To all whom it may concern:

Be it known that I, VASILIE VLADUTZ, of Homestead, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Street-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 belongs to that particular type which in the event of an object striking the car forcibly upon said object and holds the same during the movement of the car by virtue of a series of spring-pressed arms. In addition to this general construction the invention further resides in a series of novel locking devices for said arms and in the provision of cushioning-springs carried by said arms which are adapted to sustain the shock of the collision without injuring the object struck by the car.

The detailed construction will appear as the description proceeds, in which reference is had to the accompanying drawings, forming a part of this specification, like characters designating like parts throughout the several views, in which—

Figure 1 is a side elevation of a car with my improved fender mounted thereupon. Fig. 2 is a top plan view thereof. Fig. 3 is a detail plan view of one of the locking elements employed in connection with the gripping arms. Fig. 4 is a detail side elevation of the locking element employed in connection with a series of gripping-arms located beneath the car. Fig. 5 is a detail rear view of the construction in Fig. 4, showing the manner in which the arms are mounted beneath the car. Fig. 6 is a detail perspective view of a detent or locking element for one of the gripping arms located upon the front of the car, and Fig. 7 is a detail top plan elevation of a link that is employed for maintaining said arms in an open position.

Referring to the accompanying drawings, A designates the car, provided with the floor 1 and front 2. Located upon the front of the car are a series of supporting-plates 3, which may be arranged in any preferred number and which are arbitrarily shown as arranged three abreast and three deep. Each transverse row of plates 3 is for the sake of operatively mounting the gripping-arms thereupon. Fig. 5 is a detail rear view of the construction in Fig. 4, showing the manner in which the arms are mounted beneath the car. Fig. 6 is a detail perspective view of a detent or locking element for one of the gripping arms located upon the front of the car, and Fig. 7 is a detail top plan elevation of a link that is employed for maintaining said arms in an open position.

posed one on each side a pair of integral laterally-extending ears 23. Pivotally mounted adjacent the outer end of said bracket 15 are a pair of arms 24, which are fulcrumed in said bracket, as at 25. These arms 24 are provided severally and arranged in proper position with hooked lugs 26, which are angularly disposed and are adapted to be engaged by the ears 23 of the detent-plate 19. A spiral retractive spring 27 extends through the opening 22 in the plate 19, being secured at one end secured to its other end the ends of a pair of chains 29, severally connected to the arms 24, as at 30. The arms 24, as shown, are arranged arbitrarily between the two upper tiers of arms 4. For the purpose of securing and holding an obstacle that may be in a position on the track below and out of the path of said arms 4 have provided a gripping device which is dependent from the floor 1 of the car and embodies the following assemblage of elements. Depending from the floor 1 is a pair of bracket-bearings 31, upon which are secured station ary shafts 32. A bracket 33 depends from the floor 1 and is of shorter length than and interposed between said bracket-bearings 31. A stub-shaft 34 is mounted in said bracket 33. Sleeved upon said stub-shaft 34 is a depending arc-shaped arm 35, formed adjacent its upper end with an integral collar 36, from which projects a pair of oppositely-dis posed lugs 37, having pivotal connection with the end of links 38. Gaining-arms 39 are mounted on the stub-shaft 32 by virtue of an integral sleeve or collar 40, formed on each arm 39 and embracing said stub-shaft 32. Said collar 40 is provided with a laterally-extending short-length extension 41, in which are mounted in opposite relation spaced friction rollers 42, between which the end of the link 38 is adapted to project. For the purpose of swinging these arms together when released by link 38 I have provided a retractive coil spring 43, having its one end connected to the bracket 31 and its other end to the stub shaft 32. For the purpose of cushioning the shock I have secured to the inner sides of the arms 4 and to the outer edge of the plate 3 a series of expansive coil-springs 44, which will react under pressure.

In operation should an object strike the links 9 at any point between the arms 4 it will force said links inwardly, the ends thereof riding over the friction-roller 11 and clearing the ends of the arms 4, at which time the expansion spring between the rearward extensions 7 of said arms will act against said extensions to swing said arms on their pivots 5 and cause them to close in upon the object. The links 9 are supported by the chain 14. A set of these arms three deep, as shown, will operate simultaneously, and should the obstacle be a person will tightly grip the body and prevent the same from falling beneath the car. Again, assuming that the object hits the fender between the overlapping ends of a pair of adjacent arms 4, the rod 17 will be struck thereby and forced inwardly, swinging the plate 19 upon its pivot 20, the upper end thereof describing a downward movement in the arc of a circle until the ears 23 shall have cleared the angular lugs 26 of the arms 24. When the operation shall have proceeded thus far, the 75 spring 27 will react to draw the chains 29 inwardly, and thereby swing the arms 24 upon their pivots 26, encircling the object in front of the area occupied by the arms 4. Should the obstacle be in such a position as to lie out of the path of both sets of arms described above as the car progresses, the obstacle will be struck by the depending arm 33, secured to the floor thereof, thereby moving said arm rearwardly and withdrawing the links 37 from their position between the rollers mounted upon the lugs 41 of the arms 39. When the links 38 have been withdrawn from locking engagement with the ends of the arms 39, the spring 43 will act to move said arms together and prevent the object hit by the car from being dragged thereunder.

Having fully described my invention, I claim—

1. A car-fender embodying a plurality of arc-shaped arms, said arms being pivotally mounted in adjacent pairs, bearings for the general adjacent pairs secured to the body of the car, means for retaining said arms against movement and adapted to be engaged by an obstacle in the progress of the car to release said arms, rearward extensions carried upon the ends of said arms, and means adapted to engage said extensions to force said arms to swing inwardly upon their pivot when released.

2. A car-fender embodying a plurality of arms disposed in horizontal tiers and pivotally mounted, bearings in which said arms are pivotally secured to the body of the car, rearward extensions carried by said arm, means for engaging said extensions and causing said arms to swing inwardly upon their pivots, and means adapted to be engaged by an obstacle for holding said arms against inward movement.

3. A car-fender embodying horizontally-disposed tiers of gripping - arms pivotally mounted in pairs bearings for said arms secured to the body of the car, a second series of arms pivotally mounted at a point between the vertically-aligned adjacent ends of said first-named arms, brackets in which said second-named series are mounted, rearward extensions carried by said first-named series, an expansive spiral spring interposed between said extensions and adapted to force said arms together, means for retaining first-named series of arms from movement under the influence of said spring, said retaining means being released from engagement with said arms by con-
tact with an obstacle, means for forcing said last-named series of arms to swing together upon their pivots, and means for holding said last-named arms from movement, said holding means being adapted to be released from locking engagement therewith by contact with an obstacle.

4. A car-fender embodying in combination with a series of pivotally-mounted spring-controlled arms located upon the front of the car and means for normally maintaining the same against movement, a second series of arms depending from the floor of the car, and pivotally mounted in bearings provided therefor, means for causing the arms of said second series to swing together upon their pivots, and means for locking said arms against inward movement, said locking means being obstacle-operated and embodying a pivotally-mounted depending arm having connection at its pivotal end with sliding bolts adapted to normally enter into locking engagement with said first-named arms.

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

VASILIE VLADUTZ.

Witnesses:

EDWIN LOGAN,

C. KLOSTERMANN.