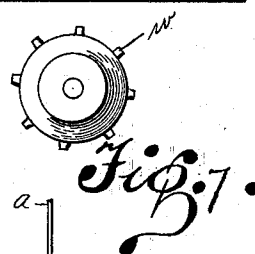
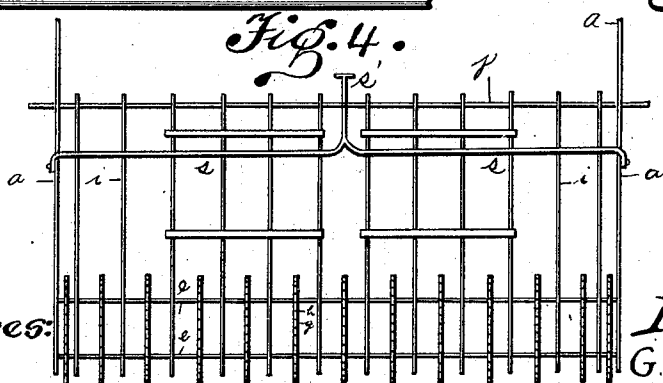
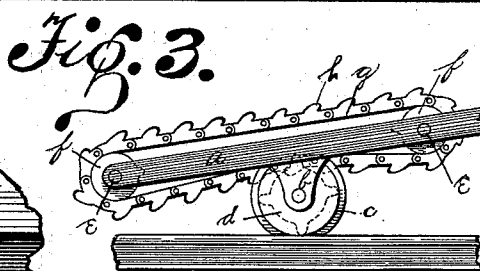
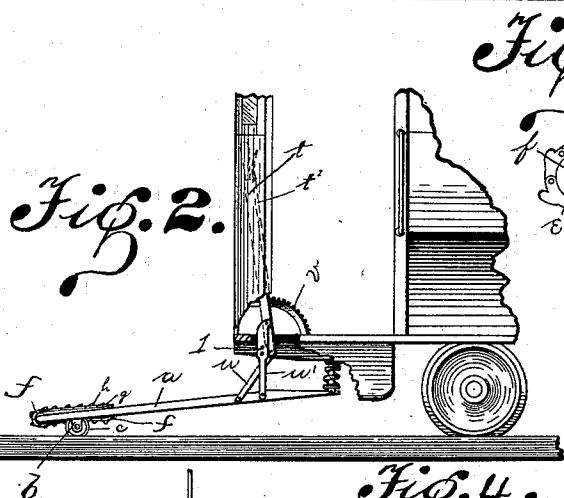
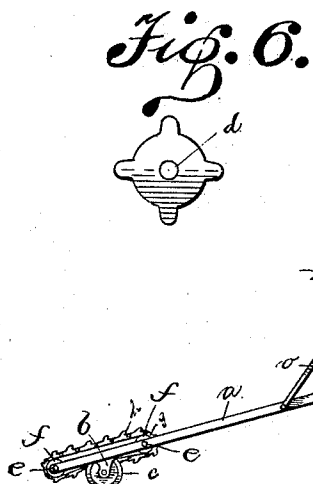
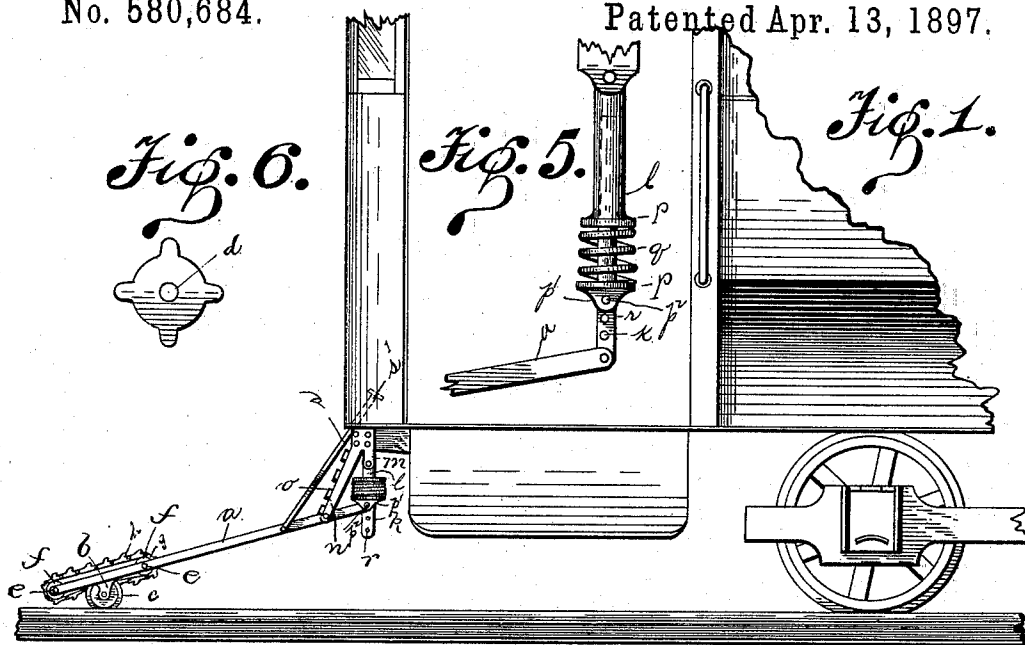


(No Model.)

G. W. GRANGER.
CAR FENDER.

No. 580,684.

Patented Apr. 13, 1897.



Witnesses:

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UNITED STATES PATENT OFFICE.

GIDEON W. GRANGER, OF ALLEGHENY, PENNSYLVANIA.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 580,684, dated April 13, 1897.

Application filed March 11, 1896. Serial No. 582,775. (No model.)

To all whom it may concern:

Be it known that I, GIDEON W. GRANGER, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in car-fenders, and has for its object the provision of new and novel means whereby a car-fender may be provided that can be quickly and easily lowered to the track in case of danger of an accident.

The invention has for its further object the construction of a car-fender of the above-referred-to class that should a person or object be struck by the same will not rise and allow the object to pass under the fender, but will roll the same up onto the fender and out of danger of being injured.

A still further object of my invention is to construct a fender possessing the above-named advantages that may be readily folded against the front of the car when the same is not in use and that will be neat in its appearance, simple in its construction, strong, durable, effectual in its operation, and comparatively inexpensive to manufacture.

With the above and other objects in view the invention finally consists in the novel construction, combination, and arrangements of parts to be hereinafter more specifically described, and particularly pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a side elevation of a portion of a car with my improved car-fender in position. Fig. 2 is a similar view showing manner of applying my improved fender to a cable-car. Fig. 3 is a side elevation of the front portion of the fender, showing the same in the operating position. Fig. 4 shows a plan view of the fender without its being applied to a car. Fig. 5 is a side elevation of a portion of the securing-brace, showing man-

ner of adjusting. Fig. 6 is a side elevation of the sprocket-wheel on the end of the roller. Fig. 7 is a side elevation of a roller which may be employed to dispense with the intermediate chains.

In the drawings, *a a* represent the side braces of the fender, which are provided with lugs *b b*, forming journals for the axles of the wheels *c c*. These wheels *c c* are provided with a sprocket-wheel *d*, and at the ends of the side braces *a a* and a short distance above the wheels *c c* are provided shafts *e e*, which carry sprocket-wheels *f f* and a sprocket-chain *g*, having outwardly-extending lugs or catches *h*, operating over the sprocket-wheels *d* and *f f*. Sprocket-wheels similar to those at the ends of the shafts *e e* are provided with sprocket-chains similar in construction to the sprocket-chain *g*, having projections *h* to engage an object. Cross-bars *i i* rest on the shafts *e e* and are connected to the rear rod of the frame portion.

The rear end of the side braces *a a* are pivotally attached to a vertical adjusting-rod *k*, operating in a sleeve or barrel *l*, which is attached to a brace *n*, provided with a downwardly-extending arm which is pivotally attached to the side brace *a* and provided with cross slats or bars *o*, and the sleeve or barrel *l* is provided with collars *p p*, between which is secured a coil-spring *q*, which holds the fender in its normal position. Holes *r* are provided in the rod *k* for adjusting the side bars *a* as desired, the collar *p* being provided with lugs *p'*, which are separated sufficiently to embrace the rod and receive the ends of the braces *a a*, which are held by the pin *p²*, (shown in Fig. 1,) or the collar may be secured by a bolt, as shown in Fig. 5, and the side braces pivoted to the ends of the rods. To the side braces *a a* is secured a forked lifting-rod *s*, having its prongs pivotally attached to the braces and the upper end extending through the car and with a foot-plate *s'*.

In Fig. 2 of the drawings I have shown the manner of attaching my improved fender to a cable-car or on any cars operating on a line provided with a loop at the end, so that the same end of the car is always employed as the front. In this construction the front portion or series of rollers and sprockets is the same

as for the description of car shown in Fig. 1, the rear end of the braces *a a* being pivotally attached to a rod secured to the car-body and provided with a coil-spring in the same manner as on the rod *r*, and an operating-lever *t* is pivoted to a link *u*, which is pivoted to the arm *a*. A vertical support *u'* is secured to the frame *l* and the brace *a* is pivoted to the lower end thereof. The lever *t* is provided with a spring-catch *t'*, which is secured thereto and engages the rack *v*, secured to the floor of the platform.

In Fig. 7 I have shown a construction of roller which may be employed in the front portion of the fender in order to dispense with the intermediate sprocket-chains. This roller is provided with projections or raised portions *w*, and when this roller is employed only the two end sprocket-chains are used, the intermediate sprocket-chain being dispensed with, the raised portions of the roller serving the same purpose as the catch on the sprocket-chains.

We will now assume, for the purpose of illustrating the operation of my improved fender, that the parts have been secured in their respective positions, as described and shown. The coil-springs arranged around the rod *r*, between the collars of the sleeve or barrel *l*, are provided of sufficient length to hold the rear end of the braces *a a* downward, the spring when in its normal position being shown in Fig. 5 of the drawings. This arrangement will suspend the forward end of the fender and keep the wheels *c c* from engagement with the rails and the sprocket-chains and shafts on the forward portion of the fender in a stationary position.

When it is desired to lower the fender to the track, the foot is placed on the plate *s'*, and the pressure thus obtained will force the front end of the fender down to the track, when the wheels *c c* will engage on the rails and communicate motion through the sprocket-wheels to the sprocket-chains *h*. By this operation the springs *q q* will be compressed to the position shown in Fig. 1, and when the pressure on the foot-plate *s'* is released the springs will retract, forcing the rear end of the side braces downward and lifting the front of the fender from the track and retaining the same in its normal position.

When the wheels *c c* are in engagement with the rails, the sprocket-chains being in operation will engage any object that may be on the track, and the catches on the sprocket-chains will engage the object and carry the same up on the cross-bars of the fender and out of the way of danger.

When the corrugated roller is employed to dispense with the intermediate sprocket-chains, the raised portions *w* will engage the object in the same manner as the catches on the sprocket-chain and carry the object up on the cross-bars.

When the fender is constructed and attached to a cable-car, as is shown in Fig. 2, the front portion of the fender will be suspended, as in the other construction, by the spring pressing on the rear end, and when the catch of the lever is released from the rack the lever is pulled backward, which will throw the inclined arm *u* forward and force the forward portion of the fender downward and the wheels *c c* in engagement with the rails to operate the sprocket-chains, as heretofore described.

When the lever *t* is in the position shown in dotted lines, the catch will engage in the cogs of the rack and hold the fender in the suspended position.

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a car-fender the side pieces, adjustable rods to which the side pieces are pivotally connected, a sleeve-barrel in which the rods are slidable, collars arranged on the rods, springs engaging the collars and sleeves, shafts connecting the braces at the front, sprocket-wheels on the shafts and means for driving the sprocket-wheels substantially as described.

2. In a car-fender, the combination of the fender and side pieces, adjusting rods supporting the fender, a barrel or sleeve in which the rods operate, an inclined support to which said pieces are pivotally attached, grate-bars on the top of the fender, a forked brace pivoted to the fender and having its end extending through the car and ending in a foot-plate, substantially as described.

3. In a car-fender, the combination of the side braces, shafts carried by the braces, wheels on the shaft engaging the rails, sprocket-wheels driven by the wheels on the shaft and chains operating over the sprocket-wheels, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GIDEON W. GRANGER.

Witnesses:

ALFRED M. WILSON,
H. E. SEIBERT.