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SAFETY BUMPER

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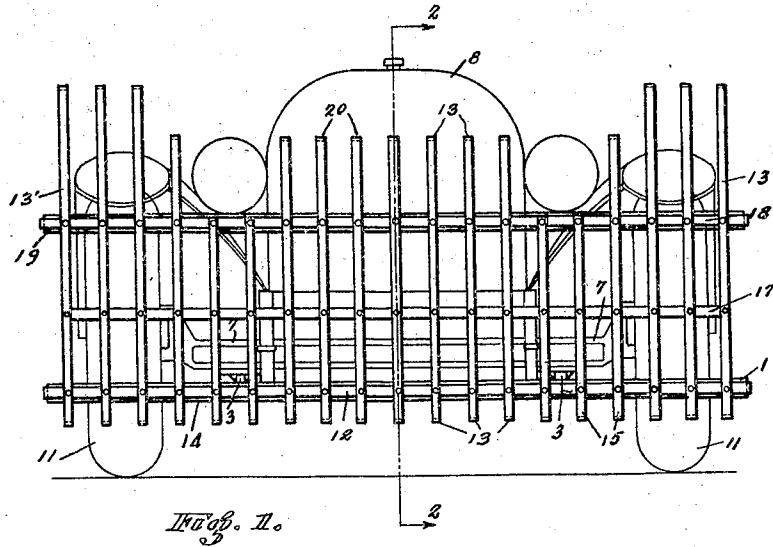


Fig. 1.

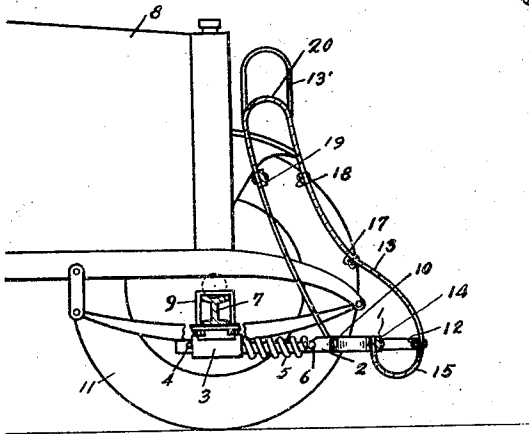


Fig. 2.

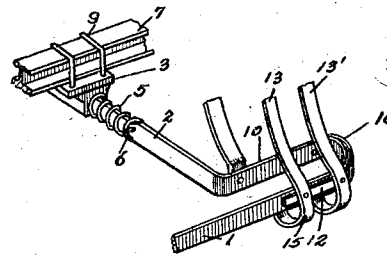


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## SAFETY BUMPER.

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My invention relates to improvements in safety bumpers, and it consists in the combinations, constructions, and arrangements hereinafter described and claimed.

5 An object of my invention is to provide a safety bumper for automobiles in which the members which actually contact with the person struck are made of flexible material so that these members will give quickly and will reduce the shock caused by the impact. In addition to the flexibility of the members the entire device is movable against springs which are compressed, thus adding another yielding feature to the device.

15 A further object of my invention is to provide a device of the type described which is extremely simple in construction and which is preferably made large enough to extend entirely across the front of an automobile.

Other objects and advantages will appear in the following specification, and the novel features of my invention will be particularly pointed out in the appended claims.

25 My invention is illustrated in the accompanying drawing forming a part of this application, in which:

Figure 1 is a front elevation of the device shown operatively applied to an automobile;

30 Figure 2 is a section along the line 2—2 of Figure 1; and

Figure 3 is a perspective view of a portion of the device.

In carrying out my invention I provide a U-shaped frame 1 that has its leg portions 2 slidably mounted in bearings 3. Any suitable stops 4 limit the movement of the legs 2 in one direction. Springs 5 bear against the bearings and against the pins 6 carried by the legs. The function of the springs is to absorb the force of an object which suddenly strikes the frame 2.

45 From Figures 2 and 3 it will be noted that the bearings or brackets 3 are secured to the front axle 7 of the automobile 8. I have shown U-shaped bolts 9 as the securing means, but any other suitable fastening device may be employed. The member 1 has outwardly extending looped portions 10 that extend in front of the front wheels 11 of the car, see Figure 1. The portion of the member 1 extending between the loops is more or less flexible. The principal difference between the invention and other bumpers lies in the provision of a plurality of flexible loops 13 of the shape shown in Fig-

ure 2. The loops are made of resilient metal, that will readily give when brought abruptly against an object. One end of each loop is connected to the member 1 at 14. The loop extends downwardly for a slight distance and is then curved upwardly, as at 15. The curved portions 15 of each loop 13 are reinforced by a strip 12 that extends parallel with the front of the member 1, as shown in Figure 2. The ends of the strip 12 are secured to the member 1 at 16, see Figure 3. The loops 13 are now bent toward the car so as to form a guard, having a concave surface. The loops are again reinforced by a second strip 17 that is disposed approximately midway between the tops and bottoms of the loops. Additional reinforcing strips 18 and 19 are provided and the loops 13 are curved as at 20, these curved portions being disposed between the strips 18 and 19. From the strip 19 the end loops 13' extend downwardly to the laterly projecting end portions 10 and are secured thereto. The loops 13 disposed between the end loops 13' terminate at the strip 19.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood.

The device very much resembles a concave-shaped guard that extends from side to side of the automobile. The curving of the loops 13 backwardly toward the automobile provides a catching device which will tend to pick up the person struck and to support them on the bumper instead of permitting them to fall down beneath the wheels. Of course, the flexibility of the loops 13 increases the concavity as soon as a person is struck and therefore the person will be more readily supported by the guard than that supposed when looking at the shape as shown in Figure 2. In addition to the flexibility of the loops 13, the entire bumper moves backwardly against the compression of the springs 5 and thus eases the impact of the body against the guard. These are vital points in the provision of a guard which will reduce to a minimum the harm done to a person when struck by a moving automobile.

Although I have shown and described one embodiment of my invention, it is to be understood that the same is susceptible of various changes and I reserve the right to employ such changes as may come within the scope of the appended claims.

I claim:

1. A safety bumper comprising a U-shaped frame, spring means connecting said frame with an automobile, flexible members  
5 extending transversely to said frame, and upwardly therefrom.

2. A safety bumper comprising a U-shaped frame, spring means connecting said frame with an automobile, flexible members  
10 extending transversely to said frame, and upwardly therefrom, said members being concave in shape for providing a concave

surface that extends across the entire length of the bumper.

3. A safety bumper comprising a U-  
15 shaped member, brackets slidably carrying the legs of said member, springs for holding said legs in a predetermined position, and flexible loops extending upwardly from said frame and being disposed at intervals for  
20 providing a guard that extends from side to side of an automobile, said loops being reinforced by connecting strips.

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