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T. C. FORBES.

FENDER FOR STREET CARS.

(Application filed July 18, 1898.)

(No Model.)

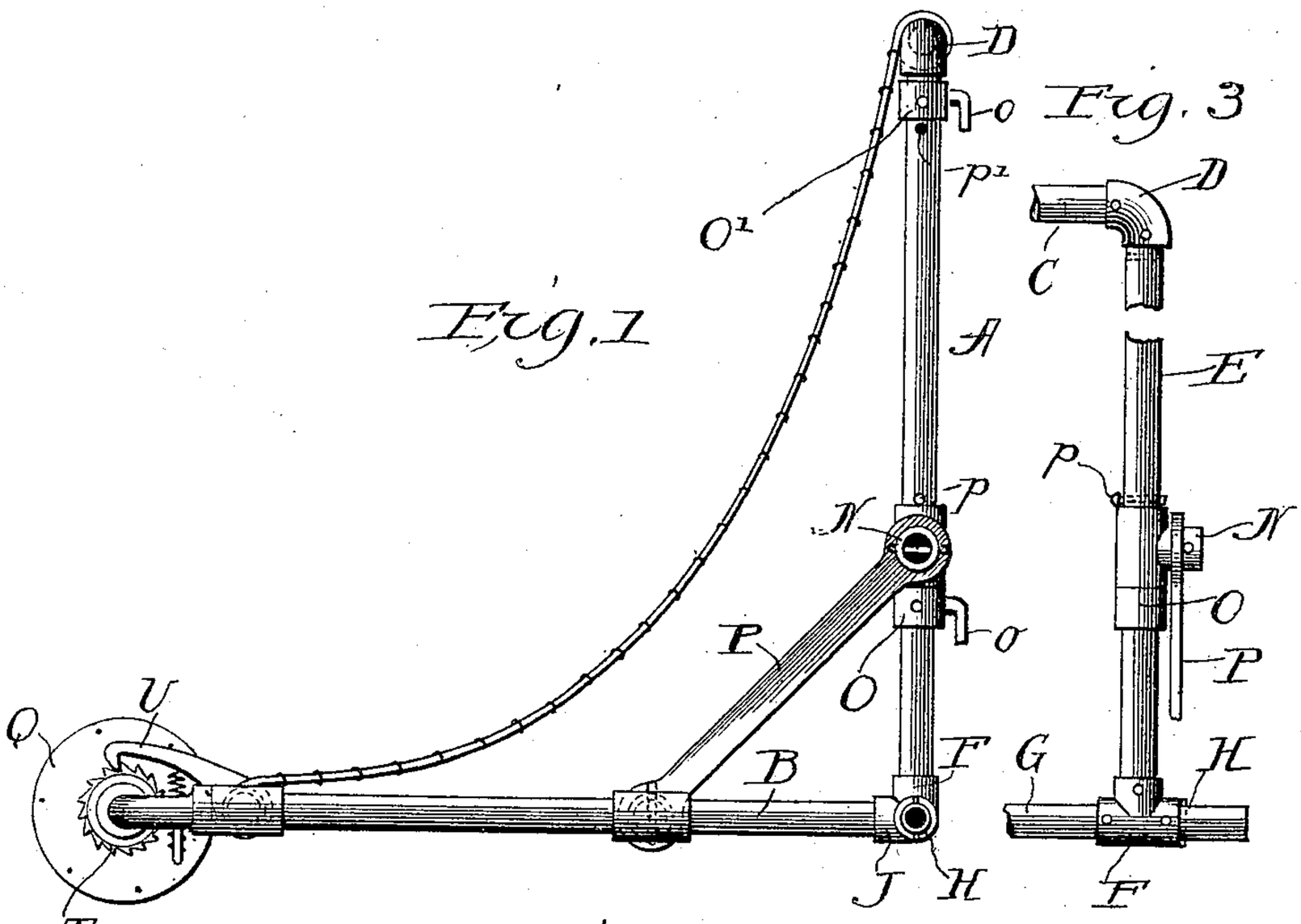

Fig. 1

Fig. 3

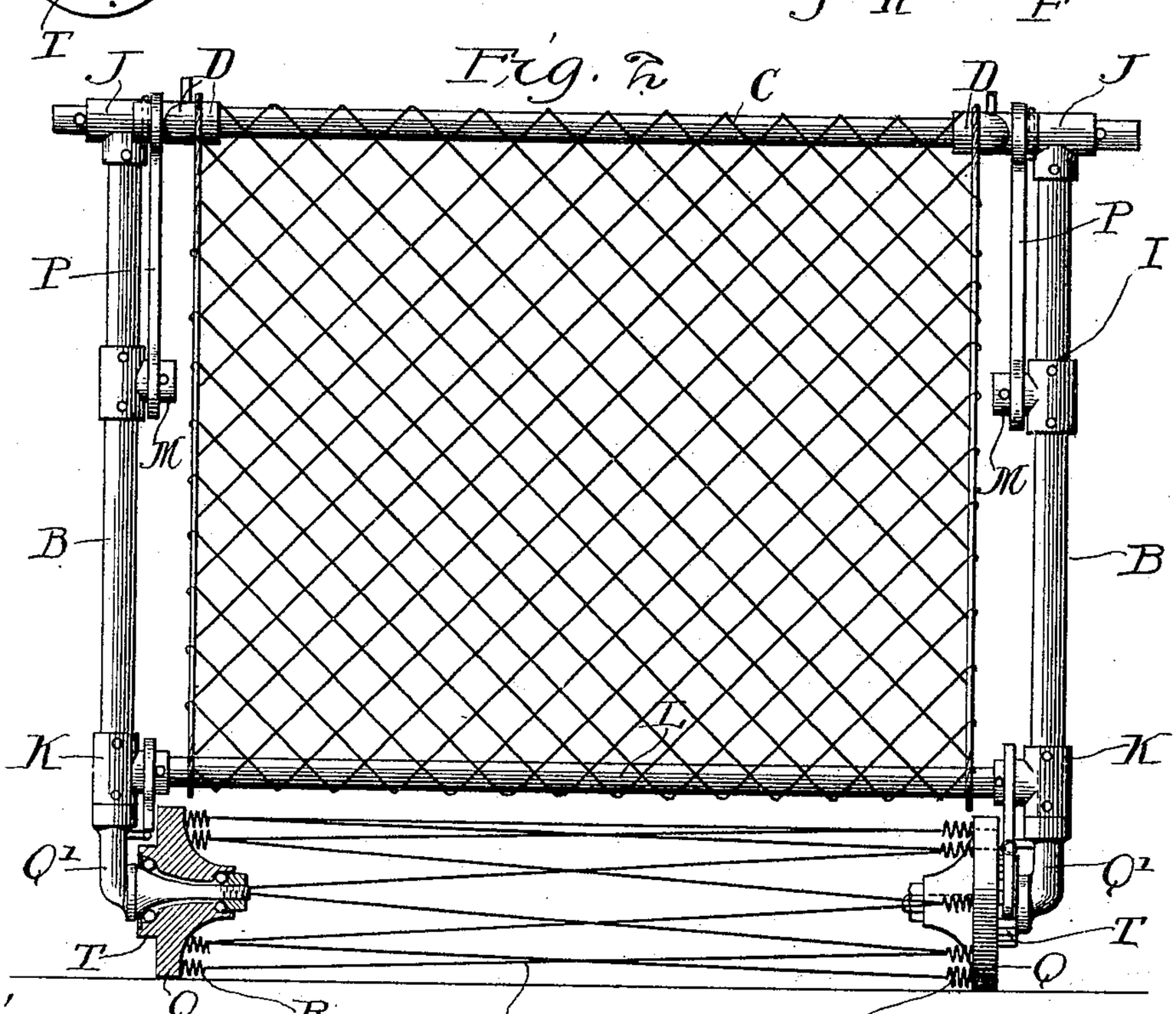

Fig. 2

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UNITED STATES PATENT OFFICE.

THEODORE C. FORBES, OF CHICAGO, ILLINOIS.

FENDER FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 616,701, dated December 27, 1898.

Application filed July 18, 1898. Serial No. 686,215. (No model.)

To all whom it may concern:

Be it known that I, THEODORE C. FORBES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fenders for Street-Cars, of which the following is a specification.

The present invention relates to that class of fenders that comprise a suitable frame which is adapted to be attached to the front of the car and a net supported by the frame.

The invention consists in the features of novelty that are herein fully described.

In the accompanying drawings, which are made a part of this specification, Figure 1 is a side elevation of a fender embodying the invention. Fig. 2 is a plan view thereof with a portion at one side shown in horizontal section. Fig. 3 is a front elevation of a portion of the frame.

The frame comprises an upright section A, provided with means for attaching it to the front of the car, and a section B, which is hinged to the section A and adapted to occupy a substantially horizontal position while in use and a substantially vertical position while not in use.

The frame is preferably constructed of gas-pipe wherever this material may be used to advantage. The upright section thereof comprises the horizontal top side C, having its ends screwed into the horizontal branches of a pair of elbows D, two vertical sides E, having their upper ends screwed into the vertical branches of the elbows D and their lower ends screwed into the vertical branches of T's F, and a horizontal lower side G, having its ends screwed into the inwardly-presented horizontal branches of the said T's. In the outwardly-presented horizontal branches of the T's are secured pieces H, which form trunnions, upon which the horizontal section of the frame is hinged, so that it may be moved from a horizontal to a vertical position.

The horizontal section of the frame comprises the two sides I, having their rear ends secured to T's J, which latter are mounted to turn upon the trunnions H, and having their forward ends secured to T's K, which latter are connected by the front side L of the frame. The sides I carry trunnions M, and the vertical sides E of the upright section of the frame carry trunnions N. The trunnions M and N are preferably formed on T-fittings, the trunnions M being fixed, while the trunnions N are adapted to slide vertically, their downward movement being limited by shoulders formed by securing to the sides E collars O.

P are links, whose ends fit upon the trunnions M and N loosely, pins or other suitable devices being passed through the trunnions on the outside of the links for preventing their displacement. With this arrangement the section B of the frame may be moved from horizontal to vertical position, and in doing so the T's carrying the trunnions N will slide up and down. They may be held in their lowermost position by means of pins *p*, passed through perforations in the vertical sides E of the frame, and they may be held in their uppermost position by passing the same pins through other perforations, (shown at *p'*.)

The collars O and similar collars O' afford a suitable means for attaching to the upright section of the frame the devices for attaching the fender to the front of the car, and these devices preferably consist of downwardly-presented hooks *o*, that are adapted to enter eyes or sockets secured to the car.

The horizontal section of the frame carries at its forward extremity what may properly be called an "auxiliary" fender. One characteristic of this auxiliary fender is that it is adapted to revolve, and another characteristic of it is that it is elastic and will yield sufficiently to prevent injury to a person being struck by it.

My invention contemplates the use at the front edge of the fender proper of an elastic device having such a degree of elasticity that it will materially lessen the impact, and preferably this device takes the form of an open drum, the sides of which are adapted to yield as described, said drum being also adapted to revolve, means being provided for compelling it to revolve in such direction that its top side moves toward the fender proper rearward.

As shown in the drawings, the revolving auxiliary fender consists of a pair of heads Q, journaled upon shafts carried by forgings

Q', which are secured to the front portion of the horizontal section of the frame, a number of short coiled springs R, connected to the heads, and ropes, wires, cables, or other yielding devices S, extending from the springs of one head to the springs of the other head and forming the sides of the drum. In order to compel the drum to revolve in the direction described and prevent it from revolving in the reverse direction, the heads Q are provided with ratchets T, and spring-actuated dogs U, suitably pivoted to the frame, engage the ratchets.

Preferably the drums are provided with ball-bearings, as shown at one side of Fig. 2.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a fender the combination of a frame formed in two sections hinged together, means for attaching one section to a car and maintaining it in upright position, rigid links connecting the two sections, said links having a sliding connection with one section and means for locking the links so as to prevent their sliding as aforesaid substantially as set forth.

2. A fender having in combination a frame formed in two sections hinged together, means for attaching one section to a car and maintaining it in an upright position, T's supported by and adapted to slide vertically upon the said upright frame-section, trunnions carried by said T's, trunnions carried by the other section of the frame, and links fitting upon the trunnions of the two sections of the frame substantially as set forth.

3. In a fender the combination with a suitable frame, a net supported thereby and means for attaching the frame to a car, of a drum supported at the front edge of the fender and adapted to revolve, and means for preventing the drum from revolving in one direction substantially as set forth.

4. In a fender the combination with a frame having a substantially horizontal section, a net supported thereby, and means for attaching the frame to a car, of a pair of heads supported at the forward portion of the frame and adapted to revolve, means for preventing the approach of said heads, a number of cords or similar devices, and a number of independent springs through the medium of which said cords or similar devices are attached to the heads, substantially as set forth.

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