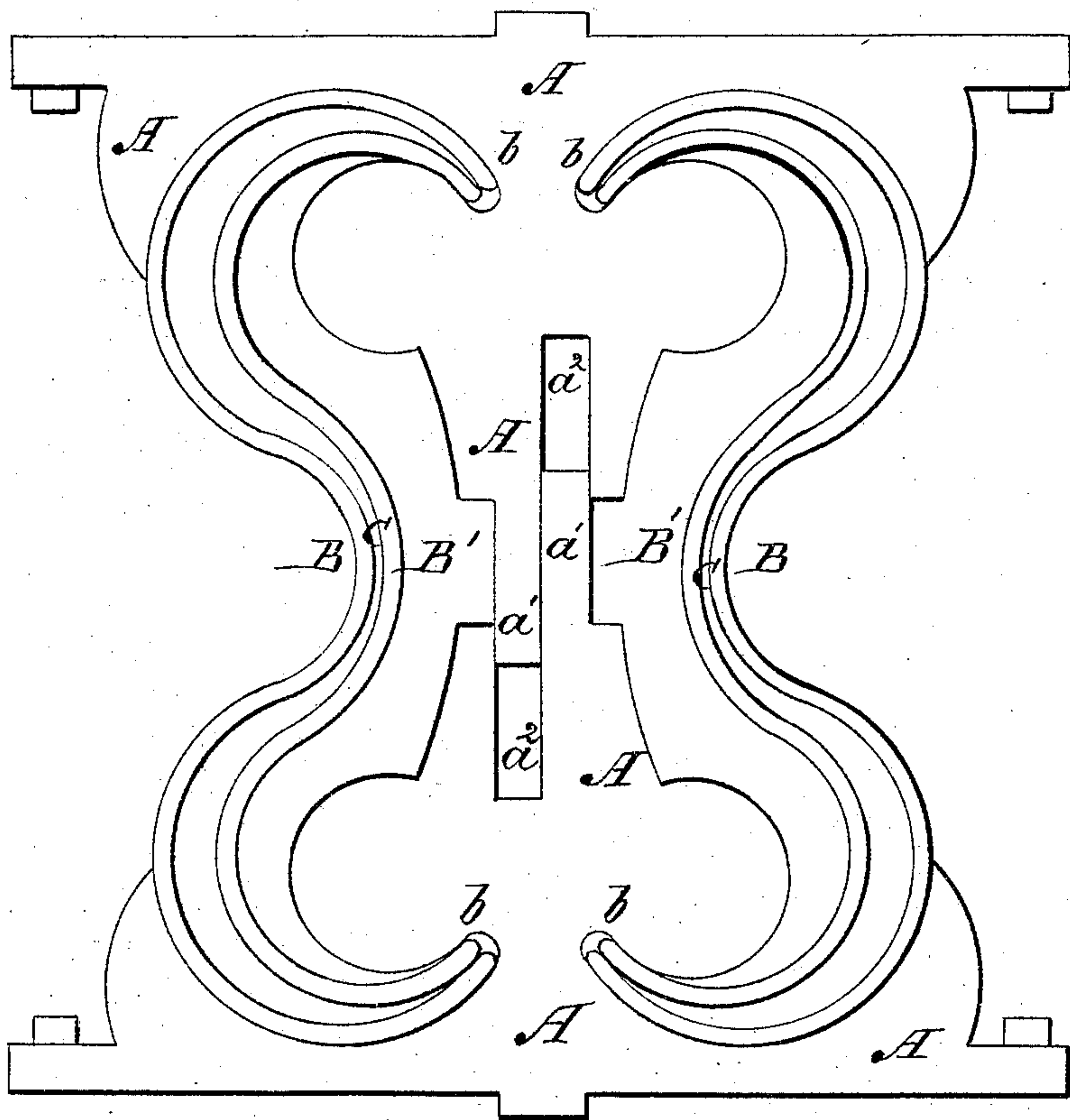


A. T. WATSON.

Car Spring.

No. 27,587.

Patented Mar. 20, 1860.



Witnesses:

L. B. Haptis  
Richard Wime

Inventor:

Alex. T. Watson

# UNITED STATES PATENT OFFICE.

ALEX. T. WATSON, OF CASTLETON, NEW YORK.

RAILROAD-CAR SPRING.

REISSUED

Specification of Letters Patent No. 27,587, dated March 20, 1860.

*To all whom it may concern:*

Be it known that I, ALEX T. WATSON, of Castleton, in the county of Richmond and State of New York, have invented a new and useful Improvement in Railroad - Car Springs; and I declare the following to be a full and exact description of my said springs, reference being had to the drawing accompanying and making part of this specification.

The drawing represents a side elevation of the spring and any vertical section parallel to the face of the spring as shown in the drawing would represent the same figure.

My spring is composed of a solid frame or setting for the springs to operate in, and of the springs which constitute the elastic material.

In the drawing the frame work or setting is shown at A, A, A, A. This is to be a casting of iron, brass or any suitable composition metal. This frame consists of two parts similar to each other in all respects, and which lock into each other by a joint or slide as shown at  $a'$ ,  $a'$ , the open spaces  $a^2$ ,  $a^2$ , being left for the play of the springs in the frame.

B, B<sup>1</sup>, are steel springs resembling in shape the numeral 3. They are placed together in pairs in the opposite ends of the frame A, and the width of the spring plates is the same as the width of the frame A. The springs are to be made of good spring steel, sufficiently tempered, and the curves in the two springs while they follow the same general outline so as to be put together in pairs, are nevertheless throughout formed upon radii of different lengths, and so that they will not touch at any point except at their ends  $b$ ,  $b$ , and they approach nearest to each other (except where they touch) at the middle  $c$ ,  $c$ . The inner spring B<sup>1</sup> is considerably shorter than the exterior spring B.

The springs being placed in the frame as shown in the drawing, when pressure is applied upon the frame, it will act at first only upon the pair of exterior springs B, B, and upon them by compression. As the weight increases and the two parts of the frame are brought nearer together, the exterior spring B, approaches the middle point  $c$ ,  $c$ , toward the spring B<sup>1</sup> and as soon as the weight is sufficient to urge the plate B in contact with B<sup>1</sup>. Then B<sup>1</sup> begins to act as an auxiliary spring in the way of tension, and not like the spring B in the way of compression, the elastic action being thus composed of elastic compression and elastic tension. By the compression and action of the exterior spring B, when a considerable pressure is exerted the ends of the spring B<sup>1</sup>, become nipped or wedged as it were by the end of the exterior spring B, so as not to be drawn from the bearings by tension.

Having thus described my improved spring I claim as my invention, and for which I desire Letters Patent—

1. The manner of arranging and combining the two springs B, B<sup>1</sup> in pairs of different lengths and curves so that when pressure is applied the one spring gives out its elastic force from compression, and the other as soon as acted on by the first spring yields an elastic force from tension, the two together affording an increasing strength and elastic power as the pressure increases.

2. I claim the form of the frame or setting A, A, by which the springs are held in position, and made to act in the manner described.

ALEX T. WATSON.

Witnesses:

I. B. STAPLES,  
RICHARD WINNE.