

(No Model.)

A. SOFFEL.
SAFETY GUARD FOR CARS.

No. 521,966.

Patented June 26, 1894.

Fig. 1.

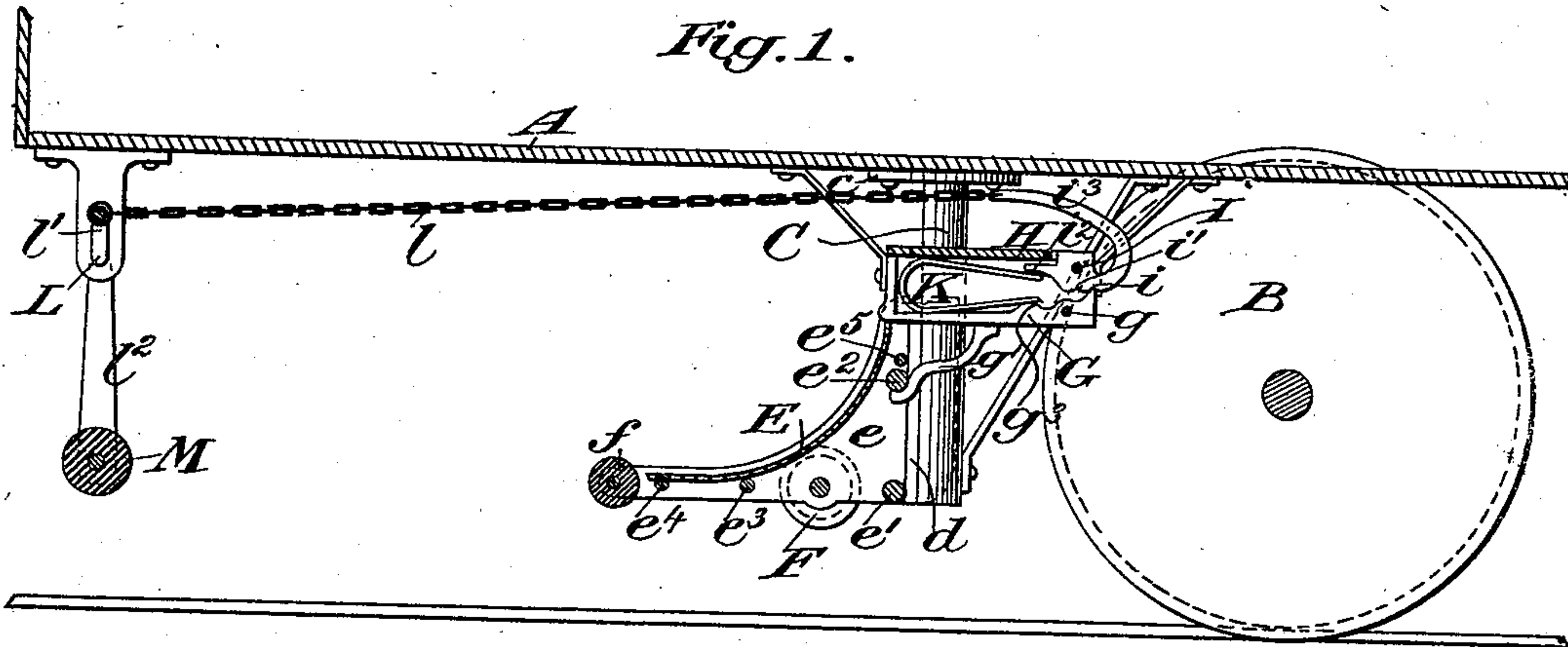


Fig. 2.

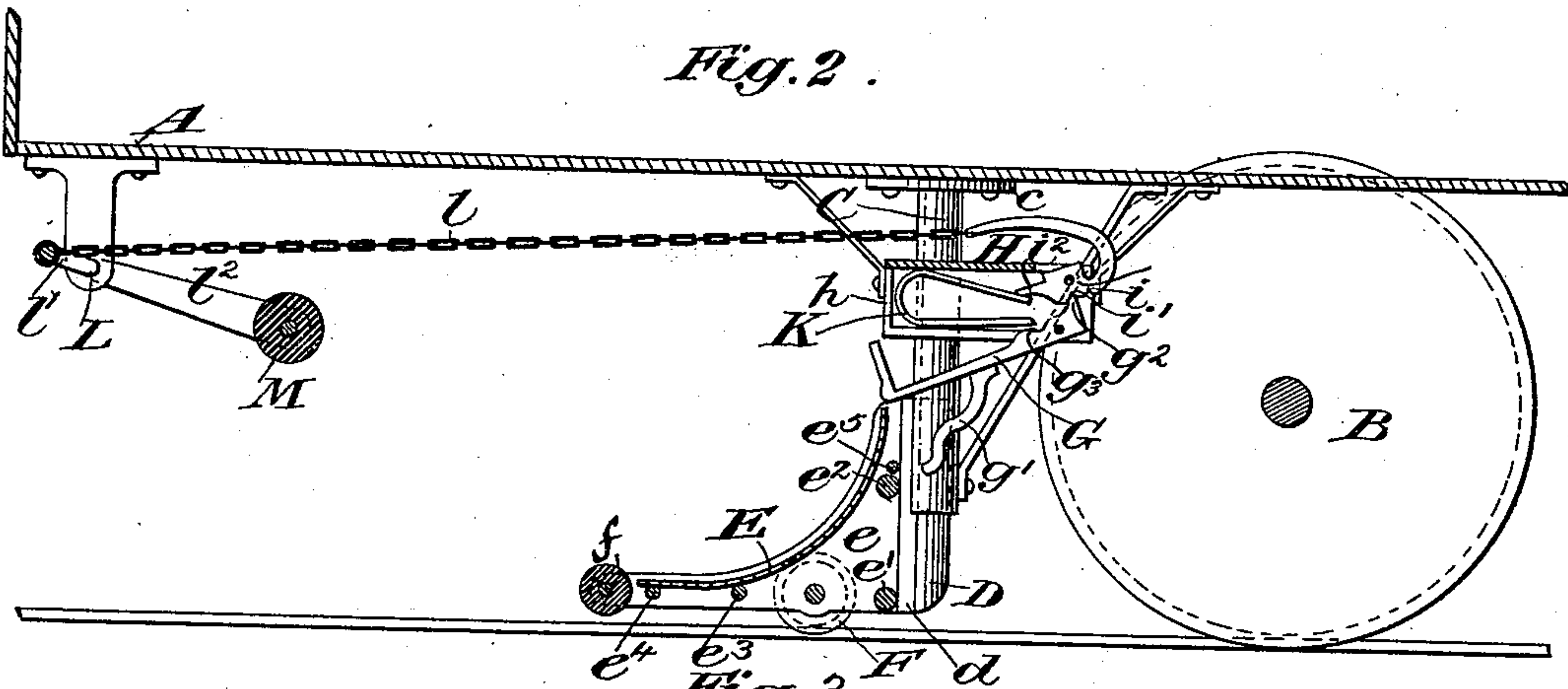
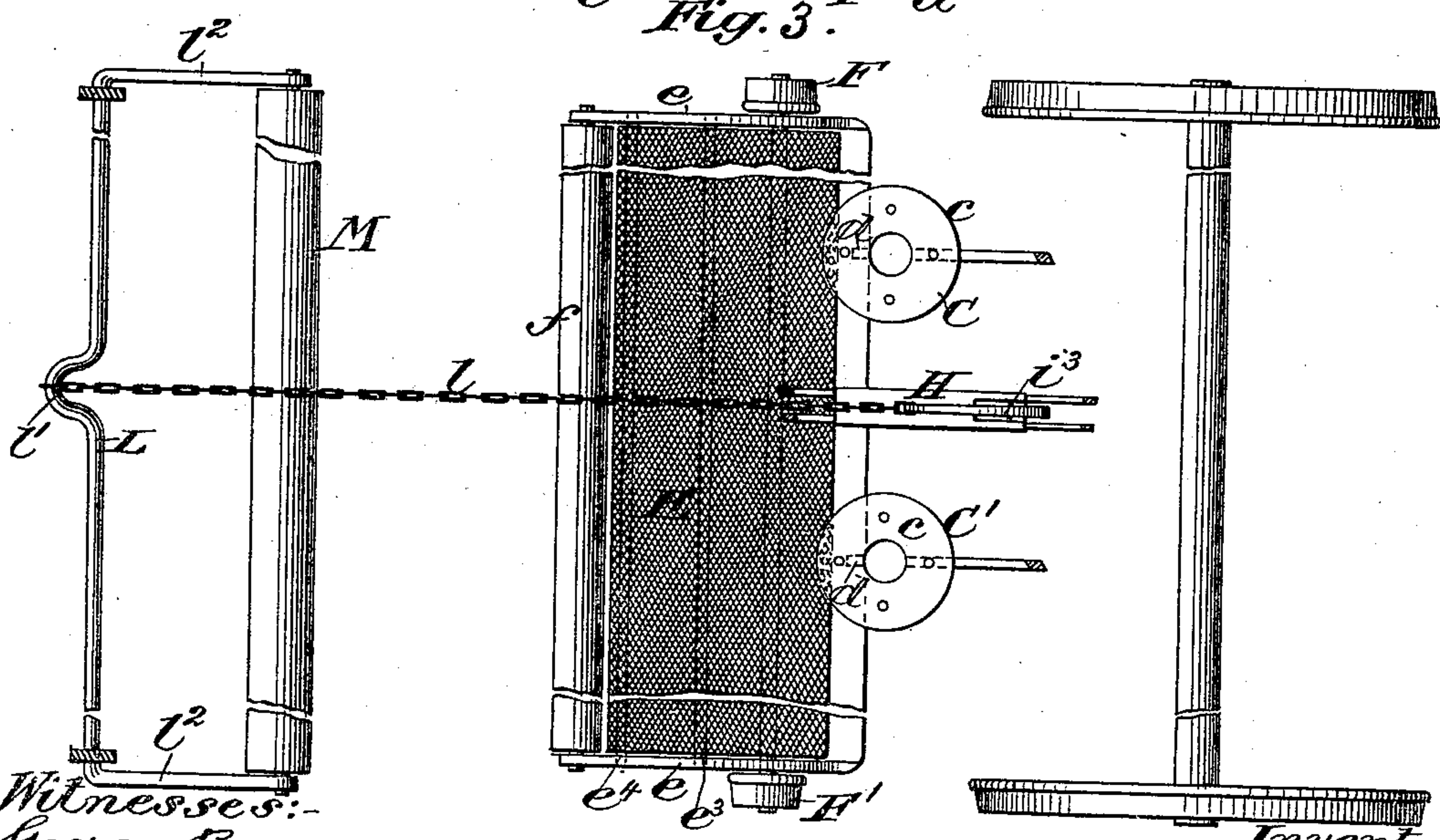


Fig. 3.



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AUGUST SOFFEL, OF BROOKLYN, NEW YORK.

SAFETY-GUARD FOR CARS.

SPECIFICATION forming part of Letters Patent No. 521,966, dated June 26, 1894.

Application filed February 23, 1894. Serial No. 501,097. (No model.)

To all whom it may concern:

Be it known that I, AUGUST SOFFEL, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful
5 Improvement in Safety-Guards for Railway-Cars, of which the following is a specification.

My invention relates to an improvement in safety guards for railway cars, in which a cradle held normally above the rail in front of
10 the wheels beneath the platform of the car is automatically released by the engagement of the front of the car with an obstacle on the track, and also lowered into position to catch and hold such object from passing under the
15 wheels.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents, in vertical longitudinal
20 section, a portion of a car platform and wheel, showing the position of the parts when the guard is in its normal position. Fig. 2 is a similar view, showing the position of the parts when the front of the car has met with
25 an obstacle and the guard has been lowered into position to catch the obstacle, and Fig. 3 is a top plan view of the parts, the platform of the car being removed to show the parts more clearly.

30 A represents the platform of a car.

B represents one of the wheels of the pair nearest the end of the car where the platform is located.

In front of the wheels B, a pair of hangers
35 C, C' depend. In the present instance the hangers C, C' consist of circular tubes provided with slots along their front sides for the reception of the web d of guide pieces D, fitted to slide freely up and down within the
40 tubes C, C'. The upper ends of the tubes C are provided with flanges c for securing them to the under side of the platform of the car, and suitable braces of any well known or approved form connect the tubes C C' with the
45 platform to hold them firmly in position.

To the guides D the frame of the cradle is secured. The cradle consists of a curved face, in the present instance formed of heavy gauze E connected to end pieces e , the end
50 pieces being connected with one another by cross bars e' , e^2 , e^3 and e^4 so as to hold them firmly together. The cradle is provided with

a pair of rollers F, F', having flanged rims so as to hold the cradle on the track when it falls, the wheels F, F' serving to support it
55 with its face a short distance above the level of the track. At its front edge the cradle E is provided with a roller f of some suitable yielding material, such for example as rubber, the object of the roller being to assist in
60 passing the object struck rearwardly onto the face E of the cradle. It also serves, when the cradle is down, to prevent the cradle from catching against any unusual obstruction which may extend an unintentional distance
65 above the level of the track. The cradle is firmly fixed to the guides D. The cradle is held normally suspended by means of a lever G, pivotally secured to a suitable support, as at g , and provided on its under side with a
70 branch g' , the free end of which, when the lever is up in a horizontal position, as shown in Fig. 1, takes under the cross bar e^2 .

I find it convenient to pivot the lever G between the opposite sides h of a housing H,
75 the latter being fixed by suitable braces to the car. Within the same housing there is pivoted a dog I, provided on its under side with notches i and i' at different distances from the pivotal point of the dog and in po-
80 sition to receive the nose g^2 on the lever G. The dog I is provided with a nose i^2 , between which and the projection g^3 on the lever G, the ends of the U-shaped spring K are received. The spring K is clamped within the
85 housing H so that its free ends cannot escape from between the nose of the dog and the projection g^3 on the lever G and the position of the notches in the dog I, relatively to the nose g^2 on the lever G are such that, when
90 the parts are in the position shown in Fig. 1, the spring will have a greater effect upon the dog and will, through it, act upon the short end of the lever G with sufficient force
95 to hold the lever G horizontally and hence the cradle in its elevated adjustment. When, however, the dog I is rocked into the position shown in Fig. 2 to bring the ends of the lever G into the notch i' , the spring K will have the
100 greater effect upon the lever G and will force it downwardly, releasing the cradle and at the same time urging on the descent of the cradle by the contact of the lever with a rod e^5 at the rear end of the cradle.

The dog I is provided with a curved tail ²³ which is connected by a chain ⁷, or other suitable flexible connection, with the crank arm ^{7'} of the rock shaft L, journaled in suitable bearings secured at the front end of the platform. The rock shaft L is provided with arms ⁷² in the free ends of which is journaled a roller M formed of some suitable yielding material, such for example as rubber. When the parts are in their normal position, shown in Fig. 1, the arms of the shaft L hang downwardly so that the roller M is in position to strike any obstacle on the track. The effect of striking an obstacle will be to swing the roller M rearwardly, thereby drawing the chain ⁷ forwardly and so rocking the dog L as to release the lever G and also lower the cradle into position.

It will be observed that the simple U-shaped spring K is made to serve the double purpose of holding the cradle normally in elevated adjustment and also of urging it positively downward whenever it is released.

The device is quite simple and inexpensive, and is very effective in preventing an obstacle reaching the wheels of the advancing car. It has the further advantage of requiring no mechanism extending outwardly beyond the front of the car into position where it would be liable to interfere with the passage of trucks or other vehicles across the tracks in a crowded thoroughfare.

It is obvious that slight changes in the form and arrangement of the several parts might be resorted to without departing from the

spirit and scope of my invention, hence I do not wish to limit myself strictly to the structure herein set forth, but

What I claim is—

1. In combination, a vertically movable cradle, a lever for engaging and releasing the cradle, a dog in position to engage the lever, a spring engaged with the dog and lever and means for operating the dog, the said spring serving—when the parts are in their normal position—to hold the cradle elevated and when the dog is rocked, serving to force the cradle downwardly, substantially as set forth.

2. The combination with the vertically movable cradle, of a U-shaped cradle operating spring and a rocking dog and lever engaged with the spring and with each other for manipulating the spring, whereby the cradle may be held suspended by the force of the spring and also forced downwardly by the spring, substantially as set forth.

3. The combination with the vertically movable cradle and its rollers, of a cradle operating spring, a lever engaged with the spring for holding and releasing the cradle, a rocking dog engaged with the spring and with the lever and a yielding fender in advance of the cradle and connected with the dog for automatically operating the cradle, substantially as set forth.

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Witnesses:

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