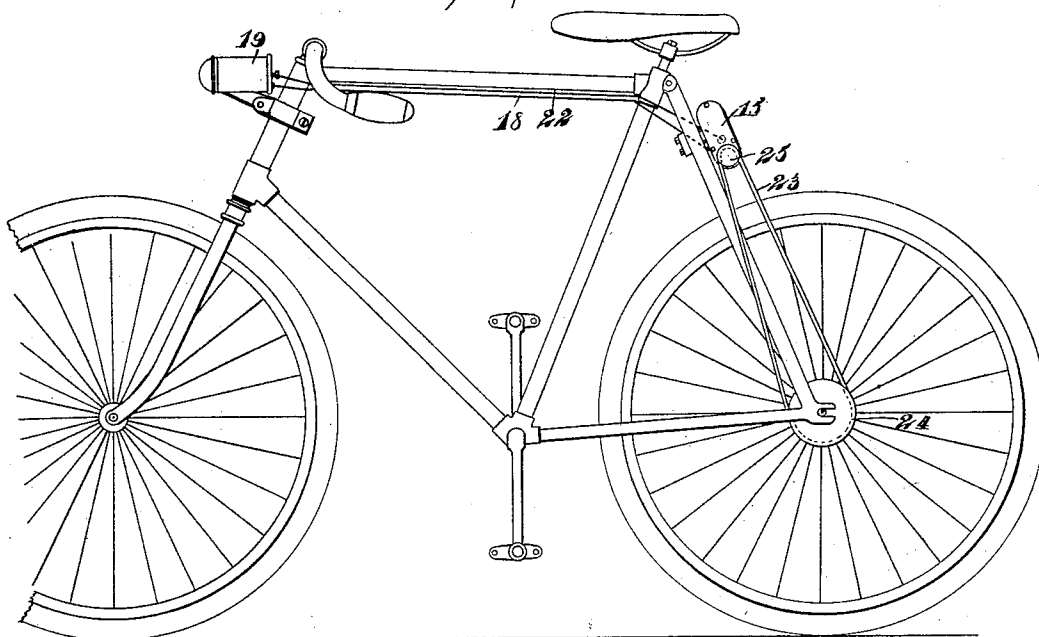
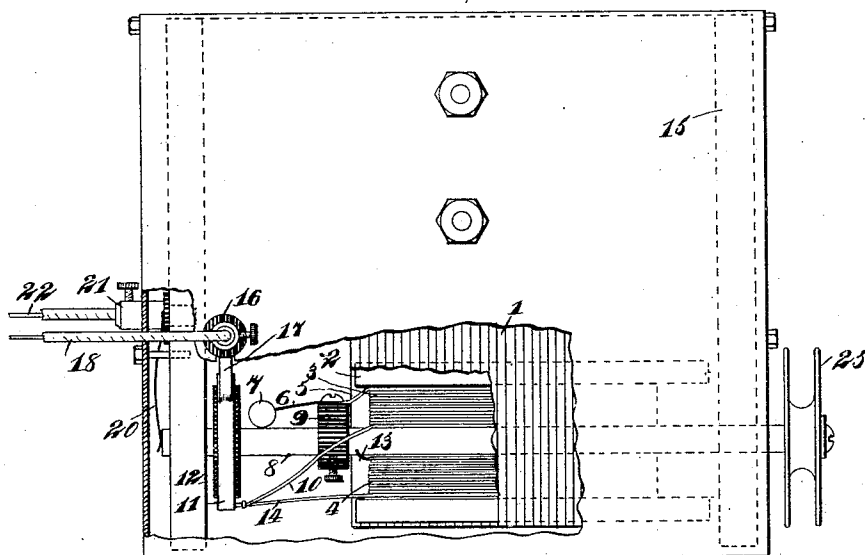


Fig. 2.



WITNESSES:

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ELECTRIC-LIGHTING MECHANISM FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 572,430, dated December 1, 1896.

Application filed March 25, 1896. Serial No. 584,852. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS E. MAGEE, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Electric-Lighting Mechanism for Bicycles, of which the following is a full, clear, and exact description.

This invention relates to devices for the electric lighting of bicycles or similar vehicles, and a main object is to provide a simple mechanism whereby the current from the generator to the lamp may be cut off or governed to prevent fluctuations or the burning out of a lamp by an overload of current, and a further object is to provide means whereby the generator-armature may be driven from a rotary part of the bicycle.

I will describe a device embodying my invention and then point out the novel features in the appended claims.

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

Figure 1 is a side elevation of a bicycle, showing my invention as applied thereto; and Fig. 2 is an elevation of a generator, with portions broken away to more clearly show the other parts.

In carrying out my invention I prefer to employ a generator for the electric current, comprising a field 1 of permanent magnets and an armature 2, shuttle-wound in two independent sections 3 4. From the section 3 a terminal 5 leads to a connection with a spring-arm 6, having at its free end a weight 7, normally in engagement with the armature-shaft 8 and designed to serve as a governor, as will be more fully explained hereinafter. The spring-arm 6 is attached to a block 9 of insulating material secured on the shaft 8. A terminal 10 also leads from the section 3 to a connection with a collector-ring 11, mounted on the armature-shaft, but insulated therefrom. The collector-ring is here shown as secured to a disk 12 of insulating material mounted on the armature-shaft. The section 4 has a terminal 13 connecting with the shaft 8 and a terminal 14 connecting with the collector-ring 11.

The parts above described are mounted in a suitable casing 15, provided with fastening

devices by means of which it may be secured to the rear fork of a bicycle-frame, as indicated in Fig. 1.

From a binding-post 16 on the casing 15 a brush 17 extends to a connection with the collector-ring 11, and from this binding-post 16 a lead-wire 18 extends to a lamp 19, mounted on the front of the bicycle-frame. A resilient contact-finger 20 engages loosely at one end upon the outer end of the armature-shaft and has its opposite end connected to a binding-post 21, from which a lead-wire 22 extends to the lamp 19.

Rotary motion is imparted to the armature, as here shown, by means of a band 23, engaging around a grooved wheel 24, secured to the hub of the rear wheel of the bicycle. From the wheel 24 the band passes around a grooved pulley 25 on the armature-shaft 8. Preferably the grooves in the wheel and pulley will be made quite deep, so that there will be little or no danger of the band slipping off.

It may be here stated that the connections and windings of the two armature-sections are arranged in the same direction. This makes the armature equivalent to being wound with only one winding of the same number of turns out of wire twice the sectional area of that of each section-winding. At the normal speed, with the resistance of the armature connected as above described, the electromotive force of the generated current will be such as to light the lamp to normal candle-power.

If the speed becomes excessive, the weight 7 through centrifugal force will overcome the tension of the spring 6 and disengage itself from the armature-shaft, thus breaking the circuit through the leads 5 and 10, leaving the leads 13 and 14 only in operation. This will cause the internal resistance of the armature to be doubled, and thereby lessen the current available for the lamp, and thus prevent its burning out.

The device described will not add greatly to the weight of a bicycle, as most of the parts may be made of aluminium.

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

1. A generator for an electric-light cur-

rent, comprising a multiple-coil armature, a collector-ring on the armature-shaft, lead-wires extended from the coils to the collector-ring, a lead-wire extended from one of the
5 coils to the shaft, a lead-wire extended from the other of said coils to a resilient arm carried by the shaft, and having a weighted end normally in engagement with the shaft, and connections for carrying a current from the
10 collector-ring and shaft to a lamp, substantially as specified.

2. In a bicycle electric-lighting mechanism, the combination with a lamp carried by the bicycle, a generator, carried by the bi-
15 cycle and having a multiple-coil armature rotated from the rear wheel of the bicycle, a collector-ring mounted on but insulated from

the armature-shaft, connections between the two coils and collector-ring, a wire connection between one of the coils and the shaft, a
20 block of insulating material mounted on the shaft, a spring secured to said block, a weight on said spring normally in engagement with the shaft and serving as a current-governor, a connection between said spring and a coil
25 of the armature, a brush in engagement with the collector-ring, a spring-contact in engagement with the shaft, and wire connections between the brush and contact and the lamp, substantially as specified.

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Witnesses:

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