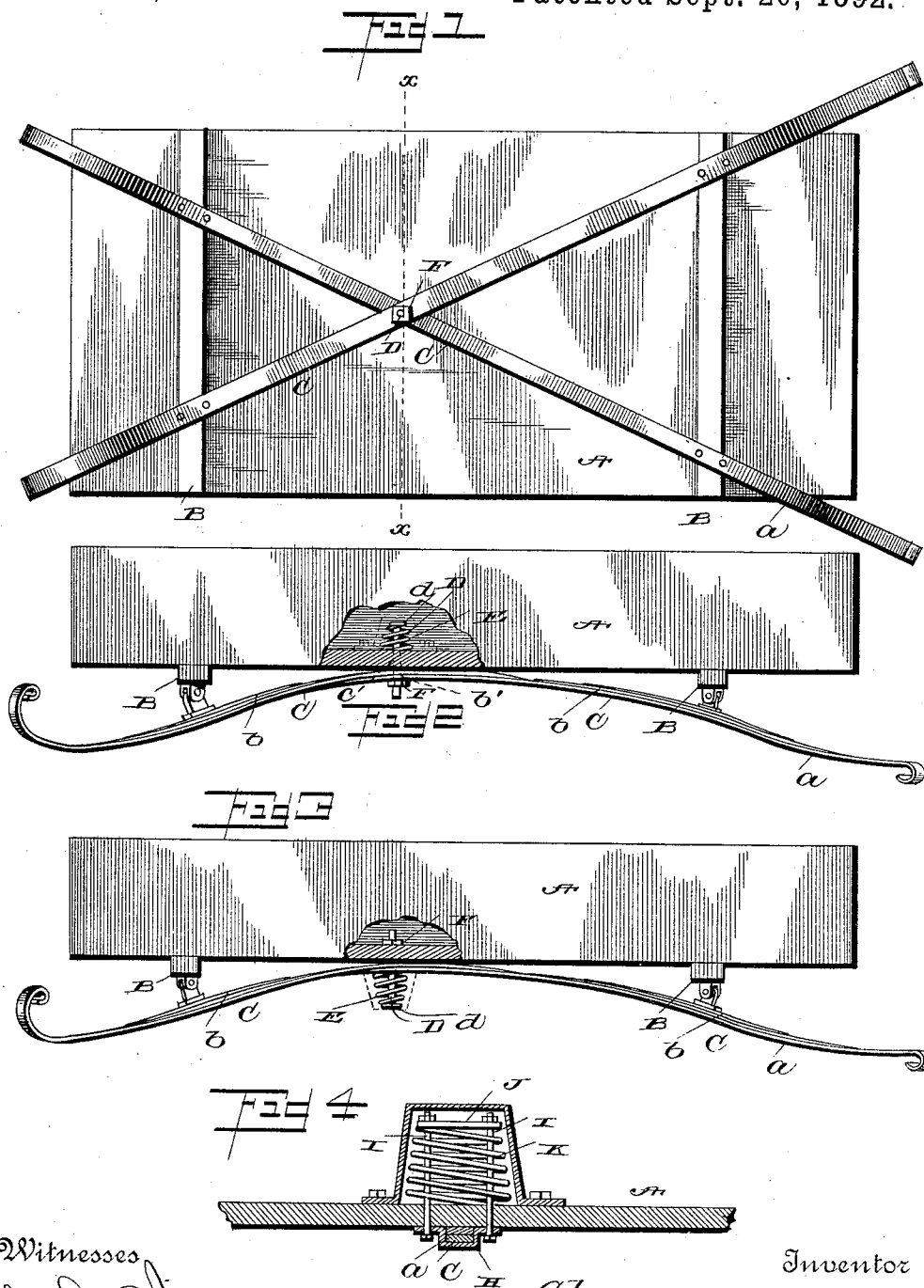


(No Model.)

C. M. BLYDENBURGH.  
RUNNING GEAR FOR VEHICLES.

No. 482,839.

Patented Sept. 20, 1892.



Witnesses

*John D. Miller*  
*Chapman Fowler*

Inventor

*Charles M. Blydenburgh*  
By his Attorneys  
*A. H. Evans & Co*

# UNITED STATES PATENT OFFICE.

CHARLES M. BLYDENBURGH, OF RIVERHEAD, NEW YORK.

## RUNNING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 482,839, dated September 20, 1892.

Application filed October 20, 1891. Serial No. 409,314. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES M. BLYDENBURGH, a citizen of the United States, residing at Riverhead, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Running-Gear, of which the following is a full and clear description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a bottom plan view of the body of a vehicle, showing the diagonally-disposed crossed springs. Fig. 2 is a side elevation of the same. Fig. 3 is a similar view showing the yielding connection at the point of crossing of the springs placed below the body of the vehicle. Fig. 4 is a cross-sectional view on the line *x x* of figure 1, showing a modification of the yielding connection.

My invention relates to certain new and useful improvements in the running-gear of carriages and wagons; and it consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

To enable others skill in the art to which my invention appertains to make and use the same, I will now describe its construction and indicate the manner in which the same is carried out.

In the accompanying drawings I have illustrated only those parts of the running-gear to which my invention particularly relates, having omitted the axles, shackles, wheels, and other complementary features, which are well known and form no part of the present invention.

A indicates a body of any well-known or appropriate construction, having cross-bars B securely fastened to its under sides at points near the ends, and C represents two springs composed of flat spring metal, having their outer ends provided with means for the attachment of shackles or other analogous or suitable devices by which the body is supported. These springs C extend the full length of the body in diagonal lines, crossing each other at a point near the longitudinal center of the body and being clipped or otherwise secured to the cross-bars B, substantially as shown in Fig. 1. In order that these two

springs may cross each other without necessitating a cutting away of either spring, I form each of them of a long leaf or plate *a*, and then secure to said plates, at points commencing at both sides of the point of crossing and terminating short of the outer extremities of the plate *a*, a series of supplemental leaves or plates *b*, which greatly stiffen and strengthen the springs. By thus adding the supplemental plates or leaves only to those portions of the springs between the line of crossing and the outer portions of both ends the springs at the point of crossing have but a thickness that is equal to the thicknesses of the plates *a* of each spring. Therefore I do not have to cut away any portion of either plate, and the springs may be placed in position or removed without any fitting and extra labor. At the point of crossing a hole *b'* is made in the plate *a* of each spring, thereby uniting the two springs, preventing any independent lateral movement, and assisting the end-supporting devices (not shown) in preventing movement lengthwise. Through the holes *b'* a rod or pin D is passed, said rod or pin also passing through another hole *c*, made in the floor of the body and having its upper end formed or provided with a collar or head *d*, between which and the floor of the body A is placed a spiral or other spring or cushion E. The opposite end of the rod or pin D projects beyond the surface of the plates *a* of the springs and is threaded to receive a nut F, by which the tension of this yielding central support is increased or diminished. This result will be better understood from the following: The springs C being clipped to the cross-bars B, these latter serve as fulcrum for them, the cushion or spring E operating against the bolt or pin D to keep the united crossed portions of the springs C normally against the floor or bottom of the body. The outer ends of the springs C being fixed, the weight upon the body, acting through the fulcrums or cross-bars, causes the springs to straighten out, thereby drawing the crossed portions down against the influence of the spring E. If a heavy weight is to be placed upon the body, the nut F is adjusted upon the threaded end of the bolt or pin D to cause a compression and stiffening of the spring E, thereby enabling this spring

to hold the main springs C with increased power against the body. This adjustment, therefore, serves to give additional strength and rigidity to the spring connection which supports the body of the vehicle. By lowering the nut upon the bolt or pin the connection is made less rigid and more elastic.

In Fig. 1 the yielding connection of the springs C with the body of the vehicle is shown as being upon the upper side of the floor of the body; but this is not essential, as the parts operate just as well when reversed and when the spring E is interposed between the springs C and the bottom of the floor, as shown in Fig. 2.

In Fig. 4 is disclosed a slight modification of the constructions shown in Figs. 2 and 3, this change consisting in supporting the crossed portions of the springs C upon a plate H, through each end of which passes a bolt or rod I, whose upper ends are joined by a cross-bar J, between which and the bottom or floor of the body a spring K is placed. The operation of this construction is similar to the others and needs no further explanation.

I do not limit myself to any particular form of spring for holding the crossed portions of the springs C against the floor of the body, as any well-known form of spring will operate in the same manner and produce the same result.

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

1. In running-gear, diagonally-disposed springs crossing each other below the body of the vehicle and normally held thereto by a flexible connection, said springs having supplemental plates secured to the main plates upon each side of the point of crossing, but

having only a single thickness at the places where they cross, substantially as herein described.

2. In running-gear, diagonally-disposed curved springs consisting of the plates *a*, crossing each other at points near their centers and secured to the body of the vehicle at points between the crossing and outer extremities, said plates having supplemental leaves or plates secured to the main plates upon each side of the point of crossing, thereby leaving but a single thickness of each spring at the place where they cross.

3. In running-gear, the diagonally-disposed springs, each consisting of a main plate having supplemental plates or leaves secured to its surface upon each side of its upper surface between its central portion and ends, thereby leaving said central portion of but a single thickness, said central portion being united and joined to the body of the vehicle by a spring connection.

4. In running-gear, the body having the cross-bars, the diagonally-disposed springs secured to said bars and crossing each other near the center of the under side of the body, a bolt or pin passing loosely through said body and the crossed portion of the springs, a nut adjustable upon the threaded end of the bolt or pin, and a spring surrounding the bolt between its opposite ends and the bottom or floor of the body, whereby the crossed portions of the main spring are normally held against said bottom or floor, but yield under the influence of weight upon the body, substantially as herein described.

CHARLES M. BLYDENBURGH.

Witnesses:

T. WALTER FOWLER,  
CHAPMAN FOWLER.