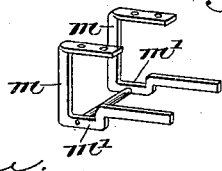
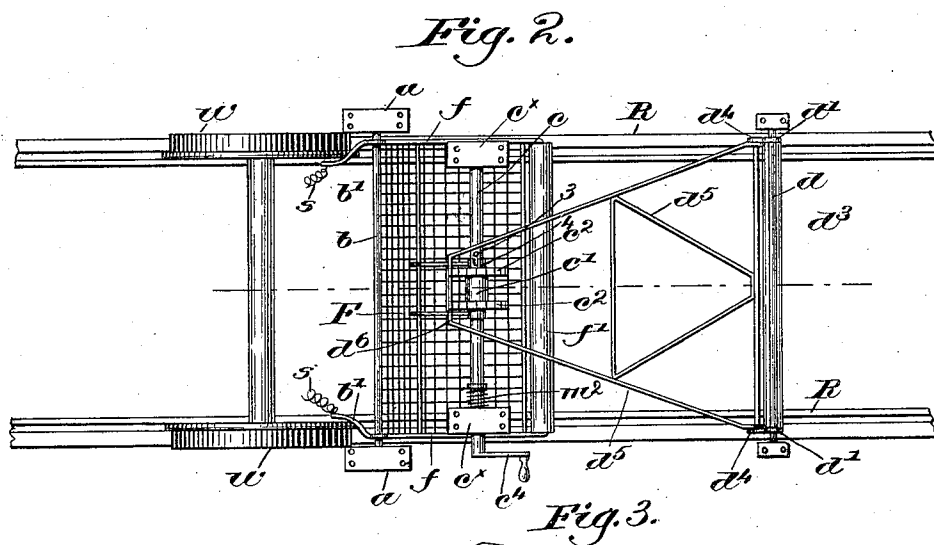
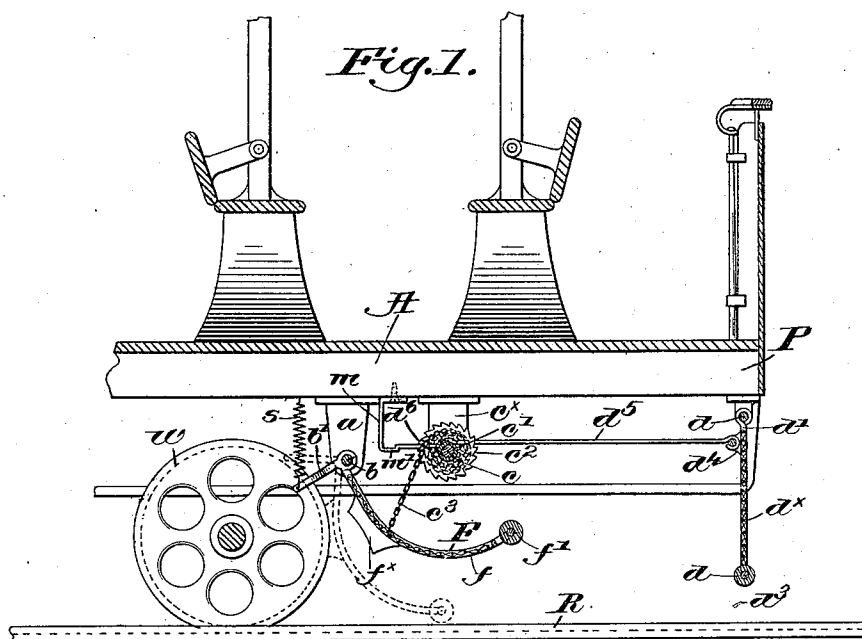


J. E. TREAT.
CAR FENDER.

Patented Mar. 2, 1897.



Twentieth:

James E. Treat.

by Crosby & Gregory -
attys.

UNITED STATES PATENT OFFICE.

JAMES E. TREAT, OF BOSTON, MASSACHUSETTS.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 578,279, dated March 2, 1897.

Application filed June 5, 1896. Serial No. 594,397. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. TREAT, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Street-Car Fenders, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention has for its object the production of a safety-guard or fender for street-cars, whereby an object on the track, such as a human being, a large stone, &c., will be picked up and carried until the car can be brought to a stop.

I have so constructed the fender that it is preferably beneath the platform and normally raised in inoperative position, a releasing device operated by a detector permitting the fender to instantly fall into operative position upon impact of an obstruction with the detector.

My improved fender can be readily applied to an existing car with little additional mechanism. Its construction is so simple that it will not readily get out of order, and it is instantaneous and effective in operation.

Figure 1 is a vertical longitudinal section on the line xx , Fig. 2, of a sufficient portion of the front end of a street-car to be understood, with my invention applied thereto. Fig. 2 is a plan view of the fender and its controlling mechanism, the car-floor being omitted; and Fig. 3 is a detail of the clutch.

Brackets a , depending from the under side of the car-floor A , in front of the wheels W , provide bearings for a rock-shaft b , to which are secured arms b' , connected by springs s to the car-bottom, normally tending to depress the fender F into dotted-line position, Fig. 1.

The fender F is shown as comprising down-curved side bars f , rigidly secured to the rock-shaft b and supporting at their lower outer ends preferably a roller f' , which rests on the rails R when the fender is in operative position.

A netting of wire or strong cord or rope, or it may be canvas, fills in the space between the side bars, the rock-shaft, and the roller to receive without injury a person who may fall or be knocked down in front of the car.

A shaft c is rotatably mounted in brackets c^x on the car-body, and it is provided with a drum c' , having secured to or forming part of it preferably two ratchet-wheels c^2 , while a chain or other flexible connection c^3 is attached at one end to the fender F and at its other end to the drum c' , upon which it may be wound by rotation of the shaft c , effected by a suitable crank c^4 .

A rod d , secured to the under side of the platform P at its front end, pivotally supports the detector, shown as a frame composed of side bars d' , a cross-bar d^2 , having a roller d^3 thereon, and a filling d^x of wire or other netting, the foot of the apron thus formed hanging a few inches above the track.

Ears d^4 on the side bars d' pivotally support a detent for the ratchet-wheels c^2 , shown as a trussed frame d^5 , of stout wire or iron rods, resting at its inner end on the shaft c , with the extremity d^6 of the frame normally in engagement with said ratchet-wheels, and preventing rotation of the drum c' when the connection c^3 is wound thereupon to raise the fender, as in full lines, Fig. 1.

An object on the track of sufficient size to engage the detector will swing the latter rearwardly as the car advances, disengaging the end d^6 of the detent d^5 from the ratchet-wheels, releasing the drum c' , and instantly the fender F drops into operative position (shown by dotted lines, Fig. 1) to pick the object up.

As the fender is normally raised, small stones or other similar objects on the track will not be engaged, and damage to the fender is thereby obviated, any object too large to pass beneath the detector, however, immediately causing the automatic movement of the fender into operative position to receive it.

Shoes f^x are preferably secured to the under side of the fender to abut against the wheel-treads when the fender is down, preventing too great depression of the latter and also supporting it when any weight is thrown upon it, the said shoes also acting as auxiliary brakes.

The detent has coöperating with it a latch or holder m , provided with a shoulder m' , the detent when slid in the direction to release the ratchet-wheels falling behind said shoulder, thus preventing the release of the

detent which might be possible to again engage the ratchet and obstruct the dropping of the fender.

The ratchet-wheel is normally loose on the shaft and is held against longitudinal movement by the arms of a latch or holder *m*, but the shaft *c* has a spline or pin 3, which may enter a slit 4 in the hub of the ratchet-wheel, and when it is desired to rotate the ratchet to wind the flexible connection the shaft will be drawn longitudinally against the spring *m*² until the spline or pin enters the slit.

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

1. In an apparatus of the class described, a pivotally-mounted fender, a depending detector located in advance thereof, means including a ratchet-wheel to raise the fender into elevated position, and a detent composed of a unitary structure adapted at one end to engage the ratchet, and at its other end positively connected to the detector and directly

movable thereby in one direction into engagement with the ratchet-wheel, to normally retain the fender in elevated position, and in the other direction out of engagement with the ratchet-wheel to release the fender, substantially as described.

2. In an apparatus of the class described, a pivotally-mounted fender, a detector adapted to be struck and moved by an object on or between the tracks, a detent connected to said detector, and a ratchet adapted to be engaged by said detent, combined with a latch or holder to retain said detent out of engagement with said ratchet when the fender is tripped, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES E. TREAT.

Witnesses:

GEO. W. GREGORY,
EMMA J. BENNETT.