No. 678,232. Patented July 9, 1901.

C. F. EKMAN.

FENDER.

(Application filed Dec. 24, 1900.)

(No Model.)

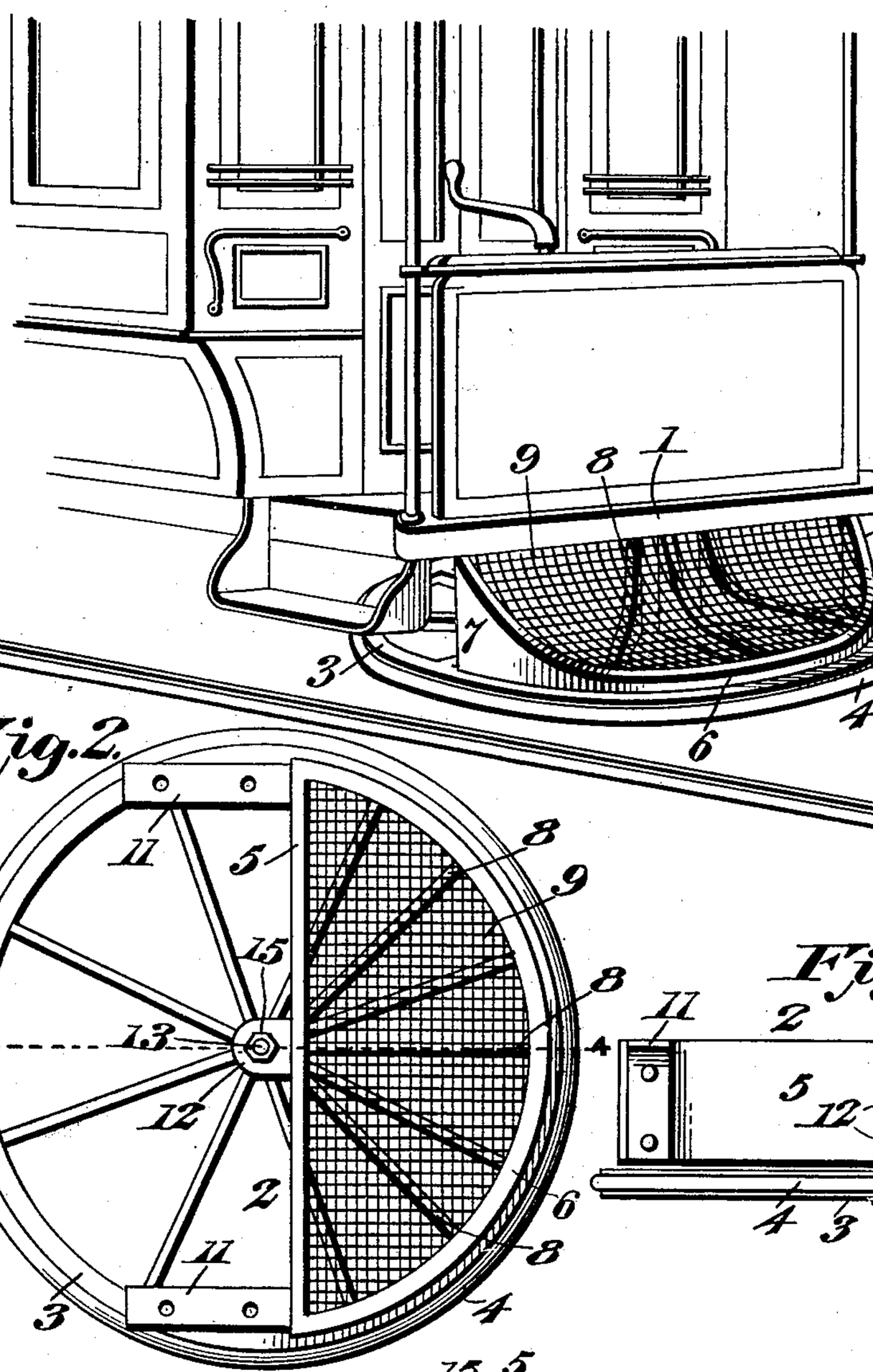


Fig. 1.

Fig. 2.

Fig. 3.

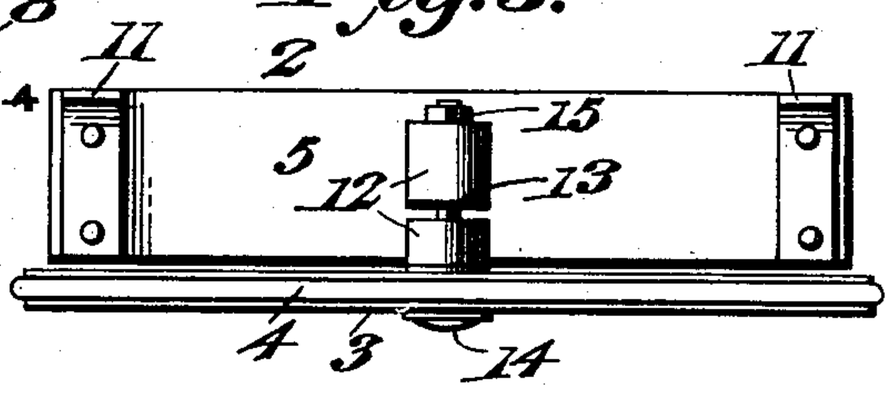
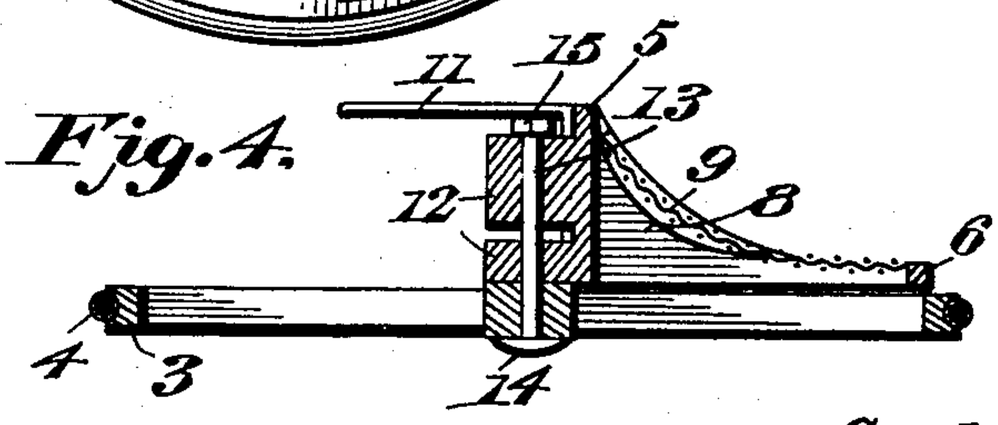


Fig. 4.



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CARL FERDINANT EKMAN, OF MARSHALLTOWN, IOWA.

FENDER.

SPECIFICATION forming part of Letters Patent No. 678,232, dated July 9, 1901.

Application filed December 24, 1900. Serial No. 40,965. (No model.)

To all whom it may concern:

Be it known that I, CARL FERDINANT EKMAN, a citizen of the United States, residing at Marshalltown, in the county of Marshall and State of Iowa, have invented a new and useful Fender, of which the following is a specification.

My present invention relates to a novel car-fender, and has for one object to provide a street-car or other vehicle of like nature with a safety appliance to prevent serious injury of a person accidentally struck by the moving car.

A further object of the invention is to provide an appliance of this character comprising a stationary fender-receptacle into which the person may be thrown when struck and a rotary guard-wheel having a cushioned periphery and freely movable below the fender proper, in order that, unless the person happens to be directly in front of the car, the rotation of the guard-wheel will cause him to be pushed to one side, out of the path of movement of the car.

A still further object of the invention is to simplify the mounting of a two-part fender of this character by making provision for the attachment of the fender proper to the car structure and for the journaling of the guard-wheel directly upon the frame of the fender.

To the accomplishment of these objects the invention consists in the construction and arrangement of parts to be described, illustrated in the accompanying drawings, and defined in the appended claims.

In said drawings, Figure 1 is a perspective view of a portion of a car equipped with my device. Fig. 2 is a top plan view of the safety appliance detached. Fig. 3 is a rear elevation of the subject-matter of Fig. 2, and Fig. 4 is a longitudinal section on the line 4 4 of Fig. 2.

Referring to the numerals employed to designate corresponding parts in the several views, 1 indicates the platform of a car, 2 the fender, bolted to the under side thereof and extending beyond the platform, and 3 the guard-wheel, disposed horizontally immediately below the fender and provided with a cushion-tire 4.

The fender 2 is composed of a substantially semicircular metal frame composed of a heavy back plate 5 extending between the ends of the semicircular guard-rail 6, the lower edge of which is disposed in the plane of the lower edge of the plate 5. The central portion of the rail 6 is of such height as to locate its upper edge in a horizontal plane considerably below the upper edge of the plate 5; but the ends of the rail are widened, as indicated at 7, in order that the height of said ends may coincide with the height of the plate.

The fender-frame is properly braced by means of a number of radiating braces or spokes 8, extending from a point or points adjacent to the middle of the plate 5 and connecting with the guard-rail 6 in equidistant relation, and the fender proper is completed by the provision of a receptacle or basket 9, preferably of wire fabric or other suitable material, set into the frames, as illustrated, and having sufficient fullnessto create a concavity within which a person struck by the vehicle may be received without injury.

As illustrated in Fig. 4, the upper edge of the radial braces or spokes 8 of the fender are curved in a degree substantially corresponding to the curvature of the basket by the enlargement of the inner ends of said braces, as shown, so that in the event of material sagging of the netting it will be supported by these spokes or braces.

The fender thus constructed is secured to the under side of the car-platform in any suitable manner—as, for instance, by supporting-brackets 11, extending rearwardly from the upper edge of the plate 5—and upon said plate, preferably at the middle of its rear face, are cast one or more comparatively heavy shaft-supporting lugs 12 for the reception of the vertically-disposed shaft 13 of the guard-wheel 3. The construction and specific manner of mounting of this shaft are not absolutely essential; but I have shown and prefer to employ a wheel-shaft having the form of a heavy bolt provided upon its lower end with a disk or head 14, upon which the guard-wheel rests. Where this form of shaft is employed, its upper end is extended above the lug 13 and is secured in place by a

nut 15, screwed upon its upper end. It is evident that any desired form of guard-wheel may be employed; but for the purpose of simplifying the construction as much as possible this wheel is preferably made in a single casting, as shown, and its periphery is grooved for the reception of the cushion-tire 4, which is preferably a hollow rubber tube, but which may be provided with a valve to permit its inflation, if desired.

In use the fender is secured upon the under side of the car-platform, as shown, and projects a sufficient distance beyond the front edge thereof to present the basket in an exposed position to receive a person before the latter is struck by the car. The guard-wheel is disposed immediately below the fender and is of such diameter as to cause its periphery to extend slightly beyond the guard-rail 6 of the fender, but in concentric relation therewith. If now a person standing between the tracks is struck by a rapidly-moving car equipped with the device, he will under ordinary circumstances be pushed out of harm's way by reason of the free rotation of the guard-wheel, by which he is first struck. If, however, the person should be standing directly in line with the axis of the wheel, he will be struck by the soft cushion-tire of the latter and will be thrown into the basket of the fender, where he may remain without injury until the car has been brought to a stop.

From the foregoing it will be observed that I have produced a simple, inexpensive, and highly-efficient life-saving appliance for cars and like vehicles; but while the present embodiment of my invention is believed at this time to be preferable I wish to reserve the right to effect any and all changes, modifications, and variations that may be fairly embraced within the spirit of the invention.

What I claim is—

1. In a safety appliance for cars, the combination with a stationary fender designed for attachment to the car structure, of a subjacent guard-wheel supported by the fender for free rotation, and having its periphery projecting slightly in advance of the fender and following the curvature thereof.

2. In a safety appliance for cars, the combination with a curved fender comprising a frame having means of attachment to the car structure, and a shaft supported by said frame, substantially at the axis of the curved edge of the fender, of a guard-wheel mounted upon said shaft in subjacent relation to the fender, and having its periphery projected slightly therebeyond.

3. In a safety appliance for cars, the combination with a fender composed of a back plate having means of attachment to the car structure, a substantially semicircular guard-rail extending from said plate, and a basket or receptacle supported by the frame, of a shaft supported by said plate substantially at the axis of the guard-rail of the fender, and a rotatable guard-wheel carried by said shaft in subjacent relation to the fender and having its periphery projected slightly beyond the guard-rail thereof.

4. In a safety appliance for cars, the combination with a fender comprising a frame composed of a back plate having means of attachment to the car structure, a substantially semicircular guard-rail extending forwardly from the plate and having the middle portion of its upper edge disposed in a plane below the upper edge of said plate, a series of radially-disposed braces extending from the plate and connected to the guard-rail, a concave netting secured within the frame and designed under certain conditions to be supported by the radial braces, a lug extending from the back plate of the fender at the axis of the guard-rail thereof, a shaft retained by said lug, and a guard-wheel mounted for free rotation upon the lower end of said shaft in subjacent relation to the fender and having a cushioned periphery disposed slightly beyond and concentric with the guard-rail.

5. In combination with the fender composed of a guard-rail, a back plate and a basket or receptacle, the rotatable guard-wheel arranged below the fender and projecting in advance of the guard-rail the axis of said wheel being disposed at the longitudinal center of the fender.

6. In a safety appliance for cars, the combination with a fender composed of a back plate, and a substantially semicircular guard-rail extending from said plate, of a shaft supported by said plate substantially at the axis of the guard-rail of the fender, and a rotatable guard-wheel carried by said shaft in subjacent relation to the fender, and having its periphery projected slightly beyond the guard-rail thereof.

7. In a safety appliance for cars, the combination with a fender comprising a frame composed of a back plate having means of attachment to the car structure, a substantially semicircular guard-rail extending forwardly from the plate and having the middle portion of its upper edge disposed in a plane below the upper edge of said plate, a series of braces extending from the plate and connected to the guard-rail, a lug extending from the back plate of the fender at the axis of the guard-rail thereof, a shaft retained by said lug, and a guard-wheel mounted for free rotation upon the lower end of said shaft in subjacent relation to the fender and having its periphery disposed slightly beyond and concentric with the guard-rail.

8. In combination with the fender composed of a guard-rail, a back plate, and a basket or receptacle, the rotatable guard-wheel arranged below the fender, having its periphery following the curvature of the guard-rail and projecting slightly in advance of the same.

9. The combination with a fender comprising a frame having a semicircular guard-rail, of a subjacent rotatable guard-wheel supported by the fender-frame and having its periphery following the curvature of the guard-rail and projecting slightly in advance of the same.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CARL FERDINANT EKMAN.

Witnesses:

S. P. KNISELY,

J. W. LINDEROTE.