

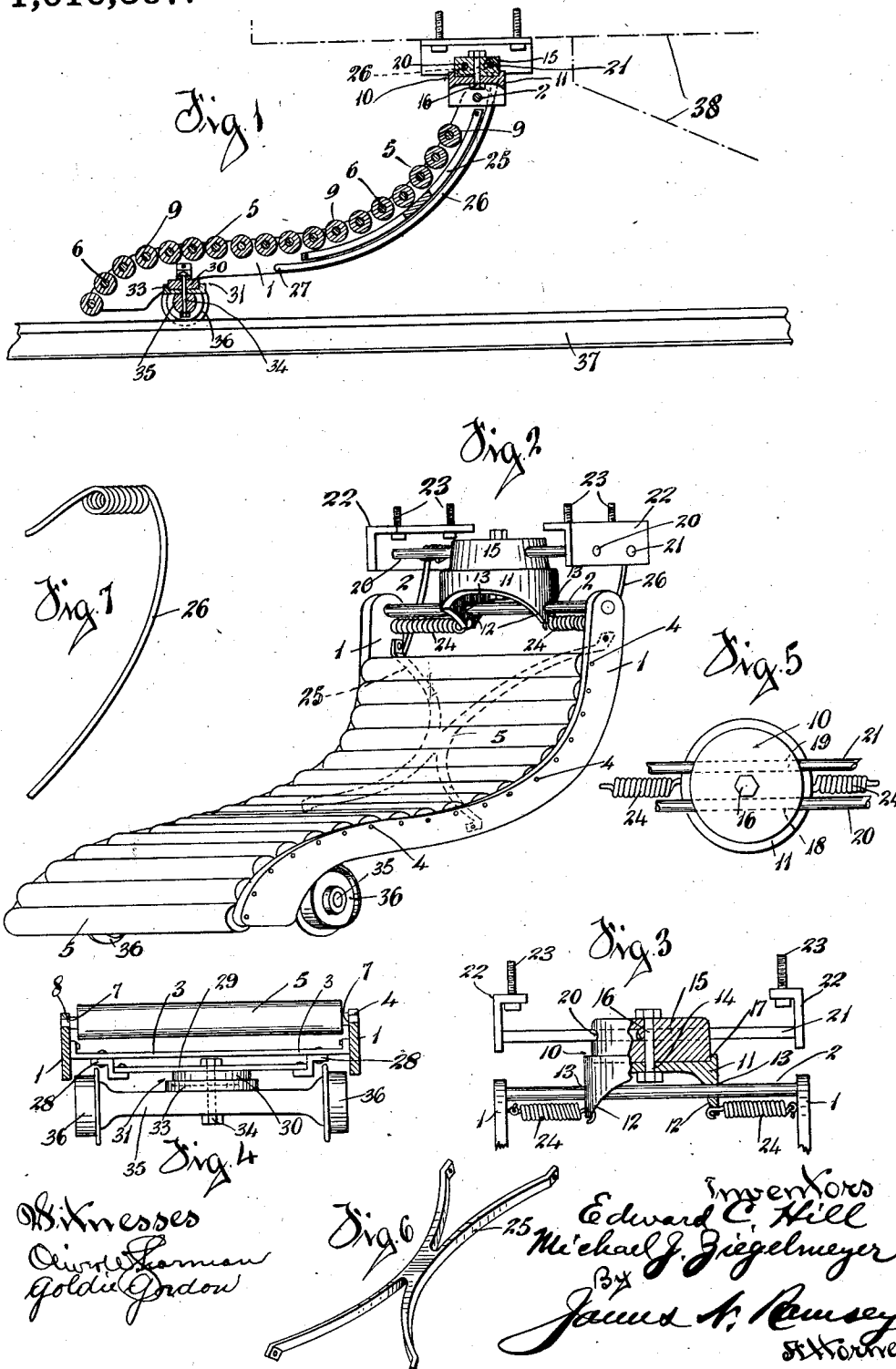
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STREET CAR FENDER.

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Fig. 6

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, EDWARD C. HILL and MICHAEL J. ZIEGELMEYER, citizens of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Street-Car Fenders, of which the following is a specification.

Our invention relates to novel street car fenders.

The object of our invention is to provide a simple, efficient device for this purpose which will effectually guard the front end of the street car and protect a person on the track when the car is approaching from serious injury.

Our invention consists in a street car fender comprising downwardly and forwardly curved side frames having pivotally mounted therein a series of rollers extending in a curved line from the front to the rear end; in suitable braces, and springs pivotally mounted in said fender and pivotally mounting it upon an axle near its front end.

Our invention also consists in the details of construction and in the combination and arrangement of the several parts as herein set forth and claimed.

In the accompanying drawing, which serves to illustrate the construction and use of our invention: Figure 1 is a vertical section of the device; Fig. 2 is a perspective view of the same; Fig. 3 is a view partly in front elevation and partly in vertical section of the fifth wheel and the connections to which it is pivotally secured between the car and the fender; Fig. 4 is an elevation of the front end of the device; Fig. 5 is a top view of the fifth wheel, shown in Fig. 3; Fig. 6 is a perspective view of the brace; and Fig. 7 is a perspective view of one of the springs.

In the embodiment of our invention, as illustrated, and which shows a preferred construction, we provide downwardly and forwardly curved side bars 1 secured in fixed relation to each other at their upper rear ends by cross bar and brace 2 and near the front end by cross bar and brace 3 each firmly secured to said side bars respectively. Said side bars 1 are each provided with a series of bearings 4 in which are journaled a series of rollers 5 respectively. Said rollers are each preferably constructed of a metallic rod 6 having shoulders 7 and jour-

nals 8, said journals being adapted to enter said bearings 4 respectively. We preferably cover said rod 6 with a sleeve 9 of wood, rubber or other suitable material and said sleeve may be firmly fixed upon said rod or may be loosely mounted to rotate thereon, as may be preferred or desired.

Our fender is pivotally and slidably connected to the street car 38 by means of a fifth wheel 10 formed of a lower cylindrical part 11 and recessed in its under side to form two downwardly extending lugs 12 each of which is provided with a transverse opening 13 therethrough for the purpose of receiving cross bar and brace 3, upon which said fifth wheel is slidably and pivotally mounted. A bolt hole 14 extends vertically through said lower part 11 and also through the upper part 15 for the purpose of receiving a pivot bolt 16 by which said upper and lower parts are secured together and upon which the lower part 11 is adapted to turn. The lower part 11 is provided upon its upper surface with a recess 17 into which the lower surface of the upper part is adapted to fit, and this also provides a receptacle for oil by which the device may be constantly lubricated. The upper part 15 is provided with transverse openings 18 and 19, adapted to receive supporting bars 20 and 21, respectively, on which said upper part 15 is mounted. The supporting bars 20 and 21 are secured to brackets 22 attached to the car 38 by bolts 23. Said upper part 15 may be held in fixed relation to said supporting bars by any suitable means. A spring 24 is suitably connected to each lug 12 and to the side bars 1, respectively for the purpose of normally holding the fender in central position relative to said lower part and at the same time to permit said fender to yield or shift to either side under the movement or action of the car or of any object which might engage the fender, thus permitting the fullest and freest variation in the movement of the fender, depending upon the particular conditions requiring same. Thus it is seen that it not only provides for a pivotal movement of the fender upon said pivot bolt but also provides for additional lateral shifting movement to either side as may be necessary. This is particularly advantageous and desirable when going around a curve, since it permits of the greatest freedom of movement and

action of the fender independently of the front of the car while turning a curve.

In order to securely brace and strengthen the fender, we preferably provide a brace 25 which is suitably secured to each side 1, substantially as shown. We also provide springs 26 each coiled upon supporting bar 21, one end of which spring engages supporting bar 21 and the other end of which extends along the inner surface of the side bar beneath said rollers and is secured at 27, said springs being provided for the purpose of normally holding the front end of said fender in its downward position as near as possible to the surface over which it passes.

Brackets 28 are secured to the cross bar and brace 3 and upon these brackets is mounted supporting bar 29 to which the upper part 30 of the fifth wheel 31 is rigidly secured. The lower part 33 of said fifth wheel is pivotally connected and secured to the upper part by means of a pivot bolt 34, said pivot bolt also extending through supporting cross bar 29 and axle bar 35 of the truck. Suitable flanged wheels 36 are mounted upon said axle bar 35 and are adapted to traverse the street car rails 37.

It will be seen that the lower front end of our fender is pivotally mounted upon a truck in such a manner as to permit said truck to turn freely and adapt itself to varying conditions of the track or rails.

It will be observed from the foregoing description that our construction is such that the fender, (which consists of a series of rollers) is always passing along directly over each rail of the track and is always down on the track, and projects in front of the car so that it is absolutely impossible for a person to be struck by the car without first coming into contact with the fender, and being protected from serious injury thereby. It should be further noted that our fender is always in position ready to catch a person who is accidentally caught by an approaching car. Our device is particularly effective when the car is passing over a curve for the reason that the fender always follows the track, whereas, on a curve the front end of the car projects to one side of the track. It should be further noted that as the car is given a tilting motion due to high speed and unevenness and irregularities in the surface of the track, the springs 24 draw said fender downwardly and always hold the wheels 36 in engagement with the rails 37 on the track. If during these movements of the street car there should be any side or lateral movement thereof, the coiled springs 24 permit of such movement without disturbing the position of the fender with relation to the track. The springs as before stated normally maintain the fender in central position relative to the car by permitting of lateral thrusts or

side movement of the car against the pressure of said springs which will quickly readjust the parts to their normal position.

An important feature of our invention consists in providing two fifth wheels, one near the body of the car to which the upper rear end of the fender is attached, permitting pivotal and sliding movement thereon and the other near the lower front end of the fender permitting pivotal movement only, thereon. This affords ample provision by which the fender is adapted to readily adapt itself to curves and other irregularities in the track as well as to the various movements, tilting, lateral and otherwise of the street car.

A very important feature of our invention consists in the provision of a series of transverse pivotally mounted rollers extending from the lower front end of the fender and near the ground or surface, gradually inclining upwardly for a short distance and then curving sharply upward to the rear end of the fender so that when a person is accidentally caught in front of the fender he will fall upon said rollers and by reason of the forward movement of the car and fender will be easily "rolled up" and securely and safely caught upon its upper surface and protected from serious injury.

The fender extends entirely across the track and over the wheels 36 so that there is no possible danger of any person being struck by said wheels.

It will be apparent that our invention is capable of considerable modification without material departure from the spirit or scope thereof. We do not, therefore, wish to be confined to the exact details of construction or arrangement of the parts as herein set forth, but

What we claim as new and desire to secure by Letters Patent is:

1. A street car fender secured to a street car and comprising side bars, means for supporting said side bars in fixed relation to each other, a series of rollers arranged side by side between said side bars and journaled therein, a fifth wheel mounted upon said street car and slidably connected to said fender whereby pivotal and sliding movement is provided between said car and said fender and a truck upon which said fender is mounted near its front end, substantially as set forth and for the purposes specified.

2. A street car fender secured to a street car and comprising side bars held in fixed relation to each other, a series of rollers arranged side by side between and lengthwise of said bars, a fifth wheel mounted on said street car, and pivotally and slidably supporting said fender at its rear end, a truck pivotally connected to and supporting said fender near its front end, and springs secured to said car and to said fender whereby

the latter is normally held in downward position to maintain the wheels of the truck in constant engagement with the track, substantially as set forth and for the purposes specified.

3. A street car fender comprising side bars suitably held in fixed relation to each other, a series of rollers journaled transversely between said side bars and extending longitudinally thereof, a brace connecting said side bars below said rollers in its rear part, means for pivotally connecting said fender to a street car and springs adapted to hold said fender in downward position, substantially as set forth and for the purposes specified.

4. A street car fender secured to a street car and comprising side bars, a series of rollers mounted transversely therebetween, a fifth wheel pivotally connected to said street car and slidably connected to said fender and springs connecting said fifth wheel and said sides respectively whereby said fender is normally held in position and is adapted to yield laterally and turn upon said pivot, substantially as set forth and for the purposes specified.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."