

L. W. COE.

Improvement in Carriages.

No. 123,809. *Fig. 5.*

Patented Feb. 20, 1872.

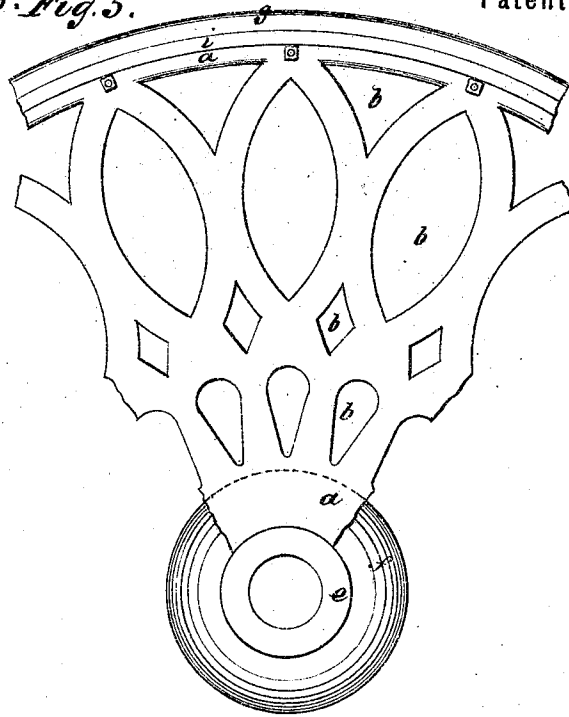


Fig. 7.



Fig. 6.

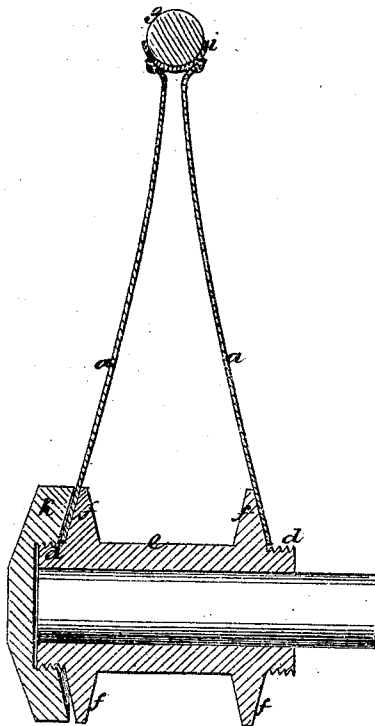
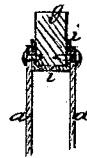


Fig. 8.



Witnesses:

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UNITED STATES PATENT OFFICE.

LAWRENCE W. COE, OF AUBURN, NEW YORK.

IMPROVEMENT IN CARRIAGES.

Specification forming part of Letters Patent No. 123,809, dated February 20, 1872.

To all whom it may concern:

Be it known that I, LAWRENCE W. COE, of Auburn, in the county of Cayuga and State of New York, have invented new and useful Improvements in Carriages; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention consists in the improvement of the frames and bodies of electrically-moved carriages, as hereinafter fully described and subsequently pointed out in the claims. The invention also consists in a novel arrangement of the steering apparatus. It also consists in certain improvements in the construction of the wheels; and it also consists in an arrangement of the brake, all as hereinafter described.

Figure 1 is a side elevation of a carriage having some of the improvements applied. Fig. 2 is a horizontal section of part of Fig. 1. Fig. 3 is a side elevation of the front part of a carriage having the improvements in steering apparatus applied. Fig. 4 is a perspective view of some of the steering apparatus. Fig. 5 is a side elevation of a section of a wheel. Fig. 6 is a transverse section of part of the wheel; and Figs. 7 and 8 are details showing slight modifications in the construction of the wheel.

Similar letters of reference indicate corresponding parts.

It is intended to provide carriages adapted for being propelled by magnetic engines directly applied to the hind axle to which the wheels are to be keyed, so that the turning axle will turn the wheels; and for so applying the engine—which in this example is indicated by A, Fig. 2—it is necessary that the frame D, to which the shell or frame of the engine must be connected, be arranged directly on the axle without springs, for any vibration of the engine, except with the axle, would interfere with the proper working of it. And as it is highly important that the body A' of the carriage be capable of springing, it is mounted at the rear on the springs B, which are mounted on the axle C independent of the frame D, which is also mounted on the axle but without springs; and at the front of the box or body it is hinged to the frame, as indicated at

E, and the front end of the frame is mounted on springs F, either by a forked standard G, in the case of a three-wheeled carriage; or by the supports H and the circular hounds I I', in the case of four-wheeled carriages.

In making very short turns in narrow streets where a carriage has to be backed up to the curbstone, it is necessary with carriages having the steering apparatus arranged in the common way, to turn the wheels nearly around a half-circle to bring them from where they stop in backing up to the right position for going forward; I therefore propose to have the hounds I I' circular and provide the lower one, I', which is supported on the springs F, with cogs all the way round, and mount the hand-shaft K and pinion l on the upper one, which is suspended rigidly from the carriage-frame, so that the wheels may be turned wholly around the axis M, by which, in such cases, they may be brought into the required position much quicker and by a shorter movement than when turned back in the ordinary way.

I propose to make the wheels of thin disks of sheet metal, preferably steel, *a a*, punching out the axial holes for the hub, and other places, as *b*, to remove all surplus metal and fit them on the ends *d* of a long hub, *e*, against the collars *f*, springing the disks very nearly or, in some cases, entirely together near the peripheries, which are beveled and curved outward for the reception of India-rubber tires *g*; being riveted together, as in Fig. 7, or attached to a concave or square grooved metal-tire, *i*, as in Figs. 6 8, in which the India-rubber tire *g* is placed. The said disks are clamped against the collars *f* by nuts *k*, screwing on the hub. This hub is preferably made of wrought-iron or steel and fitted up by turning in a lathe, but it may be made of malleable cast metal.

Instead of applying the brakes to the rims of the wheels, as is common in land-carriages, but which cannot well be done when India-rubber tire is used, I place a friction-wheel, N, on the axle C, and apply a friction-band, O, thereto, with actuating levers P and Q for working it; one end of said band being connected to the carriage-frame and the other to lever P in the usual way of arranging brakes of this character.

For convenience in applying and removing

the engine, the axle will be coupled together at R. It will also be coupled at S, and a clutch and shifting-lever will be provided for disconnecting one wheel from the other when turning sharp curves.

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

1. The carriage-frame D, mounted on springs F F in front and directly upon the axle behind, combined with a body, A', mounted on springs at the rear, hinged to the frame at the front, and supported by the axle independently

of the said frame, as and for the purpose specified.

2. The arrangement, with front-wheels, of the hound I, cogged hound I', springs F, pinion l, and hand-shaft k, whereby the wheels may be turned the whole way round, as set forth.

The above specification of my invention signed by me this 20th day of May, 1871.

LAWRENCE W. COE.

Witnesses:

GEO W. MABEE,
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