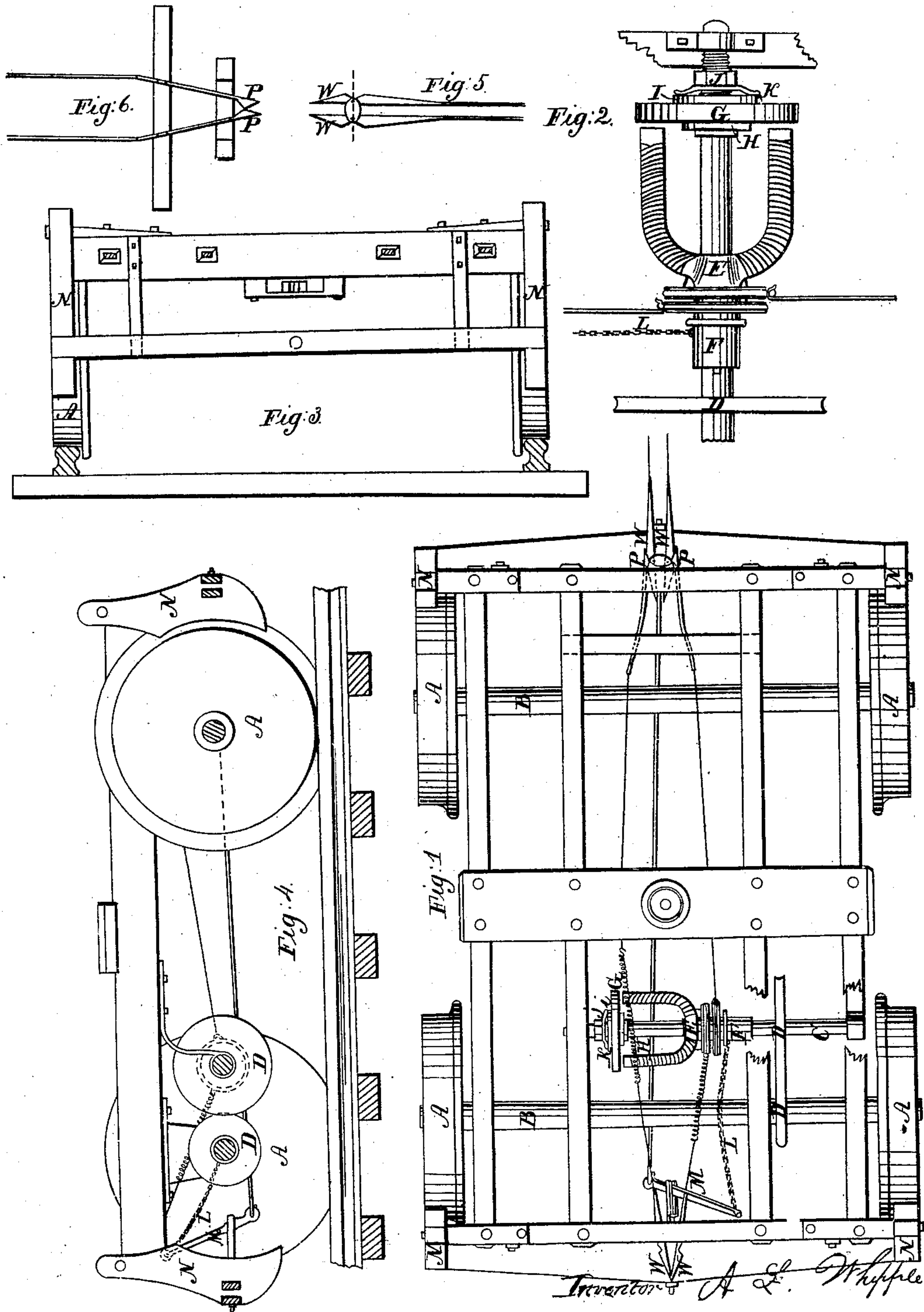


A. L. WHIPPLE.  
CAR BRAKE.

No. 22,213.

Patented Nov. 30, 1858.



# UNITED STATES PATENT OFFICE.

ASA. L. WHIPPLE, OF ELMIRA, NEW YORK.

## IMPROVEMENT IN RAILROAD-CAR BRAKES.

Specification forming part of Letters Patent No. 22,213, dated November 30, 1858.

*To all whom it may concern:*

Be it known that I, ASA L. WHIPPLE, of Elmira, in the county of Chemung and State of New York, have invented a new and improved method of impeding the speed of railway-trains, which consists in an improved mode of applying the motion of the train to the brakes by means of electro-magnetism; and I do hereby declare that the following, taken with the accompanying drawings, which form a part of my specification, is a full, exact, and minute description of my said invention.

Figure 1 in the accompanying drawings represents the truck of a railway-car completely rigged with a magnetic attachment by which the brakes are designed to be applied to the wheels in motion. Fig. 2 is an enlarged view of the magnetic attachment seen in Fig. 1. Fig. 3 is an end view of a truck with brake attached, showing the springs which throw the brakes away from the wheels when the applying-power is withdrawn. Fig. 4 is a side view of a truck, the outside of one wheel and the inside of another being shown, and the magnetic attachment as it appears underneath the frame upon which the body of the car rests. Figs. 5 and 6 represent the ends of the wires conducting the electric current, and show the manner in which they are connected, so that the current can be conducted through the whole length of a train of cars.

To enable others skilled in the art to make and use my invention, I will proceed to describe its operation and construction with reference to the accompanying drawings, designating the similar parts by letters wherever such parts are shown upon the six different figures.

Letter A represents car-wheels. B represents car-axles; C, an independent horizontal shaft; D D, friction-rollers or their equivalents, one fast to the axle of car-wheels and one to the independent shaft. Thus the axle and shaft will revolve together. The shaft C turns loosely within cylindrical part of the magnet E, whose axis is elongated at F. The shaft C passes through a circular armature of soft iron, G, which is confined between a shoulder or tight collar, H, and a loose collar, I, so

that the armature may be made tight or loose by means of a burr, I, and spring K, so that a pressure can be made or not against the armature, as circumstances may require.

It is intended that a galvanic battery shall stand upon the engine and be under the control of the engineer, and the wires passing from it shall communicate with every magnetic attachment upon the train, each car being furnished with one such attachment. Let the magnet be charged from the battery. It adheres to the armature G and revolves with it. This winds the chain L around the cylindrical part of the magnet, draws upon the lever M, causing the brake N to hug the wheels.

The power required on the brakes is controlled and regulated by the burr and spring.

The wires which have been referred to, the ends of which are shown in Figs. 5 and 6, are denoted by red lines in Figs. 1, 2, and 4, and the method by which they are prevented from being coiled around the shaft when it revolves, and by which the connection is kept good with the poles of the magnet, is by the use of four rings, two external and two internal. The internal rings are fast to the elongated part of the magnet, but are kept from contact with it by a non-conducting substance. One internal ring connects with the wire of one pole and the other connects with that around the other pole.

The manner of connecting the wires of one car with those of another and the manner of keeping up the metallic connection of the wire from the battery with the return-wire when part of the train is cut off, either by accident or intention, is shown by Figs. 5 and 6. Thus when the part W W of Fig. 5 is drawn from between the jaws of part P P those jaws spring together and make the electric circuit perfect, as before.

I do not claim as my invention the manner of securing the armature G to the shaft C by means of a loose collar and burr; but

I do claim therein—

1. In combination with the spring for a new purpose, viz., a mode of varying the intensity of the connection of the armature with shaft C and allowing that connection to give way



when the resisting force is sufficient to prevent the car-wheels revolving and causing them to slide.

2. The improved method of communicating the motion of the car-wheels to their brakes through the medium of electro-magnetism, consisting substantially of the spring-jaws P and W W, and of the insulated rings on

the axis of the magnet, arranged and operating in combination with the said magnet and adjustable armature in the manner and for the purposes herein specified.

ASA L. WHIPPLE.

In presence of—

ARIEL S. THURSTON,  
LEVI GIBBS.