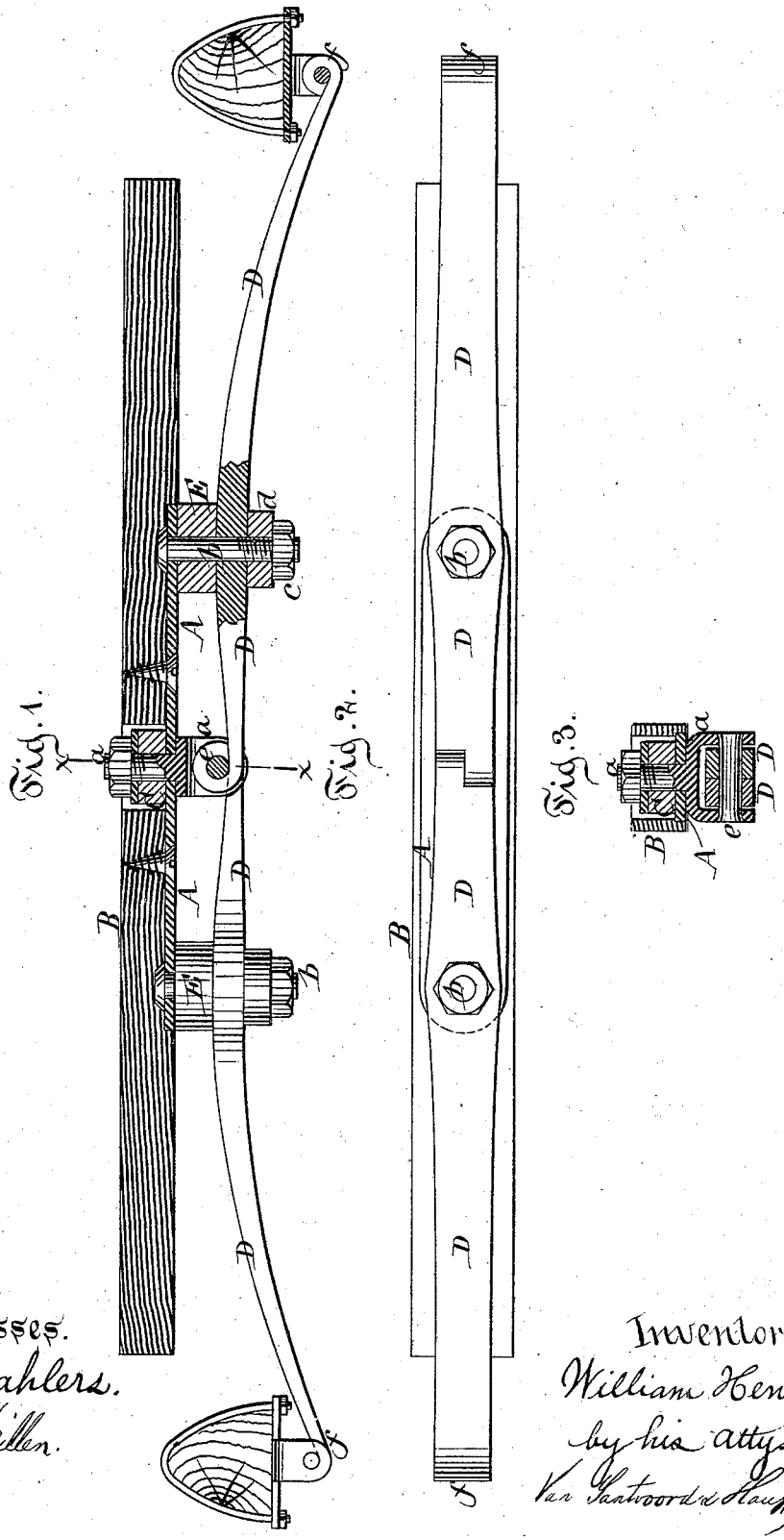
W. HENRY.
Vehicle-Spring.

No. 217,105. Patented July 1, 1879.



Witnesses.
Chas. Wahlers.
William Mellen.

Inventor.
William Henry
by his attys.
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY, OF NEW YORK, N. Y.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **217,105**, dated July 1, 1879; application filed January 29, 1879.

To all whom it may concern:

Be it known that I, WILLIAM HENRY, of the city, county, and State of New York, have invented a new and useful Improvement in Springs for Vehicles, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a side view, partly in section, of a spring embracing my invention. Fig. 2 is an inverted plan view of the same. Fig. 3 is a vertical cross-section thereof in the plane of the line *x x*, Fig. 1.

Similar letters indicate corresponding parts.

My invention relates to springs for vehicles, and is applicable to the body, the seat, or any movable portion of a vehicle where a spring may be used.

It consists in the combination, with a bar forming a part of or support for a vehicle-body, and having a central recess, of a suitable spring-supporting plate arranged upon the lower side of said bar, and having an aperture coinciding with the recess therein, a spring arranged within said recess and upon said plate, an eyebolt passing through the said aperture and recess and bearing upon the upper surface of said spring, two levers having their inner ends pivoted to the lower end of said eyebolt and their outer ends adapted to be pivoted to the axles or side bars of a vehicle, and suitable fulcra for said levers supported by the said bar which forms a part of a support for a vehicle-body, as will be hereinafter more particularly described and explained.

In the drawings, the letter A designates the supporting-plate of my spring fastened to a plank or bar, B, which may constitute one of the cross-bars of a wagon-body or a portion of the seat. C is the spring proper, and D D are the two levers.

I prefer to make the spring C of a cylindrical block of india-rubber; but it can be made of steel or any other suitable material, and of any desirable or appropriate shape; and I arrange the spring on the top of the plate A, where it is secured by means of a bolt, *a*. This bolt *a* extends through the spring C, and on its upper end is fitted a washer and a nut, as shown, while its lower end is forked and straddles the inner ends of the levers D D, to which it is connected by means of a pivot, *e*. The levers D D project out beyond the ends of the plank or bar to which the supporting-plate A is secured, and they are provided with eyes *f*, or their equivalent, at their outer extremities, whereby they are adapted to be hinged to clips embracing the side bars of a wagon, as indicated in Fig. 1, or hinged to any other support.

The letters E E designate two cushions or springs, which are interposed between the supporting-plate A and the levers D D at suitable points to form bearings or fulcra for the levers. I prefer to make these cushions E E, like the spring C, of a cylindrical block of india-rubber; but the same can be made of another material or shape, and I unite the cushions both with the supporting-plate A and the levers D D by means of bolts *b*. These bolts *b* extend through the cushions E E, and are fastened to the plate A at one end and to the levers D D at the other end. In the example shown the threaded ends of the bolts *b* extend through the levers D D and carry jam-nuts *c*, between which and the levers are interposed india-rubber or other washers *d*; but, if desired, these nuts may be dispensed with, and the threaded ends of the bolts screwed directly into the levers, and in that case the washers may be placed under the tops of the bolts on the supporting-plate.

When a load is brought upon the portion of the vehicle to which the supporting-plate A is secured and the levers D D are fastened at their outer ends to an appropriate part of the vehicle, the levers D D move downward at their inner ends against the action of the spring C, so that the latter practically supports or counteracts the weight of the load. The spring C, moreover, occupies little room, is very light and cheap, and yet adapted to support a large weight. The cushions E E allow the levers D D to yield at the points of their fulcra, and have a like effect to the spring B upon the plate A or the load, and by combining the cushions with said springs the vehicle is caused to ride exceedingly easy.

In the example shown the levers D D are connected together at their inner ends, so that they move in unison to as great an extent as

their pivotal cushions E E allow; but, if desired, the levers may be disconnected—that is to say, each of the levers may be connected to a separate spring, or they may be separately connected to the plate A, as the case may be.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the bar B, having the central recess, the attached spring-supporting plate having the central aperture, the spring C, located within the central recess of said bar, the eyebolt *a*, having a nut bearing upon the upper surface of said spring, the levers D, having their inner ends pivoted to the lower end or eye of said eyebolt and their outer ends pivoted to the axles or side bars of a vehicle, and suitable intermediate fulcra for said levers secured to and supported by said bar B, substantially as described.

2. The combination of the bar B, having the central recess, attached spring-supporting plate A, having the central aperture, the rubber spring C, arranged within said recess, eyebolt *a*, passing through said spring and bearing upon its upper surface, levers D D, pivoted to the lower end of said eyebolt, bolts *b*, secured to bar B and passing through said levers, and the rubber cushions E E, forming the fulcra of said levers, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal this 24th day of January, A. D. 1879.

WM. HENRY. [L. S.]

Witnesses:
W. HAUFF,
CHAS. WAHLERS.