

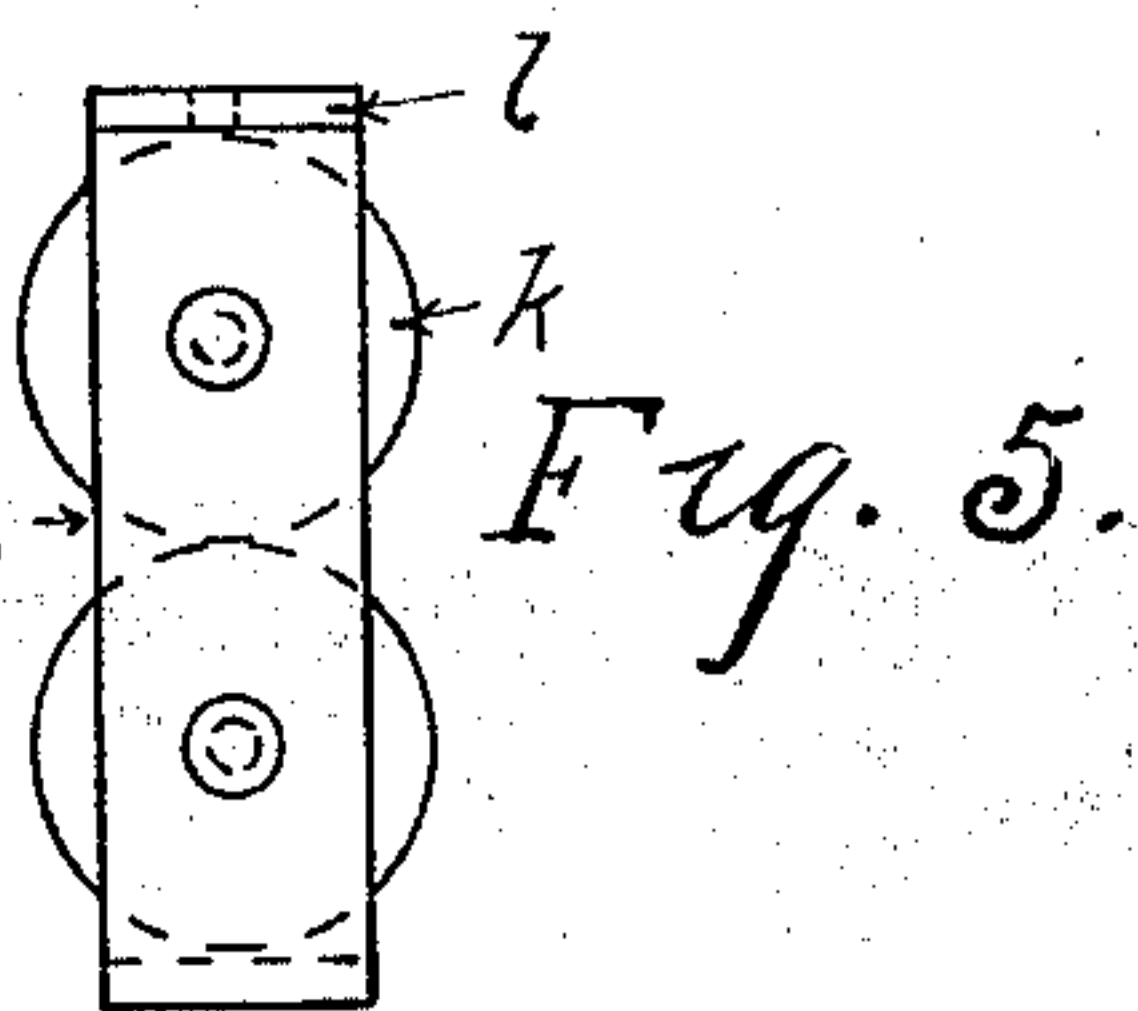
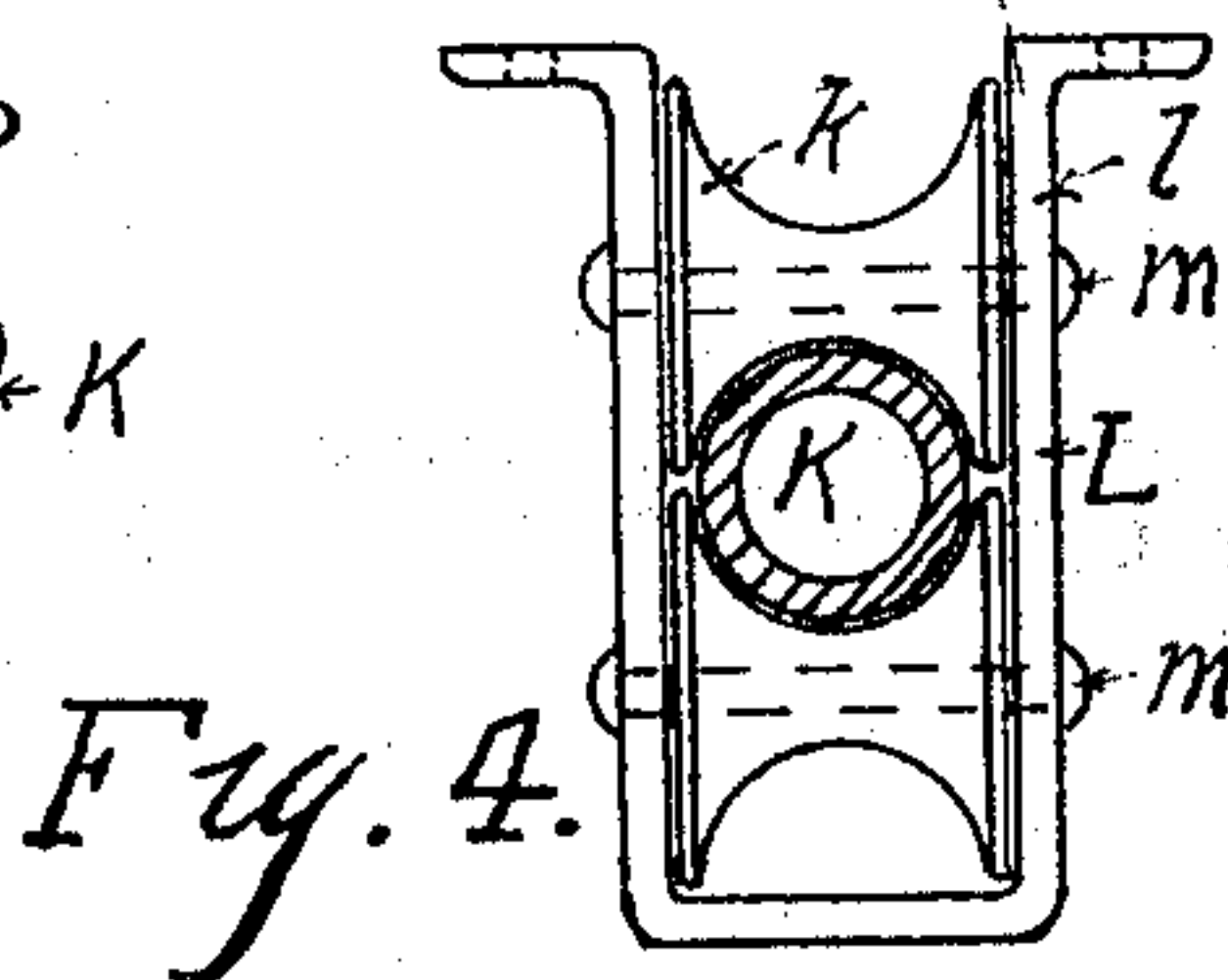
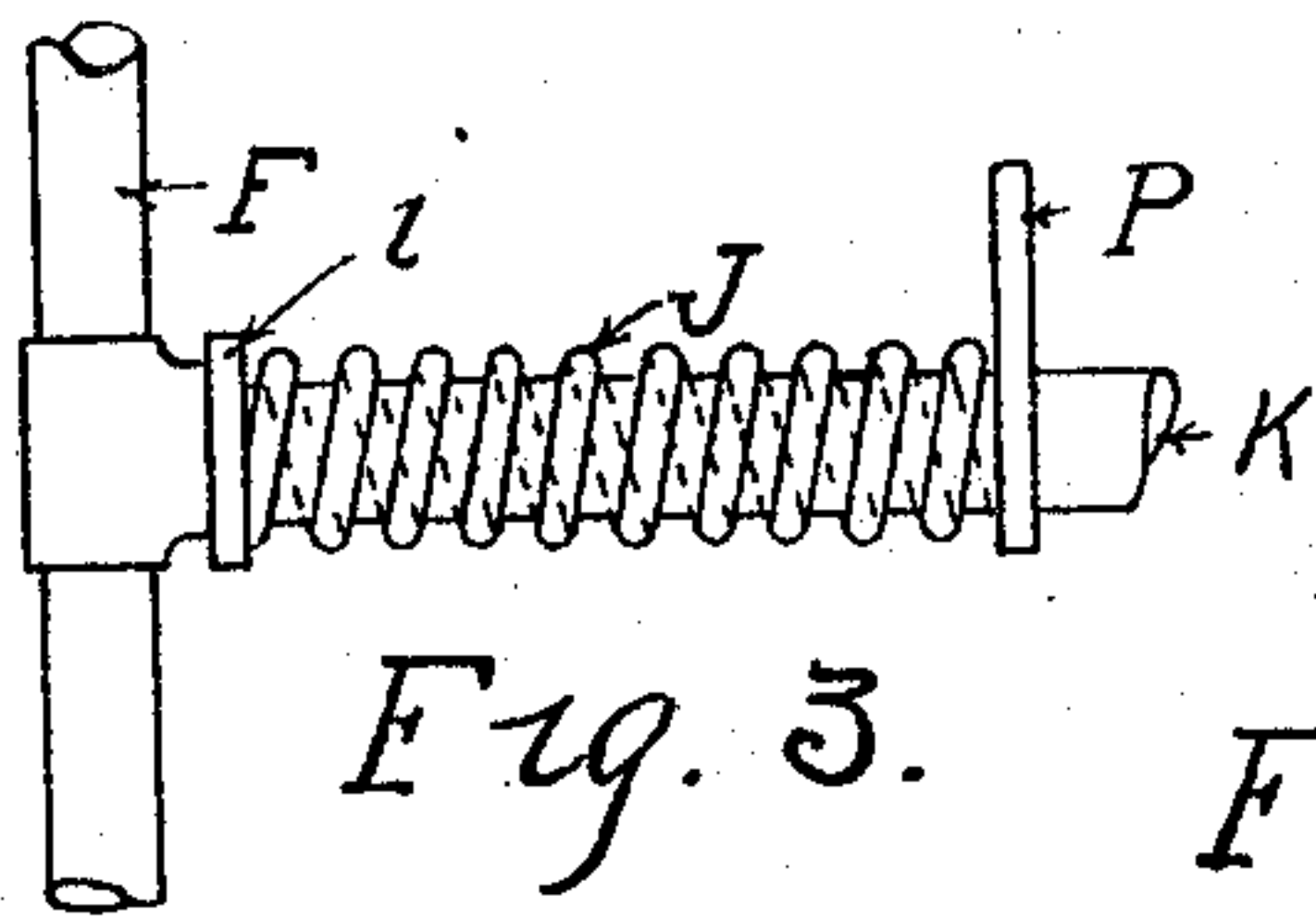
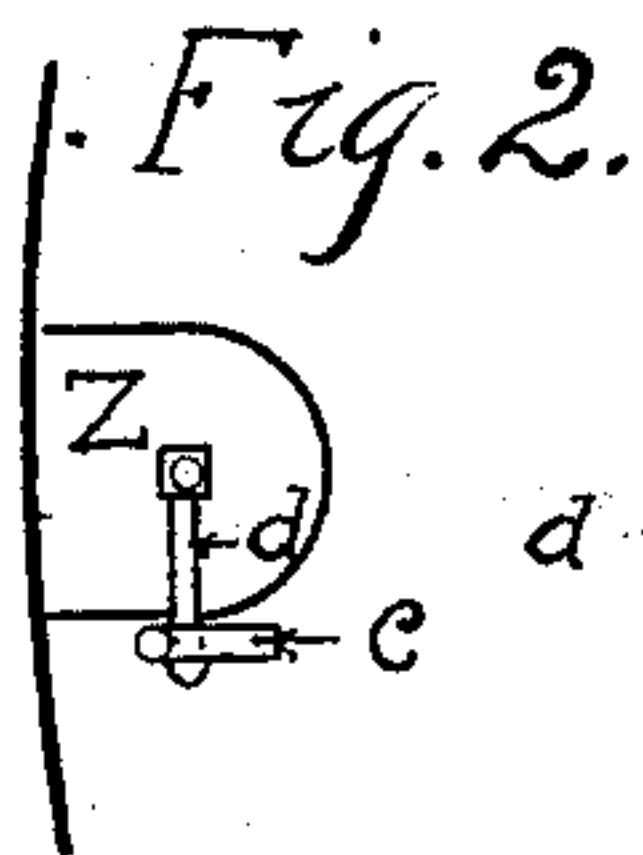
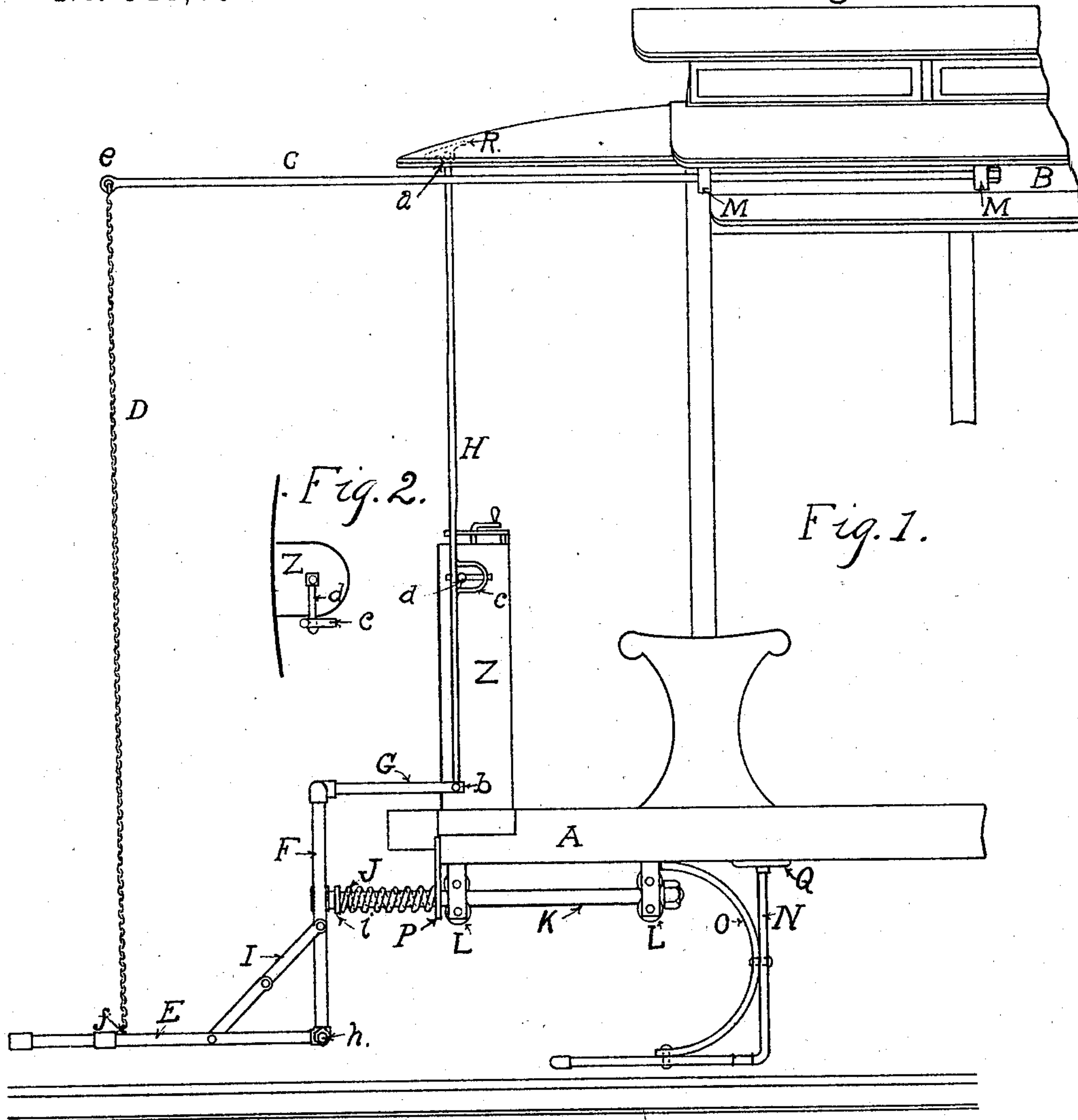
(No Model.)

2 Sheets—Sheet 1.

J. J. KIRKNESS.
CAR FENDER.

No. 544,854.

Patented Aug. 20, 1895.



WITNESSES:

J. W. Woodland
Bruce B. Gootie

John Jas Kirkness

INVENTOR

(No Model.)

2 Sheets—Sheet 2.

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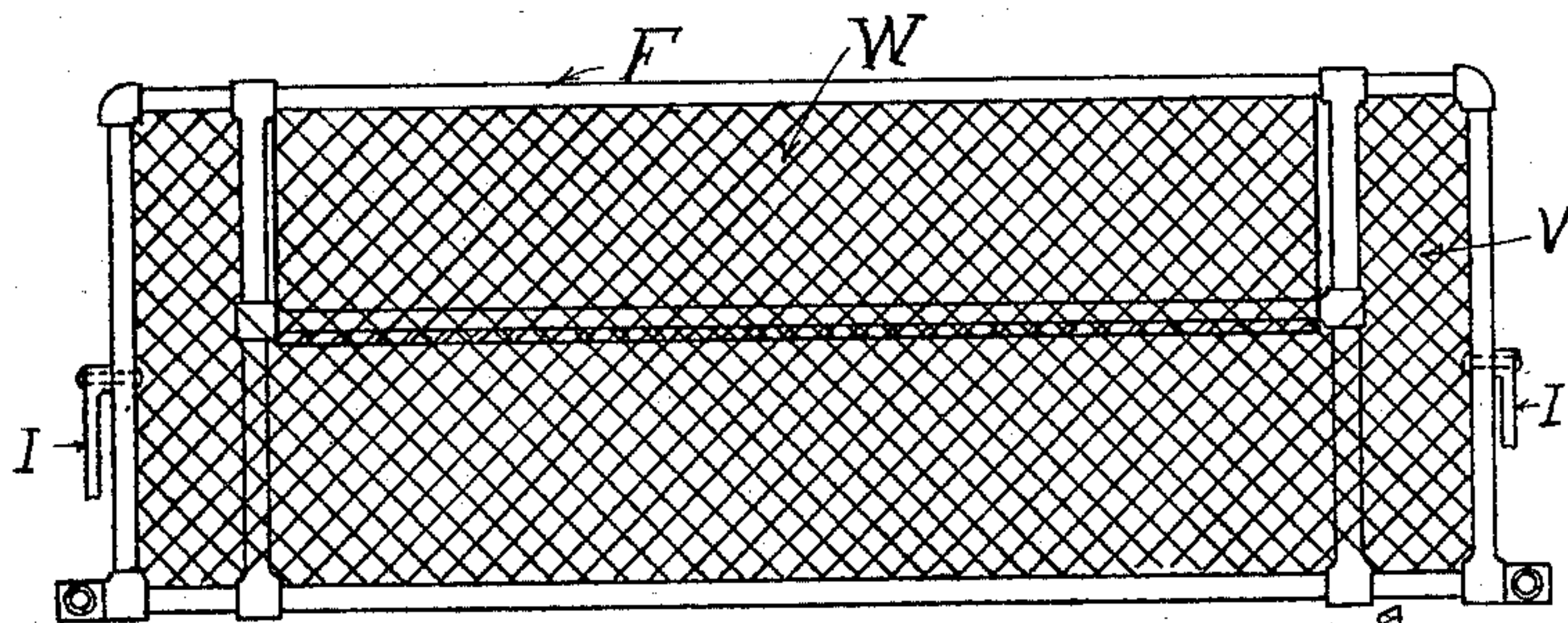
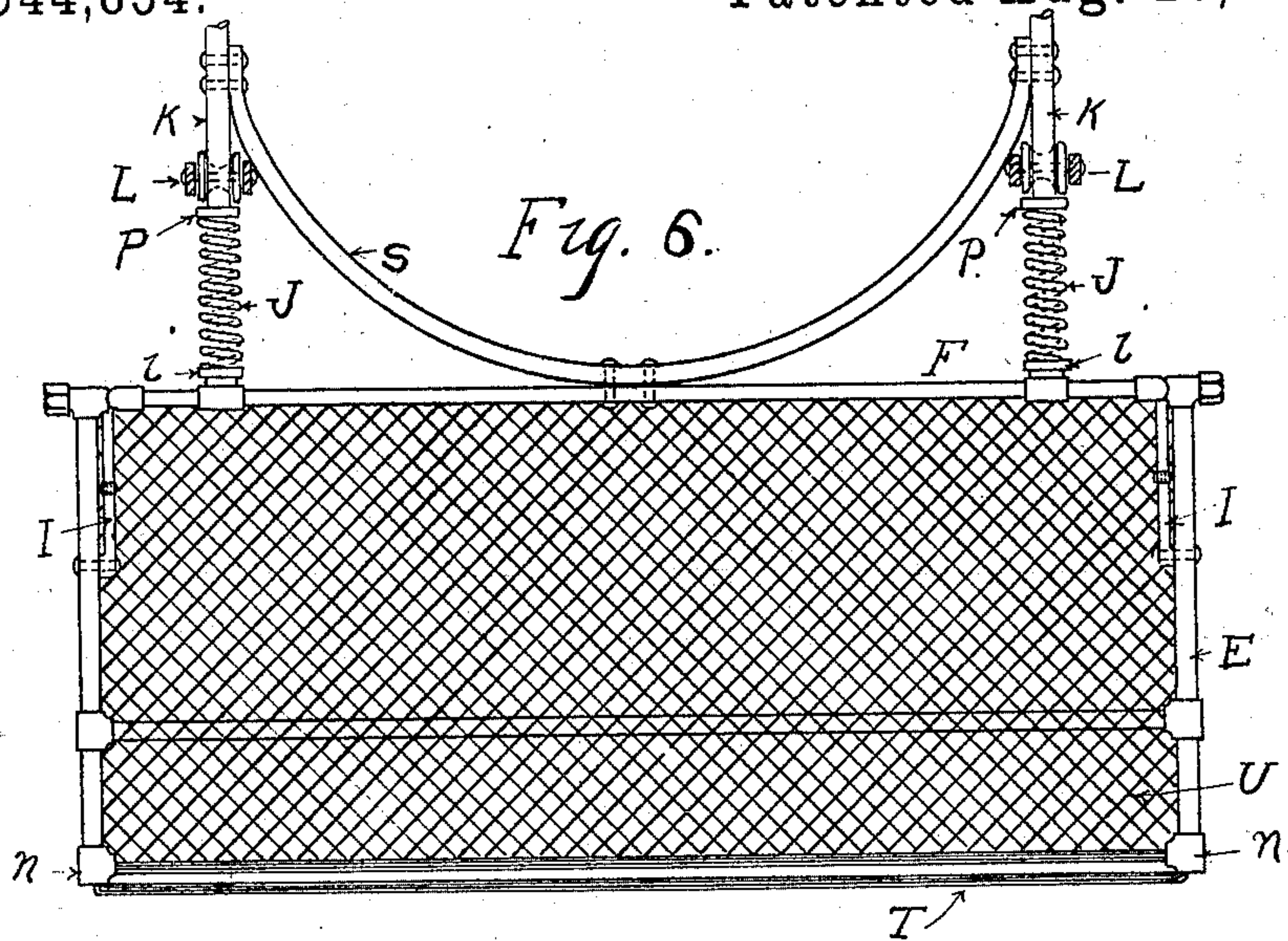


Fig. 7.

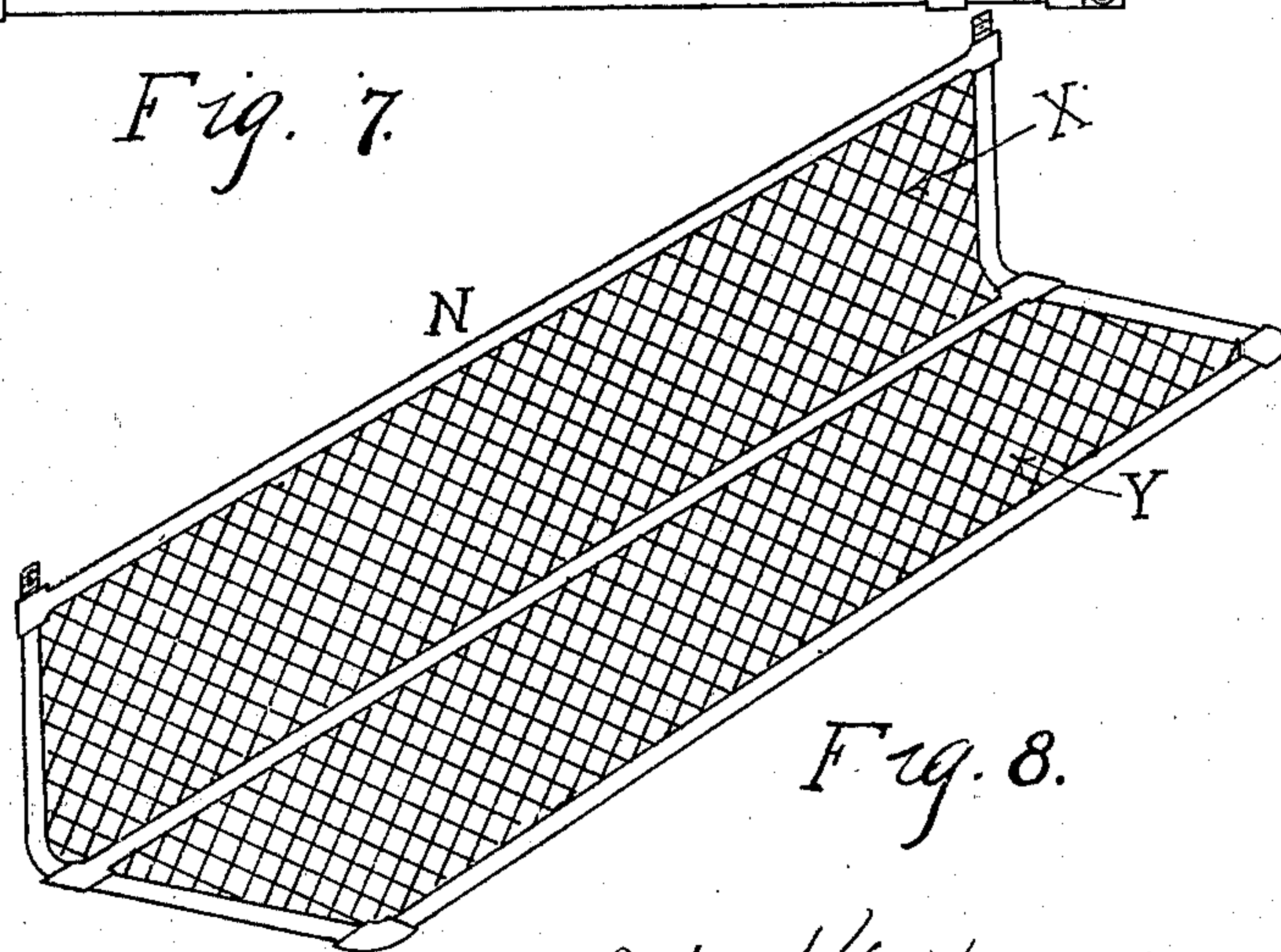


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN JAS. KIRKNESS, OF BALTIMORE, MARYLAND.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 544,854, dated August 20, 1895.

Application filed April 20, 1895. Serial No. 546,578. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES KIRKNESS, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

This invention relates to certain new and useful improvements in safety-fenders for street-cars.

One object of the invention is to provide a fender combining certain improved features of construction to prevent a person run down by the car from getting under the wheels, and another object is to provide mechanism to shut off and reverse the current when the fender is used on an electric car.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of one end of a car with my invention applied. Fig. 2 is a horizontal section of the electric controller. Fig. 3 is a detail showing a portion of the fender-frame and the sliding cushion-rods. Figs. 4 and 5 are a front and a side view, respectively, of the roller-brackets in which the cushion-rods slide. Fig. 6 is a top or plan view of the front fender. Fig. 7 is a rear view of the front fender. Fig. 8 is a perspective view of the wheel-guard.

In the accompanying drawings, the letter A designates one end of a car, and B the sides of the car immediately below the roof. The front fender has a horizontal platform E, the side bars of which have their rear ends pivoted at *h* to the lower ends of the side bars of an upright back F, which latter extends across in front of the car. Jointed-braces I, connecting said platform and back, permit of the fender being raised up vertically parallel with the latter. The front platform E is covered with rope or wire netting U, and each side bar of the platform has at its front end a T coupling-piece *n*, and a rope T is threaded through said two T-pieces and extends horizontally back and forth a number of times across the front edge of the fender. This rope yields or gives when struck by an object, and thus partially cushions the shock received by said object. The upright back F is also covered by netting made in two sections, which are separate or independent—

the two ends and lower part V and the center and upper part W. The netting W may be raised or folded up when desired on the frame-rods in order to allow the car-coupler (not shown) to project through to engage with the coupler on an adjoining car.

A rod C extends longitudinally at each side B of the car and slides in loops or eyes M, and the front ends *e* of these rods project forward of the car. A chain or cord D is pendent from said ends *e*, and is attached to the front fender E at *f* and assists to hold the same normally elevated above the street-surface. The rods C may be slid back in the loops M when the platform E is tilted up parallel with the back F, so as to effect a saving of space in the car-house where the cars are stored.

The fender is provided with means to allow it to yield back, so as to cushion the shock received by the person run down.

The car-body A is provided on its bottom, at each side, with a hanger P, and two yoke-shaped roller-brackets L are in rear of the hanger. Each roller-bracket has two rollers *k*, mounted on shafts *m*, journaled in the yoke-arms *l*. A horizontal rod *k* has one end attached rigidly to the upright back F and passes loosely through an opening in the hanger P and also between the two rollers of each yoke-bracket. A spiral spring J encircles the rod K between a head *i* thereon and the hanger P. This spring keeps the fender projected forward. With this construction the impact or blow of an object encountered by the fender will cause the springs to yield and allow the fender to yield backward, the rods K sliding rearward in the roller-brackets L. When the fender is relieved of the pressure in front, the relaxation of the springs J will cause the fender to be projected forward to its normal position. When the shock of contact occurs, the rods C assist to support the fender and will slide back in their loops M, and thus offer no resistance to the backward movement.

I provide mechanism coacting with the front fender and the cushioning mechanism above described to shut off or to reverse the current of an electric car when the fender is used thereon. Of course this mechanism will not be employed when the fender is used on a cable car. A rod H extends vertically above

the car-platform and has its upper end fitted loosely in a socket R in the car-roof. The lower end of this vertical rod is pivoted at *b* to a rearward extension G of the upright back
 5 F. The electric controller Z, a section of which is shown in Fig. 2, has a handle or arm *d* connected with the controlling mechanism and extended through and is exposed on the exterior of the controller-casing, and a loop
 10 or eye *c* on the rod H encircles said exteriorly-exposed end. I have not deemed it necessary here to show in detail the entire mechanism of the controller, as it is evident that the parts herein shown and described may be
 15 operatively connected therewith.

When the fender encounters an object and yields back, as before described, the lower end of the rod H will be moved backward and the loop or eye *c* thereon will act on the handle or arm *d* and throw it back far enough to reverse the current-controlling mechanism, and upon the return forward of the fender by the springs J to its normal position the handle or arm *d* will be turned back far enough
 20 to shut off the current and stop the car from moving.

A wheel-guard or rear fender N is provided to prevent a person from getting under the wheels should, by any chance, the front fender fail to pick him up. This wheel-guard extends across below the car in rear of the front fender parts. A curved brace O is provided to strengthen the wheel-guard, and plates Q are provided, through which bolts
 30 or screws may be passed to attach the guard to the car.

Having thus described my invention, what I claim is—

1. In a fender for street cars, the combination of an upright back, F; a horizontal plat-
 40

form, E, adapted to be tilted up parallel therewith; jointed braces, I, connecting said back and platform; sliding rods, C, extending longitudinally at the top of the car; and a chain or cord, D, connecting between said sliding
 45 rods and the horizontal platform to assist in supporting the latter.

2. In a fender for street cars, the combination of an upright back, F; a horizontal platform, E, adapted to be tilted up parallel therewith; jointed braces, I, connecting said back and platform; a pendent hanger, P, and roller-brackets on the bottom of the car; horizontal rods, K, connected with said upright back and passing through the said pendent hanger
 55 and between the rollers on the brackets; and springs around the rods between the upright back and hanger, as and for the purpose described.

3. In a fender for street cars, the combination of a car; an electric controller thereon having a handle arm, *d*; a fender projecting in front of the car; rearwardly-moving horizontal cushion-rods, K, connected with the fender; springs, J, acting on the rods to keep
 65 said rods and fender normally projected forward; a vertical rod, H, above the car platform having its upper end pivoted; a rod, G, connecting between said vertical rod and the fender; and a loop on the rod connecting between said vertical rod and the handle-arm
 70 of the controller, whereby the rearward movement of the fender when it strikes an object will cause the reversal of the current, and then the forward projection of the fender by
 75 the springs will shut off the current.

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Witnesses:

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