

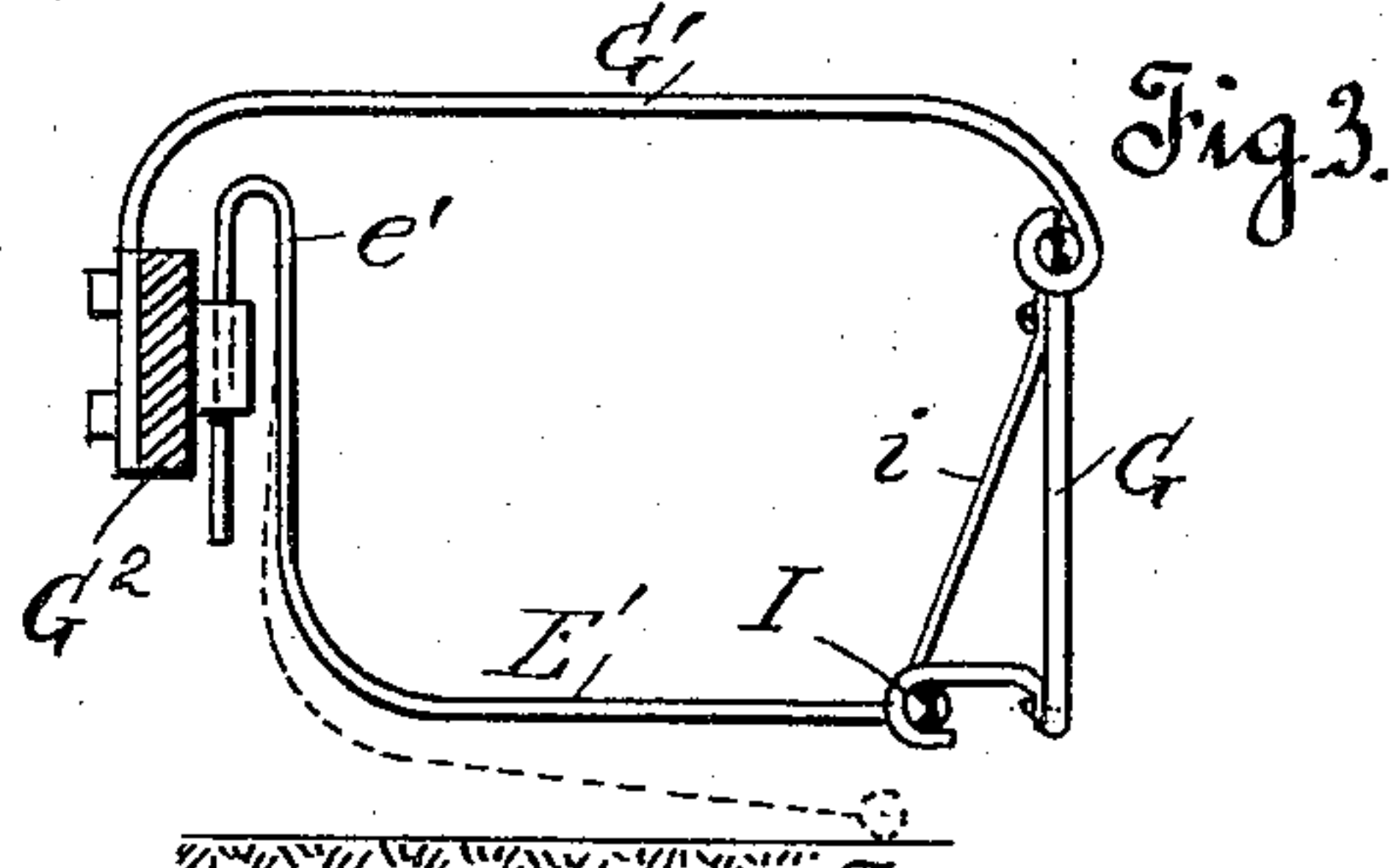
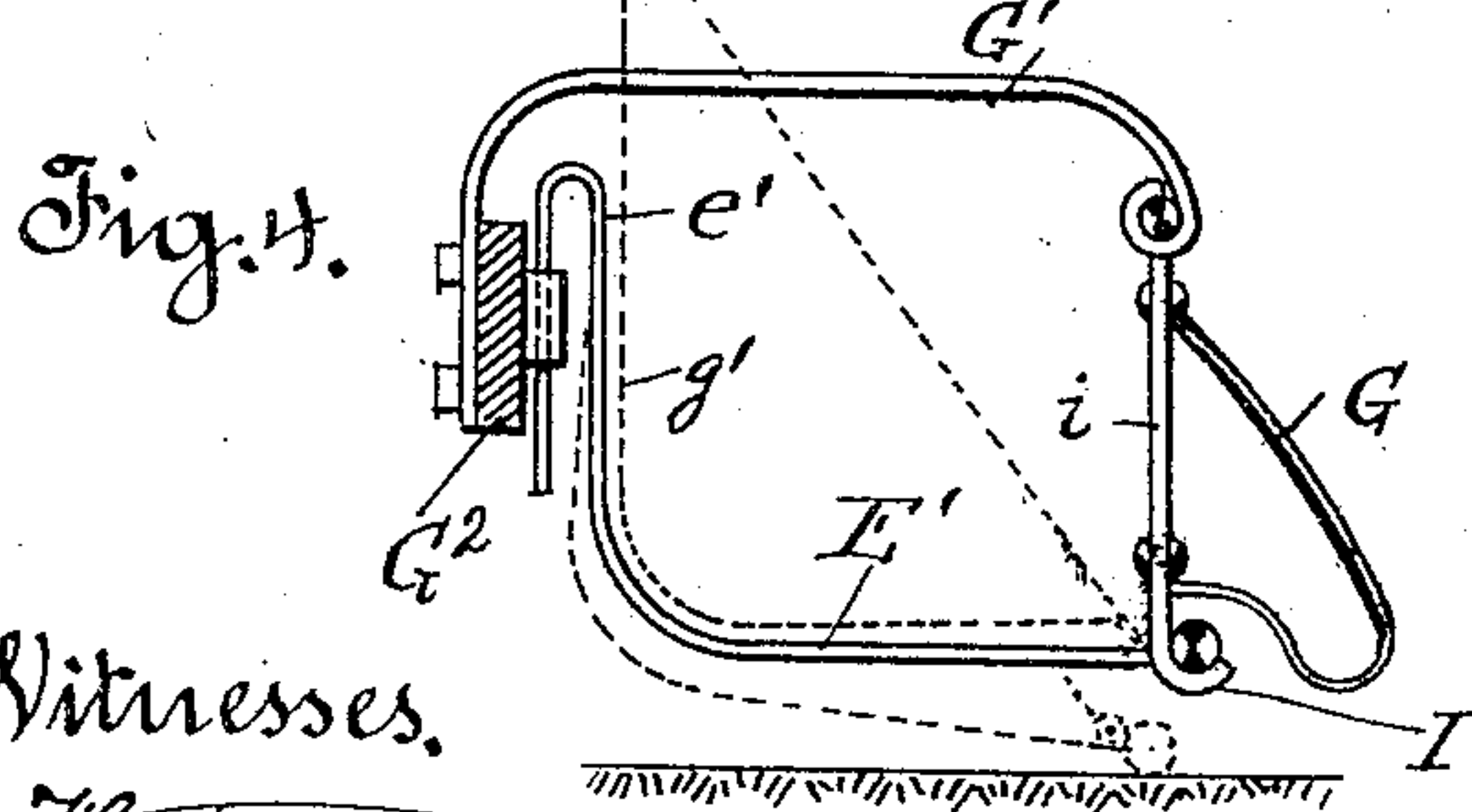
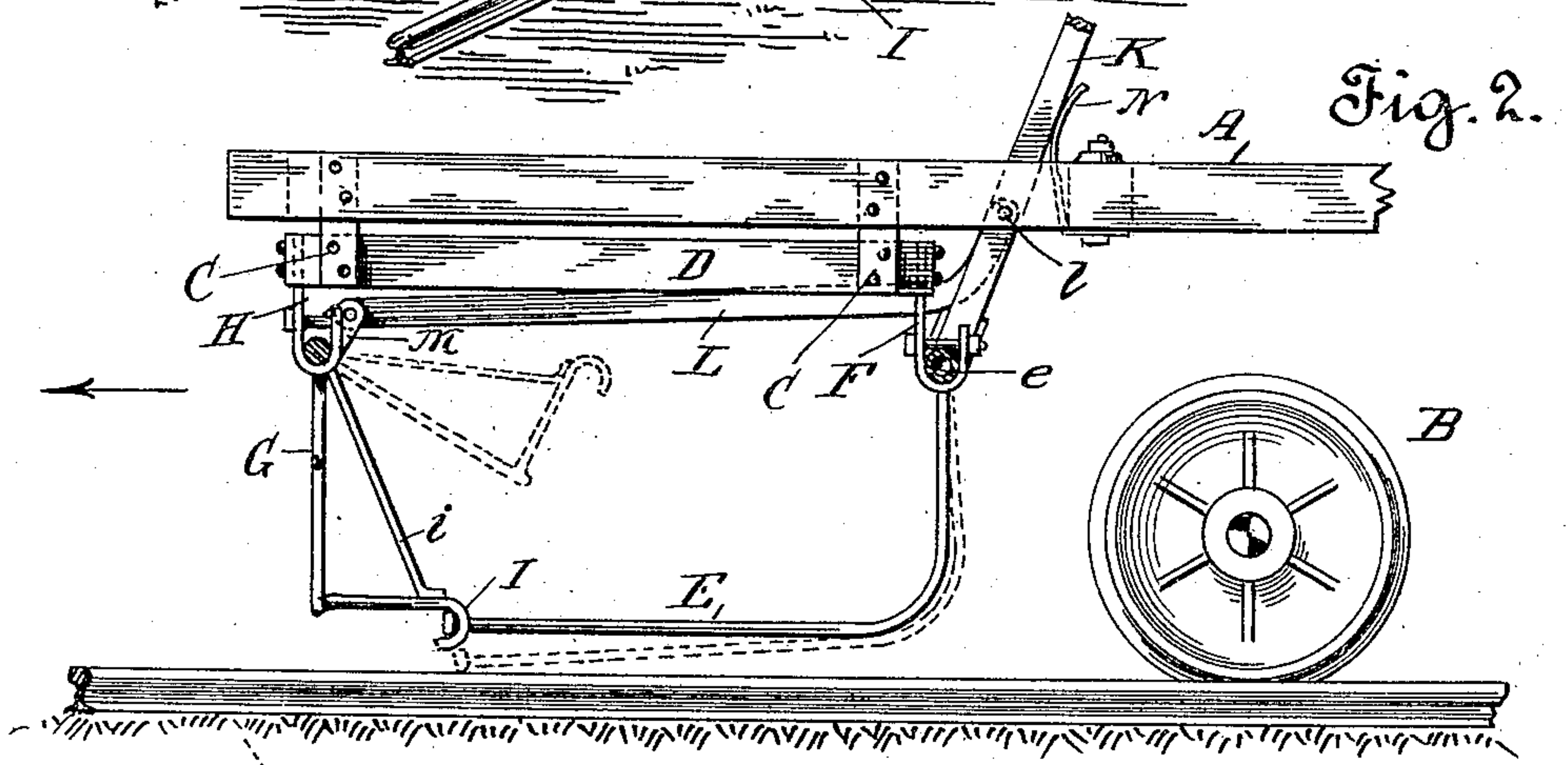
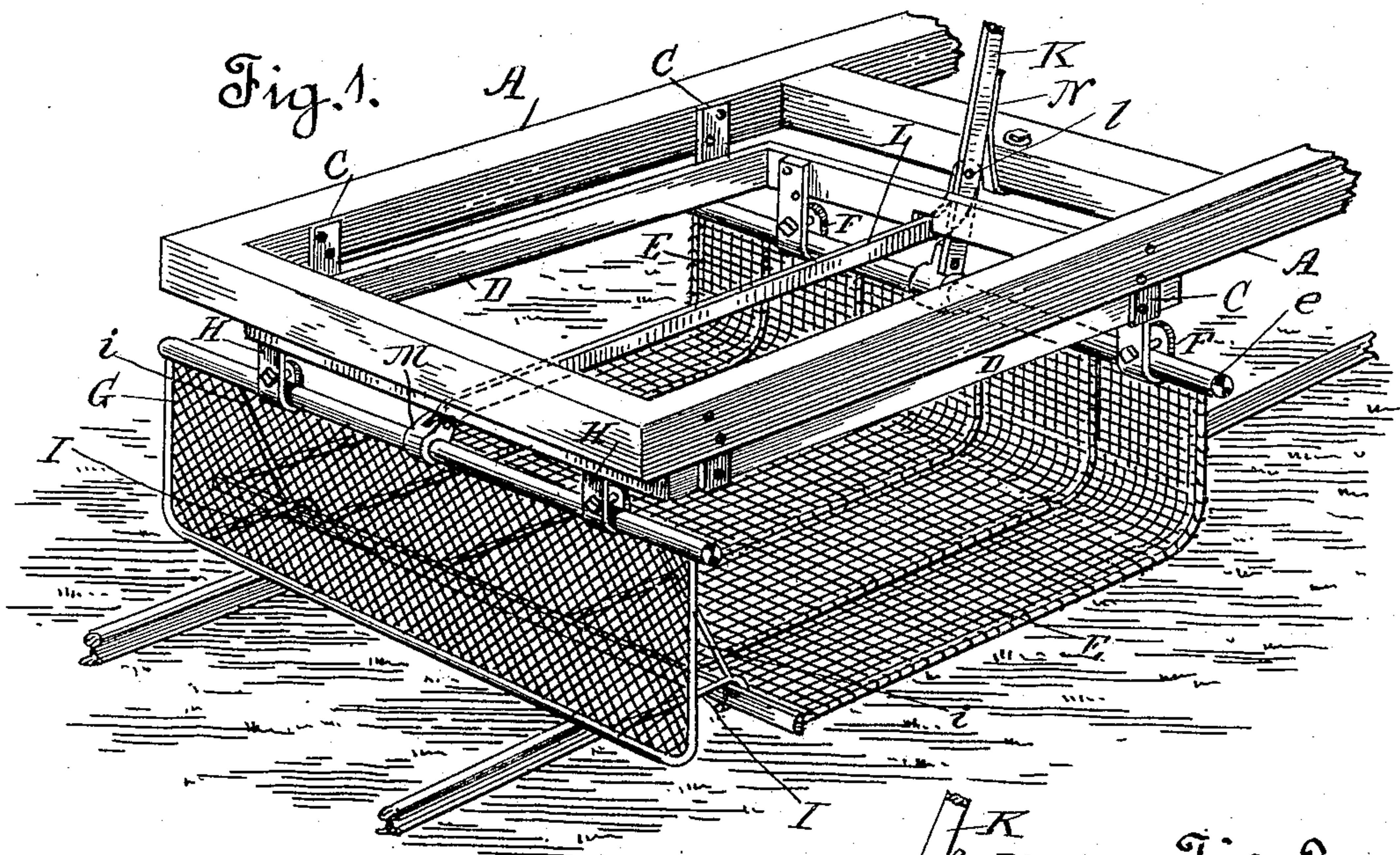
No. 765,813.

PATENTED JULY 26, 1904.

F. E. CATON.  
CAR FENDER.

APPLICATION FILED OCT. 27, 1903.

NO MODEL.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 765,813, dated July 26, 1904.

Application filed October 27, 1903. Serial No. 178,668. (No model.)

*To all whom it may concern:*

Be it known that I, FRED E. CATON, a citizen  
of the United States, residing at San Jose,  
Santa Clara county, State of California, have  
5 invented certain new and useful Improvements  
in Car-Fenders; and I do hereby declare the  
following to be a full, clear, and exact descrip-  
tion of the same.

My invention relates to that class of fen-  
10 ders or safety-guards for cars in which the  
front edge of the guard apron or scoop is nor-  
mally carried above and out of contact with  
the rails and road-bed, but is adapted to de-  
scend to functional position by the operation  
15 of a trigger or trip upon coming in contact  
with an obstructing body. In this class of  
fenders the apron sometimes consists of a  
curved or scoop-like frame, composed of ribs  
and netting, and sometimes it consists of a  
20 number of curved resilient arms. It is usu-  
ally suspended by a connection at its rear up-  
per edge, the major portion of its body ex-  
tending forwardly and having no support  
other than that afforded by its rear connec-  
25 tion. As the frame whether a net or spring-  
arms is necessarily somewhat resilient or  
yielding, (a rigid frame being undesirable,) the  
front edge is not well carried above the  
road-bed and rails, but has a considerable  
30 shaking movement, due to the movements of  
the car, which said shaking is the more pro-  
nounced where, as in many cases, the fender is  
carried by the spring-supported car-body and  
not by the trucks.

35 The main object of my invention is to rem-  
edy this difficulty by furnishing a positive  
and direct support for the front of the guard  
apron or scoop, which result I attain by means  
of the trigger itself, between which and the  
40 front edge of the scoop I form a direct trip  
connection.

Other objects of my invention are to pro-  
vide for getting the trigger up out of the way  
after the first operation of tripping the apron  
45 or scoop is performed and for positively  
throwing the apron or scoop down to the road-  
bed as soon as it is tripped and also to pro-  
vide simple and effective means for readjust-  
ing the parts of the fender after use.

To these ends my invention consists in the 50  
novel construction, arrangement, and combi-  
nations of parts, which I shall now describe  
and claim by reference to the accompanying  
drawings, in which—

Figure 1 is a perspective view of my car- 55  
fender of the pivoted net variety, showing it  
in its normal set position. Fig. 2 is an end  
view of same, showing by dotted lines its po-  
sition when called into use. Fig. 3 is an end  
view showing the apron or scoop of the spring- 60  
arm type, the dotted lines indicating its po-  
sition when released for use. Fig. 4 is an end  
view of a similar type of scoop or apron,  
showing a forwardly-extending trigger and a  
simple line connection to readjust the parts 65  
after use.

A is a portion of the car body or bed in  
front of the forward wheels B. From the car  
either from the truck or, as here shown, from  
the car-body is supported by suitable means— 70  
as, for example, by the straps C—the frame  
D, which carries the fender.

E is the guard apron or scoop, composed in  
Figs. 1 and 2 of suitable ribs and netting, as  
shown. At its rear upper edge the scoop E 75  
has a bar *e*, which is pivotally suspended by  
any suitable means—as, for example, by the  
hooked lower ends of the J-hangers F, which  
hangers are rigidly connected at their upper  
ends to the supporting-frame D. It will thus 80  
be seen that the scoop E may be turned about  
its upper rear edge as a center to lift its for-  
ward edge above or to allow it to descend to  
the rails and road-bed.

G is the trigger or trip. It may be a frame 85  
of any suitable construction—as, for example,  
a net-frame, as here shown. It is pivotally  
suspended by its upper edge by any suitable  
means, as by the lower hooked ends of the  
J-hangers H, which are rigidly secured at their 90  
upper ends to the front of the supporting-  
frame D. From the lower edge of the trig-  
ger or trip G extend backwardly the support-  
ing-hooks I, the rear ends of which engage  
with the forward edge of the apron or scoop 95  
E and serve to normally hold said edge up and  
support it above the track-rails and road-bed.  
The hooks I have suitable braces *i*.



As far as described the operation of the fender is as follows: In its set position, ready to be called into use, the trigger or trip G engages, by means of its hooks I, the forward edge of the scoop E and holds said edge above the track-rails and road-bed, so that the front of said scoop is positively supported and will not have any undue shaking movement due to its own resiliency or other want of rigidity, which would tend to make it come in contact with the road-bed. If now an obstructing body be met, the contact of said body against the trigger G will cause said trigger to swing backwardly sufficiently to disengage its hooks I from the front edge of the scoop, whereupon said scoop will drop down and its forward edge will rest upon the rails and road-bed in position to prevent the body from getting under it and said body will be received upon the scoop or apron. When the situation is relieved by the removal of the obstructing body, the car attendant can cause the trigger G and the scoop E to reengage, and the device is thereby set once more. This, it will be observed, is the simplest form of the fender, in which the main object of supporting positively the forward edge of the scoop is accomplished, and the device, thus simple, may be used with advantage in those cases where too much expense is not desired; but to effect further objects—namely, to throw the scoop down positively, to get the trigger up out of the way, and to reset the device from the car—the complete construction is as follows:

Secured rigidly to and rising from the upper back bar *e* of the scoop is a lever K, which passes up through the floor of the car in position to be operated by the motorman. Connected with this lever at point *l*, relatively high up thereon, is a connecting-rod L, the other end of which extends to and is connected with a crank-arm M, secured to the top edge of the trigger G. A spring is let into these connections in any suitable place for the purpose of throwing them forward to lift the trigger and of positively throwing the scoop down. I have here shown a spring N, bearing behind the lever, its tension being exerted to throw the lever forward. The operation of these parts will now be seen. When the trigger G is pressed backwardly by the obstructing body, and thereby detaches its hooks I from the scoop E, said scoop will fall, being impelled thereto not only by gravity, but by the spring N. This spring also throws the lever K forwardly, and this movement of the lever, through the connecting-rod L and the crank-arm M, will lift the trigger G in its backward movement high enough to get it out of the way of the obstructing body, which will now pass upon the scoop. It will be seen that the point of connection *l* of rod L being relatively high up on lever K provides by its extended arc of movement for the required swing of the trigger to lift it fully up out of

the way. It will also be seen that the relative positions of the end connections of the rod L both with respect to each other and to the pivotal center of the scoop are such that while the trigger and scoop are connected by the hooks the spring N is powerless to throw the lever K forward, so that the parts remain locked in their normal position; but owing to the resilience or slight inherent yielding in the trigger itself an obstructing body coming in contact with it will cause it to press back far enough to release its hooks from the scoop, whereupon the spring N will instantly act and throw the scoop down and the trigger up. To reset the parts, the motorman has only to draw back the lever K, whereby the scoop E will be lifted and the trigger-frame G will be lowered, and the engagement of its hooks I with said scoop will again take place.

In Figs. 1 and 2 the apron or scoop is of the net-frame type, suspended pivotally by its upper rear edge. In some fenders, however, the scoop consists of spring-arms of a C shape. To apply my invention to this type it is only necessary, as I show in Figs. 3 and 4, to direct the spring of the arms to normally depress the front edge to the road-bed and tracks. Thus the spring-arms E' in their shank portions *e'* have a tension so directed that the front edge of the scoop is thrown and held down if not interfered with or supported. In this case the hooks I of the trigger G engaging the front edge holds said edge up above the rails and road-bed, as shown in full lines; but when the trigger is forced back and trips the scoop the front edge will spring down to functionally operative position, as shown by the dotted lines. In both these figures the trigger G is pivotally suspended in bearing-arms G', secured to the beam G<sup>2</sup>, to which the scoop-arms are secured.

In Fig. 4 the arrangement is adapted for a case in which the space between the truck-frame and front edge of the car is too short to permit the axis of the trigger to be forward of the vertical plane of the front edge of the scoop, as in the other arrangements shown; but as it is best to have the trigger well in front of the scoop in order to give the latter ample time after the tripping to descend to the road-bed before the obstructing body can reach it or get under it said trigger is shown in Fig. 4 as being curved or extended forwardly for the proper distance. Also in Fig. 4 I have shown a line *g'*, secured to the forward edge of the scoop and thence extending to a handle *g*<sup>2</sup> within reach of the car operator, said line serving as a simple means to reset the parts.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A car-fender comprising an apron the front edge of which when unsupported rests upon the rails and road-bed, a swinging trig-



ger in front of said apron, a trip connection between the trigger and the front edge of the apron adapted to support said edge above the rails and road-bed, and to drop it when tripped, and means operated by the apron in dropping, to simultaneously swing the trigger up.

2. A car-fender comprising an apron pivotally suspended by its upper rear edge, a swinging trigger in front of said apron, a trip connection between the trigger and the front edge of the apron adapted to support said edge above the rails and road-bed and to drop it when tripped, a lever connected with the rear edge of the apron and a connecting-rod between said lever and the trigger adapted to swing the trigger up as the apron drops.

3. A car-fender comprising an apron pivotally suspended by its upper rear edge, a swinging trigger in front of said apron, a trip connection between the trigger and the front edge of the apron adapted to support said edge above the rails and road-bed and to drop it when tripped, a lever connected with the rear edge of the apron, a connecting-rod between said lever and the trigger adapted to swing the trigger up as the apron drops, and a spring to throw the apron down.

4. A car-fender comprising an apron pivotally suspended by its rear edge, a trigger in

front thereof pivotally suspended by its upper edge, a trip connection between said trigger and the front edge of the apron to support said edge above the rails and road-bed and to drop it when tripped, a spring-controlled lever attached to the rear edge of the apron, a crank-arm on the upper edge of the trigger, and a rod connecting said lever and arm.

5. A car-fender comprising an apron pivotally suspended by its rear edge, a trigger in front thereof pivotally suspended by its upper edge, a trip connection between said trigger and the front edge of the apron, to support said edge above the rails and road-bed, and to drop it when tripped, an uprising lever attached to the rear edge of the apron, a spring acting on said lever to throw it forwardly, a crank-arm on the upper edge of the trigger, and a rod connecting the lever with the crank-arm, substantially as herein described.

In witness whereof I have hereunto set my hand.

FRED E. CATON.

Witnesses:

LEROY BAILEY,

H. LYSLE AUSTIN.