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PATENTED DEC. 19, 1905.

R. H. FLETCHER.

CAR BUMPER.

APPLICATION FILED APR. 4, 1905.

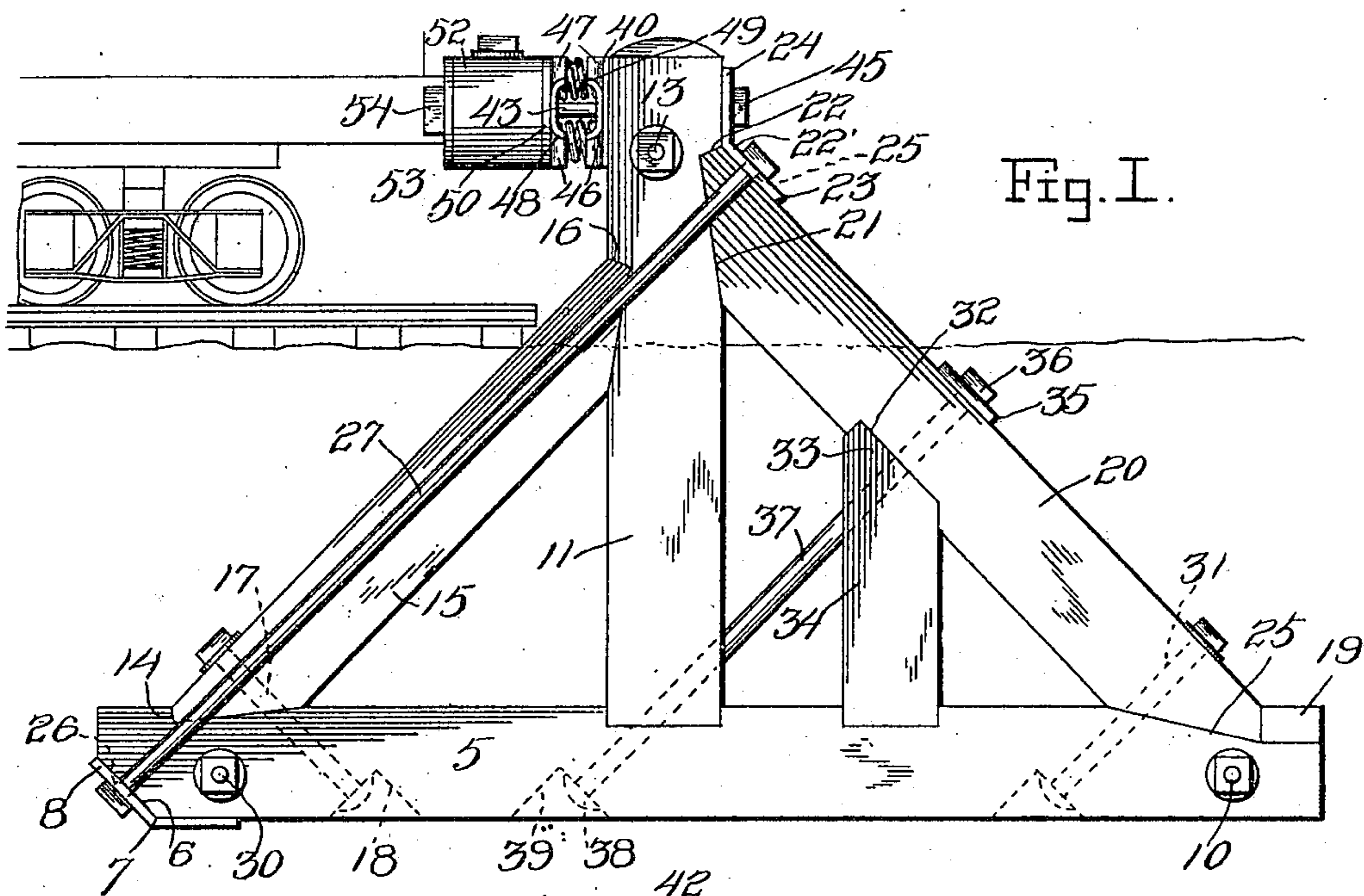


Fig. 1.

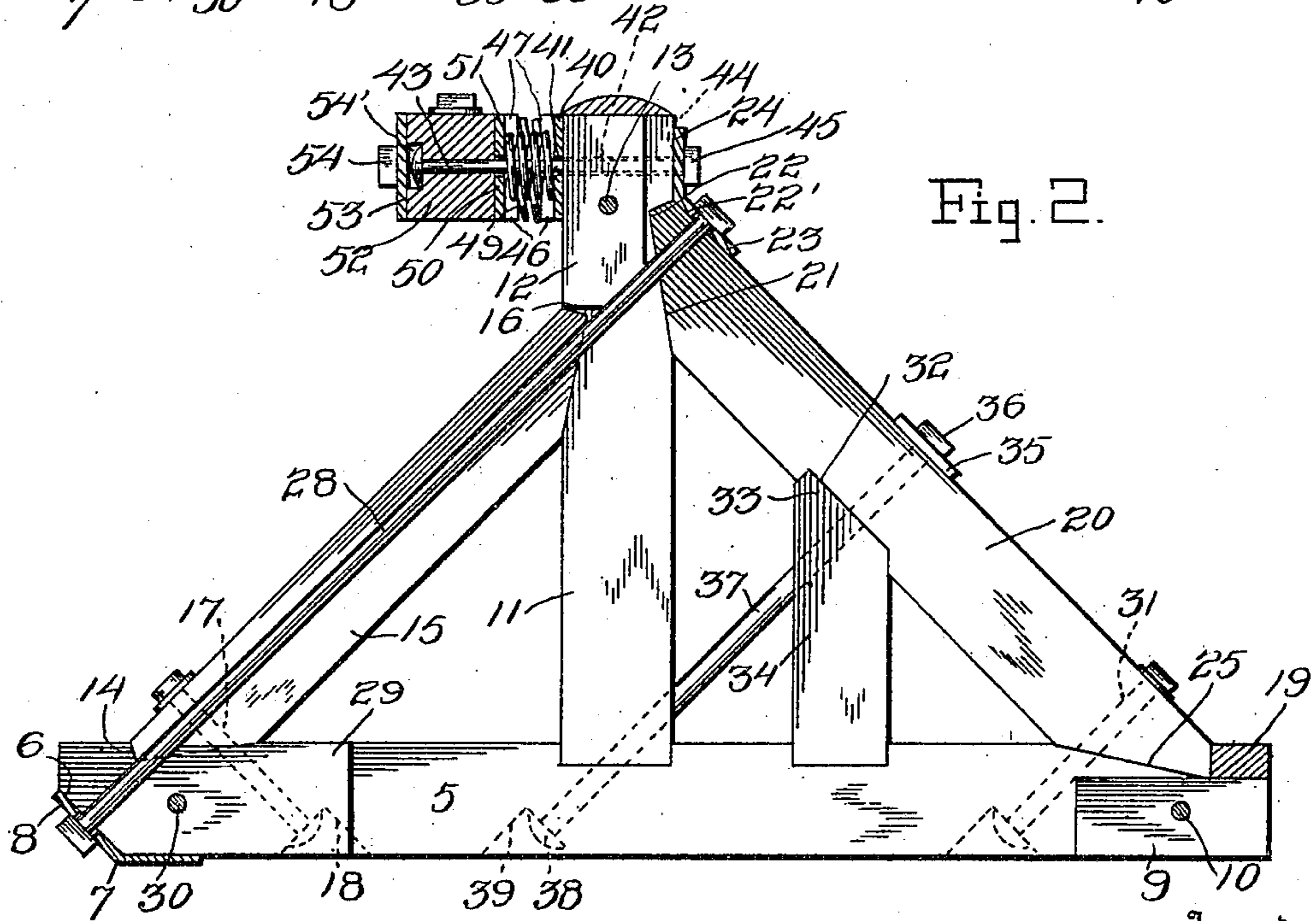


Fig. 2.

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## CAR-BUMPER.

No. 807,920.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed April 4, 1905. Serial No. 253,867.

*To all whom it may concern:*

Be it known that I, RICHARD H. FLETCHER, a citizen of the United States, residing at Alexandria, in the county of Alexandria, State of Virginia, have invented certain new and useful Improvements in Car-Bumpers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to railways, and more particularly to car-bumpers, and has for its object to provide a device of this nature which will be so arranged as to combine a maximum of strength with a minimum of weight and bulk.

Another object is to provide a bumper which may be cheaply constructed and which will be simple in arrangement.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific construction shown and described may be made within the scope of the claims and that any suitable material may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in both views, Figure 1 is a side elevation of the present bumper and illustrating the rear platform of a car in engagement therewith. Fig. 2 is a vertical section taken in the plane of one of the beam-attaching bolts and between two of the diagonal members.

Referring now to the drawings, the present invention comprises a plurality of longitudinally-extending spaced parallel sills 5, which at their lower forward corners are beveled, as shown at 6, and secured against the under surfaces of the sills adjacent to their beveled portions there is a metallic plate 7, which extends laterally beyond the outermost sills and which is bent upwardly, as shown at 8, to rest against the beveled portions 6 of the sills.

Spacing-blocks 9 are disposed between the sills at the rearward ends of the latter and are held in position by means of a transversely-extending bolt 10, which is engaged in the sills and spacing-blocks. Secured to each of the sills at its center and extending upwardly therefrom there is an upright 11, the uprights of the several sills alining transversely of the bumper, and engaged between these uprights

at the upper ends thereof are spacing-blocks 12, which are held into position by a transversely-extending bolt 13, which is engaged in the blocks and in the uprights. Adjacent to their forward ends the sills 5 are provided with notches 14 in their upper surfaces, which receive the lower ends of upwardly and rearwardly inclined braces 15, the upper ends of which are received in notches 16, formed in the forward faces of the uprights 11, the notches 16 lying in spaced relation to the upper ends of the uprights. The ends of the braces 15 are beveled, as shown, and bolts 17, which extend at right angles to the braces 15, are engaged in these braces and in the sills 5 to prevent separation thereof, the heads of the bolts being located in recesses 18 in the under faces of the sills.

A transversely-extending end piece 19 is secured to the upper faces of the sills at the rearward ends thereof and receives thereagainst the lower rearward ends of upwardly and forwardly extending braces 20, which are beveled, as shown at 25, to conform with the upper surfaces of the sills. The upper ends of the braces 20 are also beveled, as shown at 21, and are engaged in notches 22, which are formed in the rearward faces of the uprights 11, the braces 20 extending somewhat above the braces 15, as shown.

A metallic plate 22, including angular portions 23 and 24, is disposed with its portion 24 resting against the rearward faces of the uprights 11 above the braces 20 and with the portion 23 resting against the rearward faces of the braces 20 at the upper ends thereof. The portion 23 of the plate extends laterally beyond the outermost sills 5, and in these outwardly - extending portions there are formed openings 25, which register with openings 26, formed in the laterally-extending portions of that portion of the plate 7 which rests against the beveled faces 6 of the sills 5, and engaged in these registering openings there are tie-bolts 27, similar tie-bolts 28 being engaged in the plates 7 and 22 between the braces and uprights and lying parallel with the tie-bolts 27.

Disposed between the sills 5 rearwardly of the braces 15 there are spacing-blocks 29, which are held in position by a bolt 30, extending transversely through the spacing-blocks and sills. The rearward ends of the braces 20 are held in position by bolts 31, en-

gaged in these braces and in the sills in the same manner as the bolts 17 are engaged in the braces 15 and the sills.

Between their ends the braces 20 have notches 32 formed in their under surfaces for the reception of the upper beveled ends 33 of short uprights 34, which are secured at their lower ends to the sills 5. A transverse metallic plate 35 is disposed against the rearward faces of the braces 20 adjacent to the uprights 34, and this plate receives thereagainst nuts 36, carried by bolts 37, which extend downwardly and forwardly at right angles to the braces 20, extending through these braces, the upper portions of the uprights 34, the lower portions of the uprights 11, and the sills 5, the bolts having their heads 38 engaged in recesses 39, formed in the under surfaces of the sills.

Above the upper ends of the braces 15 the uprights 11 have a transverse metallic plate 40 disposed against their forward faces, this plate 40 having perforations 41 therein registering with passages 42, formed through the uprights for the reception of bolts 43, which are engaged in the registering openings and passages and which also extend rearwardly through openings 44, formed in the portion 24 of the plate 22, nuts 45 being engaged with the bolts rearwardly of this plate.

Engaged with certain of the bolts 43 forwardly of the plate 40 there are pairs of plates 46, which extend vertically and which have their corners 47 bent to form sockets 48, lying at opposite sides of the bolts, the sockets of one plate being directed toward those of the other plate, and the sockets of each pair of plates coincide for the reception of the ends of helical springs 49, which hold the plates yieldably in spaced relation. Engaged with the bolts 43 beyond the outermost plates 46 there is a transversely-extending plate 50, and engaged with the bolts 43, which are not provided with the plates 46, there are helical springs 51, which rest at their ends against the plates 40 and 50.

A transversely-extending beam 52 is engaged with the bolts 43 beyond the plate 50 and has a face-plate 53 secured to its forward face by means of bolts 54.

In use the lower portion of the bumper is embedded in cement or similar material, the upper portion of the bumper extending upwardly between the rails of a track adjacent to or at the ends of the latter. The beam 52 is disposed for engagement of its face-plate 53 by the platform of a car moving over the tracks, and it will be seen that when a car comes into engagement with the bumper the beam 52 will be moved rearwardly against the action of the springs 49 and 51, the latter absorbing the impact. It will be understood that when the beam is thus moved rearwardly

the bolts 43 are also moved rearwardly, and it will be seen that the nuts 45 may be operated to vary the tension of the several springs.

The bolts 43 lie in passages 54', formed in the beam 52 and opening through the forward face thereof, and the forward ends of these passages are covered by the face-plate 53, which thus receives thereagainst the forward ends of the bolts 43 to hold the beam against rearward movement upon the bolts.

What is claimed is—

1. A device of the class described comprising sills uprights mounted upon the sills, forwardly and rearwardly extending diagonal braces secured at their lower ends to the sills and at their upper ends to the uprights, the rearward braces lying with their upper extremities above the upper extremities of the forward braces, a plate carried by the forward ends of the sills, a plate disposed against the rearward faces of the rearward braces adjacent to the upper ends of the latter, tie-bolts engaged in the two plates, and a compressible buffer carried by the upper ends of the uprights and extending forwardly therefrom.

2. A device of the class described comprising parallel sills having their lower forward corners beveled, uprights secured to the sills between the ends of the latter, braces for the uprights, a plate disposed against the beveled portions of the sills, a plate disposed against the rearward faces of the uprights at the upper portions thereof, and tie-rods engaged in the second plates, the upper portions of said uprights being arranged to receive the impact of a moving body against their forward faces.

3. In a bumper for cars the combination with supporting-uprights having horizontal passages therein at their upper ends, of bolts slidably engaged in the passages and extending forwardly of the uprights, a transverse beam having passages therein in which the forward portions of the bolts are engaged, a face-plate secured against the forward faces of the beam and covering the forward ends of the passages to prevent rearward movement of the beam upon the bolts, springs disposed between the uprights and beam to hold the latter yieldably against rearward movement, and means for varying the tension of the springs.

4. A bumper for cars comprising spaced parallel sills spaced uprights carried by the sills between the ends of the latter, spacing-blocks engaged between the sills, bolts engaged in the sills and in the spacing-blocks, said sills having notches adjacent to their forward and rearward ends, braces engaged at their lower ends in the notches, said uprights having notches in their forward and rearward faces in which the upper ends of the braces are engaged, fastening-bolts engaged in the braces and in the sills, supplemental uprights

received at their lower ends to the sills and at  
their upper ends in the rearward braces, bolts  
engaged in the sills the uprights and the rear-  
ward braces, coinciding plates carried by the  
5 forward ends of the sills and by the upper  
ends of the rearward braces, tie-rods engaged  
in the coinciding plates and lying at the sides  
of the sills and braces and a compressible buffer

carried by the upper ends of the first-named  
uprights and extending forwardly therefrom. 10

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

RICHARD H. FLETCHER.

Witnesses:

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