

No. 814,171.

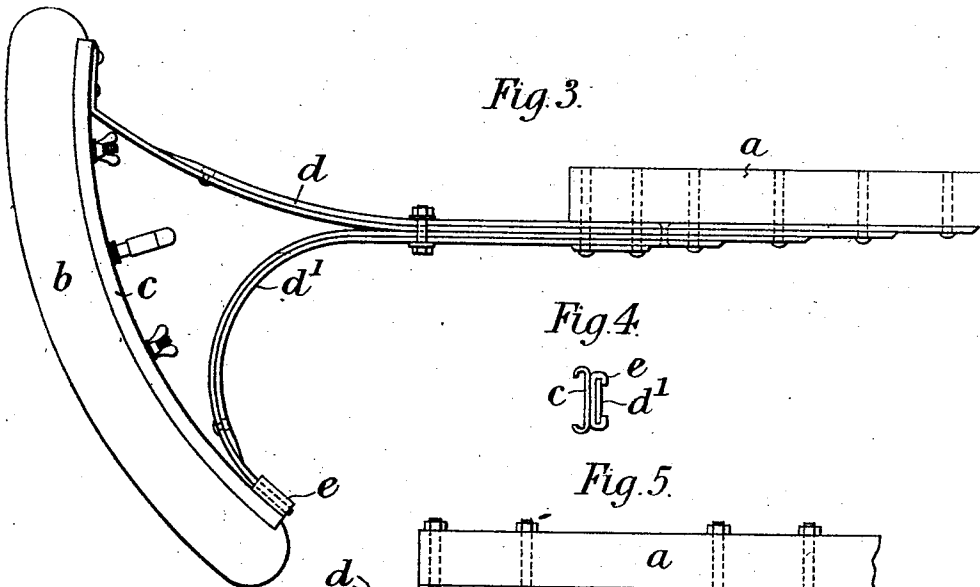
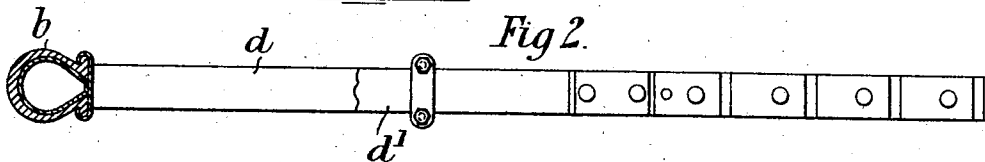
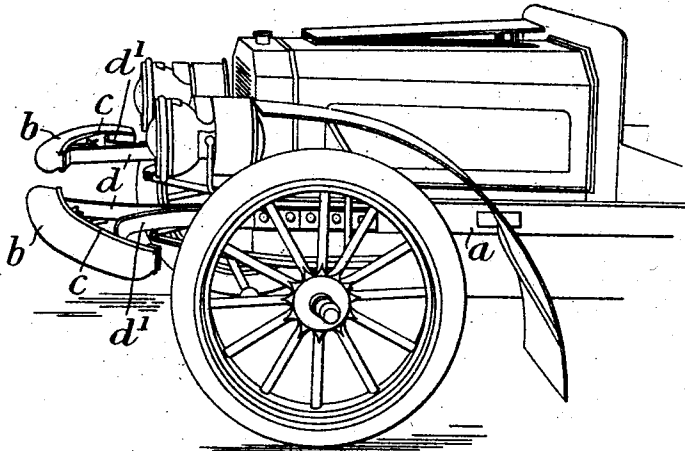
PATENTED MAR. 6, 1906.

F. R. SIMMS.  
BUFFER FOR USE ON MOTOR VEHICLES.

APPLICATION FILED SEPT. 26, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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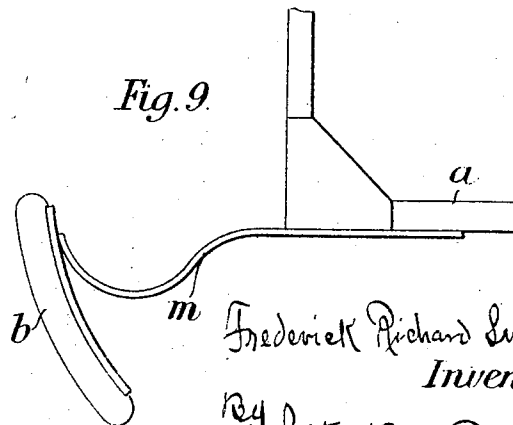
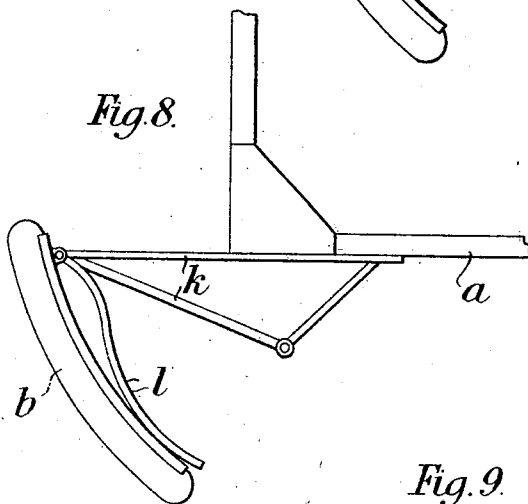
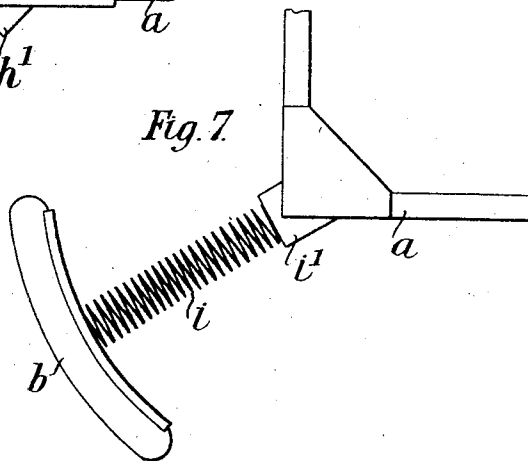
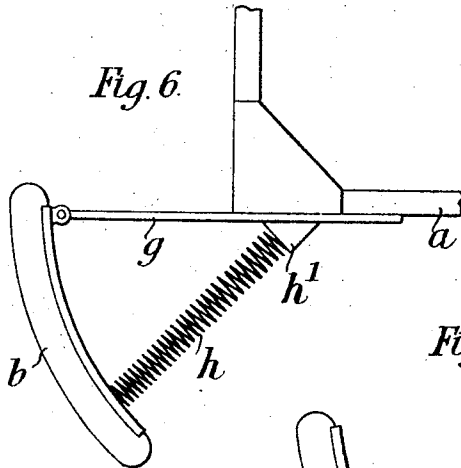
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3 SHEETS—SHEET 2.



Witnesses.

*H. Hubbard*  
*M. Painter.*

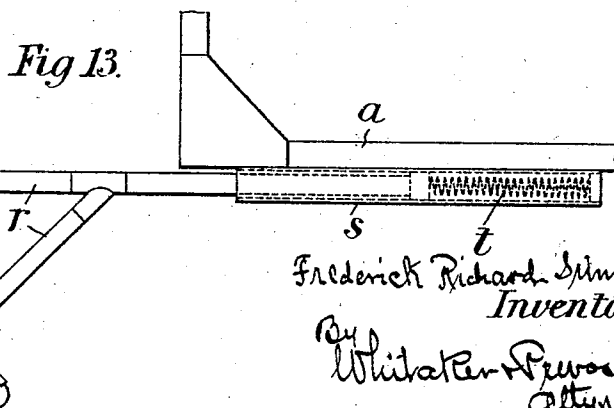
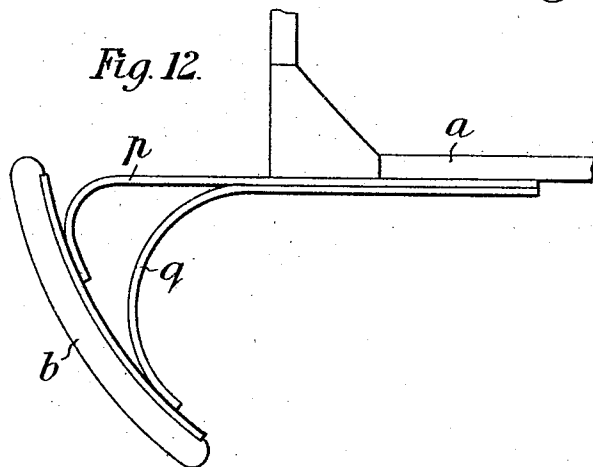
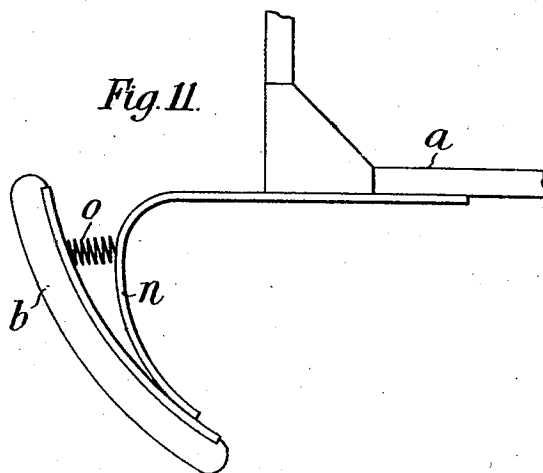
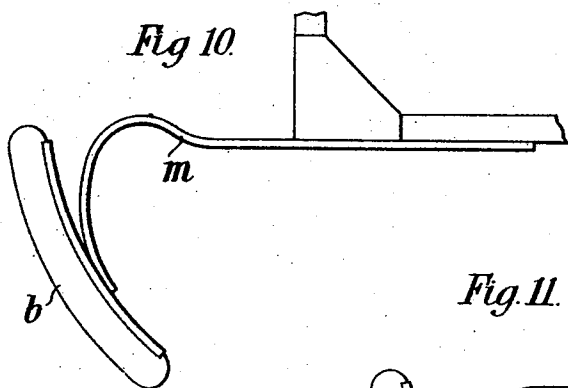
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3 SHEETS—SHEET 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

FREDERICK RICHARD SIMMS, OF LONDON, ENGLAND.

## BUFFER FOR USE ON MOTOR-VEHICLES.

No. 814,171.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed September 26, 1905. Serial No. 280,200.

*To all whom it may concern:*

Be it known that I, FREDERICK RICHARD SIMMS, a subject of the King of Great Britain, residing at Welbeck Works, Kimberley Road, Willesden Lane, Kilburn, London, England, have invented new and useful Improvements in Buffers for Use on Motor-Vehicles, of which the following is a specification.

This invention relates to improvements in buffers for use on motor-vehicles, and has for its object to prevent damage to lamps, wings, radiators, and other parts of the vehicle should the latter come into collision with an obstacle and also to guard against damage to persons or vehicles on the road.

According to my invention I provide a pair of buffers, which are preferably of the pneumatic type and are attached to the front, side, or back of the frame of the vehicle by means of suitable brackets.

The buffers proper are preferably of a curved shape and may be constructed and applied in a manner similar to that used with pneumatic tires, or they may be made of solid rubber or of stuffed leather.

The buffers may be, as above described, fitted in pairs to the front, and, if desired, to the back of the vehicle-frame, or single buffers extending completely across the vehicle-frame may be employed.

The brackets may be arranged so as to slide longitudinally on the frame, and springs are provided to render them more elastic. Furthermore, any suitable mode of attaching the brackets to the vehicle-frame may be made use of, such mode being advantageously one which enables the buffer to be readily attached to any vehicle.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a motor-car fitted with a pair of buffers constructed according to my invention. Fig. 2 is a sectional side elevation of one of the buffers and connecting-brackets. Fig. 3 is a plan view of the same, showing the attachment to the vehicle-frame. Fig. 4 is a view of a detail hereinafter described. Fig. 5 is a plan view illustrating another method of connecting the buffer-bracket to the vehicle-frame, and Figs. 6 to 13 are plan views illustrating modifications.

*a* represents the frame of the vehicle, and *b* the buffers, two of which are shown in Fig. 1 attached to the side of the vehicle-frame at the front thereof.

In the construction illustrated in Figs. 1 to 4

the buffer *b* is of the pneumatic type well known in connection with pneumatic tires and is mounted upon a curved rim *c*, the said rim being connected to the vehicle-frame *a* by means of the springs *d d'*, which are riveted to the said frame. The spring *d* at its outer end is riveted to the rim *c*, while the spring *d'* at its outer end is loosely held in the clip *e*, in which it can slide, the said clip being brazed or otherwise suitably secured to the outer side of the rim *c*. The clip is shown in end view in Fig. 4.

In Fig. 5 the spring-bracket *d d'* instead of being rigidly secured directly to the frame *a* is fitted in the brackets or clips *ff'*, which are bolted to the said frame *a*. In this construction the brackets have a certain amount of movement with respect to the frame.

In Fig. 6 I have illustrated a form of my invention wherein the buffer *b* is hinged at its inner end to the bar *g*, secured to the vehicle-frame *a*, and is connected at its outer end to one end of the spring *h*, the other end of which abuts against a stop *h'* upon the bar *g*.

Fig. 7 illustrates a form of my invention wherein the buffer *b* is centrally secured upon the outer end of a spiral spring *i*, the inner end of which is attached to a boss *i'*, formed upon the front angle of the vehicle-frame *a*.

In the arrangement illustrated in Fig. 8 the buffer *b* is hinged at its inner end to the rigid framework *k*, which is secured to the vehicle-frame *a* in any suitable manner. The buffer is elastically held in the proper position by means of the flat spring *l*, which is fixed to the hinge at one end and at its other end is secured to the outer end of the buffer by means of a sliding joint.

Figs. 9 and 10 show two forms of buffer which are similar in principle to that shown in Fig. 7, but wherein flat springs are used in lieu of the spiral spring shown in the previously-described construction. In Fig. 9 the spring *m* is attached to the inner end of the buffer, while in Fig. 10 the said spring *m* is attached at approximately the center thereof.

Fig. 11 illustrates a construction of the buffer wherein a combination of a flat spring and a spiral spring is made use of. The curved flat spring *n* is attached to the frame of the vehicle and to the outer end of the buffer *b*, the spiral spring *o* being introduced between the flat spring *n* and the inner end of the buffer.

The buffer shown in Fig. 12 is attached to two flat springs *p* and *q*, the spring *p* being

secured to the inner end of the buffer by a fixed joint and the spring *g* to the outer end thereof by means of a sliding joint, both springs being suitably attached to the vehicle-frame *a*.

In the modification illustrated in Fig. 13 the buffer *b* is secured to the outer end of a rigid tubular frame *r*, which is adapted to slide in a socket *s*, fixed to the side of the vehicle-frame *a*. The inner end of the tube *r* carries a piston which works within the socket *s* and bears upon a spiral spring *t*, arranged between the said piston and the bottom of the socket *s*.

In all the above constructions it will be obvious that in addition to the elasticity provided by the buffer *b* itself there is also that given by the spring or combination of springs by which the said buffer is attached to the vehicle-frame.

As above described I may employ a pair of buffers at the front of the vehicle, as illustrated, or a single buffer at the front thereof, or a buffer or buffers at the sides or back of the vehicle. Moreover, the buffer may be pneumatic, as illustrated, or of any other desired construction—such, for example, as of solid rubber or stuffed leather.

By the use of my improved buffers the lamps, wings, radiators, front wheels, and other parts of a motor-vehicle are protected

against damage should the vehicle collide with an obstacle; also, the buffers serve to protect pedestrians or vehicles on the road and save wear of the vehicle itself, as also of the wheels and steering-gear thereof.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A device of the class described, comprising a yielding pad and a yielding support for same adapted to be secured on the vehicle, the pad and support being in substantially the same horizontal plane, substantially as described.

2. A buffer for motor-vehicles made in two sections each of said sections comprising a yielding pad and a yielding support for same adapted to be secured to the vehicle, substantially as described.

3. A buffer for motor-vehicles made in two sections, each of said sections comprising a yielding pad, a support for the same and a yielding connection between one end of said support and the vehicle, substantially as described.

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Witnesses:

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