J. J. GEST.

Car Spring.

No. 53,291. Patented Mar. 20, 1866.

Fig: 1.

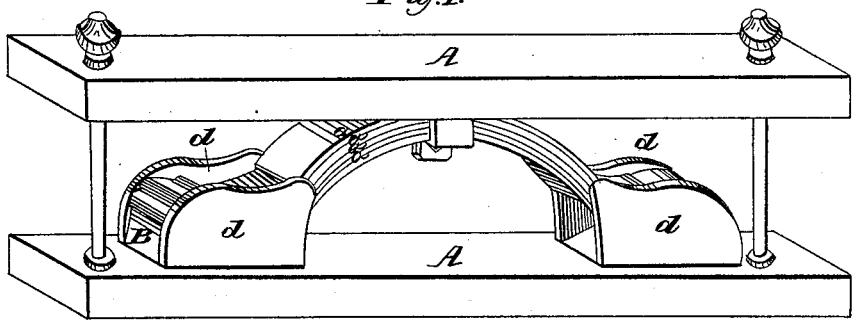


Fig: 2.

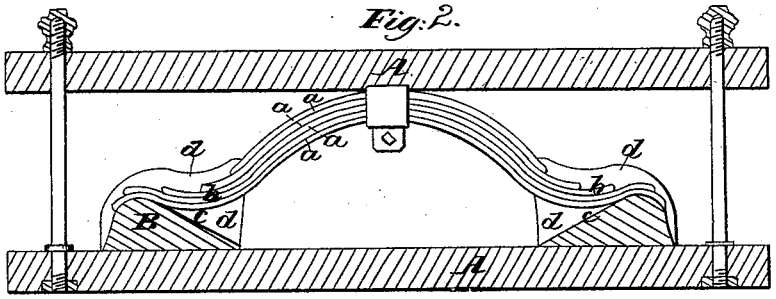


Fig: 3.

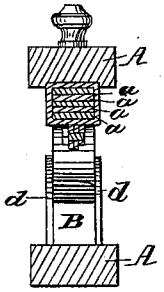


Fig: 4.

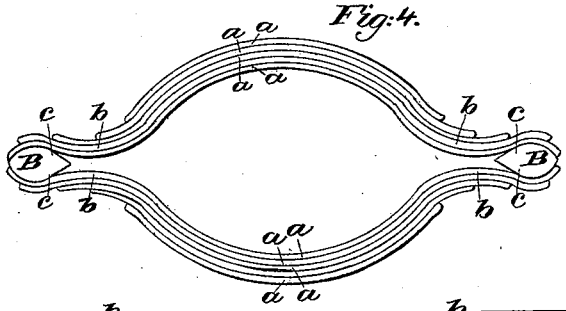
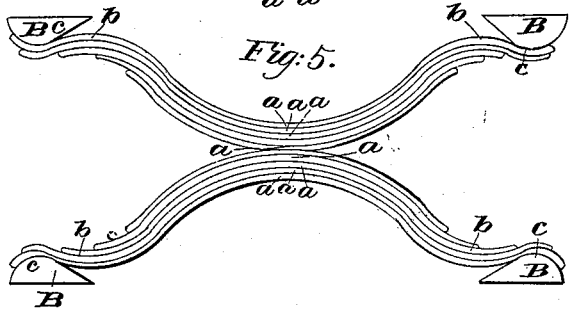


Fig: 5.



Witnesses

J. D. Patton

H. W. Heilman

Inventor

Joseph J. Gest

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UNITED STATES PATENT OFFICE.

JOSEPH J. GEST, OF CINCINNATI, OHIO.

IMPROVED CAR-SPRING.

Specification forming part of Letters Patent No. **53,291**, dated March 20, 1866.

To all whom it may concern:

Be it known that I, JOSEPH J. GEST, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Car and Carriage Springs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of one of the springs in question. Fig. 2 represents a longitudinal vertical section through the same, and Fig. 3 represents a transverse vertical section taken through the crown of the spring. Figs. 4 and 5 represent modifications of the form of the spring.

Similar letters of reference, where they occur in the separate figures, denote like parts in all the drawings.

My invention consists in so forming or shaping the blocks or abutments on and against which the ends of the springs are supported and rest as that the springs shall practically become shorter without losing their elasticity, and consequently stronger, as the load upon them becomes greater.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents a frame for supporting the spring, which frame may be of any of the well-known forms; or the spring may be otherwise applied to cars or carriages as other springs are generally applied.

a a a, &c., represent the leaves of an ordinary elliptic or semi-elliptic spring, of which there may be any suitable number that will sustain and carry the load for which the car or carriage is designed. Near the ends of the spring, as at *b*, the arched form of the leaves is reversed, so as to make their convexity below instead of above.

B are the blocks or abutments on and against which the ends of the springs rest and are supported. These blocks or abutments may be secured to the frame A or to the car or carriage in any of the usual well-known ways; or they may be clasped or held by the leaves of the spring itself, so as to be a part and parcel of the spring. The blocks or abutments are made convex, with one or more receding curved or inclined surfaces, *c*, so that as the load is increased upon the springs and they yield or sink under it their ends will find a bearing thereon, and thus practically shorten the spring without destroying its motion, and at the same time render it stronger by bringing its stronger portions on the blocks or abutments.

Figs. 1, 2, and 3 represent a semi-elliptic reversed spring, and Figs. 4 and 5 a full or double-elliptic reversed spring. The crowns of the springs in Fig. 4 are represented as opposite to each other, while in Fig. 5 they are represented as resting against each other. Of course any of the usual forms of springs may be used, it being only necessary to reverse the curved forms of the springs at or near their ends.

The blocks or bearings B may have side pieces, *d*, on or near them to keep the leaves in proper position thereon. These I prefer to the slots and projections on or in the adjacent leaves, as the former (the slots) weaken the spring.

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

In combination with arched or elliptic springs having reversed curves at their ends, a similarly arched, curved, and inclined block, abutment, or bearing, such as represented, so that as the spring settles or yields under its load it will practically become shorter and stronger, but still retain its elastic quality and be firmly held in place and to the block or bearing, substantially as herein described and represented.

JOSEPH J. GEST.

Witnesses:

M. MURRAY BAILEY,

P. POLAND.