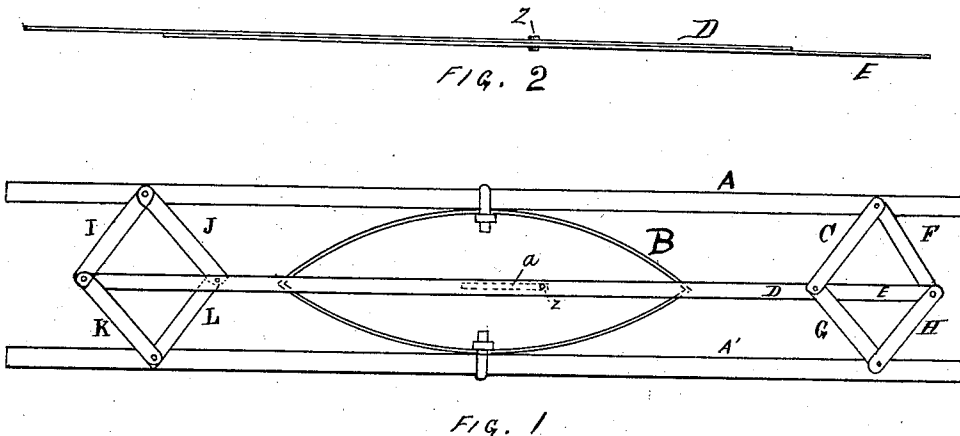


W. MILLER.  
Spring-Equalizers.

No. 155,164.

Patented Sept. 22, 1874.



Witnesses:  
H. E. Metcalf  
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Inventor:  
Wm. Miller  
per C. A. Shaw,  
att'y

# UNITED STATES PATENT OFFICE.

WILLIAM MILLER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
HIS RIGHT TO ROBERT L. WALKER, OF SAME PLACE.

## IMPROVEMENT IN SPRING-EQUALIZERS.

Specification forming part of Letters Patent No. **155,164**, dated September 22, 1874; application filed  
July 24, 1874.

*To all whom it may concern:*

Be it known that I, WILLIAM MILLER, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in the Method of Equalizing or Distributing Pressure, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation, showing my improvement; and Fig. 2 is a plan or top view of the connecting-rods.

Like letters of reference indicate corresponding parts in the different figures of the drawing.

My invention relates to means for equalizing or distributing the pressure upon platforms or other surfaces which are supported in whole or mainly by springs or levers; and consists in a novel construction and arrangement of the parts, as hereinafter fully set forth and claimed, by which a simpler, cheaper, and more effective device of this character is produced than is now in common use.

It is well known that in wagons, cars, and all similar vehicles which are provided with springs in the ordinary manner, it is very difficult to equalize the pressure so as to prevent the bodies or platforms from "tipping" when the load is unequally distributed. The same difficulty is experienced in the construction and use of spring bed-bottoms, platform-scales, spring-floor dancing-halls, and in all cases where there is a comparatively large supporting-surface resting upon springs or levers. My invention is designed to obviate this difficulty; and to that end I make use of a system of levers or links jointed together and connected by rods to operate in combination with the platform, its supporting spring or lever, and a bed-piece, as hereinafter described.

In the drawing, A represents the platform; A', the bed-piece; and B, the spring, which is attached to or bears upon the bed-piece and supports the platform. Disposed at one side of the spring, near the edge of the platform,

there are four levers or links, C F G H, the ends of which are jointed or pivoted together, the levers C F being also pivoted or jointed to the platform, and the levers G H to the bed-piece, a corresponding system or series of levers, I J K L, being disposed at the opposite side of the spring, and connected in a like manner together and with the platform and bed-piece, as shown. Between the two sets of levers, arranged as described, are two connecting-rods, D E, the rod D being provided with a stud or headed pin, *z*, the body of which works in a slot, *a*, in the rod E, to prevent vibration and keep the rods in a proper position as the platform rises and falls. The rod D has one end jointed to the levers I K and the other to the levers C G, and the rod E has one end jointed to the levers J L and the other to the levers F H, the rods corresponding exactly in length.

From the foregoing the nature and operation of my invention will be readily understood by all conversant with such matters; but to illustrate the same more fully, it will be seen that when a weight is placed upon the platform A, if the center of gravity in the weight is precisely over the center of resistance in the spring B, the spring will be evenly compressed and the platform maintained in parallelism with the bed-piece A' without the aid of the levers and their connecting-rods; but if the weight is placed at one side—for instance, over the levers C F G H—the tendency will be to depress that side of the platform, and at the same time to correspondingly tip or elevate the opposite side, which will be prevented by the rod E in the following manner: The levers F H being jointed together by their inner ends, forming an elbow-joint, and also jointed at the same point to the rod E, as the platform descends the elbow will be bent outwardly or carried farther from the spring B, drawing with it the rod E, which, being attached at its opposite end to a like elbow formed by the levers J L, will bend the last-named elbow inwardly, or draw the inner ends of the levers which form it toward the spring B, thus depressing or pulling down the side of the platform opposite the weight to a plane or

level with the weighted side. When the weight is applied over the levers I J instead of over the levers C F, the rod D, connecting the outer elbow formed by the levers I K with the inner elbow formed by the levers C G, will act to depress the opposite end of the platform and keep the same level, after the manner described for the rod E.

It will be obvious that any number of springs may be used; also, that one of the connecting-rods may be dispensed with without departing from the spirit of my invention. The platform may also be supported by a lever or system of levers, instead of employing

a spring, and loops or sleeves may be employed around the rods, instead of the stud *a*, if preferred.

Having thus described my invention, what I claim is—

The levers I J K L, rods D E, and levers C F G H, combined to operate with the platform A, spring B, and bed-piece A', substantially as and for the purpose set forth.

WILLIAM MILLER.

Witnesses:

C. A. SHAW,  
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