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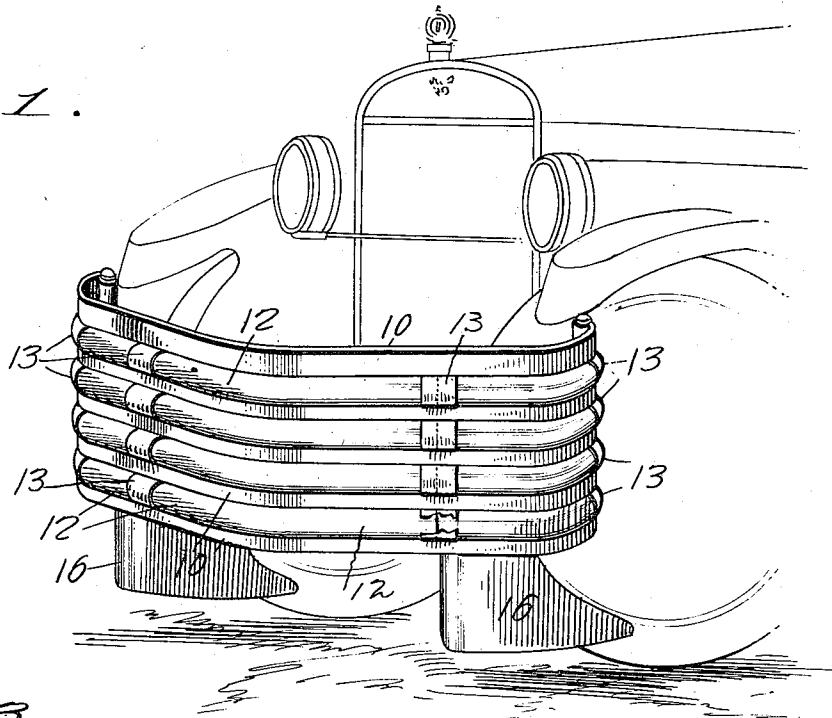
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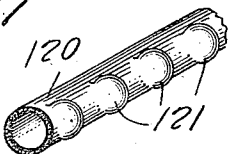
BUMPER FOR MOTOR VEHICLES

Filed May 14, 1923

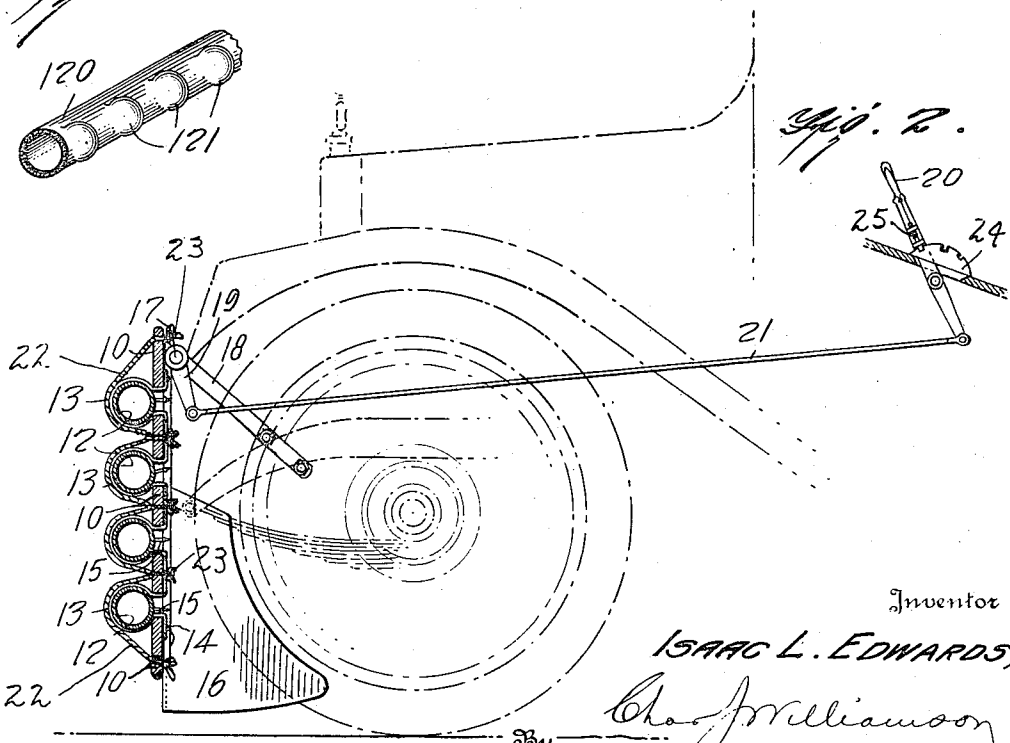
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



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# UNITED STATES PATENT OFFICE.

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## BUMPER FOR MOTOR VEHICLES.

Application filed May 14, 1923. Serial No. 638,967.

### *To all whom it may concern:*

Be it known that I, ISAAC L. EDWARDS, residing at Aurora, Illinois, a citizen of the United States, have invented certain new and useful Improvements in Bumpers for Motor Vehicles, of which the following is a specification.

The object of my invention is to prevent injury to life and limb of pedestri-  
 10 automobiles and other vehicles by providing means which if the person is struck by the moving vehicle will prevent injury or greatly lessen injury from the blow and will push or move the person out of the path of the  
 15 oncoming vehicle so as to prevent the vehicle running over the person. In what I consider now the best embodiment of my invention it achieves the object stated and also achieves other objects which will appear hereinafter.  
 20 My invention consists in whatever is described by or is included within the terms or scope of the appended claims.

In the annexed drawings:

Fig. 1 is a perspective view of an embodi-  
 25 ment of my invention;

Fig. 2 is a vertical section thereof;

Fig. 3 is a detail perspective view of a form of cushion that may be used.

Briefly described my invention is embodied in a frame or supporting structure preferably of metal and cushions projecting forward therefrom so that if a person is struck the blow will be softened or cushioned, the frame being given for suitable portions of  
 30 its length a lateral and rearward inclination or direction so that the onward movement of the vehicle will tend to push a person encountered or struck sidewise and out of the path of the vehicle and thus out of  
 40 a position in which the vehicle might run over the person; and guards or shoes being provided to occupy a position in front of each front wheel of the vehicle and sufficiently near the ground as to make impos-  
 45 sible for a person to pass under the oncoming wheel such guard having the further functions of preventing stones or other small objects passing under the wheel and apt by a sort of snapping action of the tire  
 50 to be thrown violently outward from the wheel with the possibility of damage to person or property.

Describing now with some detail what is shown in the drawings the supporting frame  
 55 is composed of several horizontally extend-

ing parallel members, 10, spaced one above another and suitably joined at their extremities which are inclined or curved rearward to reach beyond the front portions of the front wheels, which frame may be composed  
 60 of a single oblong plate of sheet metal with longitudinally extending slots to provide the desired spacing between the members, 10, or the members, 10, may be in the form of separate bars or straps of metal joined at  
 65 their ends to a vertical bar, 11. Alining with the longitudinally extending space between adjacent bars, 10, is a cushioning element that is of strip form, by which is meant a slender body of a cross section con-  
 70 siderably less than the length thereof, and preferably tubular or hollow and made of some air tight flexible material such as rubber so as to constitute a pneumatic cushion that projects sufficiently far in advance of  
 75 the front sides of the bars, 10, as to first come in contact with a body. The diameter of the cushion element is somewhat greater than the space between adjacent bars, 10, so that when a body is struck the  
 80 cushion member will be forced backward and squeezed into such space the result being that a more satisfactory cushioning action is secured than would be the case should the cushion element be supported on its rear  
 85 side by a solid body. The cushion element may consist of a single tube closed at its ends reaching continuously from end to end of the frame but preferably I make it of several tubes, 12, placed end to end or with  
 90 spaces between them so that the consequences of a localized injury calling for replacement will not be as serious as would be the case should a tube of the full length of the frame be used. I contemplate instead of using true  
 95 tubes to use hollow globular or spherical bodies spaced conveniently throughout the length of the space between adjacent bars, 10. The tubular sections, 12, may be conveniently and inexpensively and yet effi-  
 100 ciently secured in place by means of straps 13, of flexible material which are woven or interlaced through the slots or spaces between adjacent bars, 10, and partially around the tubular sections, 12, the free ends of the  
 105 straps being secured by bolts, 14, to the rear side of the upper and lower bars, 10.

The tubes or tubular section, 12, may be provided with a valve, 15, such as is used with pneumatic tires for inflating or pro-  
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viding a desired air pressure within the tubes, such valve being conveniently projected rearward through adjacent bars, 10.

As shown in the drawings the bars, 10, and the cushion elements besides the rearward and outward inclination or curvature at their extremities also incline from mid-length outward and rearward so that when a person is struck by the bumper he will be pushed sidewise out of the path of the oncoming car. The bumper may be supported in a strictly vertical position so that a person will be struck by all the cushioning members at a time or it may be inclined downward and forward.

Preferably supported from the frame is a guard or shoe, 16, for each front wheel of the vehicle said guard extending vertically downward to reach close to the ground and being rounded on its forward side and carried rearward to lap on either side of the wheel so that it would be impossible for a person or any other object to pass under the wheel and the convexly rounded forward side of the guard, 16, will throw sidewise any object that might be encountered and thus avoid the danger of stones or other small objects passing under the wheel from being pinched or snapped by the squeezing action of the wheel and thereby thrown with more or less violence through the air. The shoe or guard, 16, also prevents the splattering of water or mud from the wheel.

My bumper may be supported in any desired manner from the vehicle. Preferably since conditions of road may be encountered rendering it desirable to lift the bumper to clear road obstructions I support it in such a way that it may be moved to and from normal working position and I provide means for enabling one upon the car seat to so manipulate the bumper. A convenient mounting for this purpose is to support the frame bar at the top upon a pivot, 17, on an arm or bracket, 18, bolted to the car spring or chassis, and connecting the bumper by a crank, 19, that extends from its pivot to an operating lever which may be a treadle or a hand lever, 20, the connection between crank and lever being a link or rod, 21, that permits the lever, 20, to be located within convenient reach of a person on the front seat of the car. Suitable locking or holding means prevent accidental swinging of the bumper from either of its positions.

The metal frame of my bumper may be given any desired configuration or design in the practice of my invention and I therefore do not restrict myself to any particular configuration or design.

My bumper may be applied to pleasure automobiles or trucks and other vehicles used under conditions that make it important to safeguard life and limb from destruction or injury.

As shown in Fig. 3 the cushion may be a tubular body, 120, with hollow globular bosses, 121 projecting forwardly therefrom at intervals at its length.

Preferably as shown in Fig. 2 a flexible shield or apron, 22, is carried over the front of the cushions which is made of some tough material, such as a blacksmith's apron leather, for example, to prevent damage to the rubber cushions by cutting or tearing which might result from collision with other automobiles or other objects. Said shield or apron, 22, may be readily removably attached to the frame by means of buckles, or thongs, 23, that pass through holes in the bars, 10, so that the apron may conform to the convex contour of the individual cushions, but if desired the apron could extend in a plain sheet from top to bottom of the series of cushions.

Besides having a lock for the lever, 20, which will hold the bumper either in a vertical position or in a fully raised position, the lock may be arranged to hold the bumper at an intermediate forwardly inclined position which may be an advantage in that a pedestrian might be struck below the knees with the bumper at an incline and thereby caused to fall backward upon the bumper. The lever lock shown in Fig. 2 is the well known notched segment or curved rack, 24, and a dog, 25.

What I claim is:

1. A bumper comprising a frame and cushioning means protruding from such frame, such means being of elastic strip-form supported in front of a space in the frame with which it aligns, such space being narrower than the thickness of said strip and into which the strip is adapted to be squeezed.

2. A bumper comprising a frame and elastic strip form cushioning means protruding from such frame, the frame having in rear of the cushioning means a space into which the same may pass, said space being narrower than the thickness of such means whereby the latter may squeeze therein.

3. A bumper comprising a frame having horizontally extending spaces and cushioning means protruding forward of the spaces and in alinement therewith and comprising for each space an elastic strip-form body thicker than the width of the space and adapted to be squeezed into such space.

4. A bumper comprising a frame and cushioning means protruding from such frame, and a shield for said cushioning means.

5. A bumper comprising a frame and cushioning means protruding from such frame, and a shield of flexible material for such cushioning means.

6. A bumper comprising a frame and a plurality of cushioning means arranged in

a vertical series upon the frame and protruding therefrom, and a shield extending in front of such cushioning means.

5 7. A bumper comprising a frame and a plurality of cushioning means arranged in a vertical series upon the frame and protruding therefrom, and a shield of flexible

material extending over such cushioning means and conforming to the contour thereof.

In testimony whereof I hereunto affix my signature.

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ISAAC L. EDWARDS.