

A. BUCHANAN.

Car Spring.

No. 45,696.

Patented Jan. 3, 1865.

Fig:1

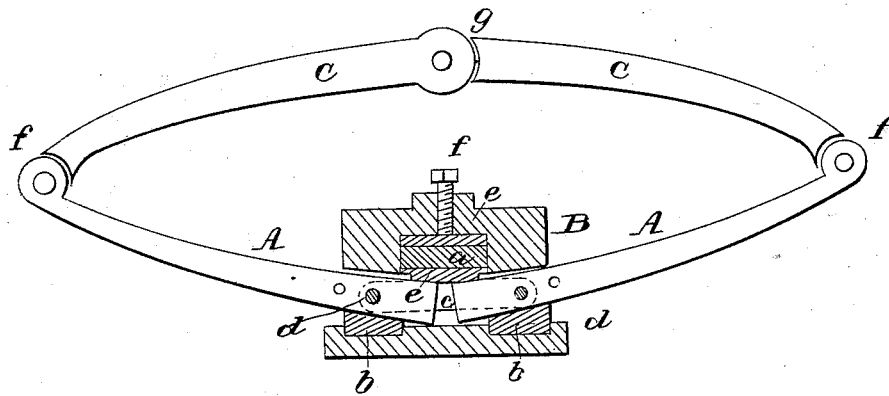


Fig:3

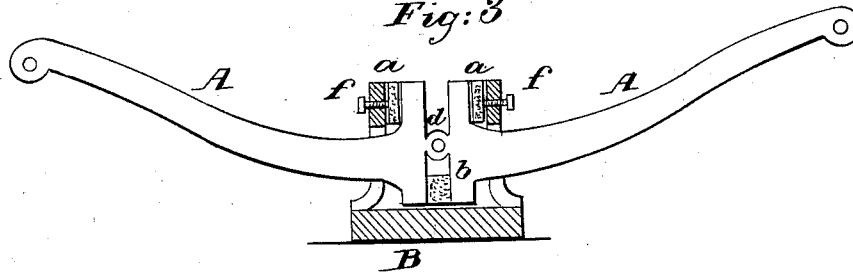
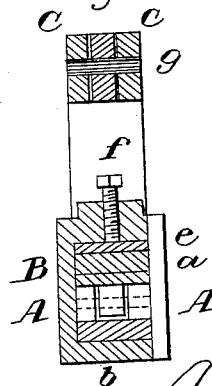


Fig:2.



Witnesses

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ANDREW BUCHANAN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. 45,696, dated January 3, 1865.

To all whom it may concern :

Be it known that I, ANDREW BUCHANAN, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Car-Spring; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a sectional front elevation of this invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 shows a diagram of a modification of the same.

Similar letters of reference indicate corresponding parts.

This invention consists of a spring composed of two arms, each of which is supported at two or more points by blocks of india-rubber, or by springs of any other suitable material, in such a manner that one of said blocks or springs forms a yielding fulcrum for each of the arms, and that by the combined action of all the springs considerable motion is allowed to the outer end of each arm which supports the car or other vehicle.

The invention consists also in the application of toggle-arms connecting the ends of the arms, which are supported by springs in such a manner that a spring constructed according to this invention will readily adapt itself to a heavy or light load by changing the bearing point or points toward or from the center of the toggle-arms.

It consists, finally, in the use of an adjusting-screw, in combination with one or more of the springs bearing on the arms in such a manner that the power of the spring can be adjusted at pleasure.

A A represent two arms, made of iron or any other suitable material, and placed with their inner ends into a box, B, of cast-iron or other suitable material, as clearly shown in Fig. 1 of the drawings. Each of the arms is supported at two or more points by blocks *a b*, of india-rubber, or by springs made of any other suitable material, though by preference I use india-rubber, and the block is secured in the top of the box B and bears on the upper edges of the arms A A at their extreme ends, whereas the blocks *b b* are secured in

the bottom of the box B and bear on the lower edges of the arms at a certain distance from their ends, as clearly shown in the drawings. These blocks or springs *b b* form the yielding fulcrum for the arms, and, in order to prevent said arms from slipping out of the box B, they are connected by a short link, *c*, the pivots *d* of which are situated as near as possible over the yielding fulcrum formed by the blocks *b b*. The block *a* is protected by metallic plates *e*, one at the bottom and one at the top, and a set screw, *f*, serves to compress the said block more or less, according to the weight which the spring has to support. The forms of the arms and the position of the blocks or springs *a b b* might, however, be altered as shown in the diagram, Fig. 3, and I do not wish to confine myself to the precise form or shape shown in Figs. 1 and 2 of the drawings. The outer ends of the arms A A are or may be connected by toggle-arms C C, which are jointed to said arms and to each other by pivots *f f g*, and the weight to be supported by the spring may either rest directly on the ends of the arms A A or it may be shifted nearer and nearer to the fulcrum *g* of the toggle-arms. It is obvious that a smaller weight will depress the ends of the arms A A if the same is moved nearer to the fulcrum of the toggle-arms, and by these means my spring can be readily adapted to heavier or lighter loads.

I claim as new and desire to secure by Letters Patent—

1. A spring for cars or other vehicles, composed of two arms, each of which is supported at two or more points by blocks of india-rubber or other equivalent material, substantially in the manner and for the purpose herein shown and described.

2. The set-screw *f*, in combination with the block *a*, or its equivalent, and with the arms A A, constructed and operating in the manner and for the purpose substantially as set forth.

3. The toggle-arms C C, applied in combination with the arms A A, and springs *a b b* in the manner and for the purpose substantially as specified.

ANDREW BUCHANAN.

Witnesses:

WM. F. McNAMARA,
J. P. HALL.