No. 685,109. Patented Oct. 22, 1901.

J. P. CORNELIUS.

CAR FENDER.

(Application filed Aug. 15, 1901.)

(No Model.)

Fig. I.

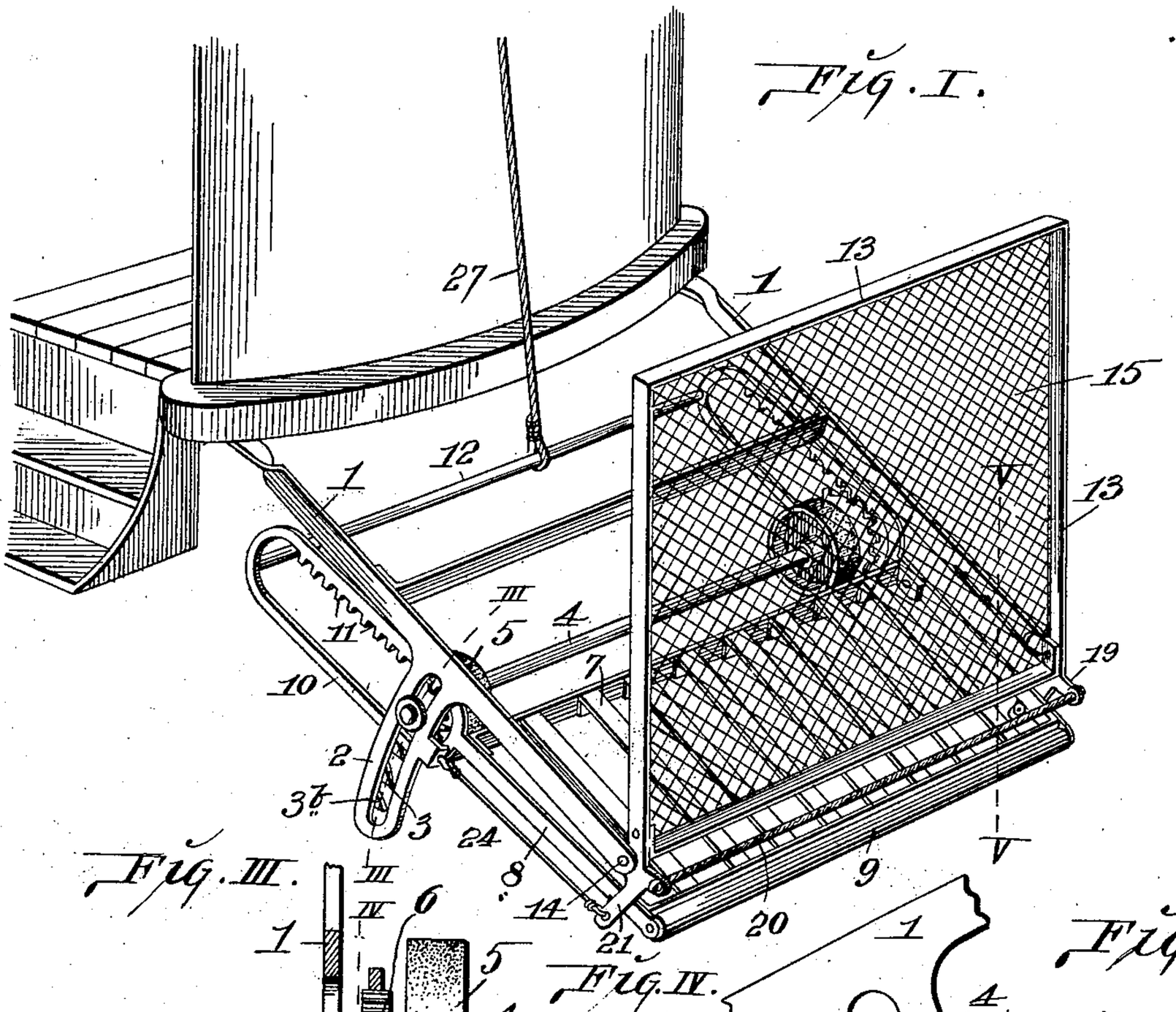


Fig. III.

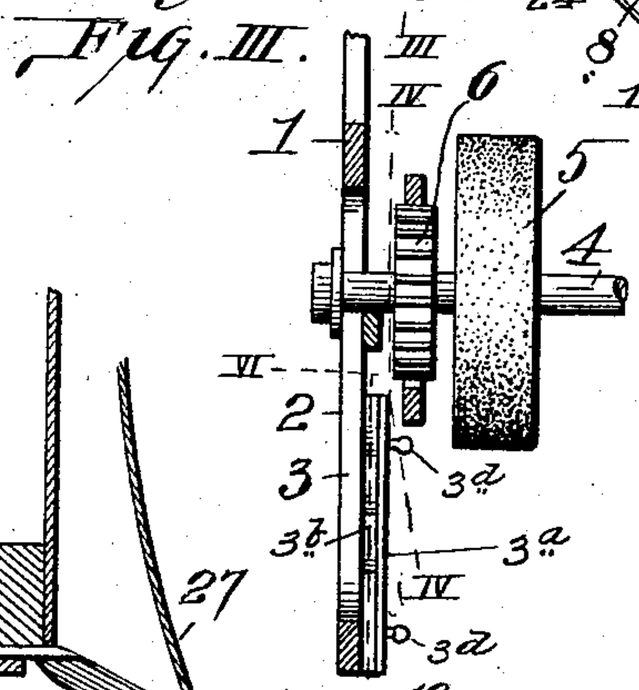


Fig. IV.

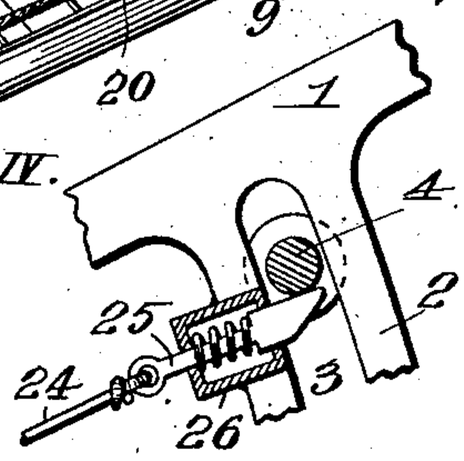


Fig. V.

Fig. VI.

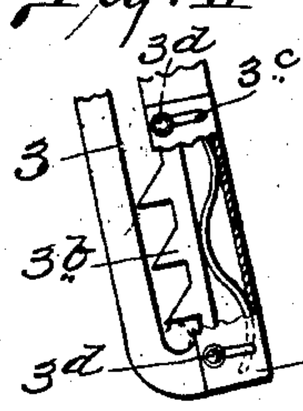
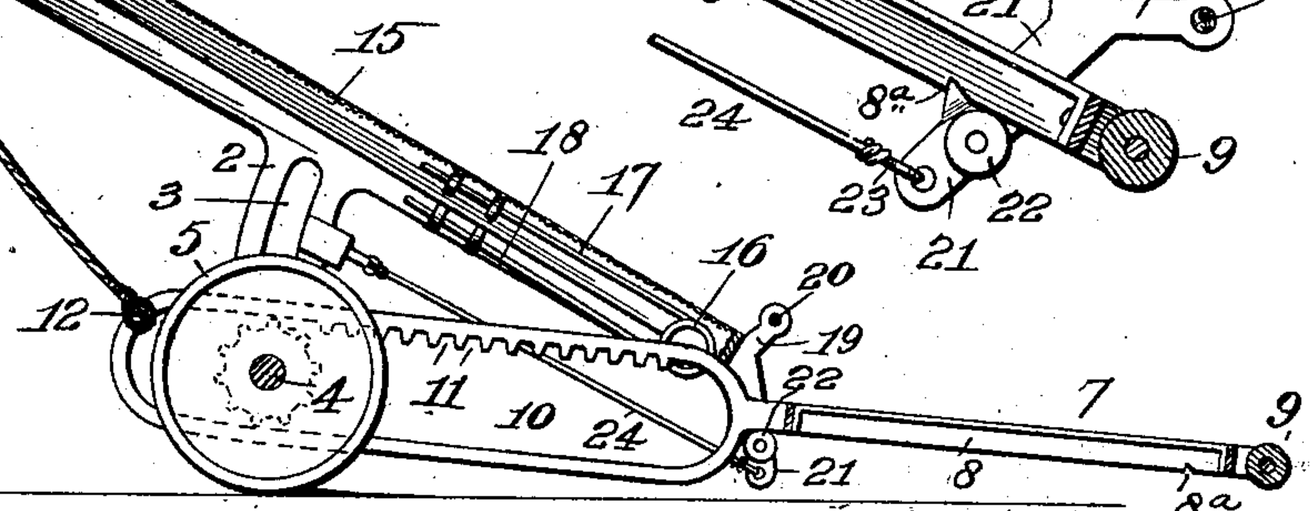


Fig. II.



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UNITED STATES PATENT OFFICE.

JOSEPH P. CORNELIUS, OF ST. LOUIS, MISSOURI.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 685,109, dated October 22, 1901.

Application filed August 15, 1901. Serial No. 72,139. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. CORNELIUS, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Car-Fenders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of devices used as life-saving guards upon the forward ends of street-cars; and the invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a perspective view of my fender applied to the platform of a street-car. Fig. II is a vertical sectional view taken centrally through the fender. Fig. III is an enlarged sectional view taken on line III III, Fig. I. Fig. IV is a detail sectional view taken on the line IV IV, Fig. III. Fig. V is an enlarged view, partly in elevation and partly in vertical section, taken on the line V V, Fig. I.

1 designates hangers fixed to the car-platform and provided intermediate of their ends with downwardly-extending arms 2, containing slots 3. On the inside faces of the arms 2, to the rear of the slots 3, are located housings 3^a, in which operate spring-pressed notched plates 3^b. The teeth of these plates 3^b extend downwardly and are intended to engage a rod, hereinafter mentioned, that operates in the slots 3. In the ends of the housings 3^a are formed horizontal slots 3^c, through which pass pins 3^d, that enter the ends of the plates 3^b. By means of these pins the plates 3^b are drawn rearwardly against the pressure of the springs when it is desired to elevate the rod after it has been engaged by the teeth of the plates.

4 designates a rod having its ends seated in the slots 3 of the arms 2 and adapted to move therein, and 5 are wheels carried by said rod, that are adapted to travel on the ground when the fender is dropped thereto, as will hereinafter appear. Fixed to each end of the rod 4 between the wheels 5 and the arms of the hangers 1 are cog-wheels 6.

7 is a slidable fender-frame located within the hangers 1 and having side bars 8, in which is rotatably mounted a roller 9. Integral with the side bars 8, at the rear ends thereof, are elongated eye members 10, the upper portions of the bars of which are provided with racks 11, that are adapted to mesh with the cog-wheels 6 on the rod 4. The rear ends of the eye members 10 are united by a cross-rod 12.

13 designates a swingingly-mounted bumper, pivoted at 14 to the hangers 1 and having a covering 15, of metal, applied to the frame thereof. The bumper 13 is held normally in vertical position, as seen in Figs. I and V, by springs 16, the arms 17 and 18 of which are attached, respectively, to the bumper and the hangers 1, said springs being designed to permit movement of the bumper in a downwardly direction to the hangers 1 when an object is encountered and struck by said bumper.

19 designates arms extending forwardly from the bumper 13. At its lower end and attached to these arms is a rope 20, adapted to afford yielding resistance in striking an object encountered by the fender, so that the force of the shock of striking the object will be lessened. 21 are lever-arms extending downwardly and rearwardly from the side bars of the bumper 13, and rotatably mounted on these lever-arms are rollers 22, on which the side bars 8 of the slidable frame 7 move. Each of the side bars 8 is provided with a notch 8^a, located in the lower edge near the forward end of the bar, and projecting from the lever-arms 21 are fingers 23, that are adapted to enter said notches and hold the slidable frame 7 from forward movement while in such engagement. Attached to the lever-arms 21 are pull-cords 24, that lead to spring-bolts 25, slidably mounted in housings 26, carried by the slotted arms 2. The spring-bolts 25 are normally projected rearwardly beneath the rod 4 and serve to support said rod and the parts associated therewith until the bolts are withdrawn.

In the practical use of the fender the parts normally occupy the positions seen in Fig. I, the bumper 13 being in vertical position ready to receive the impact of an object that may be encountered and the sliding frame 7 being held in retracted position by the engagement of the lever-arms 21 therewith. When an object strikes the bumper 13, said bumper is

moved rearwardly on its pivots 14, and the lever-arms 21 are swung forwardly, moving the fingers 23 out of engagement with the notches 8ª in the side bars 8 of the slidable frame 7. Simultaneously the spring-bolts 25 are retracted from their position beneath the rod 4 by reason of the connection between said bolts and the lever-arms, and the rod 4 and wheels 5 thereon are permitted to descend, the rod moving in the slots 3 of the arms 2 and the rollers descending into contact with the ground. The rod in moving downwardly through the slots 3 will force the plates 3ᵇ rearwardly against the pressure of the springs, and when the wheels 5 contact with the ground said rod will be engaged below certain of the teeth of the plates 3ᵇ, thus holding the wheels in position to travel on the ground, even though the weight of the object struck by the fender be on the outer portion of the slidable frame 7, which would otherwise tend to elevate the rear portion of the eye members 10 and wheels 5. As soon as the wheels 5 reach the ground they begin to travel thereon, and rotation is imparted to the rod 4 and the cog-wheels 6, carried by said rod. The cog-wheels 6 being in mesh with the racks 11 of the eye members 10, said eye members are caused to be carried forwardly on the rotation of the cog-wheels, and the slidable frame 7 is projected forwardly into the position seen in Fig. II beyond the forward end of the fender as it exists in its normal position. The object encountered is received on the slidable frame 7, which is projected into close contact with the ground, and, the bumper 13 being forced downwardly to the hangers 1 by the weight of the object against the action of the springs 16, the object may be partially received on said bumper, if of sufficient size to extend beyond the slidable frame. When the fender has been actuated in the manner described and it is desired to return it to normal position, the plates 3ᵇ are moved rearwardly to allow the rod 4 to pass upwardly through the slots 3, after which the slidable frame is drawn rearwardly and the rear ends of the eye members 10 raised by suitable means, such as a rope 27, the parts being thus moved back into their normal positions and when so moved being retained in the same manner as before.

I claim as my invention—

1. In a car-fender, the combination of hangers, slotted arms carried by said hangers, a rod mounted in said slotted arms, spring-pressed toothed plates carried by the lower portions of the slotted arms for engaging the rod when it is at the lower ends of the slots, wheels on said rod, a slidable frame having connection with said rod, a bumper carried by said hangers, and means connected to said bumper whereby said rod and wheels are supported, substantially as specified.

2. In a car-fender, the combination of hangers, a slidable frame supported by said hangers, a bumper pivoted to the forward ends of said hangers, and means whereby said slidable frame is retained in a retracted position until released by the movement of said bumper, substantially as described.

3. In a car-fender, the combination of hangers, a slidable frame supported by said hangers, a bumper pivotally connected to said hangers, and adapted to support the forward end of said slidable frame, means for holding said frame in retracted position, and means for supporting said frame in raised position, substantially as described.

4. In a car-fender, the combination of hangers, a swinging spring-sustained bumper connected to said hangers, a slidable frame having its forward end supported by said bumper, and means for holding said frame in retracted position until released by the movement of said bumper, substantially as described.

5. In a car-fender, the combination of hangers, a slidable frame, a swinging bumper connected to said hangers, downwardly-projecting lever-arms carried by said bumper, and fingers carried by said lever-arms adapted for engagement with said slidable frame, substantially as described.

6. In a car-fender, the combination of hangers, slotted arms carried by said hangers, a rod mounted in said slotted arms, wheels on said rod, a slidable frame having connection with said rod, a bumper carried by said hangers, and means connected to said bumper whereby said rod and wheels are supported, substantially as described.

7. In a car-fender, the combination of hangers, a rod movably mounted in said hangers, wheels on said rod, cog-wheels carried by said rod, a slidable frame having eye members, racks carried by said eye members adapted to mesh with said cog-wheels, a bumper connected to said hangers, and means whereby said slidable frame is upheld when in retracted position, substantially as described.

JOSEPH P. CORNELIUS.

In presence of—
E. S. KNIGHT,
N. V. ALEXANDER.