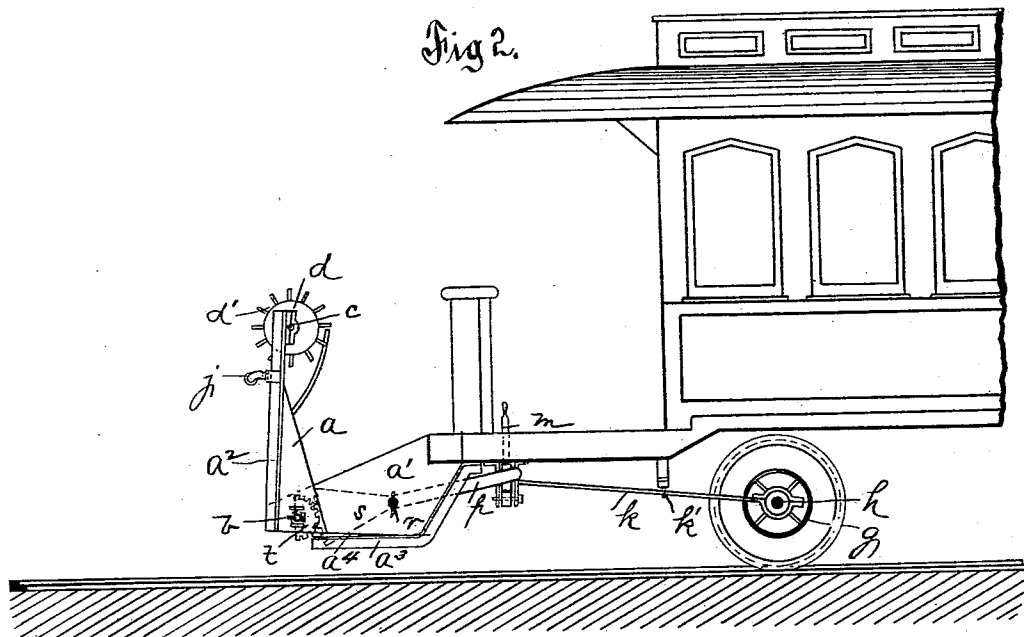
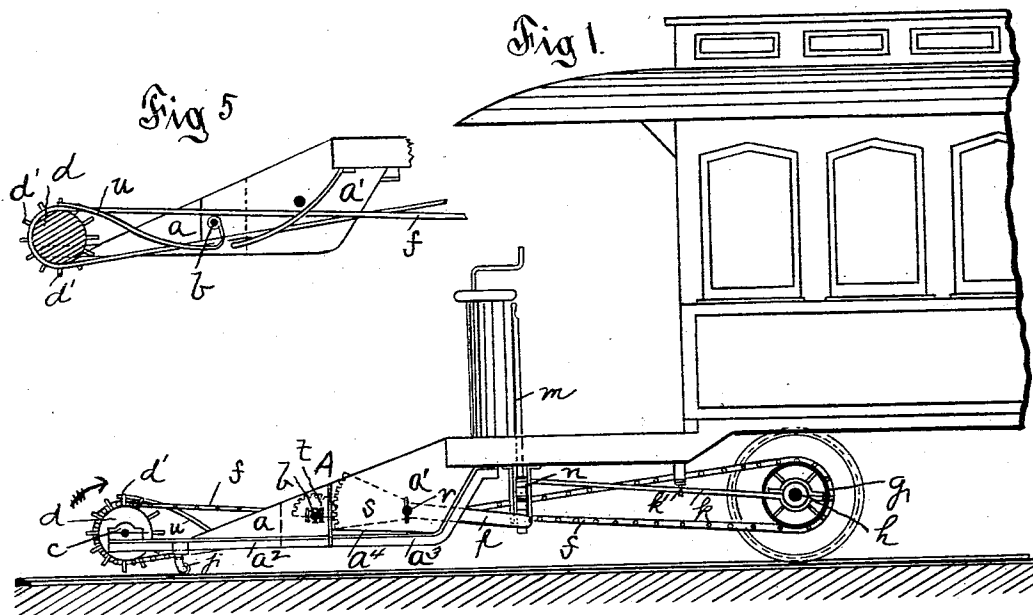


L. E. ANDERSON.
CAR FENDER.

No. 557,750.

Patented Apr. 7, 1896.



Witnesses
Chas. J. Farrar.
Robert C. Totten

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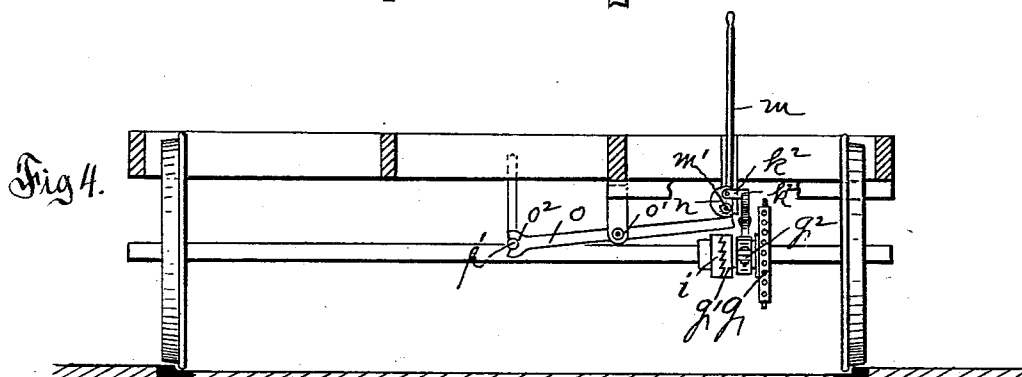
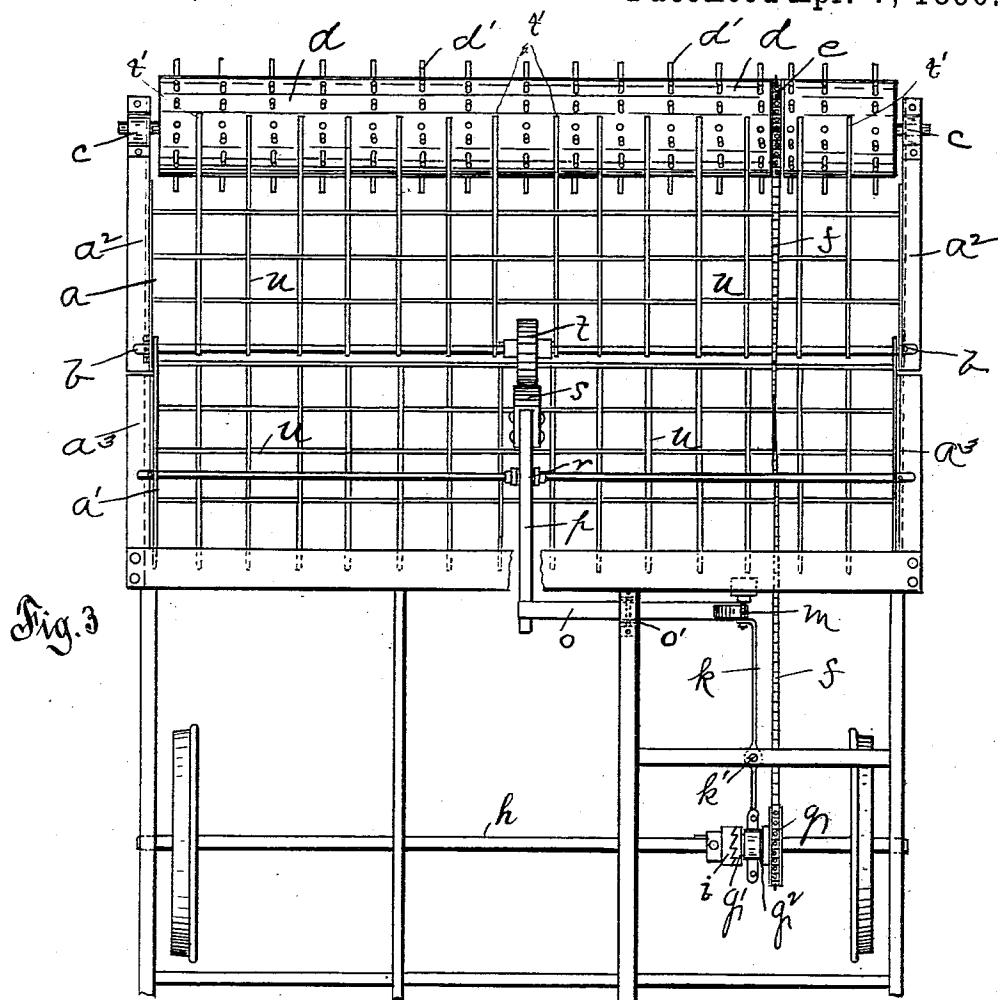
(No Model.)

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UNITED STATES PATENT OFFICE.

LEONIDAS E. ANDERSON, OF PITTSBURG, PENNSYLVANIA.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 557,750, dated April 7, 1896.

Application filed May 18, 1895. Serial No. 549,758. (No model.)

To all whom it may concern:

Be it known that I, LEONIDAS E. ANDERSON, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Fenders; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to fenders for street-railway cars, locomotives, &c.

To enable others skilled in the art to make and use my invention, I will describe the same with reference to the accompanying drawings, in which—

Figure 1 is a side view of my improved fender. Fig. 2 is a like view of the fender raised. Fig. 3 is a plan view. Fig. 4 is an end view, looking from the rear. Fig. 5 is a detail view.

Like letters indicate like parts in each of the figures.

I have illustrated my invention as applied to a street-railway car; but it may be applied to locomotives or other conveyances.

The frame A may be secured to the body of the car or to any other convenient support. The said frame A may be formed of metal plates of suitable thickness. The frame A is made in two sections a a' , so that the front section can be swung up in front of the car to the position shown in Fig. 2. For this purpose the front section a has its sides overlapping the sides of the rear section a' . A shaft b passes through the sides of both sections. In this manner a hinged connection is formed between said sections a a' , so that when the fender is not in use the front section may be thrown back to the position shown in Fig. 2. Along the lower outside edges of the sections a a' are the angle-bars a^2 a^3 , respectively. When the front section is lowered, the rear ends of the angle-bars a^2 butt against the front ends of the angle-bars a^3 and thus prevent the said front section a from dropping to the track. The angle-bars a^3 have the inclined strips a^4 secured thereto, on which the inner ends of the front section a rest when said section is swung back.

Journaled in suitable bearings c in the angle-bars a^2 , which extend in front of the section a , is the roller or drum d , which may be formed of rubber, iron, or other suitable material. The drum d is provided with the pro-

jections or spikes d' , which may be formed of iron or hardened rubber. These spikes d' are arranged at suitable intervals over the surface of the drum. The drum d is further provided with the sprocket e . This sprocket e is connected up by the crossed chain f with the sprocket-wheel g on the axle h . This will cause the drum to rotate toward the car, as indicated by the arrow. The drum is elevated at a suitable distance from the track to allow for the oscillating of the car. To further provide for the oscillating of the car, I employ the casters j , which are swiveled in the fender and can conform to any position of the fender. These casters are below the drum and relieve the wear on same as the car oscillates.

The sprocket-wheel g is loosely mounted on the axle and has the clutch-face g' , with which the clutch i on the axle h is adapted to engage. The sprocket-wheel g has the annular groove g^2 , which is engaged by the inner end of the rod k . This rod k is pivoted at k' . The outer end of the rod k is connected to the operating-lever m by means of the clevis k^2 . The lever m is pivoted at m' to a suitable support. The operating-lever m passes up within the car in such position as to be readily operated by the motorman. The lower end of the lever m has the cam n , which is adapted to engage and lower the inner end of the rod o , fulcrumed at o' . The outer end of the rod o is preferably slightly rounded, as at o^2 , and fits around the correspondingly-shaped lug p' in the arm p . This provides for a certain amount of play as the car oscillates. This arm p is fulcrumed at r and has at its front end the toothed sector s , meshing with the toothed sector t on the shaft b .

The netting or screen u which covers the frame extends up onto the drum d to about the middle thereof, the outer end of said netting consisting only of the strips t' , which will allow space for the movement of the spikes d' between said strips.

As there are two sections a a' of the fender, the netting, unless made sufficiently flexible, is in two parts to permit of the throwing up of the section a . The rear end of the netting on section a may extend back to the shaft b .

The operation of my improved fender is as follows: When the fender is in the position

shown in Fig. 1 and the car is in motion, the drum *d* will travel in the direction of the arrow toward the car. With the drum *d* rotating in this direction, in case said drum comes in contact with the body of a person overtaken by the car the spikes *d'* will catch in the clothing of such person and will carry the body up on the drum and deliver it onto the netting *u*. By having the netting extending onto the drum itself instead of merely extending up to said drum below the top thereof there is no possibility of the body being caught between the end of the netting and the drum and being mutilated and torn by the spikes before the car can be stopped.

In case the fender is not in use and it is desired to throw it up out of the way the motorman forces the lever *m* to one side. The cam *n* will force down the inner end of the arm *o* and raise the outer end thereof. By this movement the inner end of the arm *p* will be raised, the outer end of the arm *p* will be lowered, and, the teeth of the sector *s* meshing with the teeth of the sector *t*, the front section *a* of the fender will be raised to the position shown in Fig. 2. At the same time that the lever *m* is moved the outer end of the rod *k* will be moved. Through the connections described the sprocket-wheel *g* will be thrown out of engagement with the clutch *i*, whereupon said wheel ceases to rotate when the car moves.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a safety-fender, the combination of a suitable frame made in two sections hinged together, a drum having projections thereon, connections between said drum and the axle for turning said drum toward said car, and mechanism for throwing up the front section of said frame practically at right angles to

the rear section and at the same time throwing said drum out of engagement with said axle, substantially as set forth.

2. In a safety-fender, the combination of a suitable frame made in two sections hinged together, a drum having projections thereon, a crossed belt connecting said drum and a loose pulley on the axle, a clutch on said axle, and mechanism for throwing up the front section of said frame and disengaging said clutch at the same time, substantially as set forth.

3. In a safety-fender the combination of a suitable frame made in two sections hinged together, a drum having projections thereon, revolving toward the car, a toothed sector on the front section of said frame, a toothed sector engaging said first-mentioned sector, and mechanism for operating said second sector, whereby said front section can be raised or lowered, substantially as set forth.

4. In a safety-fender, the combination of a suitable frame made in two sections hinged together, a drum having projections thereon, a crossed belt connecting said drum and a loose pulley on the axle, a clutch engaging said pulley, a toothed sector on the front section of said frame, a toothed sector engaging said first-mentioned sector, said second sector being on a swinging arm, an operating-lever, and connections between said operating-lever and said arm, and between said operating-lever and said clutch, substantially as set forth.

In testimony whereof I, the said LEONIDAS E. ANDERSON, have hereunto set my hand.

LEONIDAS E. ANDERSON.

Witnesses:

ROBT. D. TOTTEN,
ROBERT C. TOTTEN.