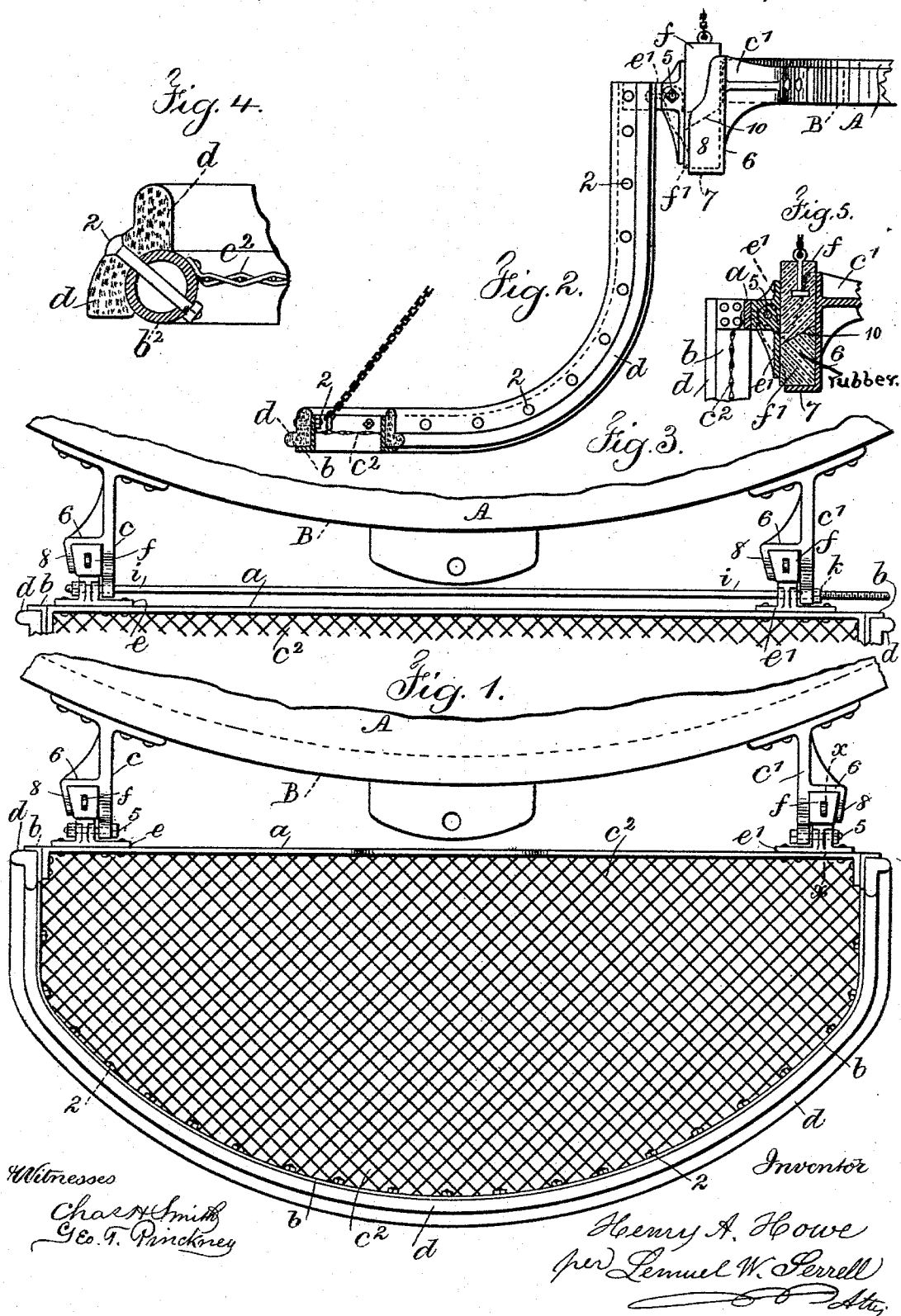


(No Model.)

H. A. HOWE.
SAFETY ATTACHMENT FOR STREET CARS.

No. 515,588.

Patented Feb. 27, 1894.



UNITED STATES PATENT OFFICE.

HENRY A. HOWE, OF ALBION, ASSIGNOR TO HIMSELF, AND JOSEPH NORWOOD, OF BROOKLYN, NEW YORK.

SAFETY ATTACHMENT FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 515,588, dated February 27, 1894.

Application filed August 26, 1893. Serial No. 484,089. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. HOWE, a citizen of the United States, residing at Albion, in the county of Orleans and State of New York, have invented a new and useful Improvement in Safety Attachments for Street-Cars, of which the following is a specification.

Street cars operated by electricity or cables have heretofore been the cause of many serious accidents both of life and limb, and with a view of overcoming this danger, safety attachments have been hinged to the lower edges of the platforms and adapted when not in use to fold over against the dash board and their outer free edge was supported when in use by rollers running upon the pavement. These rollers are objectionable because in running around a curve they are liable to be broken off by the sidewise movement or to cause the safety device to be bent or injured.

My improvements relate to a safety device that is pivoted to the car platform and supported by the pivot bolts and bears against yielding devices adjacent to said pivots which permit the safety device to be carried in air above the track and without the use of rollers. These yielding devices lessen the jar received by a person in falling upon the safety device and I also provide a yielding edge to the safety device to lessen the force of the blow or concussion between the object struck and to the safety device.

I prefer to construct my safety device as an integral suspended platform.

In the drawings Figure 1 is a plan of my improved safety device. Fig. 2 is a side elevation and partial section. Fig. 3 shows a modification in the pivotal fastening of the safety device to the car platform. Fig. 4 shows by a cross section a modified construction of the edge or rim of the safety device, and Fig. 5 is a cross section at the line $x x$ of Fig. 1.

A represents part of the car platform, B the end sill and $c c'$ brackets with T ends connected therewith.

The safety device consists of a metal frame composed of the bar a and the downwardly bent and rounded bar b riveted to the ends of the bar a , and forming the curved front

edge of the frame. The bar b as shown in Figs. 1, 2 and 3, is of L angle iron, but a tube b^2 as shown in Fig. 4 is equally available.

A lattice work c^2 is fitted within the frame of bars, a , b , and is secured thereto at its edges in any desired manner. This lattice work may be of any suitable material such as wire or rope, netting or canvas or rubber fabric secured around the edge is available instead of the metal lattice work. The notched face of the L angle iron bar b is placed outward and receives an L shaped strip of rubber d which is made with rounded edges and is secured to the bar b by bolts 2 at intervals. The edges of this rubber strip extend beyond the respective edges of the metal bar b so as to prevent a person struck by or falling upon the safety device coming against the metal edge and also to lessen the shock or concussion and prevent a person from slipping off. Upon the back of the bar a are secured auxiliary brackets $e e'$, that are perforated and the outer ends of the brackets $c c'$ are also perforated and bolts 5 passing through the perforations connect the safety device pivotally to the brackets. The auxiliary brackets $e e'$ have horizontal flanges secured by rivets to the plate a , and outer faces that stand perpendicular toward the car platform.

The brackets $c c'$ are each provided with sockets formed by the back plates 6, bottom plates 7 and side plates 8. Each side plate 8 is inclined in relation to the bracket plate so as to produce a tapering opening or socket in the bracket. Two buffer blocks of rubber $f f'$ of trapezoidal cross section are received into said sockets and their meeting ends at 10, are inclined, and bearing against their outer or exposed faces are the vertical faces of the auxiliary brackets $e e'$ and the safety device as supported by the pivot bolts 5 rests against the rubber buffer blocks $f f'$, and thereby the safety device is yieldingly carried in air with its free outer edge slightly above the track and street pavement and this safety device yields and swings on the pivot bolts 5 if it comes in contact with any object. It is preferable to make these rubber buffer blocks $f f'$ of different degrees of softness, the upper one being of softer rubber than the lower one which carries most of the

weight of the safety device and these blocks of rubber yield with the weight of a person who may accidentally fall upon the safety device.

5 The lower and outer edge of the safety device readily passes over inequalities in the pavement of a street if borne down thereto by the weight of a child or older person.

I prefer to employ an eye in the upper end 10 of the buffer blocks *f* to which is attached a chain, and to have a chain connected to the outer front edge of the safety device which chains extend to fastenings on the dash board in convenient position for the motor man, and 15 when desired the blocks *f* can be pulled out of their sockets and the safety device turned up against the car. This is advantageous in storing the cars in a car house.

To obviate the necessity of removing the 20 rubber buffer blocks and as shown in Fig. 3 I may place the buffer block sockets on the same sides of the brackets *c c'* as seen in Fig. 3 and employ a rod *i* extending all across the back of the safety device to pivot it to the 25 brackets. With this construction the nut *K* can be loosened and run along the rod *i* and the rod and safety device slid endwise until the auxiliary brackets *e e'* are clear of the buffer blocks and their sockets so that the 30 safety device can be readily turned up against the dash board. I have shown and prefer to employ the rubber buffer blocks but it is obvious that springs or equivalent yielding devices can be employed.

35 I claim as my invention—

1. In a safety device for street cars, the

combination with supporting brackets upon the car platform, of a safety guard having a back bar *a*, a bar *b'* connected therewith and extending down and across and forming the 40 sides and front, a rubber rim *d* or cushion upon the outer faces of the bar *b*, and connected therewith, and a lattice *c²* or filling between the bars *a, b*, and pivots for connecting the safety guard to the brackets, substantially 45 as set forth.

2. The combination with a safety device for street cars, of the brackets *c, c'* connected to the platform, auxiliary brackets *e e'* upon the safety device and bolts for pivotally connect- 50 ing the said brackets in supporting the safety device and rubber buffer blocks or equivalent yielding devices connected to the brackets *c, c'*, and against which the auxiliary brackets bear in yieldingly carrying the safety device 55 in air substantially as set forth.

3. The combination with a safety device for street cars, of the brackets *c c'* connected to the platform, the auxiliary brackets *e e'* connected to the safety device, the bolts for piv- 60 otally connecting the said brackets in supporting the safety device, there being sockets upon the sides of the brackets *c, c'* and rubber buffer blocks *f f'* received in such sockets substantially as and for the purposes set 65 forth.

Signed this 23d day of August, A. D. 1893.

HENRY A. HOWE.

Witnesses:

GEO. T. PINCKNEY,
HAROLD SERRELL.