(No Model.) 2 Sheets—Sheet 1.

W. CLINE.

CAR FENDER.

No. 590,699. Patented Sept. 28, 1897.

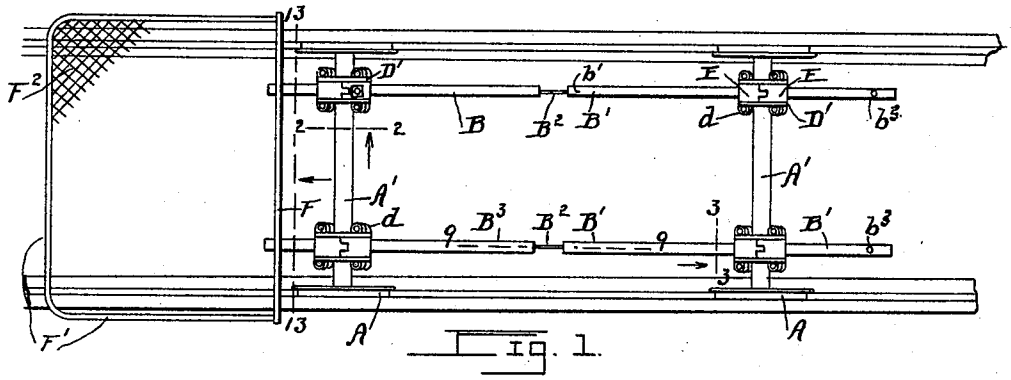


Fig. 1.

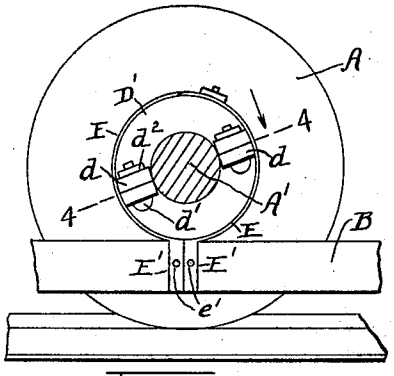


Fig. 2.

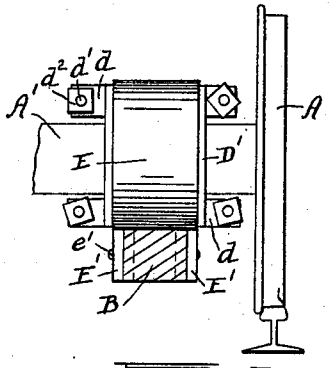


Fig. 3.

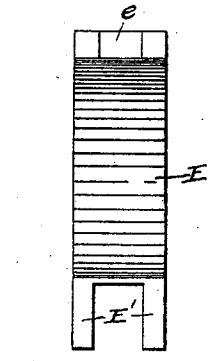


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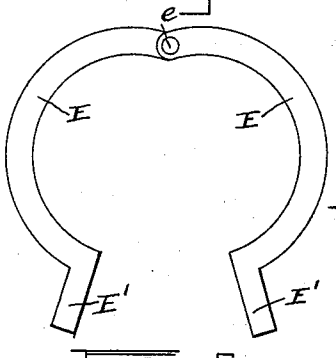


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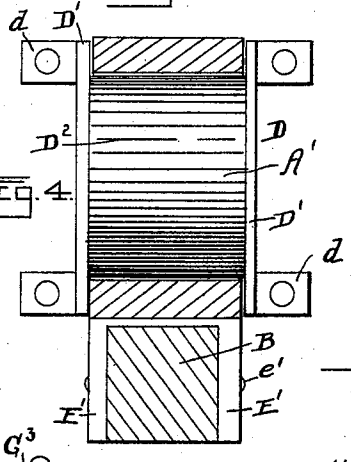


Fig. 4.

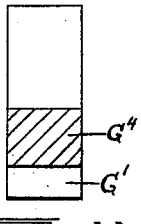


Fig. 11.

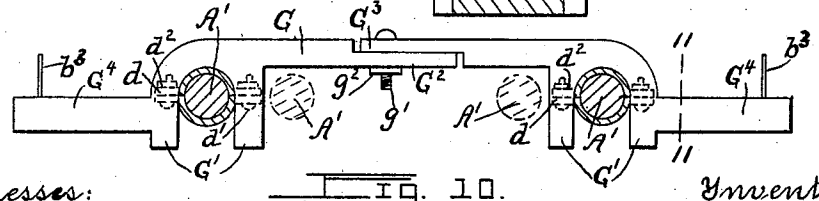


Fig. 10.

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(No Model.) 2 Sheets—Sheet 2.

W. CLINE.

CAR FENDER.

No. 590,699. Patented Sept. 28, 1897.

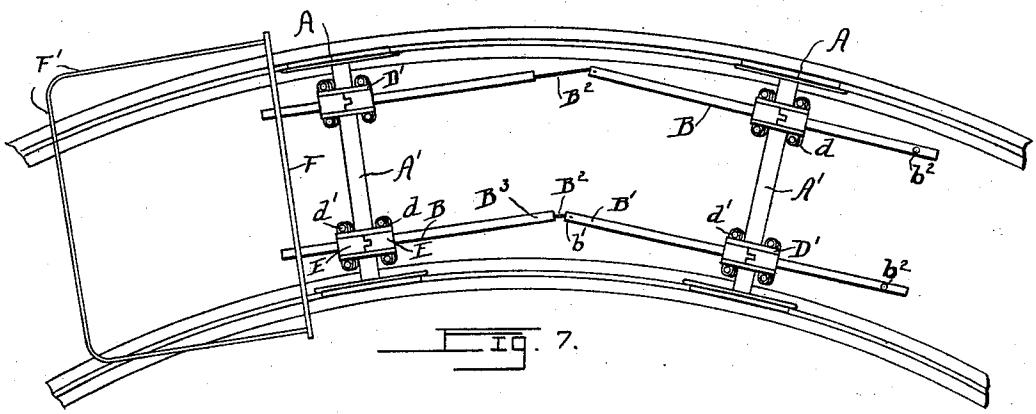


Fig. 7.

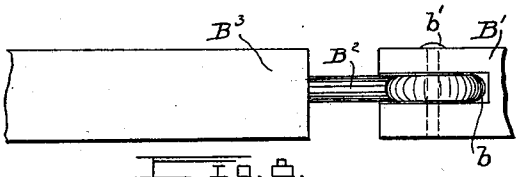


Fig. 8.

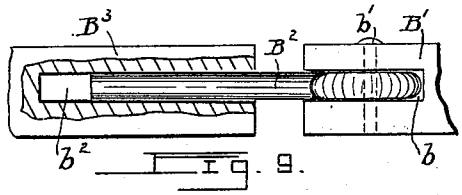


Fig. 9.

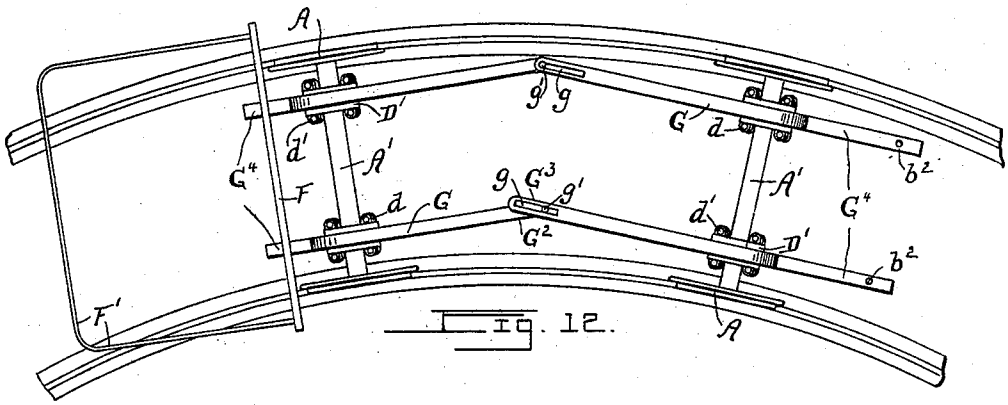


Fig. 12.

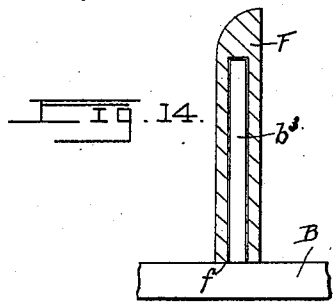


Fig. 14.

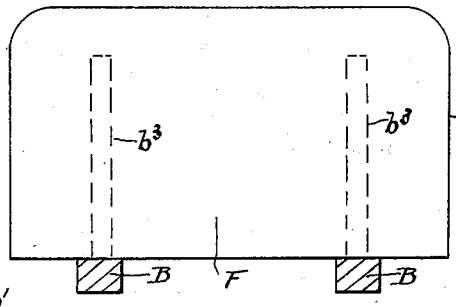


Fig. 13.

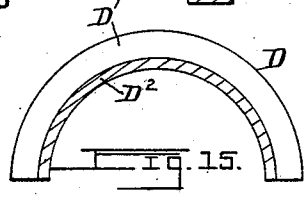


Fig. 15.

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By Attorney
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UNITED STATES PATENT OFFICE.

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CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 590,699, dated September 28, 1897.

Application filed December 16, 1896. Serial No. 615,894. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CLINE, a citizen of the United States, residing at Lancaster, in the county of Lancaster, State of Pennsylvania, have invented certain Improvements in Car-Fenders, of which the following is a specification.

This invention relates to improvements in that class of fenders carried in front of street-cars to prevent persons struck thereby from being caught by the wheels; and the object of my improvement is to prevent vertical vibration of the fender, caused as fenders are now constructed by the rocking of the car-body. This vertical vibration is often a fatal weakness in fenders of this class, as by it the fender is frequently thrown high enough to pass over the body of a person instead of being held steadily down close to the rails, so as to catch or pick up such body.

The invention consists in the construction and combination of the various parts, as hereinafter fully described, and then pointed out in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a top plan view of the axles of a car, showing attached thereto a fender embodying my invention as constructed for a double-truck car. Fig. 2 is a section on broken line 2 2 of Fig. 1; Fig. 3, a section on broken line 3 3 of Fig. 1; and Fig. 4, a section on broken line 4 4 of Fig. 2, the bolts and nuts being removed. Fig. 5 is an inner face view of a section of one of the beam-supports, and Fig. 6 is a side view of one of said beam-supports detached and showing the vibrating ends spread apart. Fig. 7 is a top plan view similar to that shown in Fig. 1, but illustrating the position of the beam-supports as the car rounds a curve. Fig. 8 is a side view of a joint between two of said beam-sections, parts being cut away; and Fig. 9 is a section on broken line 9 9 of Fig. 1. Fig. 10 is a side view of a modified construction of the fender mechanism, and Fig. 11 a section on broken line 11 11 of Fig. 10. Fig. 12 is a top plan view of the axles of a car having said modified construction attached thereto and showing the position of the parts when the car is on a curve. Fig. 13 is a section on broken line 13 13 of Fig. 1; and Fig. 14, a section longitudinal of a supporting-beam, showing the connection between said beam and the fender-frame. Fig. 15 is a longitudinal section of one of the clamp-sections. Figs. 2, 3, 4, 5, 6, 8, 9, 11, 13, 14, and 15 are enlarged views. The views illustrating the whole construction, although showing said construction for a double-truck car, show only one pair of wheels of each truck, as it can easily be seen that the supporting-beams pass either below or above the axles of the other pairs of wheels.

Similar letters indicate like parts throughout the several views.

Referring to the details of the drawings, A indicates the wheels, and A′ the axles.

In Figs. 1 to 9, both inclusive, B indicates the beams that support the fender, and they are supported directly from an axle of each of the trucks. To each part of an axle to which one of said beams is attached is secured a clamp constructed of two tubular semicylindrical sections D, having vertical side plates D′ built on the edges of an annular plate D^2, forming the bottom of an annular channel, of which said plates D′ are the sides. On the outer face of the meeting edges of side plates D′ are outwardly-projecting registering ears *d*, whereby the sections D, which embrace the axle, are clamped thereon by means of bolts *d*′, passing through openings in said ears and nuts d^2. In channel D′ D^2 is located a collar comprising two sections E, having their upper ends hinged together, as at *e*, and on the free ends of these collar-sections are depending jaws E′, which embrace one of the beams B and are rigidly secured thereto by bolts *e*′, passing through said jaws and the beam. By this construction the clamps D D revolve with the axles and in the collars E E, and the beams B are thereby immovably secured to said axles, so that they maintain the fender in a plane parallel with the rails. Between the trucks beams B are divided transversely into sections pivotally connected by a telescopic joint. The jointed end B′ of one of said sections of each beam has a horizontal groove *b* therein, and in the inner end of this slot a connecting-rod B^2 is secured by a pivot-pin *b*′, the other end of said rod being engaged

with a socket b^2 in the adjacent end B^3 of the other beam-section, wherein said connecting-rod has a longitudinal movement. In rounding a curve the outer connecting-rod is drawn outward in its socket and the inner connecting-rod is pushed into its socket, the horizontal grooves b permitting said rods to play about pins b', as shown in Fig. 7. The ends of beams B project beyond the outer sides of the trucks, and on said ends, near their extremities, are vertical pins b^3. The fenders proper are constructed of a vertical back plate or wall F, having in the bottom edge thereof sockets f, that removably engage pins b^3, a forwardly-projecting frame F', having the ends thereof fastened to the ends of the lower edge of back plate F, and a net F^2, secured to said back plate and the frame, as is usual In Fig. 1 a fender is shown on only one end of beams B; but as the fender is removably attached to said beams it can be transferred from one end thereof to the other, or, if preferable, a fender can be attached to each end of beams B. In cars having a single truck the supporting-beams B are secured to both axles of that truck, and each of said beams is constructed in a single rigid piece.

In Figs. 10, 11, and 12 is illustrated a modified construction of the supporting-beams. With this construction the beams G are located above the axles, and on the outer end of each beam-section are two depending jaws G', that embrace one of the axles, the bearing between said jaws being curved so as fit on the bottom of channel $D' D^2$ of a clamp similar to that previously described and as shown in Fig. 10. On the outer face of each outside jaw is a forwardly-projecting tongue G^4, near the ends of which are likewise located vertical pins b^3. Beams G are also divided transversely into sections, but the meeting ends G^2 G^3 are halved and lap each other horizontally. In the upper half is a longitudinal slot g, having both ends closed, and through this slot and an aperture in half G^3 passes a bolt g', secured by a nut g^2. This construction permits the longitudinal adjustment of the beams in rounding a curve. If preferable, the telescopic joint may here be used, as shown in Fig. 1.

I do not limit myself to any particular construction of supports for the fender; neither do I restrict myself to the particular construction and arrangement of parts connecting said parts with the axle herein shown and described.

My improvement involves a radical departure in the construction and principle of operation of car-fenders, the invention consisting, broadly, in a supporting connection between the car-fender and an axle of the car, whereby vertical vibration of said fender may be prevented.

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

1. The combination, with the axle of a car, of a clamp on said axle, a collar in a channel in the clamp, a beam, jaws on the collar and embracing the beam, and a supporting connection between said beam and the jaws, for the purpose specified.

2. The combination, with the axle of a car, of a clamp on said axle, a collar in a channel in the clamp and divided transversely into sections, hinged together at one end, jaws on the free ends of said sections, and a beam supported by said jaws, for the purpose specified.

3. The combination, with the axle of a car, of a clamp on said axle and divided into sections, ears on the meeting edge of one of said sections and registering with similar ears on the meeting edge of the other section, bolts passing through said ears, whereby said sections are clamped on the axle, a collar in a channel in the clamp-sections, said collar being divided into sections hinged together at one end, jaws on the free ends of the collar-sections, and a beam supported by said jaws, for the purpose specified.

4. The combination, with a double-truck car, of a beam divided transversely into sections, a supporting connection between an axle of each of said trucks and the beam, a device uniting the inner ends of the beam-sections, a pivoted connection between said device and one of said beam-sections, and a longitudinally-movable connection between said device and the other beam-section, for the purpose specified.

5. The combination, with a double-truck car, of a beam divided transversely into sections, a pivoted and a longitudinally-movable connection between the inner ends of the beam-sections, a clamp on an axle of each of said trucks, a collar in a channel of each of the clamps, jaws on each collar embracing one of the beam-sections, and a supporting connection between the beam-sections and said jaws, for the purpose specified.

6. The combination, with a double-truck car, of a beam divided transversely into sections, a device uniting the inner ends of the beam-sections, a pivoted connection between said device and one of said beam-sections, a longitudinally-movable connection between said device and the other beam-section, a clamp on an axle of each of said trucks, a collar in a channel in each of said clamps and divided transversely into sections, hinged together at one end, jaws on the free ends of said sections, and supporting connections between the jaws and said beam-sections, substantially as and for the purpose specified.

WILLIAM CLINE.

Witnesses:
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WM. R. GERHART.