

L. E. SULZER.
CAR FENDER.

APPLICATION FILED JULY 21, 1910.

984,616.

Patented Feb. 21, 1911.

2 SHEETS—SHEET 1.

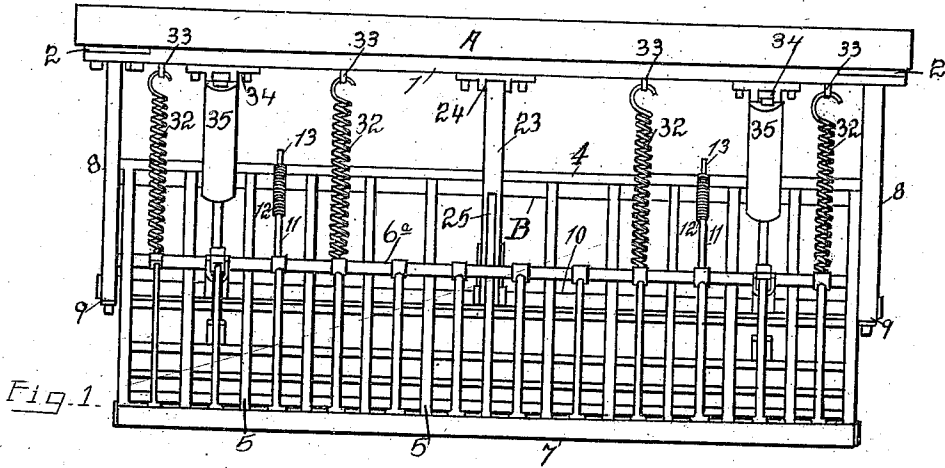


Fig. 1.

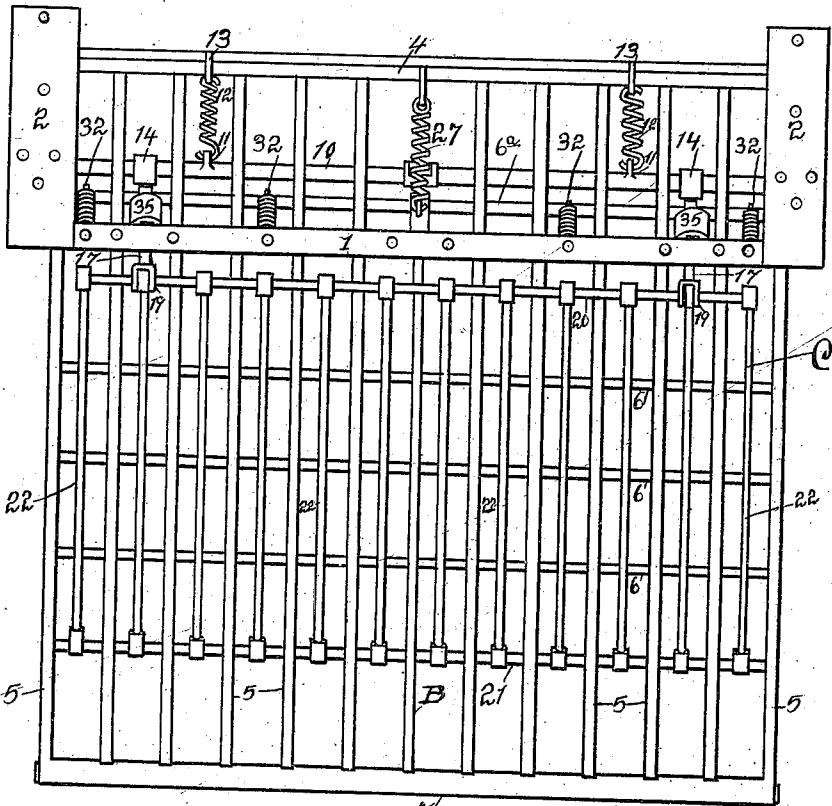


Fig. 2.

Witnesses
Clayton S. Dew
F. G. Campbell

Inventor
Leo E. Sulzer,

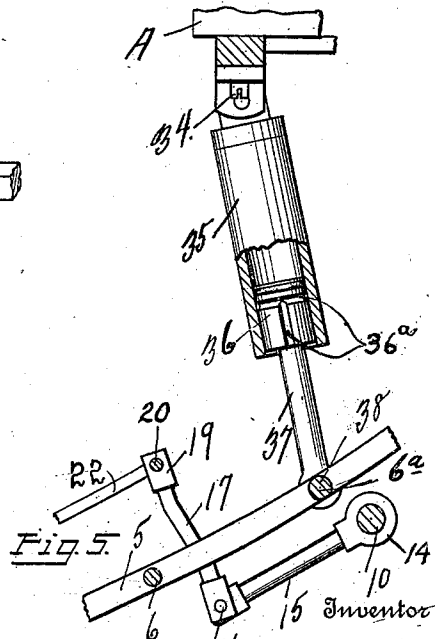
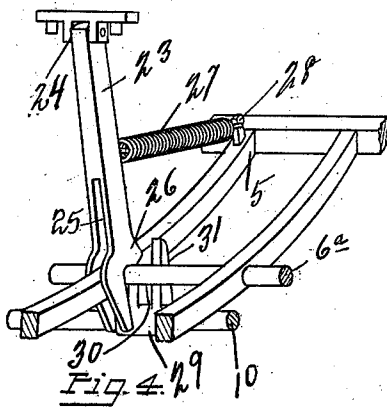
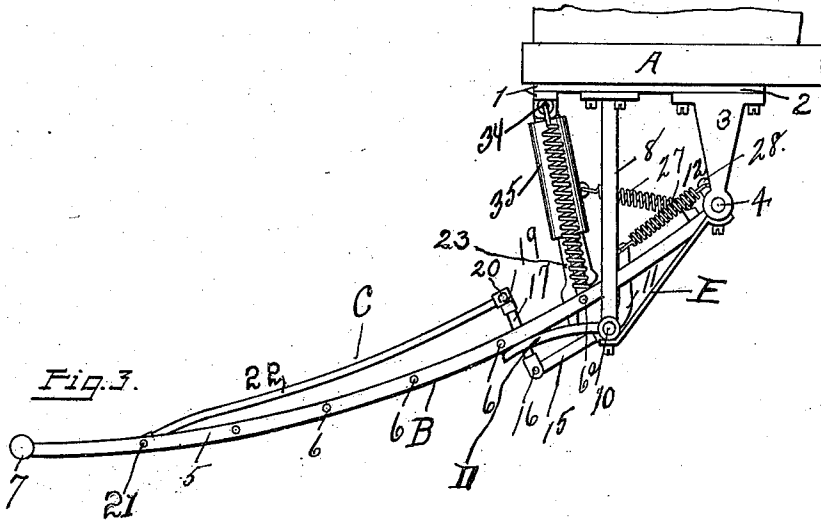
By Chester C. Shepherd
Attorney

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2 SHEETS—SHEET 2.



Witnesses
E. B. Maurer.
A. L. Phelps

Inventor
Leo E. Sulzer

C. Shepherd Attorneys

UNITED STATES PATENT OFFICE.

LEO E. SULZER, OF CHILLICOTHE, OHIO.

CAR-FENDER.

984,616.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed July 21, 1910. Serial No. 572,981.

To all whom it may concern:

Be it known that I, LEO E. SULZER, a citizen of the United States, residing at Chillicothe, in the county of Ross and State of Ohio, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

The present invention relates to car fenders and has particular application to fenders of the type employed in connection with street railway cars, and is in the nature of an improvement upon the fender forming the subject matter of my co-pending application, filed June 21, 1910, Serial Number 568,123.

In carrying out my invention, it is my purpose to provide a fender embodying the desired features of simplicity and durability, and one which is automatic in its operation, that is, is not dependent upon the motorman for its actuation.

Still a further object of my invention is to provide a fender which, when it picks up a body, will be automatically tripped, so that the basket or frame of the fender, will be slowly raised, carrying its burden clear of the track, and yet will prevent the body being thrown suddenly and violently against the car by the impact of the fender.

Still a further object of my invention is to provide pneumatic means, coöperating with mechanical devices, whereby the tripping and raising of the fender is accomplished, as described.

With the above recited objects and others of a similar nature in view, my invention consists in the construction, the combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings: Figure 1 is a front view of a fender embodying my improvements, showing the same attached to a car body, Fig. 2 is a top plan view of my improved fender, Fig. 3 is a side view, Fig. 4 is a detail perspective view, showing the fender locking and tripping mechanism, Fig. 5 is a detail view, showing one of the pistons of the fender, a portion of the piston cylinder being broken away.

Referring now to the accompanying drawings in detail, A designates a portion of the car body, as the bumper, having secured to the underside thereof a metallic cross bar 1 and the side plates 2. Depending from the side plates, are the hanger

arms 3, having their lower ends formed with bearings for the reception of the rear shaft 4 of the basket or frame B of the fender. This frame, as will be seen by reference to the drawings, comprises a series of longitudinally extending curved bars 5 connected through the medium of the cross rods 6, the rods and bars being suitably spaced apart. At the front of the fender, I may if desired, secure any suitable buffer, such as shown at 7, said buffer being preferably formed of or covered with a soft resilient material to lessen the shock or impact when the fender strikes.

Depending from the car body and preferably arranged forwardly of the hangers 3 are the hanger rods 8, one at each side of the car, the ends of said rods, as at 9, forming bearings for the rock shaft 10. This shaft is provided with a suitable number of upwardly extending arms 11. To one end of each arm is attached an end of the contraction spring 12, the opposite end of each spring being secured to a lug 13 carried by the rear shaft 4 of the frame B. Carried by collars 14 fixedly mounted upon the rock shaft 10, are the arms 15, each pivotally connected as at 16, with the links 17, the arms and links forming a flexible connection.

The ends 19 of the links are suitably connected to the cross rod 20 of the supplemental frame C. This frame is preferably formed of the cross rods 20, 21, and the longitudinally extending slightly curved rods 22, which are preferably so spaced apart, that each rod 22 lies above and between the longitudinally extending rods 5 of the basket or frame B. The cross rod 21 extends through and is loosely mounted in the longitudinal bars of the frame B. Depending from the car body, and preferably approximately centrally thereof, is the locking arm 23, pivoted as at 24 to the car body, the free end of said pivoted or swinging arm being preferably bifurcated as at 25, and is formed with a shouldered portion 26, adapted to engage with the rear cross rod 6^a of the frame B, the bifurcated portion of the arm 23 preferably straddling the adjacent bar 6^a of the main frame or basket B. It will be noted by reference to Figs. 1, 2 and 3 that the frame of the scoop B comprises the longitudinally extending bars 5, a number of cross rods 6, the front or buffer bar 7, and a rear bar 4 and also has a cross bar 6^a near the rear of the frame,

which is similar to the bars 6, this bar 6^a being the one upon which the pivoted arm 23 rests. The arm 23 is also provided with a tension spring 27, through which it is connected to the lug 28 at the rear of the frame B. A finger D is secured to the end of the rock shaft 10 and bears against the underside of the frame B so that as the frame B is depressed in setting, the springs 12 are placed somewhat under tension. These springs consequently tend to throw the frame B of the fender upwardly or into engagement with the arm 23. This bearing of the finger D against the underside of the frame B aids in preventing up and down movement of the fender due to the jolting of the car.

When the fender is set, the supplemental frame C, is elevated from the main frame and the rock shaft 10 turns slightly in its bearings to bring the tripping member 29 close to the bifurcated locking arm 23 which engages with its shouldered portion on the cross rod 6^a. Carried by the rock shaft is a tripping member 29, which is also bifurcated at 30, so that the arms 31 of the trip, straddle the adjacent bar 5 of the main frame, the trip being in line with the locking arm to actuate the latter as hereinafter described, for the purpose of releasing the arm when a body is struck. When the fender contacts with an object, the latter is naturally tossed on the frame C, and the links being depressed, the rock shaft 10 turns and brings the trip 31 forward, striking the locking arm 26, thus engaging the latter from the bar 6^a of the fender frame B. The fender is then drawn upward through the medium of a suitable number of springs 32, one end of each spring being connected to the cross bar 6^a of the frame B, while the opposite end of the contraction springs 32, are connected to the car body as at 33. Were merely powerful contraction springs 32 employed, the tendency of the fender would be to move upwardly too rapidly and thereby present the possibility of throwing the body violently against the car body, which, in case of a person, would be liable to inflict serious injury either by the impact against the body of the car, or by the person being thrown outward after striking the car. To obviate the rapid and sudden rising of the fender I employ the following mechanism: Hinged to the car body, as at 34, are a suitable number of depending cylinders 35, within each of which moves a piston 36, the rod 37 of which is connected as at 38 to the cross bar 6^a of the main frame. The piston 36 is channeled or grooved as at 36^a to permit the escape of air as the piston ascends the cylinder, when the fender has been actuated and the tripping mechanism has released the locking parts.

By referring to Fig. 5, a clear understanding of the piston and cylinder construction, or dash pot arrangement will be readily had. It will be noted that the cylinder 10 hung or pivoted at 34, is open at its lower end, and the piston head or plunger 36 is grooved, to permit the escape of air as just described. Thus when the fender is released by the tripping mechanism, the upward movement of the same, due to the action of the spring 32 is retarded by the pneumatic mechanism and the fender moves to its uppermost position slowly and gradually.

From the above description, taken in connection with the accompanying drawings, the construction and operation of my improved fender will be readily apparent.

In setting the fender, the main frame is depressed by pressure applied to the same, so that the rock shaft is moved slightly forward, and the hinged bifurcated locking arm engages with the rod 6^a. In this position the supplemental frame C is elevated its maximum distance above the frame B, said frame C swinging from the connections with the cross bar of the main frame, near the front of the fender. In this position, the fender is set or ready for operation. When the bumper strikes an obstruction, the latter is naturally thrown on to the fender and striking the supplemental frame C, depresses the same so that the trip on the rock shaft strikes the shouldered portion of the arm 23, disengaging the latter from the cross bar 6^a, thereby releasing the main frame and causing the latter to be drawn upward by the powerful contraction springs 32. As heretofore stated, the sudden and rapid rising of the fender is retarded and prevented by the pistons and cylinders. A brace E extends from the bottom of the hanger arm 3 to the bottom of the hanger rod 8 and aids in bracing these parts.

It will be noted that I have provided a safe and positively acting automatic fender and one which is so operated that the possibility of a person being seriously injured after being struck, is greatly lessened.

While I have herein shown and described one particular embodiment of my invention, I wish it to be understood that I do not limit myself to all the precise details of construction herein shown and described, by way of illustration, as modification and variation may be made without departing from the spirit of the invention or exceeding the scope of the appended claims.

What I claim, is—

1. In a fender, the combination with a main fender frame, means for locking the frame against movement, and a supplemental frame located above and connected to the main frame and adapted to actuate the locking means to release the fender.

2. In a fender, the combination with a main frame, means for holding the frame against movement, and a depressible frame located above and connected to the main frame for actuating the holding means to release the fender.

3. In a fender, the combination with a main frame, means for holding the same against movement, a supplemental frame for actuating the holding means to release the main frame, and means for retarding the upward movement of the main frame.

4. In a fender, the combination with a main frame, means for holding the same against movement, a supplemental frame for actuating the holding means to release the fender, means for drawing the fender upward upon release, and pneumatic means for retarding the upward movement of the fender.

5. In a fender, the combination with a main frame, pivoted holding means engaging with the main frame to hold the same in depressed position, trip mechanism to actuate the holding means, a supplemental frame, connections between the supplemental frame and the trip mechanism whereby the tripping mechanism is actuated upon the depression of the supplemental frame, and the fender released.

6. In a fender, the combination with a pivoted main frame, means for holding the same in depressed position, and a depressible frame movably connected to the main frame and adapted to be depressed to release the main frame.

7. In a fender, the combination with a main frame, tension means normally tending to draw said frame upward, holding devices counteracting the tendency of the tension means, a frame extending above the main frame adapted to be depressed to release the holding means, and retarding means for the main frame.

8. In a fender, the combination with a pivoted fender frame, means normally tending to draw said fender frame upward, means for holding said fender frame against movement, a rock shaft, tripping mechanism carried thereby, a depressible member, and connections between said depressible mem-

ber and the rock shaft, for actuating the tripping mechanism to release the fender frame.

9. In a fender, the combination with a pivoted fender frame, means normally tending to draw said fender frame upward, means for holding said fender frame against movement, a shaft, tripping mechanism carried thereby, a depressible member carried by the fender frame, connections between said depressible member and shaft, and means for retarding the movement of the fender frame upon the release of the holding means.

10. The combination with a pivoted fender frame, means normally tending to draw the same upward, means for holding said fender in a depressible position, a shaft, tripping mechanism, a supplemental frame, and connections between said frame and shaft whereby the tripping mechanism is actuated upon the depression of the supplemental frame.

11. The combination with a pivoted fender frame, tension means normally tending to draw said frame upward, means for holding said frame in depressible position, a shaft, tension devices for said shaft connecting the latter and the pivoted frame, a depressible frame, connections between said depressible frame and shaft, tripping mechanism carried by the shaft, a hinged cylinder depending from a car body, and a piston moving in said cylinder.

12. In a fender, the combination with a pivoted fender frame, a depressible frame connected to the fender frame, means for holding the fender frame in depressed position, said means comprising a pivoted locking arm, a rocking trip adapted to contact with said arm and release the same upon the depression of the depressible frame, springs for drawing the fender frame upward, and means for retarding the upward movement of the fender frame.

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

LEO E. SULZER.

Witnesses:

WILLIAM F. PROBST,
JOSEPH P. ENGLESON.