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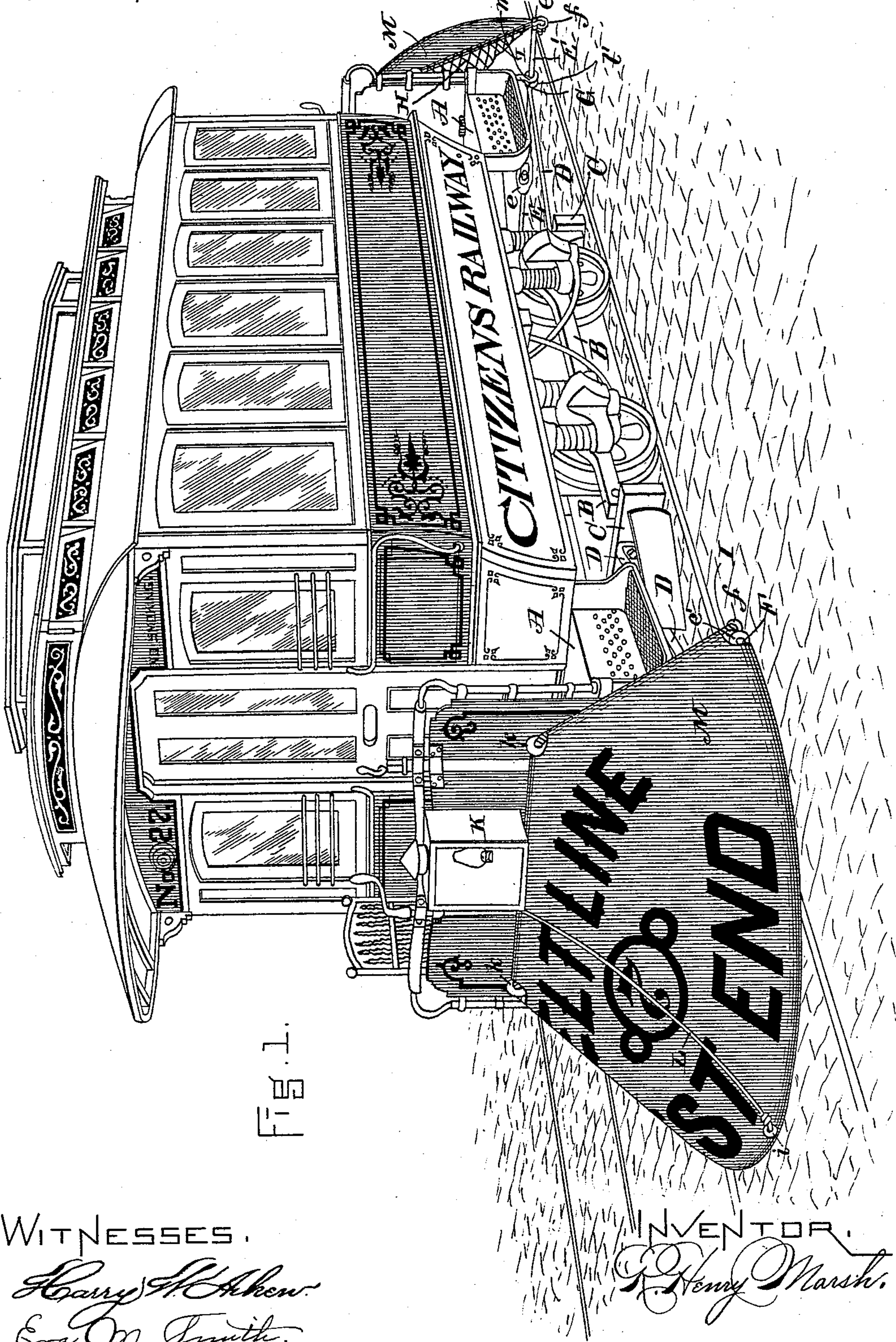
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R. H. MARSH.

FENDER FOR STREET RAILWAY CARS.

No. 465,383.

Patented Dec. 15, 1891.



WITNESSES.

Harry H. Akew.
Eva M. Smith.

INVENTOR.

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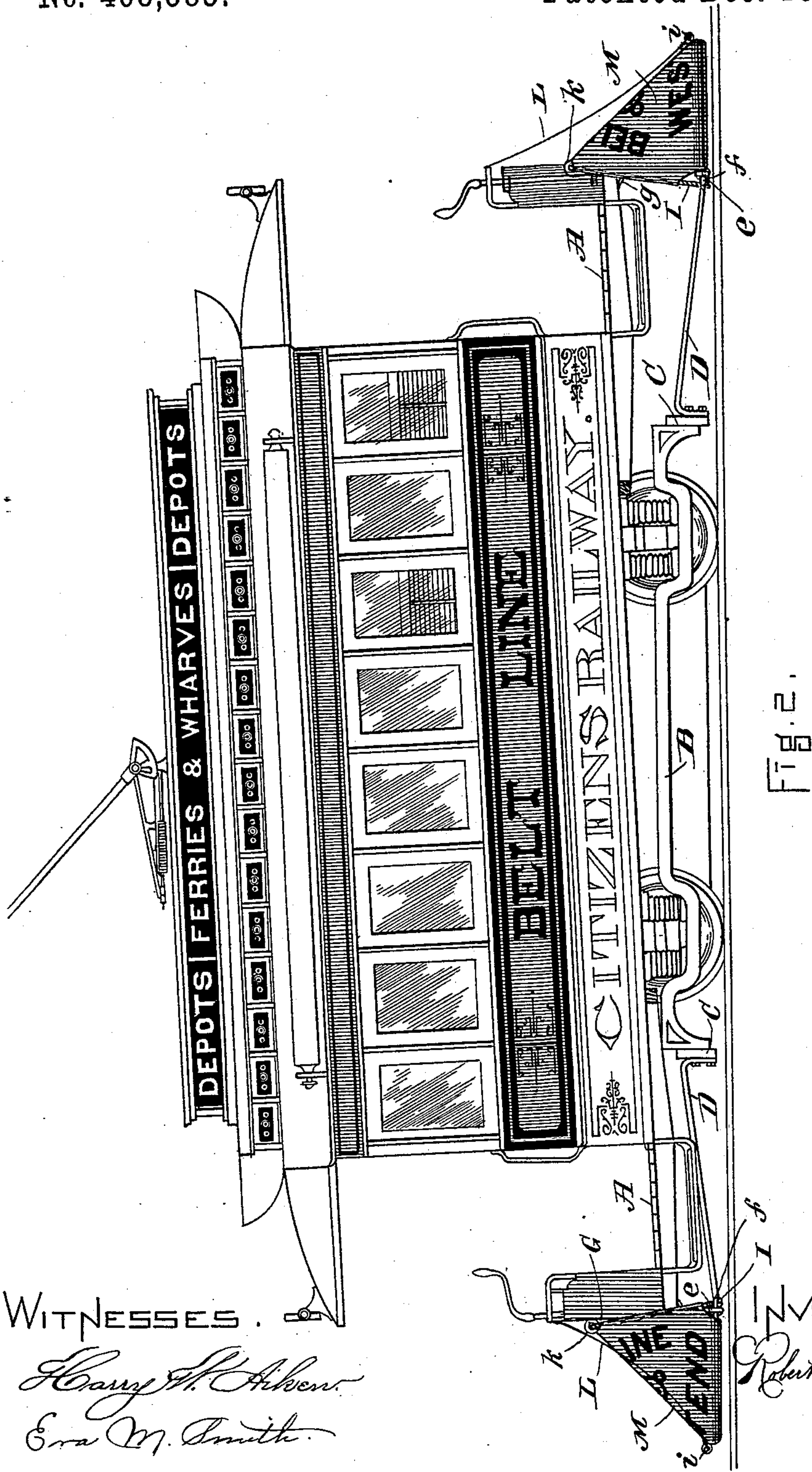
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WITNESSES.

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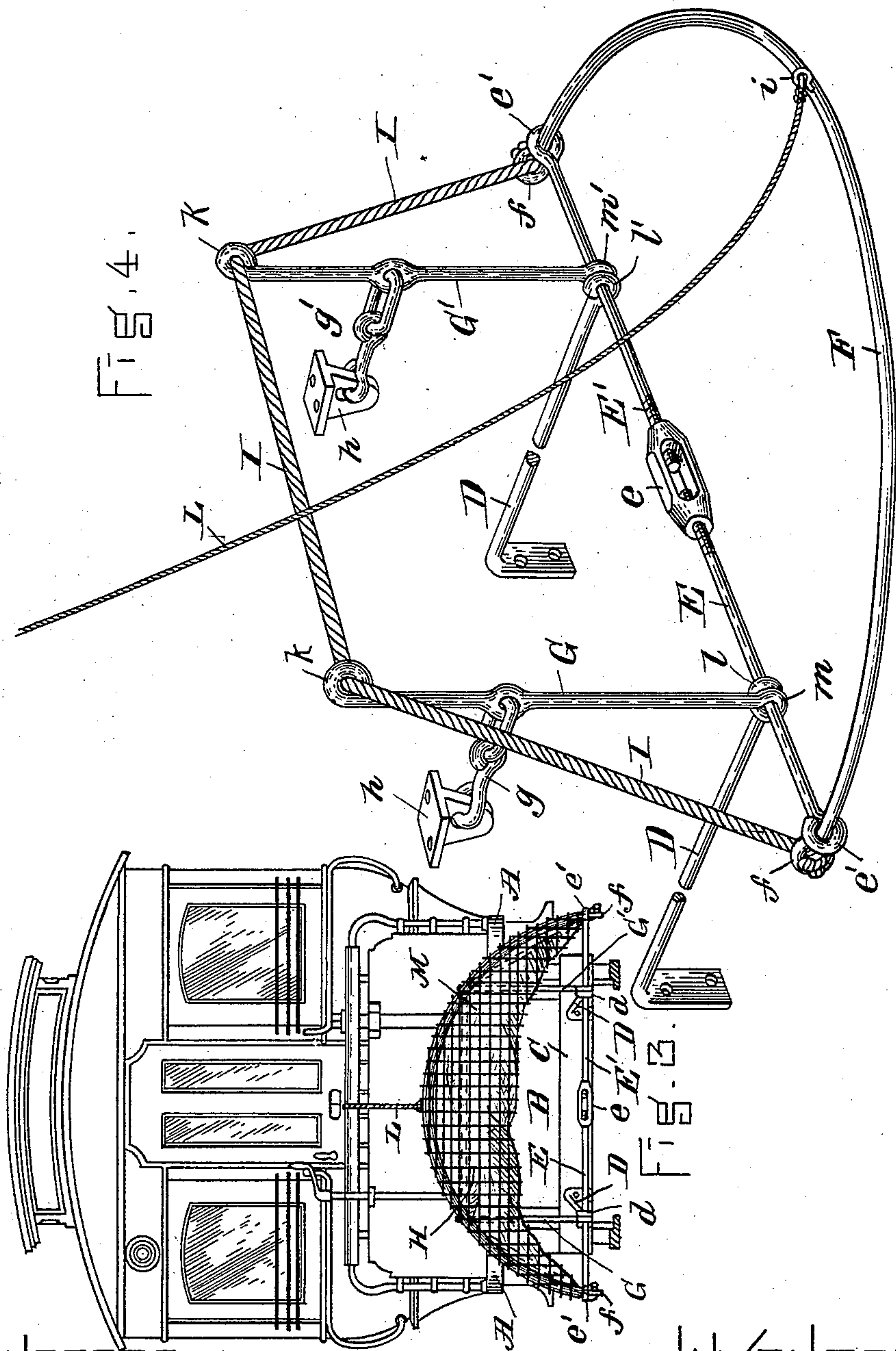
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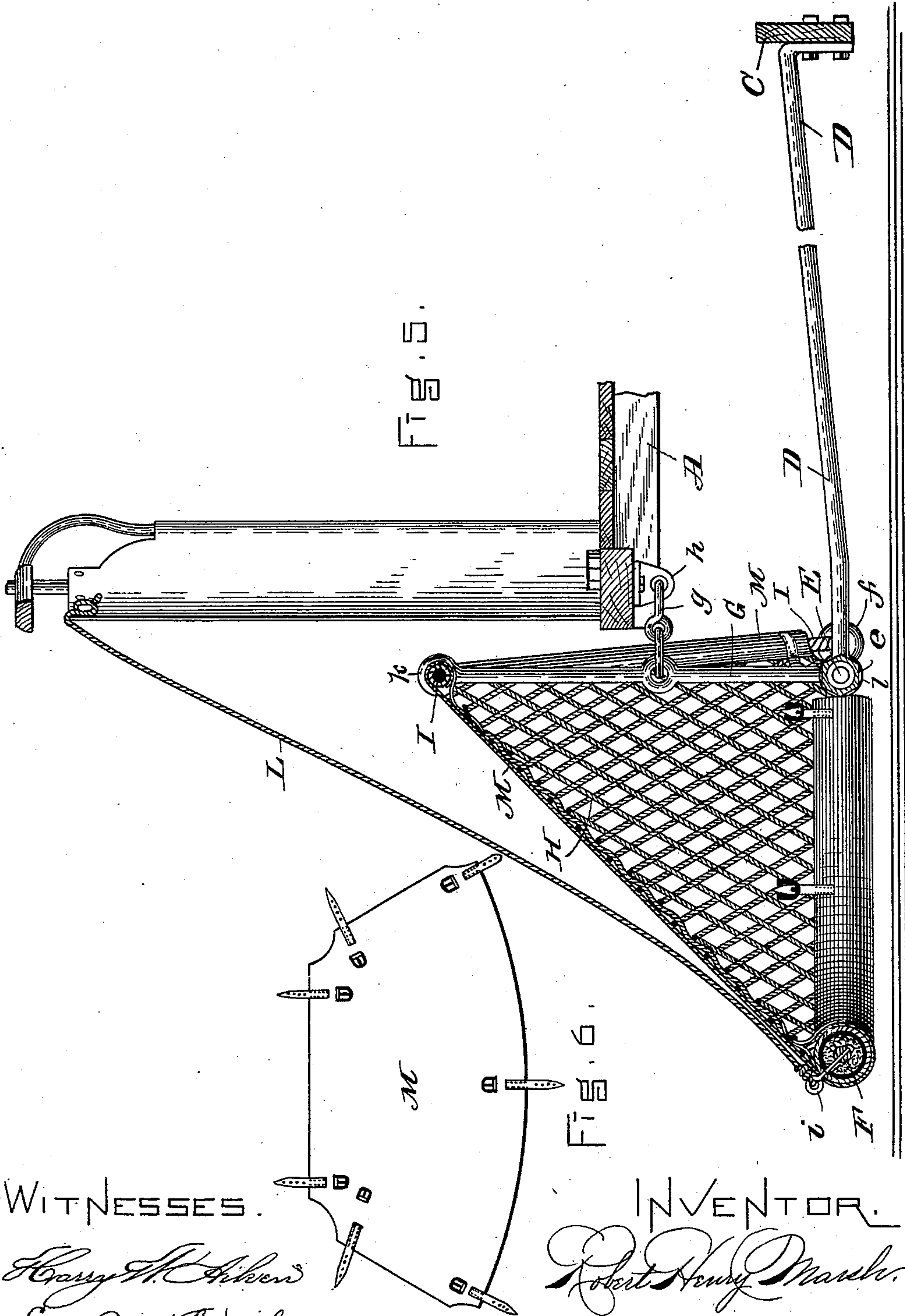
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(No Model.)

5 Sheets—Sheet 5.

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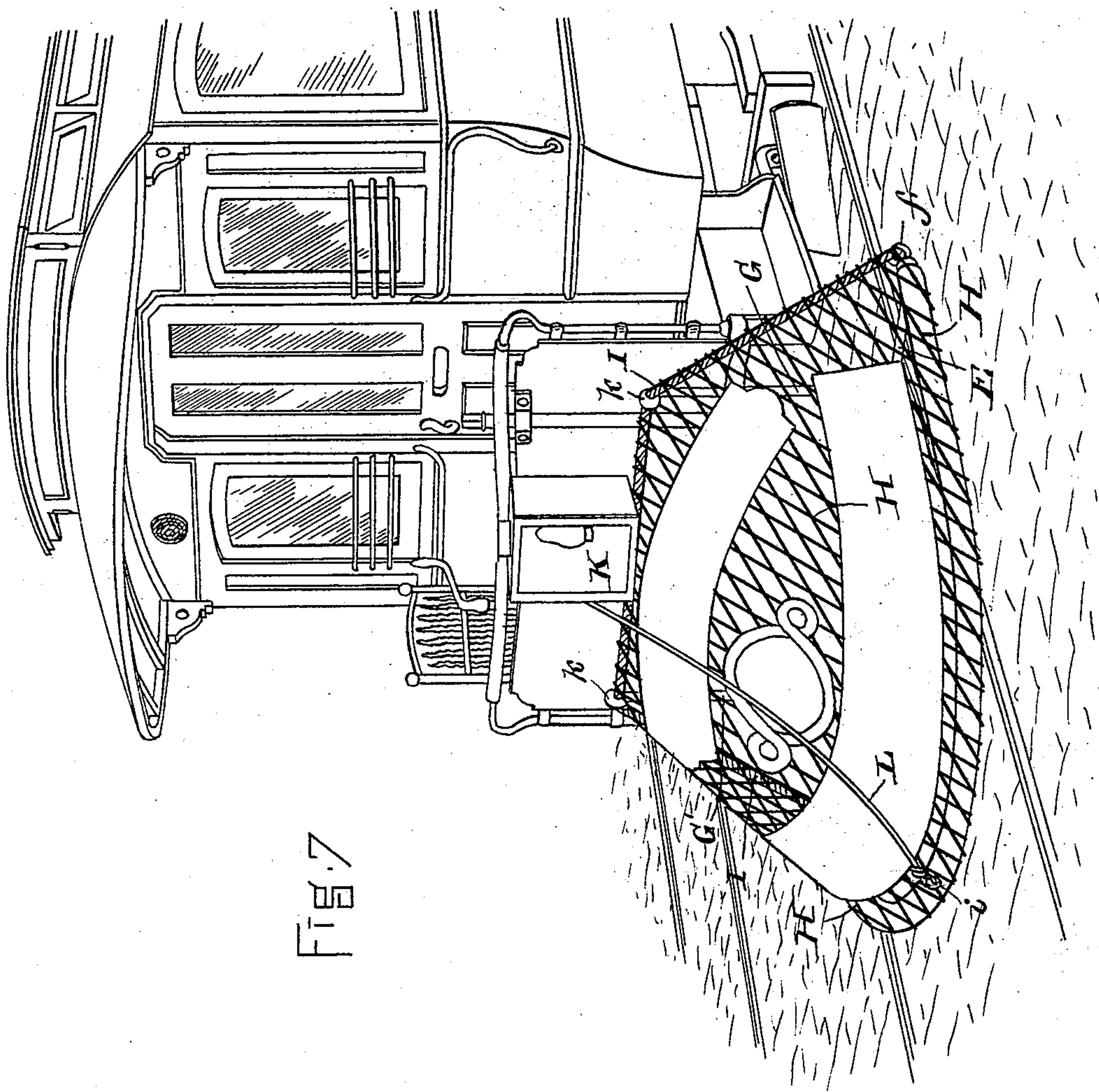


FIG. 7

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UNITED STATES PATENT OFFICE.

ROBERT HENRY MARSH, OF BOSTON, MASSACHUSETTS.

FENDER FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 465,383, dated December 15, 1891.

Application filed May 20, 1891. Serial No. 393,456. (No model.)

To all whom it may concern:

Be it known that I, ROBERT HENRY MARSH, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Fenders for Street-Railway Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a street-railway car provided with a fender constructed in accordance with my invention. Fig. 2 is a side elevation of the same, showing the car tilted, both fenders being shown in their lowered positions to illustrate the object of my invention. Fig. 3 is an end elevation of a street-car with the fender folded against the dasher. Fig. 4 is a perspective view of the frame of the fender with the parts immediately adjacent thereto. Fig. 5 is a longitudinal vertical section of the same. Fig. 6 is a view of the covering as shown in plan detached from the fender. Fig. 7 is a view of my improved fender as it might be used without a canvas covering.

My invention has for its object to provide a flexible fender which can be folded up vertically against the dasher of the car when not required for use or when two cars are to be coupled together; and my invention consists in an upwardly-folding fender having a frame pivoted at its inner lower end to suitable supports secured to the car-truck and connected with the platform, whereby said fender is kept at the same distance above the level of the track regardless of the rocking or tilting motion of the car, said frames being adapted to be swung or folded up vertically against the end of the car and being provided with a covering composed of flexible material to admit of its being conveniently folded, as hereinafter more particularly set forth.

In the said drawings, A represents the platform or body of a car, and B the truck, upon each end of which are secured cross boards or guards C, to which the supporting bars or rods D of the car-fender are rigidly secured. The bars or rods D are securely held in position by bolts passing through one end of

the rod wrought into a plate shown in Fig. 4, and through the board or motor guard C.

Immediately in front of the car-platform and at the same height from the ground as the rods D are two rods E E', jointed at the center by a turn-buckle *e*, so that in case of breakage of any of the parts of the fender the part broken may be removed and another inserted in its place without detaching the entire frame from the car.

At the outside ends of the rods E E' are formed loops or eyes *e'*, through which a rod F, bent into semicircular form, passes, and which forms the outside or foremost edge of the fender, as seen in Figs. 4 and 5. At each end of this semicircular rod F are formed loops or eyes *f f* for the purpose of holding taut a rope I, which is knotted on each end and passes upward obliquely through the loops or eyes *k* of two vertical supports G G', the whole serving as a frame to support a covering consisting, preferably, of a net H, which is secured to the rope I at its inner and upper edges, and also to the semicircular rod F, which forms the lower edge of the fender-frame. The frame of the car-fender does not project over the rails beyond the width of the car, and its height is limited to permit the use of a head-light K at night, as seen in Fig. 1.

To reduce the liability of injury to a person, I cover the semicircular bent rod F with straw or some other suitable elastic material wound around it until it forms a cushion, so that should a person be struck by the forward portion of the fender, as would most probably be the case, the danger of loss of limb or the like is reduced to a minimum.

The frame of the fender is attached to the car-body or platform by means of two pairs of links *g g'*, held in position upon the car by two ears or brackets *h*, projecting downward from the under side of the platforms A of the car. By these links *g g'* the uprights or vertical rods G G' are held in their proper positions, and so maintain the fender accordingly. It will now be seen that in consequence of the frame being held rigid upon the car-truck and provided with the links *g g'*, mentioned, secured to the car-platform, the car

may rock or tilt without changing the relative positions of the fender in relation to the car-truck. These links not only hold the fender off of the ground, but should the fender come into contact with any obstacle upon the track the strain would proportionately be upon the car-body, relieving the strain upon the horizontal supporting-rods D, thereby making the breakage of these parts an almost unlikely occurrence.

Having described, in a measure, the frame of the fender, I will now describe the manner in which the outer projecting rod F is sustained at the proper level above the track. The rods all being held in place and the net H being fastened, as before described, to the rope I and at its lower edge to the rod F, it is obvious that it will hold the said rod the proper distance from the track. Projecting from the center of the rod F is a ring *i*, to which a rope L is secured, the opposite ends of the rope being held by a cleat or some other suitable device secured to the dasher of the car, as shown in Figs. 1 and 4. This rope serves many purposes—first, to help support the outer frame or rod F in case of accident, and, secondly, it is used by the driver of the car to pull or fold the fender up against the end of the car, as seen in Fig. 3, in which position it will be out of the way when not required for use or where two cars are to be coupled together or if it should be desired to attach horses to draw the car in the event of its motive power becoming deranged. The fender facing the direction the car is traveling is the only one down, and one of the advantages of the construction is that the driver is able to pull the fender up from where he stands on the platform without the necessity of getting off the car. As the car-fender is drawn up so as to fold against the dasher of the car, it will be seen that the rods E E' will be necessarily turned in their supporting loops or eyes *l l'* in the rods D D', the up-rights or vertical rods being looped at their lower ends *m m'*, allowing the rods E E' to turn upon their axes. Over all of this I preferably place a flexible cover M, composed of canvas, rubber, or other suitable material, which is made removable, and is secured in place by any suitable fastening device. (Shown in Fig. 1.) When waterproofed, this cover M will protect the netting and framework underneath from the weather, and it may be painted to correspond with the color of the body of the car, giving it a very tasteful appearance, the lettering indicating the destination of the car being placed thereon, the reading of the same at night being facilitated by the head-light, which shines directly upon it. This is a very desirable feature, as it is often difficult to read the sign-boards on the cars at night. This cover M is provided with straps and buckles (shown in Fig. 6) as a means for fastening it to the fender, and one advantage in having it made removable is that when a great many cars are required

to be sent to a certain point the coverings may be taken from the summer-cars, which are lettered properly, and put upon the winter ones, or vice versa, as may be required. However, this is unnecessary, as it is obvious that one set of covers will be sufficient for both summer and winter use. This removable covering might be employed without a net, as I use the net more as an extra safeguard in case a heavy body fell onto the cover and tore it, allowing it to fall through. The net being on the back of the cover would sustain the weight of the body. The fender-cover being so applied to the frame as to slope away from the car in all directions would have a tendency to let a body glide off out of danger.

Where the fenders are used without a canvas covering, as shown in Fig. 7, the destination of the car could be lettered on a flexible material and the netting painted to protect it from the weather.

This form of fender might prove the most desirable, inasmuch as the meshings of the netting give an extra opportunity for a person to get hold if struck by the fender.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a railway-car, of supports rigidly secured to the car-truck and independent of the car-body, and an upwardly-folding fender pivoted to said supports, whereby it is rendered independent of the tilting or oscillating movements of the car and maintained at a uniform distance from the ground, substantially as set forth.

2. The combination, with a railway-car, of an upwardly-folding fender consisting of a frame composed of a curved or semicircular rod forming the lower front edge of the fender, a transverse rod supported by horizontal rods rigidly secured to the car-truck, and vertical rods connected with the transverse rod and loosely connected with the car-platform by means of yielding connection, said frame being provided with a flexible cover extending from the lower curved rod to a marginal support at the rear and upper edge of the fender to permit the said fender to be folded up vertically against the end of the car, substantially as set forth.

3. A car-fender frame composed of the rods E E', F, and G G', supported by the horizontal rods D, rigidly secured to the car-truck, the inner ends of the said rods E E' being connected by a turn-buckle *e*, whereby the several parts of the frame may be separated from each other, substantially as described.

4. The combination, with a railway-car, of an upwardly-folding fender having at its rear end a transverse rod supported by and adapted to turn in eyes or bearings *l l'* at the ends of horizontal rods D, rigidly secured to the car-truck, said fender being connected with the car-platform by yielding connections, substantially as described.

5. The combination, with a railway-car, of

an upwardly-folding fender consisting of a
frame provided with a flexible covering and
having a rope L extending from its outer edge
to the car-platform, whereby the said fender
5 may be drawn up against the end of the car,
substantially as described.

In testimony whereof I have signed my

name to this specification, in the presence of
two subscribing witnesses, on this 14th day of
February, A. D. 1891.

ROBERT HENRY MARSH.

Witnesses:

JAS. P. PRINCE,

HARRY W. AIKEN.