(No Model.)

P. J. KERN.
TORSION SPRING FOR VEHICLES.

No. 303,576.   Patented Aug. 12, 1884.

Fig.1.

Fig.2.

Fig.5.

Fig.3.

Fig.4.
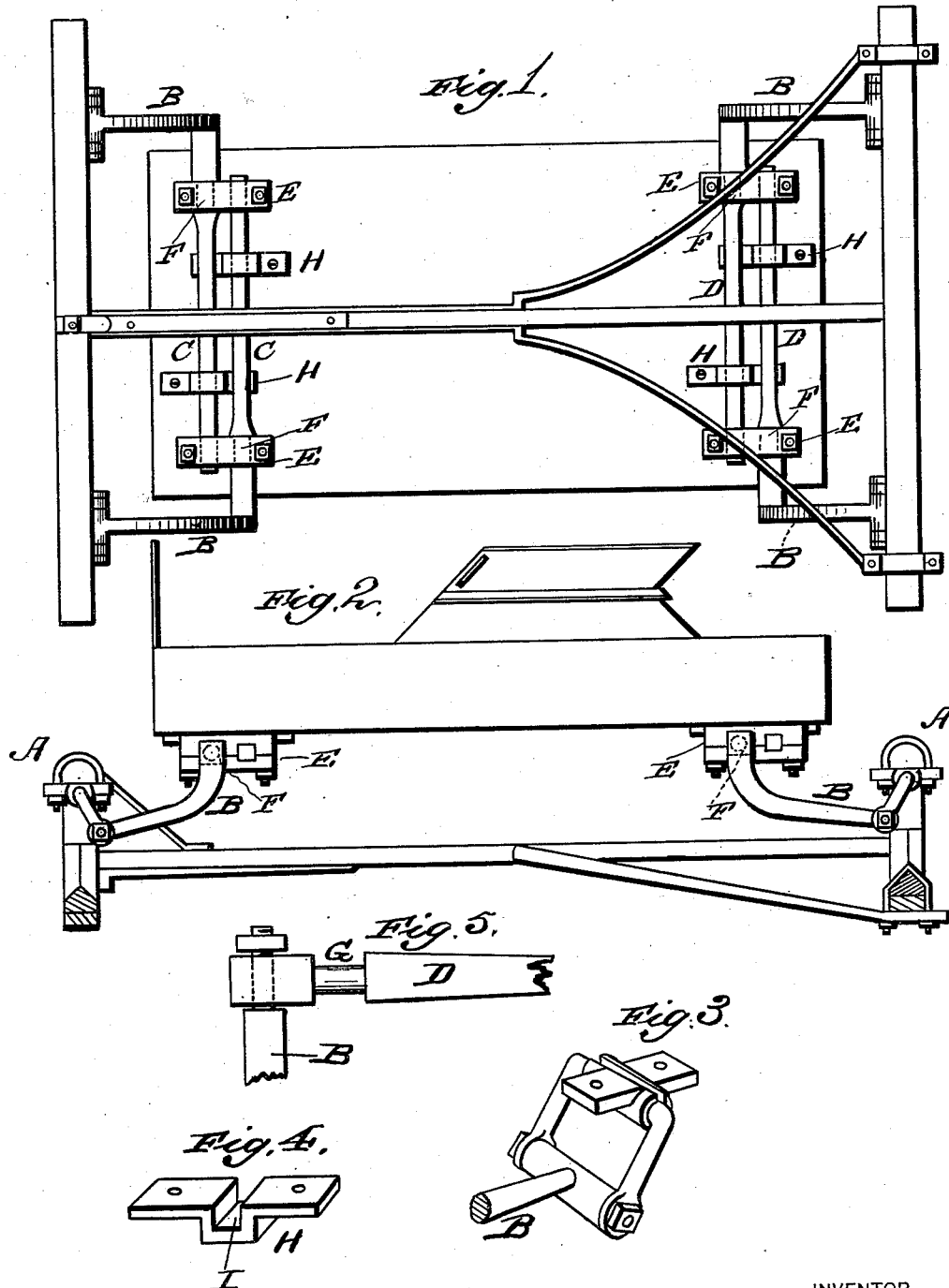
WITNESSES

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PHAON J. KERN, OF FRANKFORT, INDIANA.

TORSION-SPRING FOR VEHICLES.

To all whom it may concern:

Be it known that I, PHAON J. KERN, a citizen of the United States, residing at Frankfort, in the county of Clinton and State of Indiana, have invented certain new and useful Improvements in Torsion-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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of an inverted plan of a carriage-body, showing my invention applied. Fig. 2 is a side elevation of the same with the front and rear bars in section. Fig. 3 is a perspective view of the torsion-bar fastening device with the torsion-bar broken away. Fig. 4 is a perspective view of one of the adjustable clamps, and Fig. 5 is a view of a modification of the torsion-bars.

This invention has relation to torsion-springs for vehicles; and it consists in the construction and novel arrangement of devices, as hereinafter set forth, and particularly pointed out in the appended claim.

In the accompanying drawings, the letter A designates the front and rear bars or front and rear springs of a four-wheel vehicle. To these are attached clips and swinging shackles, to which are connected the ends of the arms B of the torsion-bars C and D, which respectively extend from the sides of the bed under and across the same to the opposite sides, where they are attached to the sills. Of each pair one spring-bar is in front and the other in rear, as shown. The fastenings E are formed with pivotal bearings F, for the journal portions G of the torsion-bars, and with rigid bearings for the ends of said torsion-bars, these bearings being reversed in position on each side, so that each spring is fastened in the bearing on the opposite side, and turns in the bearing nearest its arm B. The spring-bars are squared, and upon them, between the fastenings, are applied the adjustable clamps H, which are formed with squared apertures I, to fit the spring-bars loosely. These clamps are secured to the bottom of the vehicle, and may be adjusted from or toward the rigidly-fastened ends of the spring, and in this manner said spring may be made stronger or more delicate, according to the weight to be borne. These regulating-clamps are of especial importance in connection with the rear springs, and they are usually more weakened by the greater weight which they have to carry. The regulating devices can be moved at any time to strengthen the springs, as it may be required. So, also, they are useful, when one of the two occupants is heavier than the other, to cause the vehicle to ride level and easily.

These springs can be readily applied to two-wheel vehicles, their arms being reversed in position or turned toward the axle, and connected to the bar or spring that is fastened to the axle. The springs can also be used in connection with side bars.

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

The torsion-bars having their long arms C D formed of rectangular bar-iron, and provided with the rounded reduced journal portions G, to bear loosely in the fastenings E, in combination with the said fastenings E and adjustable clamps H, having squared apertures I, to fit the spring-bars loosely, the carriage-body, and the front and rear springs or bars, with means for connecting the parts, substantially as shown and described.

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

<div style="text-align:right">PHAON J. KERN.</div>

Witnesses:
  JAMES A. BIEBER,
  WILLIAM R. HINES.