

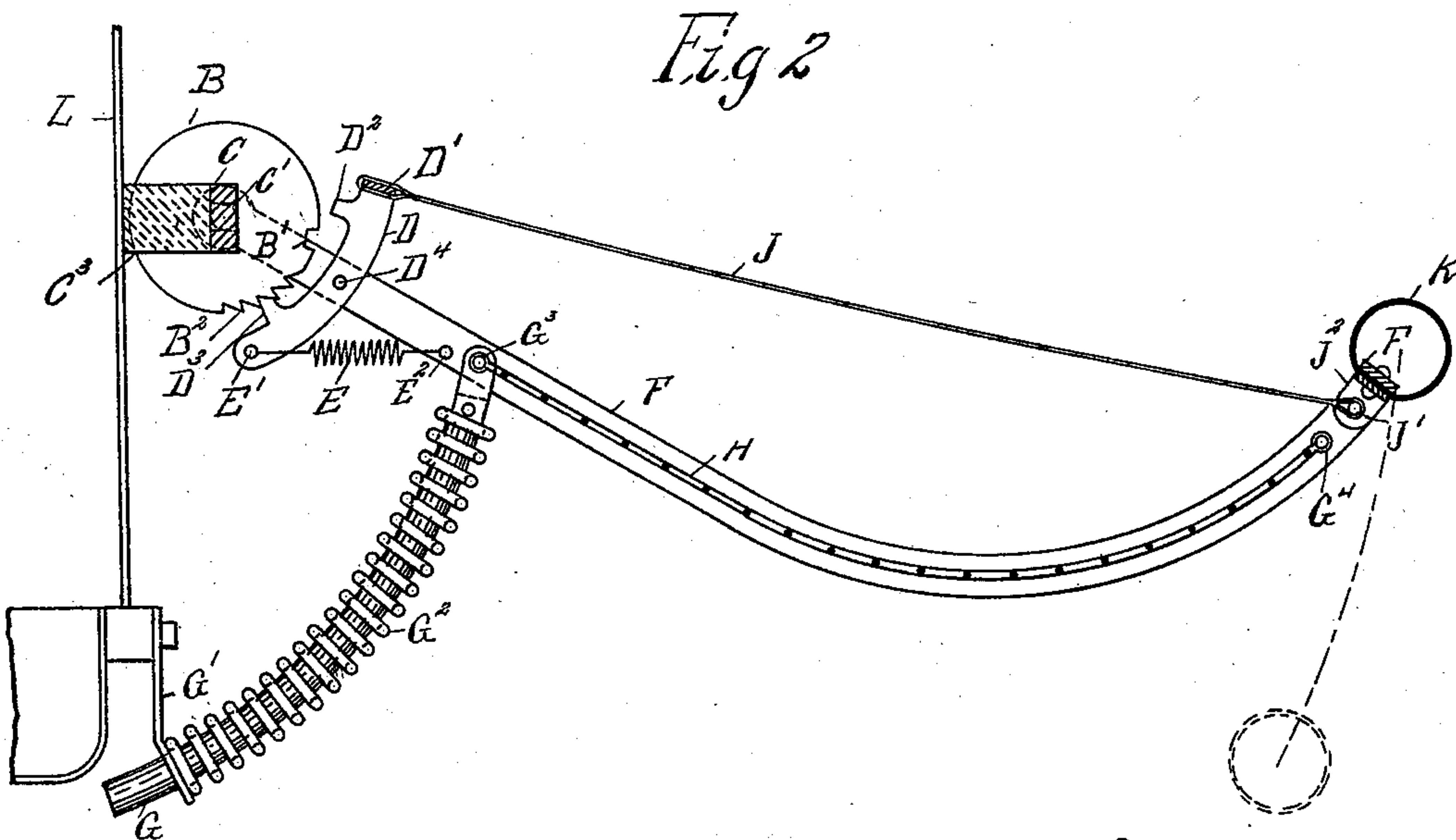
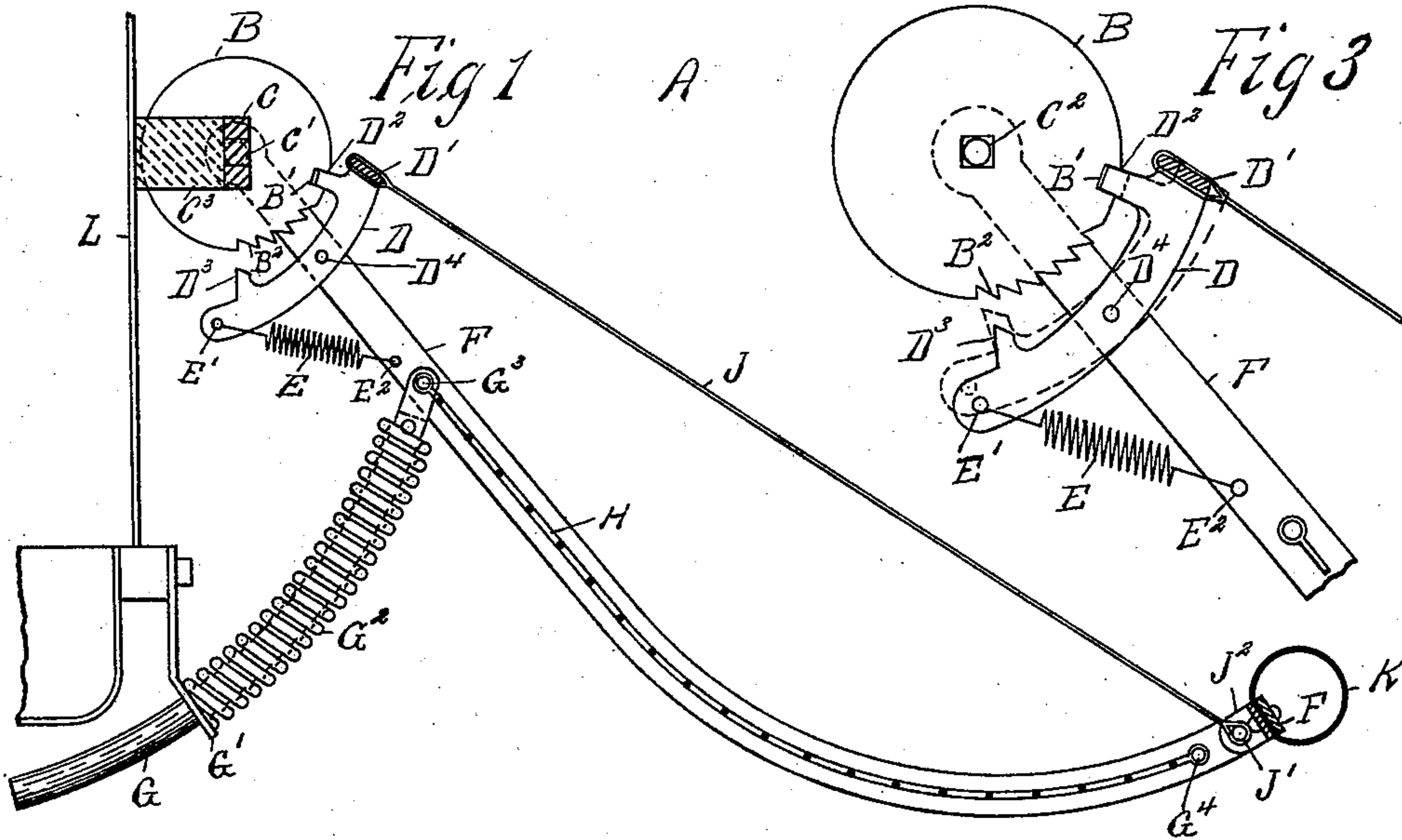
(No Model.)

2 Sheets—Sheet 1.

G. MAURO & F. RENZO.
LIFE SAVING GUARD FOR CARS.

No. 533,961.

Patented Feb. 12, 1895.



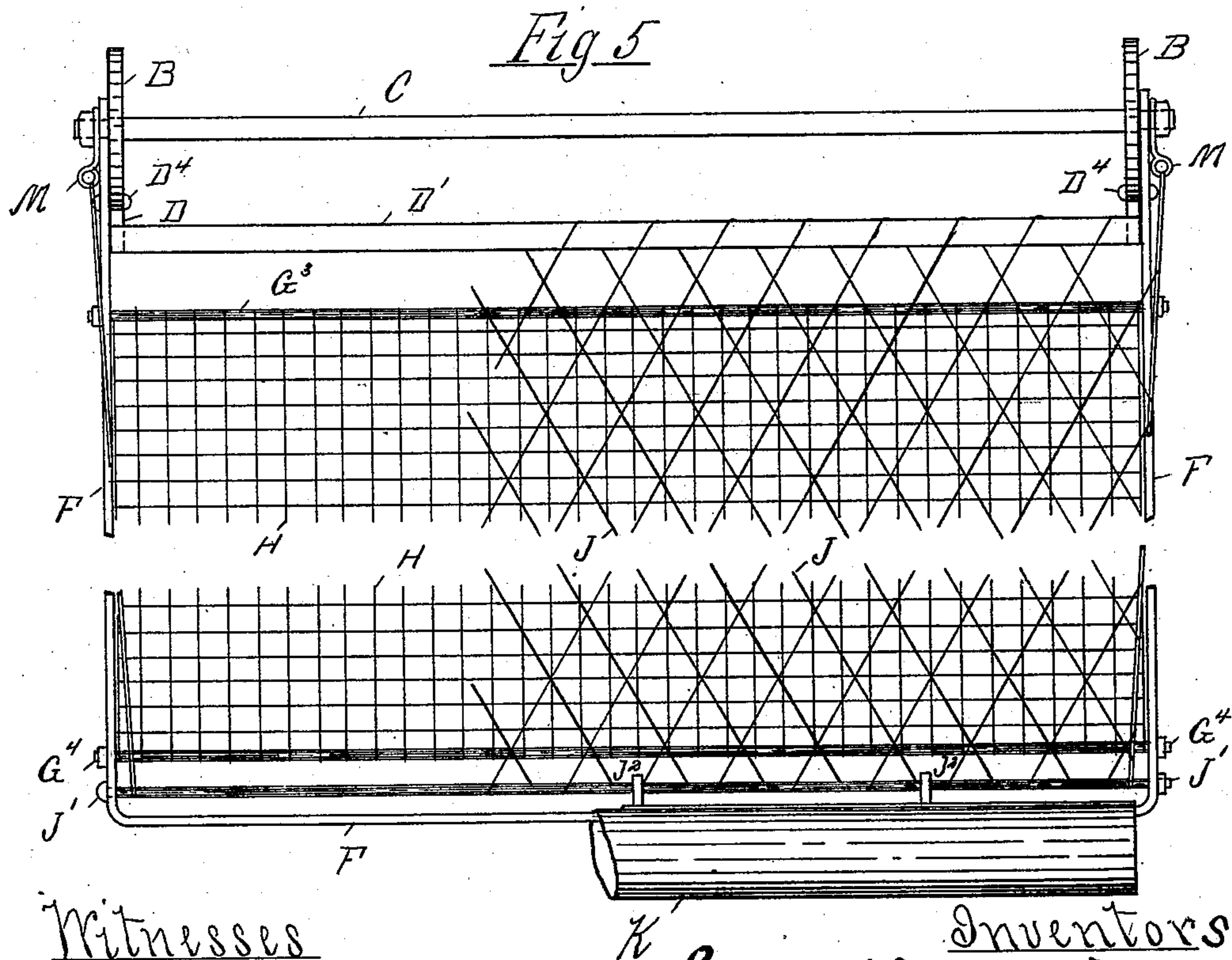
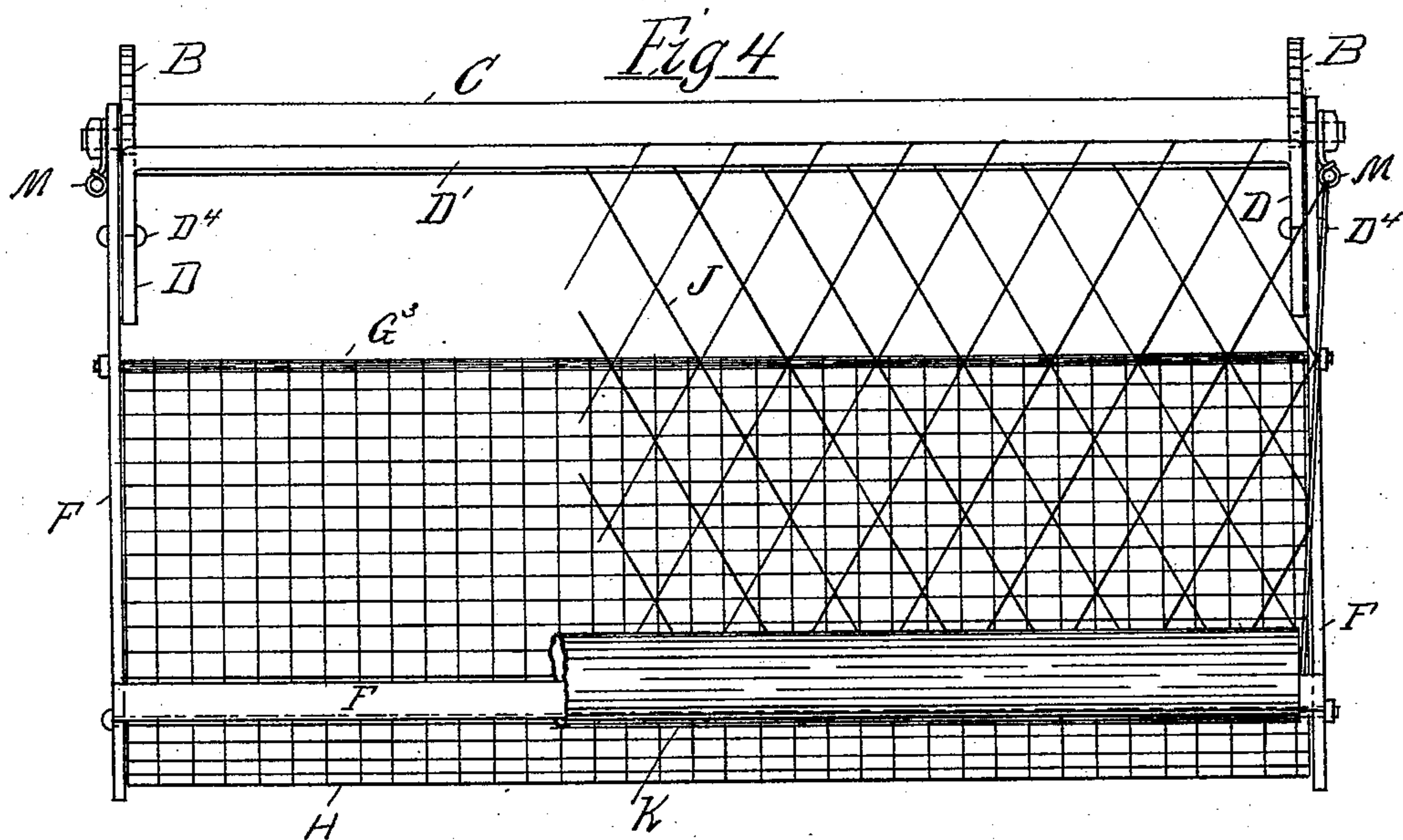
Witnesses
Alfred B. Watson.
Wm M. Drew

Inventors
Giovanni Mauro &
Francesco Renzo, By John F. Kerr
Attys.

G. MAURO & F. RENZO.
LIFE SAVING GUARD FOR CARS.

No. 533,961.

Patented Feb. 12, 1895.



Witnesses

Alfred B. Watson
Wm M. Drew

Inventors

Giovanni Mauro & Frances Co.
Renzo, By John F. Kerr
attys.

UNITED STATES PATENT OFFICE.

GIOVANNI MAURO AND FRANCESCO RENZO, OF PATERSON, NEW JERSEY.

LIFE-SAVING GUARD FOR CARS.

SPECIFICATION forming part of Letters Patent No. 533,961, dated February 12, 1895.

Application filed November 5, 1894. Serial No. 527,881, (No model.)

To all whom it may concern:

Be it known that we, GIOVANNI MAURO, a subject of the King of Italy, and FRANCESCO RENZO, a citizen of the United States, both residing at Paterson, Passaic county, New Jersey, have invented new and useful Improvements in Life-Saving Guards for Cars, of which the following is a specification.

The object of this invention is to provide a car used for the transportation of either merchandise or passengers and which is propelled by steam, electricity or other power, with a guard which, will pick up and carry any person or object which the moving car may encounter during its progress, and hold said person or object until the car can be brought to a standstill without serious injury to the person so picked up.

It is also part of the object of our invention to so arrange the guard that it can be carried in various positions and at various distances above the track and so that it may be removed from one end of the car to the other when required.

The device is constructed and arranged so that when it comes in contact with a person or object the weight of the person or object falling into the net work apron operates a toothed lever releasing it from engagement with a stationary and fixed plate secured to the front of the car and springs mounted on bars under the guard then operate to elevate the guard as much as the weight of the person or object will allow when the toothed-lever by reason of the weight of the person or object is caused to engage one of the ratchet teeth with which said stationary or fixed disk is provided, causing the guard to remain in an elevated position and forming a safe receptacle in which the person or object is held until removed from danger.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1, is a side elevation partly in section of a guard and car, showing the guard in its lowered position. Fig. 2, is a similar view of car and guard showing the guard in its raised position. Fig. 3, is a side elevation partly in section showing an enlarged detailed view of a portion of the operating mechanism. Fig. 4, is a front elevation of the guard parts be-

ing omitted. Fig. 5, is a plan view parts being omitted.

The outer frame of the guard is composed of the side bars —F— and the front bar —F—, the side bars being bent as shown in Figs. 1 and 2 of the drawings. Cross bars G³ and G⁴ pass through the side bars —F— connecting them and are secured therein by a screw nut or in any other suitable manner. A wire netting —H— connects the side bars —F— and the cross bars G³ and G⁴.

On the front bar —F—, which, as shown in the drawings, is integral with the side bars —F—, is suitably secured a rubber tube —K— of any dimension required. The object of this rubber tube mounted on the front bar —F— is to avoid the injuries apt to be sustained by the person struck by a moving car and the size and yielding character of the tube will be selected with that object in view. A further cross rod —J'— extends from one side of the frame to the other and is suitably secured thereto.

The upper ends of the side bars —F— are pivotally secured to a block, beam or other suitable fastening —C—.

The block or cross bar —C— is suitably secured to the car front —L—.

On the ends of the cross bar —C— are securely fixed the disks or plates —B—. Each disk or plate —B— is provided with one or more recesses —B'— and with any required number of ratchet teeth —B²—.

A toothed lever —D— is pivotally secured to each of the side bars —F— by a bolt —D⁴— at a point therein so as to enable the lugs —D²— and —D³— of the lever —D— to engage the recesses B' and the ratchet teeth B² respectively of the disk plate —B— when required. A cross bar —D'— is made integral with and forms a part of the toothed levers —D— and crosses the guard between the sides thereof. A netting made of rope or any other suitable materials connects the lever bar —D'— and the cross bars —J'— as indicated in the drawings —J—. The bar —J'— also passes through the lugs —J²—.

Curved bars —G— are secured to the sides of the guard —A— and extend from beneath the guard toward the car front, passing through the guides —G'— which may be secured to the

car in any appropriate manner where required. Around said bars —G— is placed a helical spring —G²— the tension of which is sufficient to elevate the guard when the lugs on the lever —D— are removed from engagement with the disk —B—.

A spring —E— connects the lower end of the lever —D— and the side bar —F—, —E'— and —E²— being holes in the lever and side of frame respectively to which the ends of the spring are secured.

—C'— is the square end of cross bar —C— which passes through the square holes —C²— in the disk plate —B—, and —C³— is a block or other suitable fastener.

The drawings correctly represent the principle involved in my invention but the recesses —D'— and the ratchet teeth —B²— with which the disk plate —B— is provided may be located in such a manner that the guard —A— when lowered may be as close to the rails on which the car moves, as is desired; and in the same manner the height to which the guard may be elevated can be regulated.

The spiral spring —E— has a tendency to keep the lug —D²— engaged with the recess —B'—.

When a person or an object is struck by a moving car which is provided with our life saving guard it operates as follows: The part of the guard which first comes in contact with a person is the rubber tube —K— which forms an elastic yielding cushion which is not apt to injure the person struck. The force of the collision throws the person or tips him into the net —J—, the guard being down as shown in Fig. 1. The netting —J— extending from the cross bar —J'— to the cross lever bar —D'—, the weight of the person in the netting —J— draws the lug —D²— of the lever —D— out of the recess —B'— in the disk plate —B— and the lug thus being withdrawn the helical spring —G²— forces the guard —A— as high as the weight of the person in the netting —J— will permit it to go, at which point or elevation the lug —D³— is forced to engage with some one of the ratchet teeth —B²—, as shown in Fig. 2, and the guard will then remain in that position until the person or object struck is safely removed therefrom.

Our guard may be of such a size that the length of the netting —J— will prevent the person being picked up by the guard from coming in contact with anything except the tubular cushion —K— and the netting —J— and the danger to the life or limb of the person picked up is thus reduced to a minimum.

With this description of our invention, what we claim is—

1. In a life saving guard for cars the combination with the car having a cross bar secured to the front thereof of a guard pivotally secured to the ends of said cross bar, a disk plate provided with a recess and a number of ratchet teeth securely fixed to the ends

of said cross bar, a lever bar having two arms made integral therewith each arm being pivotally secured to one side of the guard frame and provided with lugs adapted to engage with the recesses and ratchet teeth in the respective disk plates, a spring connecting the lower end of each lever arm to a side of the guard frame and adapted to hold a lug on the lever arm in a recess of the disk plate and a netting —J— extending from the lower front portion of the guard to the upper portion thereof and connected with the cross lever bar, substantially as shown and described.

2. In a life saving guard for cars the combination with the car having a cross bar secured to the front thereof of a guard pivotally secured to the ends of said cross bar, a tubular rubber cushion secured to the lower front edge of said guard, a disk plate provided with a recess and a number of ratchet teeth securely fixed to the ends of said cross bar, a lever bar having two arms made integral therewith, each arm being pivotally secured to one side of the guard frame and provided with lugs adapted to engage with the recesses and ratchet teeth in the respective disk plates, a spring connecting the lower end of each lever arm to a side of the guard frame and adapted to hold a lug on the lever arm in a recess of the disk plate and a netting —J— extending from the lower front portion of the guard to the upper portion thereof and connected with the cross lever bar, substantially as shown and described and for the purposes specified.

3. In a life saving guard for cars the combination with the car having a cross bar secured to the front thereof of a guard pivotally secured to the ends of said cross bar, a tubular rubber cushion secured to the lower front edge of said guard, curved bars secured to the guard frame beneath the same said bars being curved toward the car, a helical spring secured to and around said curved bars, bar guides secured to the car and provided with openings adapted to permit the lower ends of the curved bars to move through the same, a disk plate provided with a recess and a number of ratchet teeth securely fixed to each end of said cross bar, a lever bar having two arms made integral therewith, each arm being pivotally secured to one side of the guard frame and provided with lugs adapted to engage with the recesses and ratchet teeth in the respective disk plates, a spring connecting the lower end of each lever arm to a side of the guard frame and adapted to hold a lug on the lever arm in a recess of the disk plate and a netting —J— extending from the lower front portion of the guard to the upper portion thereof and connected with the cross lever bar, substantially as shown and described.

4. In a life saving guard for cars, the combination with the car, having a cross bar secured to the front thereof, of a guard pivot-

ally secured to the ends of said cross bar, a tubular rubber cushion secured to the lower front edge of said guard, curved bars secured to the guard frame, beneath the same, said bars being curved toward the car, a helical spring secured to and around said curved bars, bar guides secured to the car and provided with openings adapted to permit the lower ends of the curved bars to move through the same, a disk plate provided with a recess and a number of ratchet teeth securely fixed to each end of said cross bar, a lever bar having two arms made integral therewith each arm being pivotally secured to one side of the guard frame and provided with lugs adapted to engage with the recesses and ratchet teeth in the respective disk plates, a spring con-

necting the lower end of each lever arm to a side of the guard frame and adapted to hold a lug on the lever arm in a recess of the disk plate, a netting —J— extending from the lower front portion of the guard to the upper portion thereof and connected with the cross lever bar, cross bars G^3 and G^4 connecting the sides of guard frame and wire netting extending from rod G^4 to rod G^3 , substantially as shown and described and for the purposes specified.

GIOVANNI MAURO.
FRANCESCO RENZO.

Witnesses:

FRANK P. ROMANO,
VINCENZO PEPE.