R. WALKER.

Vehicle-Spring.

No. 168,302. Patented Sept. 28, 1875.

Fig. 1.

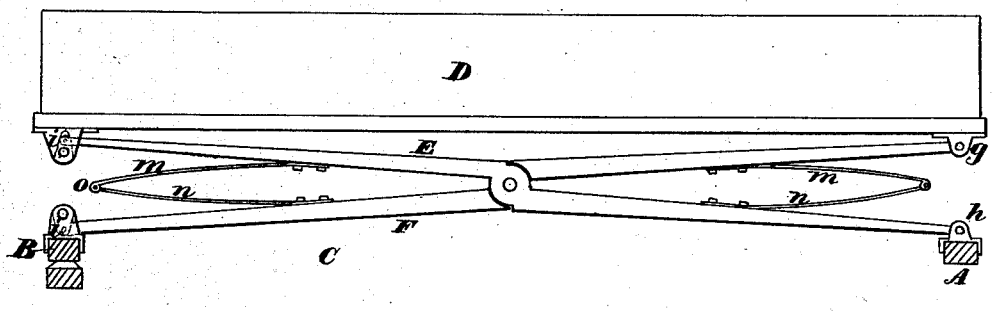


Fig. 2.

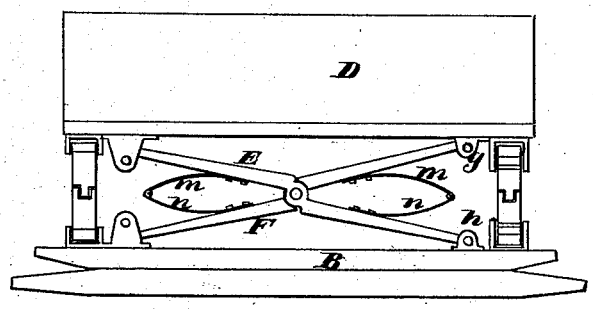
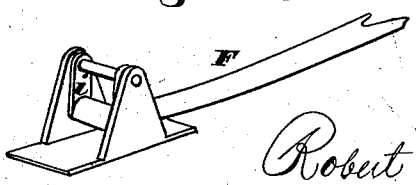


Fig. 3.



Witnesses

Geo. H. Strong.

Jno. L. Boone

Inventor

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UNITED STATES PATENT OFFICE.

ROBERT WALKER, OF OAKLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO GEORGE W. HENSHAW, OF GRIDLEY, CALIFORNIA.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **168,302**, dated September 28, 1875; application filed April 27, 1875.

To all whom it may concern:

Be it known that I, ROBERT WALKER, of Oakland, Alameda county, State of California, have invented an Improved Carriage-Spring; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to certain improvements in the construction of wagons and carriages, so that by the use of a novel arrangement of levers, in combination with springs, I am enabled to perfectly equalize the action of the vehicle upon its springs, whether the load be well distributed or not.

Referring to the accompanying drawing for a more complete explanation of my invention, Figure 1 is a side elevation of my device. Fig. 2 is an end view. Fig. 3 is a section showing the swinging shackle.

A is the rear axle-bed, and B the bolster of a wagon or carriage, united by the reaches C. D is the body of the vehicle, which it is necessary to mount so that it will ride easily.

In the present case I have shown my device as applied to both sides and ends of the vehicle; but it will be readily seen that in end-spring buggies, where the seat is about midway between the ends, it will only be necessary to equalize it with reference to a weight which shifts from side to side, while in longer bodies, like express-wagons, in which the weight may be at either end at times, it will be necessary to place the equalizing-gear longitudinally.

E and F are two levers, which are joined together in the center, crossing each other in the manner of a pair of shears, so that when two contiguous ends are drawn together or spread apart, the opposite ends will move in a similar manner. At one end, the two levers are provided with short journals, which turn in boxes *g* and *h*, one being secured to the vehicle-body and the other to the axle-bed or bolster, as shown. The opposite ends of these levers are supported upon short swinging levers or shackles *i*, which are mounted, respectively, upon the axle-bed and wagon-body, and this, or a similar construction, allows the lengthening and shortening necessary as the levers close or open.

In order to support the vehicle-body, springs are necessary, and I have found nothing so suitable as the elliptic spring. The two levers *m* and *n* of a half-spring, united at the head *o*, in the usual manner, are placed between the arms of the levers E and F, one spring at each side of the central joint. The inner ends of these springs are firmly riveted or otherwise secured to the inside of the two levers, and it will thus be seen that the elasticity of these springs will resist any tendency to force the levers together, acting in all respects as an ordinary spring.

By the use of the levers, it will also be seen that a weight placed in any part of the body will exert its influence equally upon all the springs, and that when one part of the body is depressed or allowed to rise, the effect of the levers will be such as to cause a corresponding movement of the opposite side or end.

In the case of long wagon-bodies, it will often be found more convenient to place the side levers nearer together, and in some cases a single pair of levers placed between the reaches will be sufficient.

My equalizing device can be employed upon the spring-seats used upon wagons, and will prevent the seat from being tipped down when the weight is all at one end.

My device will be found more durable, as the supports are at the extreme ends of the levers, and the connection of the levers and springs will protect the springs from any side motion or strain. The weight is always equally divided upon the springs, whatever may be its position, and they can, consequently, be made much lighter.

I am aware that swinging levers or shackles are not of themselves new, the same being shown in patent to H. A. Hight, June 9, 1874, and I do not, therefore, claim them broadly.

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

The levers E and F, united at their center, in combination with the springs *m n* of a vehicle, for the purpose of equalizing the pressure, all substantially as set forth.

In witness whereof I hereunto set my hand and seal.

ROBERT WALKER. [L. S.]

Witnesses:

GEO. H. STRONG,

JNO. L. BOONE.