

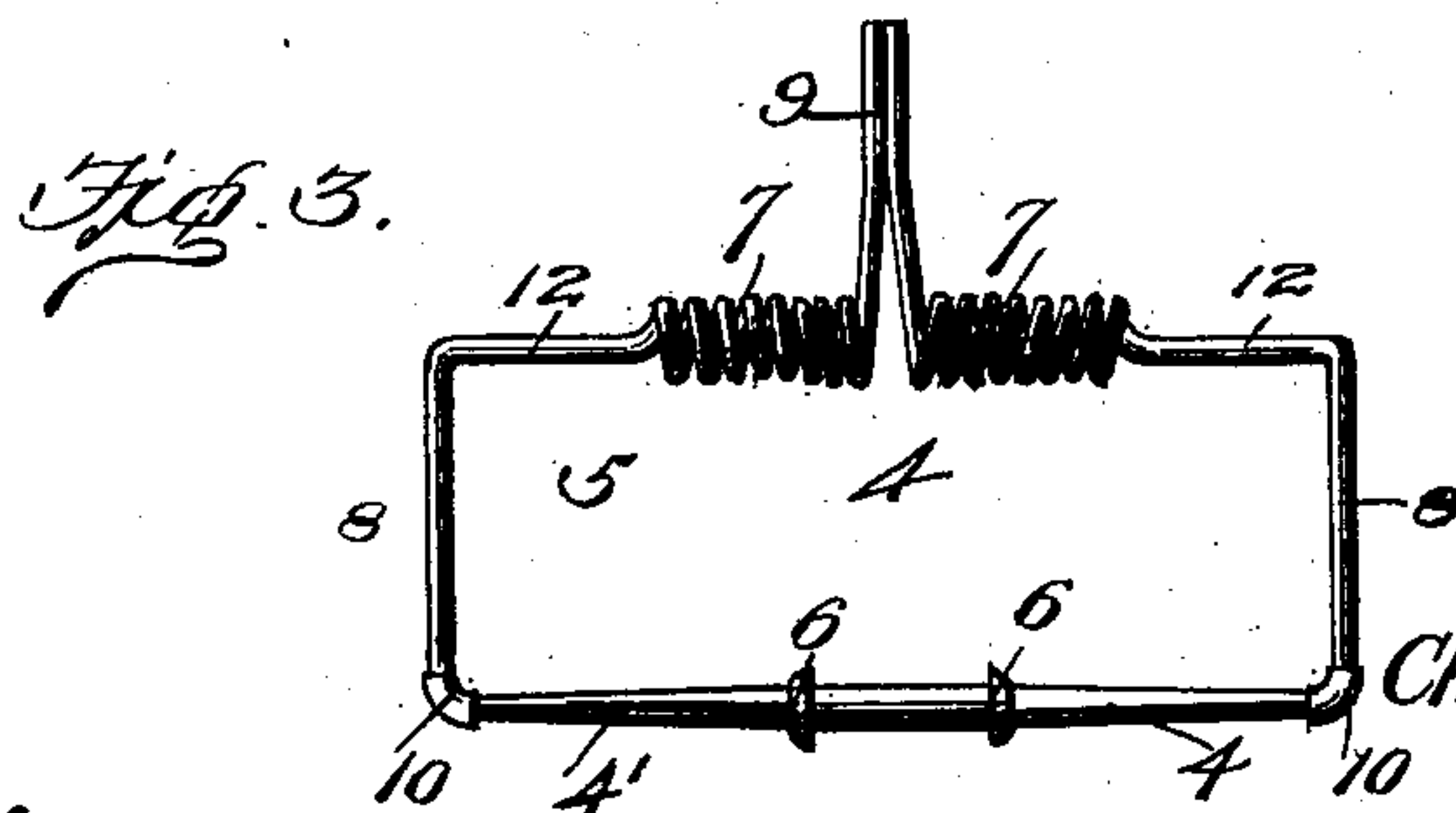
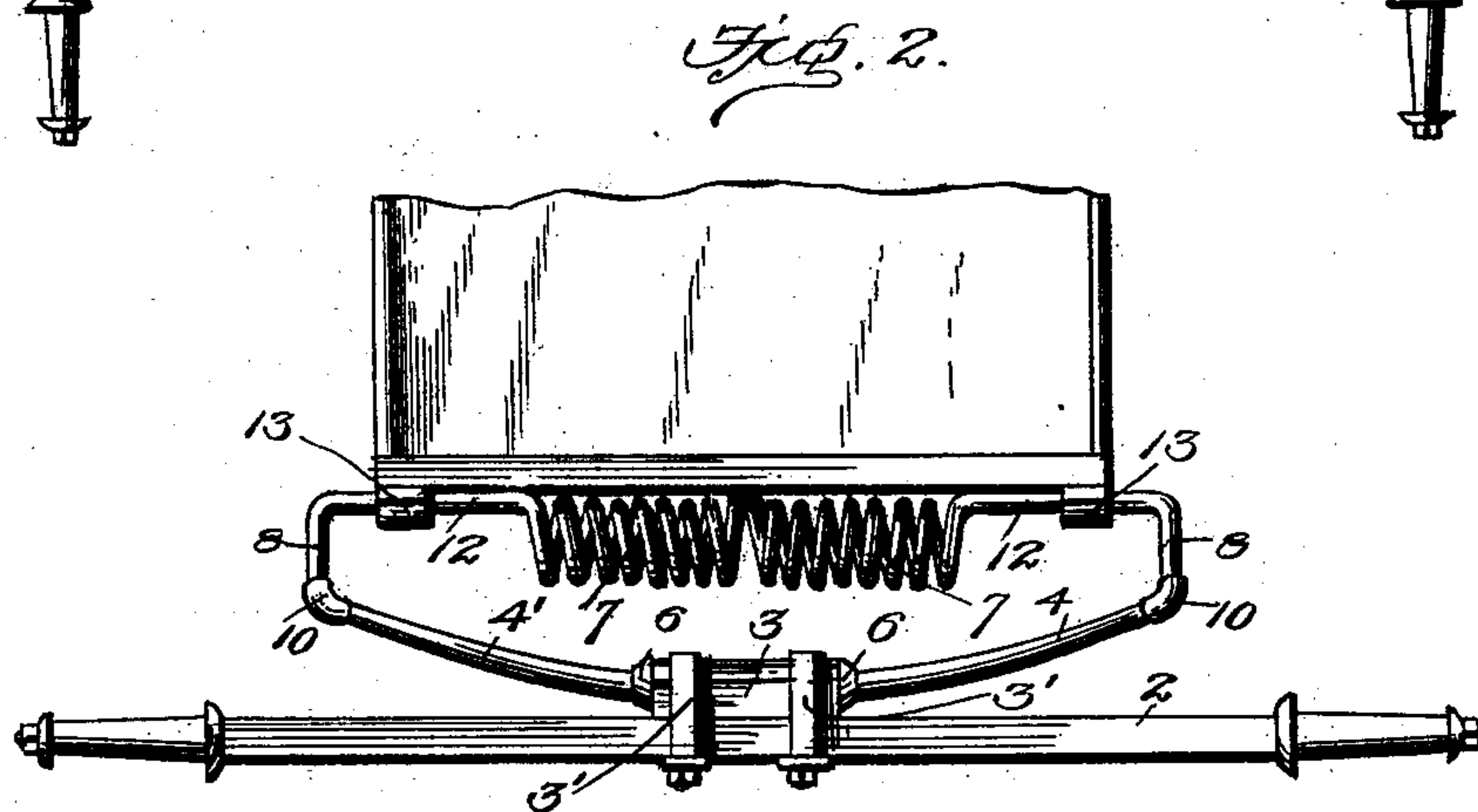
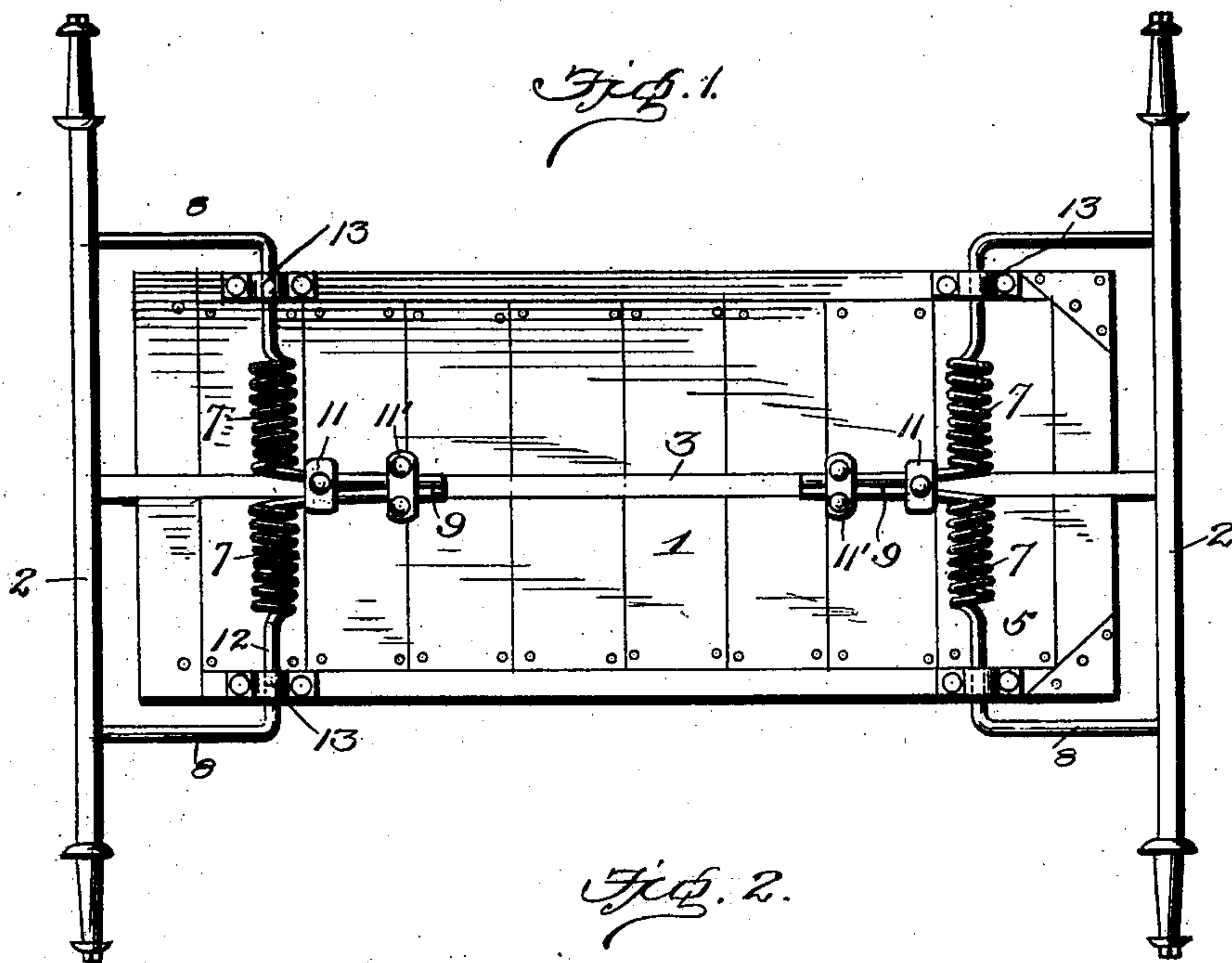
No. 744,259.

PATENTED NOV. 17, 1903.

C. L. THOMAS.
VEHICLE SPRING.

APPLICATION FILED SEPT. 15, 1902.

NO MODEL.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES LEE THOMAS, OF AMSTERDAM, NEW YORK.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 744,259, dated November 17, 1903.

Application filed September 15, 1902. Serial No. 123,497. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEE THOMAS, a citizen of the United States, residing at Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Vehicle-Springs; and I do 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.

This invention relates to improvements in vehicle-springs.

The object of the invention is to provide a light, cheap, and durable spring which possesses maximum strength and reduces to a minimum side rocking of the vehicle-body.

With this and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a bottom plan view of a vehicle-body equipped with my invention. Fig. 2 is an end elevation of the same. Fig. 3 is a front elevation of one of the springs.

Referring now more particularly to the drawings, 1 represents a vehicle box or body, 2 its supporting-axles, and 3 a reach or brace bar forming a connection between the axles and secured at its ends thereto by clips 3'. The body is supported from each axle upon springs 4, each of which consists of a central supporting portion 4' and spring portions 5, said supporting portion being journaled to rock upon the axle and bar 3 in a bearing formed by the clips 3' and being provided with shoulders 6 to abut against the opposite sides of said bar to hold the spring against endwise movement longitudinally of the axle. The spring portions 5 consist each of a single piece of stout spring-steel bent to form a spring-coil 7, a side arm 8, and a lateral connecting-arm 9. The side arms 8 may be formed integral with the supporting portion or bar 4', or they may be connected at their ends thereto by elbows or couplings 10. Preferably the supporting portion 4' is formed independent of the spring portions 5 and suitably united thereto, as by the elbows 10, as by this construction the said supporting

portion may be tapered from the center toward each end, as shown in Fig. 3, thus making it light and yet strong at the center to afford a firm support upon the axle. In some cases, however, I may, as stated, form the entire spring of a single piece of material, the central part of which will form the supporting portion 4' and the ends the spring portions 5, which latter will be bent into the form described and terminate with the lateral connecting-arms 9, formed by the extremities of the continuous piece of wire constituting the springs.

As shown, the springs 7 of the two spring portions 5 are coiled in opposite directions, and the lateral connecting-arms 9 are arranged in parallel relation and connected by the clips 11 11' to the bottom of the box or bed 1, while the portions intermediate the springs 7 and side arms 8 form journals 12, which are mounted in bearings 13, secured to the bottom of the body adjacent to the sides thereof. From these journal portions 12 the side arms 8 project downwardly and forwardly, as clearly shown in Fig. 1, and connect with the supporting bar or portion 4', whereby the journal portions 12 have axial play in the bearings 13, allowing the body to have movement in a vertical plane and the springs 7 to exert a resilient action to permit the body to move downward under strain and then to restore the body to its normal position. It will be seen that as the bar or supporting portion 4', though journaled on the axle, is itself rigid, and as the end coil-spring portions are connected by the bearings 13 to the bottom of the body, at opposite sides thereof, any tendency of the body to rock in a sidewise direction will be materially diminished or entirely overcome, thus preventing such objectionable motion and the strain thrown thereby upon the springs and running-gear of the vehicle. Furthermore, as the supporting-bar 4' is journaled to rock upon the axle weight or pressure upon either side of the body is transmitted equally to the opposite side, producing an equalizing action, whereby when one side of the body goes down the other side will be forced down to an approximately equal extent, thus keeping the body practically level at all times. At the same time all strain and weight over any part

of the spring is instantly conveyed along the whole length of the spring—an obvious advantage.

Where the supporting bar or portion 4' is formed independent of the coil-spring portions, it may be found expedient in some cases to make the portions 5 of a continuous piece of spring-wire, the wire being bent at its center to form the connecting-arms 9, which will then be united and in the form of a loop, and thence continued and bent to form the coils, opposite side arms, and journal portions, as will be readily understood without a further extended description or illustration. The bar or supporting portion 4' may also be arched, as shown in Fig. 2, or made straight, as shown in Fig. 3.

Any desired number of the coils 7 may be employed, making the spring as easy-acting as may be desired without an increase of side motion, as in the case of other coil-springs.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be readily understood, and it will be seen that it provides a vehicle-spring which is simple of construction, comparatively inexpensive of production, and designed to give the required yielding action to the body, while obviating the objectionable side rocking motion which is permitted when the ordinary elliptical springs are used.

While the preferred form of the invention is herein disclosed, it will of course be understood that changes in the form, construction, and arrangement of the parts other than those indicated may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

1. A spring of the class described, comprising an intermediate substantially straight portion forming a journal, side arm portions disposed angularly with relation and rigidly connected thereto, inturned journal portions at the outer ends of said side arm portions and formed with coaxial spring-coils 7, and with projecting arms 9, at the opposing end portions of the respective spring-coils disposed substantially parallel with each other, and angularly with relation to the said inturned portions.

2. The combination with the running-gear of a vehicle, of a bearing thereon, a spring having an intermediate substantially straight portion centrally journaled in said bearing, side arm portions disposed angularly with relation and connected to said intermediate portion, inturned portions at the outer ends of said side arm portions and formed with coaxial spring-coils 7, and with projecting arms 9 at the opposing end portion of the respective spring-coils and disposed substantially parallel with each other and angularly with relation to the said inturned portions, and a vehicle-body having bearings for said inturned portions of the spring, and devices to secure the said projecting arms 9 to the body, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES LEE THOMAS.

Witnesses:

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