(No Model.)

# E. PECKHAM.

## CAR SPRING.

No. 456,592. Patented July 28, 1891.

Fig. 1.

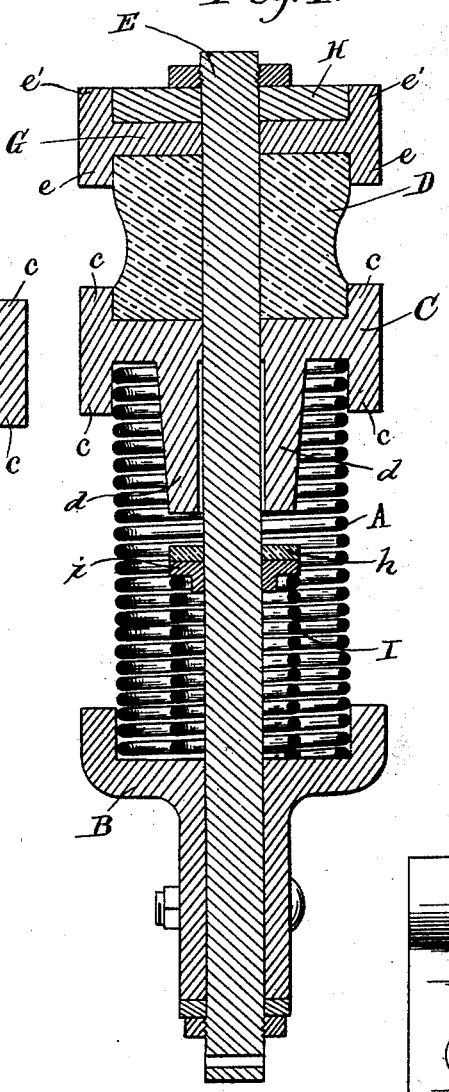



Fig. 2.

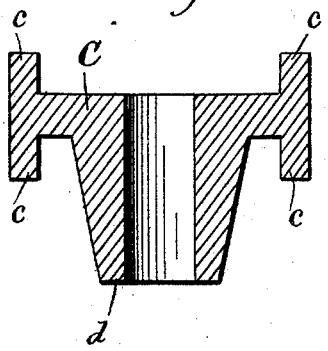
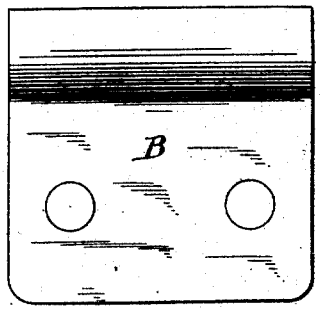



Fig. 3.




Witnesses:

W. A. Treadwell

J. E. McBorren

Inventor:

Edgar Peckham

# UNITED STATES PATENT OFFICE.

EDGAR PECKHAM, OF NEW YORK, N. Y.

## CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 456,592, dated July 28, 1891.

Application filed August 18, 1890. Serial No. 362,301. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR PECKHAM, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car-Springs, of which the following is a specification.

My invention relates to springs for supporting car-bodies on the truck-frames; and it has for its object the devising of a composite spring which shall be adapted to render the car easy riding under all conditions and to effectively take up the shock due to obstructions on the way.

In the construction of my spring structure the elastic support for the normal load of the car is supplemented in such manner that extra loading of the car, instead of causing the car-body to sink against an inelastic surface, will enable it to ride easy and without shock or strain to the parts.

My invention is fully described hereinafter, and in claims at the end of the description I have set out the novel features, for which Letters Patent is desired.

In the accompanying drawings, which form part of this specification, and in which like parts are indicated by like letters of reference, Figure 1 is a sectional elevation of my composite spring. Fig. 2 is a sectional view of the cap for the main coiled spring, said cap also serving as a pocket for the rubber cushion of the spring structure; and Fig. 3 is a side view of the bottom spring-pocket, this view being at right angles to that view of the pocket shown in Fig. 1.

Referring to the drawings, A indicates a coiled spring of sufficient rigidity to serve as a part of the means which sustain in an elastic manner the normal load of the car. This spring is seated in a metallic pocket-piece B, which may be of the form shown or of any other suitable form, and at its top it fits within the metallic cap-piece C, which is provided with flanges *c*, serving at their bottoms to hold spring A in proper position and at their tops to form a pocket or seat for the bottom of rubber cushion D. The cap-piece C is open centrally in a vertical line to permit the passage therethrough of the bolt E, which serves in conjunction with nuts or pins to hold the several elements of the composit spring together. The cap C is provided with the depending part *d*, which, in addition to the function presently ascribed to it, serves to maintain the spring A in operative position. The rubber cushion D is preferably of the form shown, being of less diameter centrally than at its ends, thus permitting it to give more readily under the movements of the car. At its top the cushion D fits between the flanges *e* of the metallic cap-piece G, said cap-piece having like flanges *e'* on its top, between which passes one of the longitudinal rails H of the truck-frame.

Surrounding the bolt E, inside the coiled spring A, I place a smaller spring I of the required rigidity, which supplements the spring A and takes up any extra load placed on the car that may be sufficient to compress the main spring A to its limit of resistance. On the top of supplemental spring I, I place a flanged metallic washer *i*, which serves to guide the spring I and keep it in proper relation to the bolt E, which passes through said spring. On the top of metallic washer *i*, I place a rubber washer *h*, also surrounding the bolt E, which acts as a cushion to receive the depending end *d* of the cap C as the latter moves downward with the contraction of main spring A under the load of the car. Shock to the parts from this movement is thus prevented.

In the operation of my composite spring the rubber cushion D serves to take up the shock due to the travel of the car over the way, while the main spring A receives and supports the normal load to which the car is capacitated. When the load exceeds normal, the main spring A will be compressed, so that the depending part *d* of the cap-piece C will abut against the rubber washer *h* and compress to more or less extent the supplemental spring I, which thus relieves the main spring A when its limit of elasticity is reached, and thereby maintains the elastic connection between the car-body and its supporting-truck.

This invention is particularly intended for use on trucks for electromotor-cars, but is obviously adapted for other cars and in other connections.

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

1. The combination, with the coiled spring

and supporting-pocket B, of double-flanged cap-piece C, rubber cushion D, double-flanged pocket-piece G, and connecting-bolt, substantially as set forth.

2. The combination, with the main coiled spring, its supporting-pocket B, and flanged cap and guide C, provided with depending portion *d*, of supplemental spring I, arranged within the main spring and supported in said pocket B, guide-washer *i*, and connecting-bolt, substantially as set forth.

3. The combination, with the main coiled spring supported in pocket B, of supplemental spring I, likewise supported in said pocket, flanged cap and guide C, flanged pocket G, and rubber cushion D, of less diameter centrally than at its ends and held between the flanges of cap C and pocket G, and connecting-bolt, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 31st day of July, A. D. 1890.

EDGAR PECKHAM.

Witnesses:
J. E. M. BOWEN,
W. A. TREADWELL.