

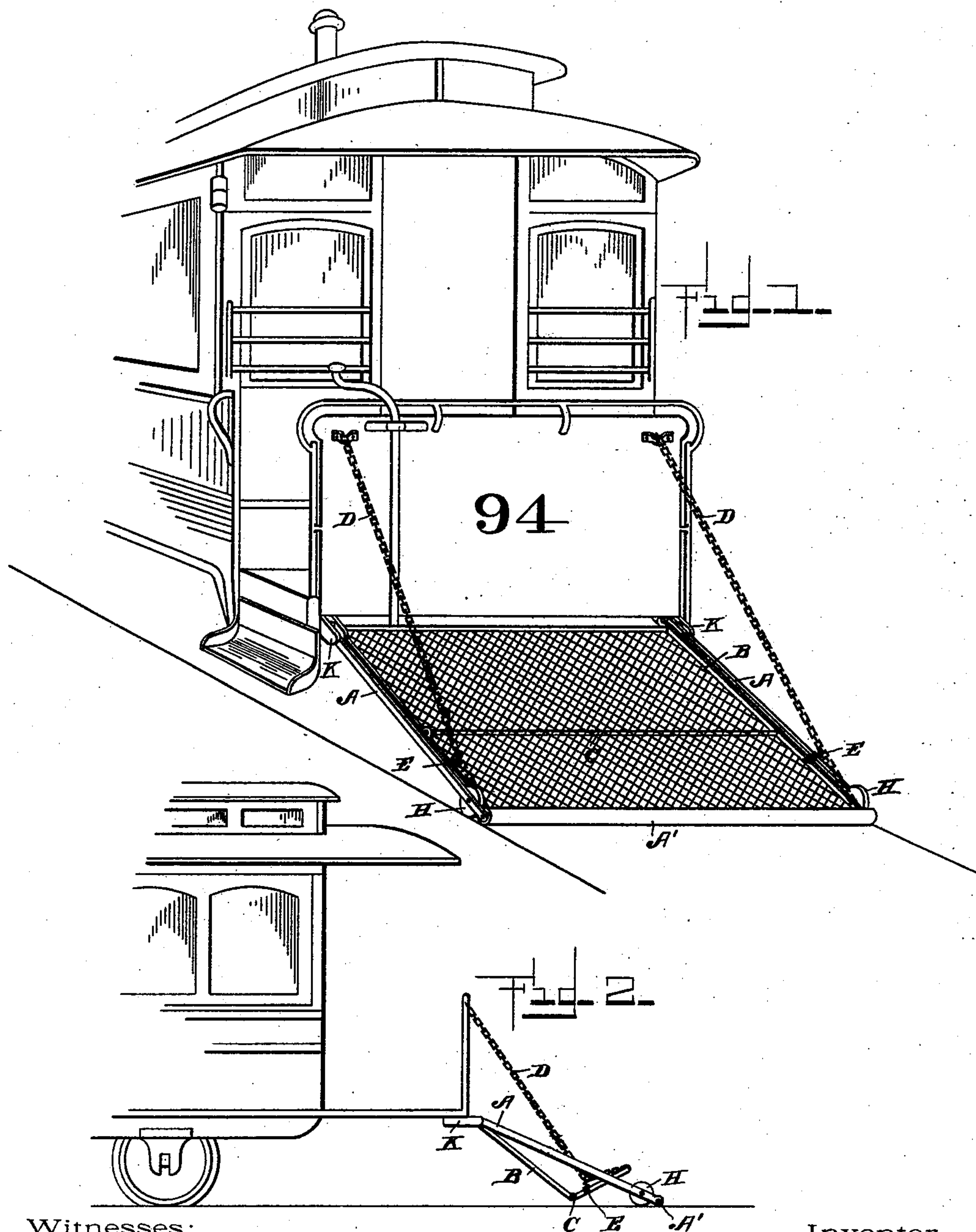
(No Model.)

2 Sheets—Sheet 1.

W. B. CHAMPLIN, Jr.
SAFETY GUARD FOR CARS.

No. 533,050.

Patented Jan. 29, 1895.



Witnesses:

A. M. Mel...
G. P. Norris

Inventor.

William B. Champlin, Jr.
By A. M. Smith & Son,
Attorneys.

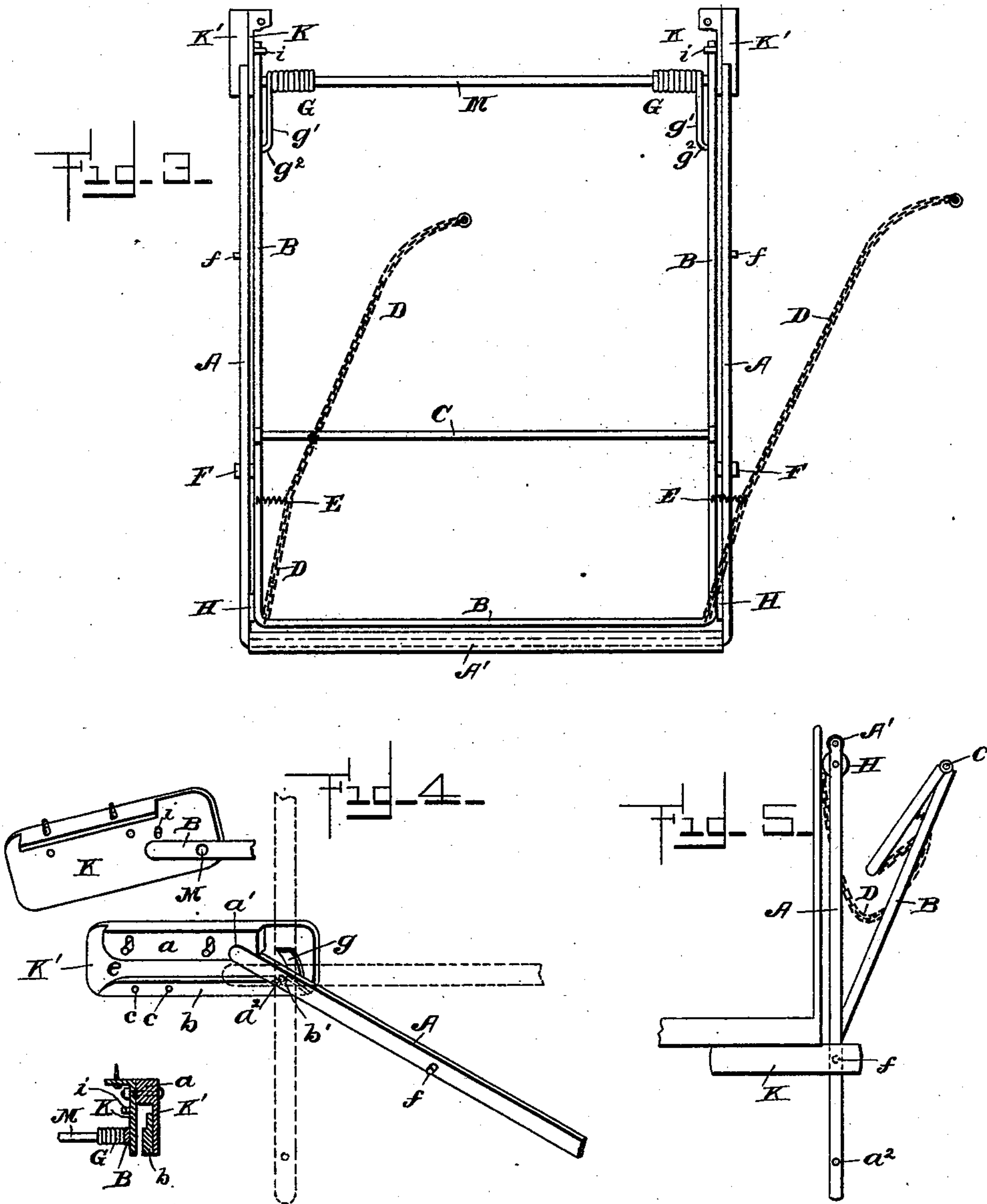
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UNITED STATES PATENT OFFICE.

WILLIAM B. CHAMPLIN, JR., OF OAK CLIFF, TEXAS.

SAFETY-GUARD FOR CARS.

SPECIFICATION forming part of Letters Patent No. 533,050, dated January 29, 1895.

Application filed May 22, 1894. Serial No. 512,059. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. CHAMPLIN, Jr., a citizen of the United States, and a resident of Oak Cliff, county of Dallas and State of Texas, have invented a new and useful Improvement in Safety-Guards for Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to that class of safety guards employing a flexible netting or apron, in front of the car, and, more especially, to a construction of double frame for, and to the means for supporting the guard, and to the devices adapting it to be folded into compact form for transportation, when not in use. It will be understood from the following description and claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of one end of a car, with my improved guard applied. Fig. 2 is a side elevation of the same, illustrating the action of the guard in use. Fig. 3 is a plan view of the guard frame, and the devices for attaching it to the car. Fig. 4 represents, in detail view, some of the devices for attaching the guard frame to the car and permitting its adjustment, and Fig. 5 illustrates, in side elevation, the manner of folding the guard, when not required for use.

My guard is especially designed for use on cars propelled by cable or electricity, but it may, of course, be used on cars otherwise propelled, wherever it may be found applicable. It is composed of two frames, an outer and an inner frame, arranged in substantially the same plane, the inner one carrying the netting or flexible apron, the outer one receiving the shock of an obstruction in its path and serving to guide and steady the movements of the inner frame.

A indicates the outer frame made from metal rods or bars and forming three sides of a rectangle, the forward bar A' of which, connecting the forward ends of the side bars (A) is covered with rubber tubing, which serves to cushion its contact with any obstruction. The rear ends of the side bars A, are supported, each in a bracket plate K, (see Fig. 4) as follows, viz: The plate K' is set on edge and

has, on its inner face, near its upper edge, a horizontal rib or bar *a*, fast on it, having in its lower edge, near its forward end, a notch or recess at *a'*, in which the rear end of the bar A, rests, when the guard is in operative position. A short distance in front of said end, the bar A is provided with a spur or pin *a*², which rests in a notch *b'* in a bar *b*, which, in practice, is made of steel and riveted at *c, c*, near its rear end, to the plate K', in parallel relation to and underneath the bar or rib *a*, as shown. This leaves the forward end of the bars *b* free to spring or yield slightly under the weight of a load on the guard. A space or longitudinal groove *e*, open at its rear end, is left between the bars *a* and *b*, for a purpose that will appear.

g is a stop, located on the plate K' in front of the bars *a* and *b* and which may, if desired, be formed on the forward end of the latter. It is designed to prevent the pin *a*² from escaping forward from the plate K, but is made of less thickness than the bar *b*, so that it will permit a pin *f*, on the bar A, and which is made shorter than pin *a*², to pass by it, and then rest on bar *b*, in folding the guard, as will appear. The bracket plate K', thus formed, is riveted or bolted, through the bar *a*, to the outer face of an angle iron or plate K, which, in turn, is bolted or otherwise rigidly secured to the end of the car platform frame, as indicated in the drawings.

The inner frame B is similar in form and arrangement of parts to the frame A, except that its side bars are jointed at or about one-third, more or less, of their length, from their front ends, the parts thereof being, preferably, united by a rule joint, which will permit their being deflected downward, but prevents their passing upward beyond a right line. The pivot, connecting the parts, is indicated at C, being, preferably, made in the form of a rod extending transversely, from one side bar to the other and thereby stiffening and strengthening the frame.

The rear ends of the side bars of the frame B, are pivoted on a rod M, extending between and connecting the bracket plates K, K. Upon the rod M, near each end, is placed a coiled spring G, the inner end of which is secured to the rod, the outer ends thereof being

provided, each, with a forwardly extending arm g' , having a pin or spur g^2 , on its forward end, said pins passing under or otherwise engaging the side bars of the frame B, the tension of the springs G being exerted to uphold said side bars in the same plane with the outer frame bars A.

The side bars B are provided with angle irons or clips F, the horizontal arms of which project laterally under the bars A and prevent the frame B from rising above the plane of said bars.

Chains D, extend from the upper edge of the car dash-board to the forward end of the frame B and serve to uphold said end within three or four inches of the rails, and from these chains, stiff spiral springs E, are suspended, which are connected to the side bars of the frame B, near the joints therein, as shown, thereby upholding the latter and preventing the flexing of the joints except under the action of the weight on the apron, sufficient to also deflect the supporting chains.

The frame bars A are provided, just back of the front bar, with small wheels or rollers H, which, when a heavy weight is thrown on the guard or guard apron, sufficient to press down the ends of the spring bars b , will rest and roll on the rails, bringing the forward bar A', in close proximity thereto, as indicated in Fig. 2. Ordinarily, however, the rollers H, will be elevated slightly above and clear of the rails.

The apron L may be made of wire netting, canvas, or other strong, flexible material, that can be readily folded and that will yield readily to a weight thereon, as indicated in Fig. 2.

The action will be to deflect the side bars A, of the inner frame B, and these being upheld by the chains D through the connections E, as the chains are deflected by the weight, the forward edge of the apron will be drawn up thus lifting the feet of anyone caught by the guard, clear of the ground, and effectually obviating any danger of a person's falling off. As soon as the weight is removed from the guard, it will instantly resume its working position, thus making it entirely automatic in its action.

For folding the guard out of the way, when not in use, all that is necessary is to raise it from the inclined position, indicated by the bar A, in full lines, Fig. 4, to the horizontal position, shown in dotted lines. This frees the rear ends of the bars A from the notches a' , when the bars A can be pushed back under the car, until the pins a^2 , are free from the grooves e and the pins f have passed the stops g and rest on the bars b , when the forward end of the guard can be raised, causing the latter to assume the position indicated by the vertical dotted lines in Fig. 4, and against the dash board, the inner frame folding upon itself, as shown in Fig. 5, and within the frame

A, thus bringing the guard into compact shape, against the dash-board.

The jointed frame B is guarded against being deflected too far, by means of stops i , with which the inner ends of the side bars come in contact.

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

1. In a safety guard for cars, the combination of the rigid, outer frame pivoted to the car to fold up against the dash-board, the inner, jointed frame, arranged in the same plane with the rigid frame and provided with the flexible apron, and the supporting chains connecting the forward or outer end of said jointed frame with the car and permitting its being flexed, in operation, substantially as described.

2. The combination in a safety guard for cars, of the rigid, outer frame, the notched and grooved brackets connecting said frame with the car body and permitting its endwise movement for folding and unfolding the guard, the inner, flexible frame, pivoted to said brackets and carrying the guard apron, and the chains supporting the forward end of said inner frame and having a yielding or spring connection therewith, substantially as described.

3. The combination in a safety guard for cars, of the two frames arranged, one within the other and in substantially the same plane, the inner frame, carrying the flexible apron, being jointed in its length and pivoted at its inner end, the notched and grooved bracket supporting the outer frame and permitting its being folded, and the chains supporting the outer end of the jointed, inner frame, substantially as described.

4. The guard supporting bracket plate K', provided with the notched bar a and the yielding or spring bar b and the stop g , in combination with the angle iron or plate K, for securing said bracket plate to the car body, the inner, apron frame B, pivoted to the plate K and the outer frame A, connected to said bracket plate K', all substantially as described.

5. The combination in a folding safety guard for cars, of the outer and inner frames A and B, the notched and grooved brackets connecting said frames with the car frame, the cross bar connecting said brackets and the springs mounted on said cross bars and connected with the jointed, inner frame, for upholding the latter in the plane of the outer frame, substantially as described.

In testimony whereof I have hereunto set my hand this 18th day of May, A. D. 1894.

WILLIAM B. CHAMPLIN, JR.

Witnesses:

I. W. ROWE,
A. H. SMITH.