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O. T. DOUGHERTY.
WEIGHT INDICATING SLIDING AND SPRING SUPPORT FOR
VEHICLE BODIES.

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NO MODEL.

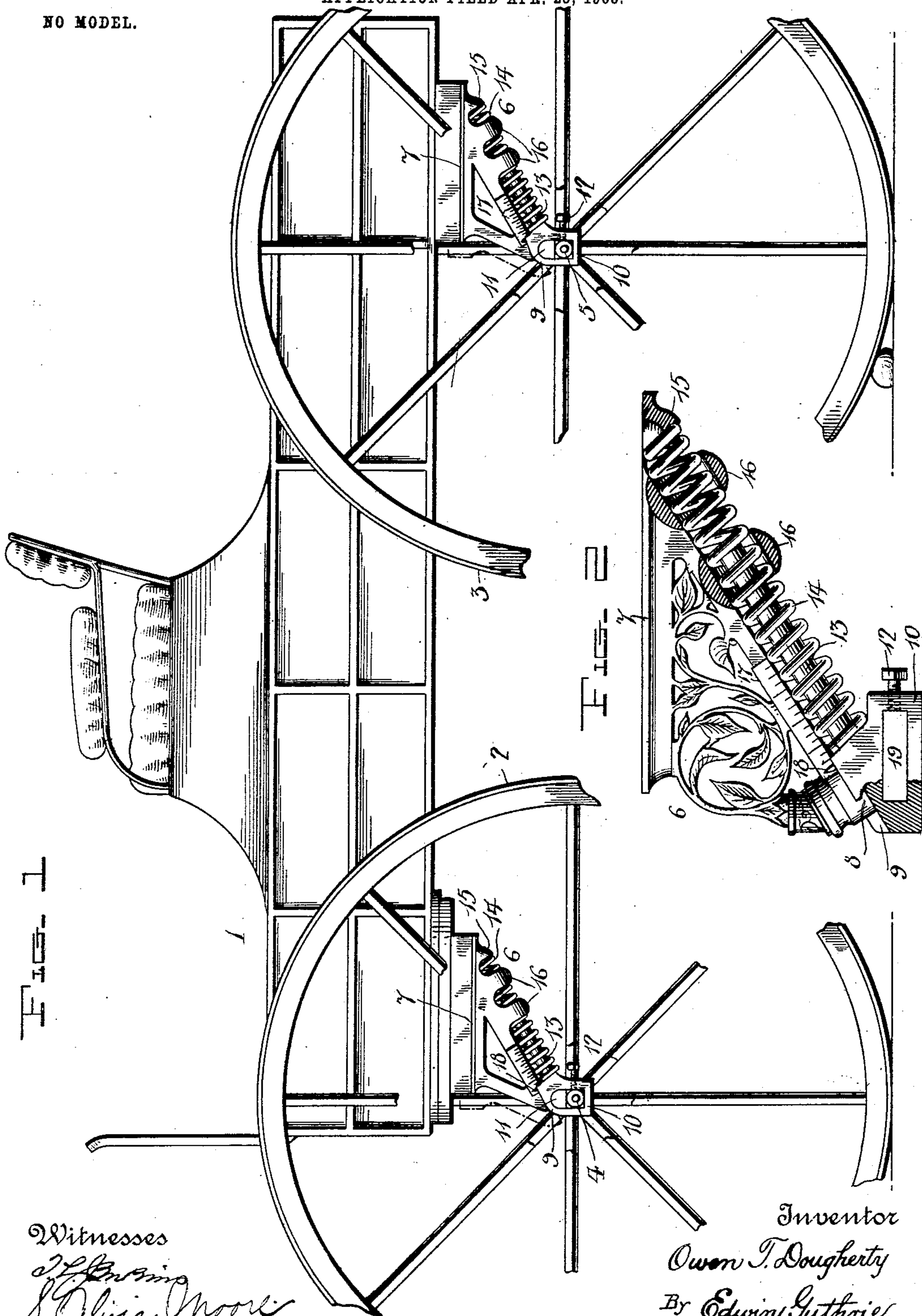


Fig. 1

Fig. 2

Witnesses

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OWEN THOMAS DOUGHERTY, OF MINNEAPOLIS, MINNESOTA.

WEIGHT-INDICATING SLIDING AND SPRING SUPPORT FOR VEHICLE-BODIES.

SPECIFICATION forming part of Letters Patent No. 745,718, dated December 1, 1903.

Application filed April 25, 1903. Serial No. 154,248. (No model.)

To all whom it may concern:

Be it known that I, OWEN THOMAS DOUGHERTY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Weight-Indicating Sliding and Spring Supports for Vehicle-Bodies; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable other skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to weight-indicating sliding and spring supports for vehicle-bodies.

It is an object of my invention to provide a yielding device connecting the running-gear and body of any vehicle which shall permit a slight forward and rearward movement of the body and load with respect to the running-gear. For example, let it be assumed that a loaded wagon while being drawn along meets with an obstacle by reason of the wheels striking a rock or abnormal elevation or depression of the roadway. A brief retardation of the whole takes place. When my invention is used, the running-gear alone is retarded immediately, the body and load continuing their forward movement against a suitable spring based upon the running-gear. This succeeding forward movement delivers a push or blow in the same direction against the retarded wheels, both as the spring is compressed and as it reacts, with the result that the actual original jar due to partial stoppage is reduced in effect, because it halts only the running-gear, and to the draft pull necessarily exerted in overcoming the obstacle is added the forward tendency of the body and load.

It is also an object of my invention to provide indicating means arranged upon the device stated and to proportion the spring element to be compressed certain distances by certain predetermined weights contained in the body of the vehicle, the indicating means exhibiting the amounts of such weights in suitable manner.

To accomplish the objects stated, I employ as a preferable form of construction the parts

fashioned and associated as illustrated in the accompanying drawings, of which—

Figure 1 is a side view of a vehicle the wheels of which have encountered an obstruction of average extent. The broken lines are intended to mark the temporary forward position attained by the triangular runners immediately after the collision. Fig. 2 represents a vertical longitudinal sectional view of the invention detached.

Like numerals refer to like parts in both views.

Numeral 1 marks a wagon having a suitable body platform or box, of which 2 designates the front and 3 the rear wheels.

Numeral 4 refers to the front spindle and axle, and 5 to rear spindle and axle.

To each side of body 1, directly above and extending slightly in rear of each axle, are secured the triangular runners 6, and these elements are customarily more or less ornamental in character when my invention is applied to driving carriages. The top flange 7 of each runner is attached to the body, and the forward angle of the runner projects over the axle, as shown. The top flange may be either flat or grooved to fit any side bar or edge of a wagon-body.

The incline 8 of the runner is finished smooth and slides in the guide 9. (Best shown in Fig. 2.) The body of guide 9 consists of the square collar 10, inclosing the bolsters 11 and axles and firmly secured to them by set-screws 12 or in any effective manner. Projecting rearwardly and upwardly and forming an integral part usually of the collar 10 of the guide is a cylindrical post 13, and the spring 14 encircles this post with its lower coils, while its upper end is restrained by the base-lug 15 of the runner. One or more sleeves 16 are ordinarily provided through which the spring is passed, and these sleeves serve to keep the axis of the spring in approximately a direct line. Spring 14 is longer than post 13, as shown.

It is shown in the drawings that the angle made by the guide and runner with the horizontal is less than forty-five degrees. Such an incline permits ample cushioning of the body vertically for ordinary uses and enables the momentum of the body to exert a greater

impulse forward than vertically. It is the forward impulse that assists in overriding obstacles in the roadway.

It is thought now to be clear that when the running-gear is suddenly partly halted the body of the wagon and its load will by their momentum compress spring 14, thereby exerting a forward push upon the axles and wheels both during compression and reaction. Such forward effect while but temporary is very useful in enabling the team to pull over or out of the hindrance met with.

When my invention is applied to coal-carts, cars, or wagons designed to carry substances by weight, that weight can be easily determined by means of an indicator. Attached to the runner 6 is a scale 17, parallel with the incline 8, and a projecting pointer-pin 18 will be noted on the guide 9. As the runner slides down the guide under the weight of the load the scale passes the pointer 18, and, the parts being duly proportioned, any weight of load may be indicated.

As the spring is usually made it takes the place in all respects of the regular springs of the vehicle; but it is believed to be within the scope of my invention to use it in addition to the ordinary vehicle-springs. This is accomplished without change of construction. The bar 19 in Fig. 2 is secured on top of the running-gear springs of a carriage.

I do not confine the application of my invention to any class of vehicles.

What I claim is—

1. In a sliding and spring support for vehicle-bodies, the combination with an inclined guide attached to the axle of a vehicle, of an inclined runner connected with the body of the vehicle and sliding upon the said guide, means for keeping the runner in place upon the guide, and a spring arranged between the said runner and guide holding them yieldingly apart, the said runner and guide inclining upwardly and rearwardly at an angle of less than forty-five degrees with the horizontal whereby the weight of the body of the vehicle is cushioned vertically and the thrust of the body is greater in a horizontal direction

forward than in a vertical direction downward when the running-gear meets an obstacle, said forward thrust being also cushioned by said spring, substantially as shown and described.

2. In a sliding and spring support for vehicle-bodies, the combination with the guide 9 attached to the axle of a vehicle and having a post extending upwardly and rearwardly from the axle at an angle of less than forty-five degrees with the horizontal, of a runner engaging the said guide and connected with the body of the vehicle, said runner being provided with the sleeve 16, and a helical spring encircling the post of the guide and passing through said sleeves, said spring being arranged between said runner and guide holding them yieldingly with respect to each other, the said runner and guide having the same incline as the post whereby the thrust of the body is greater in a forward than in a vertical direction on meeting an obstacle, substantially as described.

3. In a weight-indicating sliding and spring support for vehicle-bodies, the combination with the guide 9 attached to the axle of a vehicle and having a post extending upwardly and rearwardly from the axle, of a runner engaging the said guide and connected with the body of the vehicle, said runner being provided with the sleeves 16, a helical spring encircling the post of the guide and passing through said sleeves, said spring being arranged between said runner and guide holding them yieldingly with respect to each other, and a scale and indicator attached to said runner and guide, said runner and guide being inclined at an angle of less than forty-five degrees with the horizontal whereby the thrust of the body is greater in a forward than in a vertical direction on meeting an obstacle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

OWEN THOMAS DOUGHERTY.

Witnesses:

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JACOB DOMM.