(No Model.)

A. L. CLARKE.

CAR FENDER.

No. 489,848. Patented Jan. 10, 1893.

Fig 1

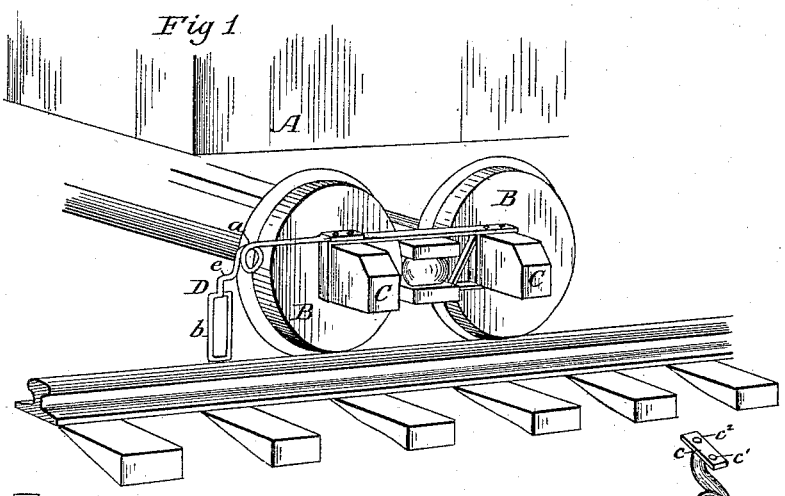


Fig.5.

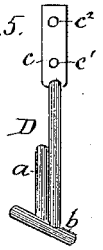


Fig.4

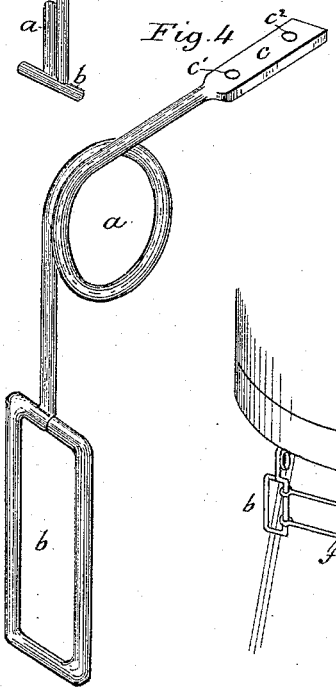


Fig.6.

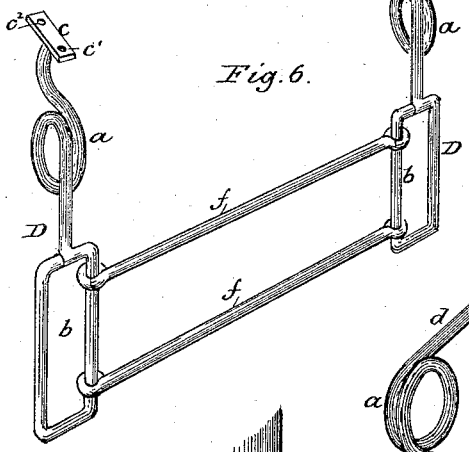
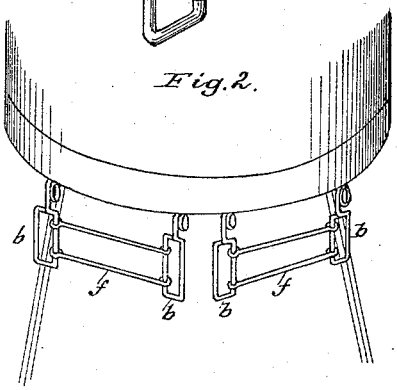


Fig.2.



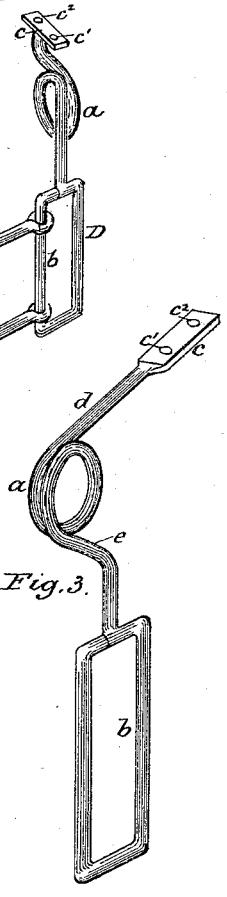


Fig.3.

Witnesses:
A. B. Deggs
R. A. Norfleet.

Inventor:
Alfred L. Clarke
by Staley & Shepherd
attys.

UNITED STATES PATENT OFFICE.

ALFRED L. CLARKE, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-HALF TO FRANK H. CLARKE, OF SAME PLACE.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 489,848, dated January 10, 1893.

Application filed October 14, 1892. Serial No. 448,897. (No model.)

To all whom it may concern:

Be it known that I, ALFRED L. CLARKE, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

My invention relates to improvements in fenders for car wheels and it also relates in its nature to improvements upon Letters Patent No. 339,857, issued to me April 13, 1886.

The object of my invention is to provide a fender of novel construction, which shall be adapted to be readily and easily applied to or removed from any desired portion of the car to accomplish the object for which it is designed.

My invention consists in the constructions and combinations of parts hereinafter described and claimed.

In the accompanying drawings, which form a part of this specification, Figure 1 is a perspective view of a portion of a railway car, to which my improved fender is shown attached. Fig. 2 is a perspective view showing my device attached to a street car. Figs. 3 and 4 are detailed views in perspective of ordinary forms of my device, detached. Fig. 5 is a top view of one of the same. Fig. 6 is a detailed view of a device, shown detached, which is especially adapted for street cars.

Like parts are indicated by similar letters of reference throughout the several views.

In the said drawings A, represents the body of an ordinary railway car; B, B, the wheels of the same, and C, the axle-box on which the car is supported.

D, is my improved fender which consists essentially of a coil *a*, and an elongated loop *b*, which stands obliquely, or at an angle to the said coil, the parts being formed of a single piece of steel or other suitable material to give the necessary resilience.

The advantages of the loop *b* in place of a flat plate shown in my patent No. 339,857, are that said loop permits snow or water to readily pass therethrough, and thus presents but little impediment to the advance of the car to which it is attached; it also permits a pair of said loop-fenders to be inexpensively united together by rods hinged thereto.

In attaching the fender to railway cars of the ordinary type, I preferably secure the same to the axle-box C, by extending an arm *d*, backward from the coil or helix *a*, the said arm being provided with a flattened portion *c*, having openings c', c^2, therein, adapted to receive the bolts which secure the car axle-box in place. When so constructed and secured, a right angled bend is formed at *e*, to bring the loop *b*, opposite the center of the wheel. It will be seen that by this construction a fender is formed which is adapted to yield both laterally and vertically, and by its resilience clear the track of any obstructions that may occur thereon.

It is obvious that the fender may be applied in any other desired manner or location; for instance, it may be applied directly to the body of the car, to the brake beam, or at or to any other suitable point or part.

In Fig. 2, I have shown an arrangement of fenders especially adapted for street cars, cable cars or dummy railroads. This consists in attaching two or more of the fenders to the body of the car, and connecting the loops *b*, of the same, by small rods *f*, the fenders being so placed that when so connected the connecting rods *f*, will stand at an angle to the rails and form a guard by which any obstruction or a human body would be pushed from the track. In place of the connecting rods *f*, small slats, or if desired, boards may be used to form a solid guard or fender.

The fender being formed of a single piece, and with a helix and a loop, as described, is adapted to yield both in a lateral and vertical direction so that the danger of it becoming broken by contact with the track or rigid obstructions, is obviated, and at the same time a resilience is afforded which will assist materially in removing a human being, or other obstruction which might fall accidently upon or otherwise be placed on the track.

Having thus described my invention, I claim:

1. A fender for cars having a coil or helix, and a loop formed from a single piece of resilient metal, and extending downwardly to form the fender proper, substantially as and for the purpose set forth.

2. The combination with a car of a spring

fender formed of a single piece of metal and provided with the helix or coil, and a loop set at an angle or oblique to the said coil, substantially as specified.

3. The combination with a car, of a series of fenders each provided with a coil, and a loop formed of a single piece of resilient metal, and connecting bars between said loops, substantially as set forth.

4. The combination with a car axle-box, of a spring fender formed with an extended arm adapted to be attached to said box, a helix or coil joined to said arm, and a loop at an angle to said coil, said loop being offset from the coil to bring it opposite the center of the car wheel, substantially as set forth.

In testimony whereof I have hereunto set my hand this 13th day of October, A. D. 1892.

ALFRED L. CLARKE.

Witnesses:
FRANK W. GEIGER,
FRANK WATT.