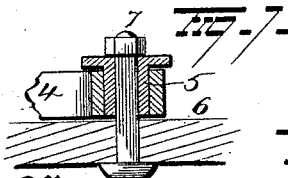
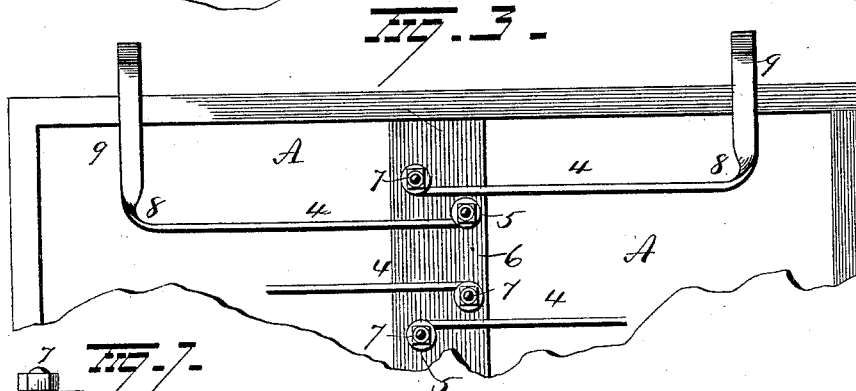
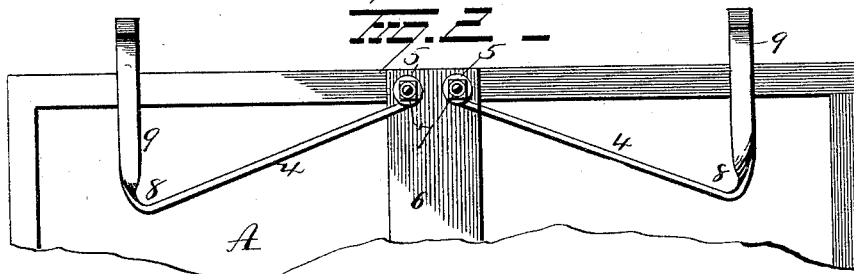
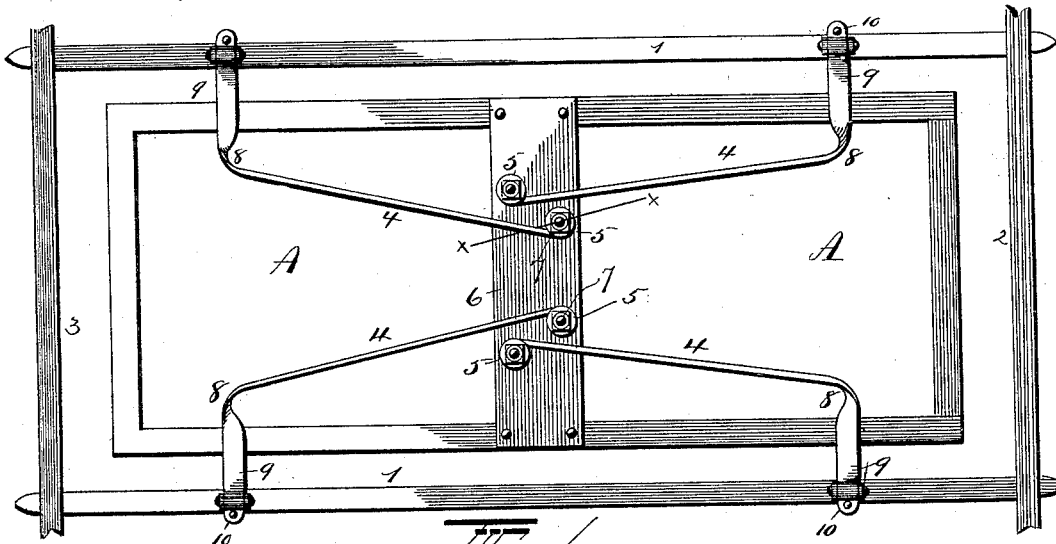


(No Model.)

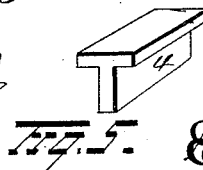
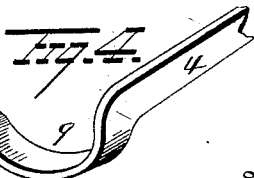
E. JARRELL.
VEHICLE SPRING.

No. 419,956.

Patented Jan. 21, 1890.



Witnesses
E. M. Thompson
G. F. Downing



By his Attorney

Edwin Jarrell
W. A. Symmes



UNITED STATES PATENT OFFICE.

EDWIN JARRELL, OF HARPER, KANSAS, ASSIGNOR OF ONE-FOURTH TO
JAMES W. McMUNN AND HARRY W. McMUNN, BOTH OF SAME PLACE.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 419,956, dated January 21, 1890.

Application filed November 2, 1889. Serial No. 328,983. (No model.)

To all whom it may concern:

Be it known that I, EDWIN JARRELL, of Harper, in the county of Harper and State of Kansas, have invented certain new and useful Improvements in Springs for Vehicles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in vehicle-springs, the object being to provide a spring of simple and durable construction, of slight cost, and capable of being readily attached to vehicles of various forms, and also so formed as to entirely do away with journals, and to give increased strength at points where the springs are and where the parts are usually weak.

With this end in view my invention consists in certain novel features of construction and combinations of parts, as will be herein-after described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a bottom plan view of a vehicle-body with my improved spring attached. Figs. 2 and 3 are modifications in which the same springs are shown, but differently applied. Fig. 4 is a slightly-modified form of spring. Figs. 5 and 6 show different shapes of springs, and Fig. 7 is a detail.

A represents the box or body of the vehicle, and 1 1 are a pair of side bars, between which the box or body is hung or supported. Said side bars rest on the axle 2 at the rear and the head-block 3 in front.

The numerals 4 4 indicate the springs. These consist preferably of flat or oval formed bars of spring metal, or of bars formed substantially as illustrated in Figs. 5 and 6—namely, T-shaped or L-shaped, as the case may be. Each bar is bent at one end around a small flanged sleeve 5, and the latter is held fast to the lower side of the spring-board 6 by means of a bolt, screw, or similar device 7, so that as they extend outward from this point of attachment the weight is sustained edge-wise of the bars, thus utilizing the full strength of the bars. At or near the outer ends these bars are given a slight half-twist at point 8 and turned outward to form the arms 9 9, which

it will be observed extend in planes at right angles to the remaining portion of the springs. The object of forming the springs in this manner is to not only get the full strength and elasticity of the springs in sustaining the weight in the box or body, but also to yieldingly resist the forward and backward motion of the box or body. By thus forming the springs the two principal weights to be sustained—namely, the downward pressure and end pressure—are upon the edges of the springs.

The arms 9 9 are connected to the vehicle, the side bars, or other part by means of the shackles 10 10.

A slightly-modified form of spring is shown in Fig. 4, in which the springs 4 4 are merely bent, not twisted, at point 8, to form U-shaped arms 9 9. In each instance the arms 9 9 may be bent outward at different angles from the main portion of the spring, as desired, and the inner ends of the springs may be secured to the spring-board at different distances apart, as shown in Figs. 2 and 3. Of course the bend at point 8 to form the arms is regulated to the different modes of attachment, as shown.

It is evident that my spring might be applied to any vehicle, and that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the particular construction herein set forth; but,

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

1. In a vehicle, the combination, with running-gear and a body, of a series of springs each rectangular in cross-section and secured to the under side of the body, the said springs being bent at a point under the body at or approximately at right angles and attached at their outer ends to the running-gear, the broader surfaces of the springs on opposite sides of the bends being in planes approximately at right angles to each other, substantially as set forth.

2. In a vehicle, the combination, with running-gear and body, of a series of springs each

rectangular in cross-section and secured to the under side of the body, the said springs being bent at or approximately at right angles and twisted at the bends, so as to bring
5 the broader surfaces of the springs on opposite sides of the bends in planes at right angles to each other, and secured at their outer ends in a plane below the body to the running-gear, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

EDWIN JARRELL.

Witnesses:

J. A. TRICKETT,

J. W. McMUNN.