(No Model.)

E. S. SMITH.

VEHICLE SPRING.

No. 338,564. Patented Mar. 23, 1886.

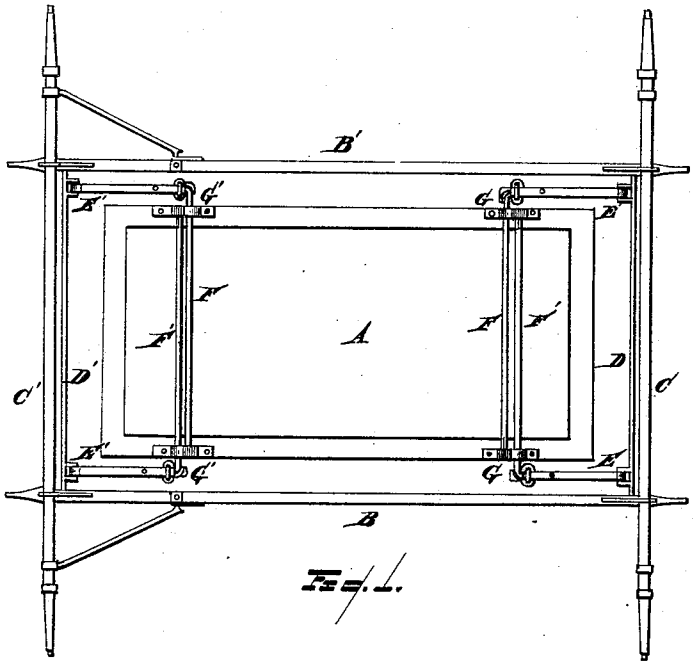


Fig. 1.

Fig. 2.

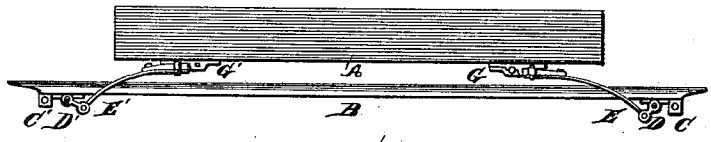


Fig. 3.

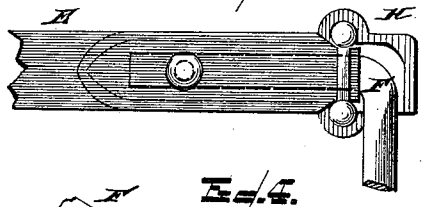
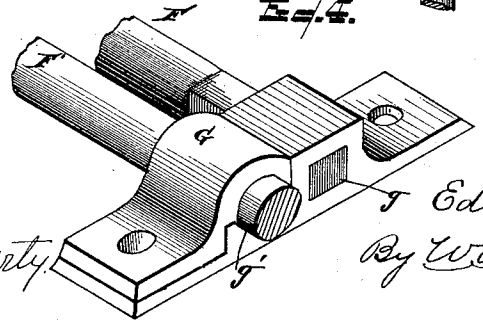


Fig. 4.



WITNESSES

N. S. Wright.

M. B. O'Hagherty.

INVENTOR

Edward S. Smith

By Edw. W. Leggett.

Attorney

UNITED STATES PATENT OFFICE.

EDWARD S. SMITH, OF OVID, MICHIGAN.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 338,564, dated March 23, 1886.

Application filed July 28, 1885. Serial No. 172,888. (No model.)

To all whom it may concern:

Be it known that I, EDWARD S. SMITH, of Ovid, county of Clinton, State of Michigan, have invented a new and useful Improvement in Vehicle-Springs; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to improvements in that class of vehicles having side bars, equalizers at the front and rear connected with the side bars, side springs connected with the equalizers, and torsional cross-springs connected with the vehicle-body and with the side bars.

The invention has for its object to provide a novel construction and combination of devices for providing an easy-riding vehicle. This I accomplish in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawing, in which—

Figure 1 is an inverted plan view of a device embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a separate view showing the manner of engaging the torsion-springs with the side springs. Fig. 4 is a separate view of one of the brackets.

A represents the body; B B′, the side bars; C C′, the axles.

D D′ represent equalizers running transversely with the axles between them and the vehicle-body. The equalizers are secured at their extremities in any suitable manner.

E E′ represent side springs secured at their forward and rear ends, respectively, to said equalizers, although they might be secured directly to the axles instead, if preferred; but by securing their said ends to the equalizers greater firmness is secured, and the body is less liable to have a rocking motion. The inner ends of said side springs—that is, the ends projecting toward the middle of the vehicle-body—are respectively engaged with torsion-springs F F′. These torsion-springs each extend from one side the vehicle-body across underneath the same, as shown in Fig. 1, said springs being secured to the vehicle-body by means of brackets G G′, each of said brackets constructed with a squared orifice, *g*, to receive the end of the torsion-spring, which is squared to engage therewith, so as to be held rigidly thereby, and also an annular orifice, *g′*, through which the torsion-spring is passed toward its opposite end, so that said end may have a rotary movement in said socket.

The movable end of each of the torsion-springs is engaged with its adjacent side spring, bending the said end of the torsion-spring, and engaging it upon the side spring by means of a clip, H, located upon the upper side of the spring. The brackets are secured to the side sills of the vehicle-body. It is obvious that the ends of the torsion-springs opposite their engagement with said side springs are held stationary by the bracket by the squared orifice, the torsion being permitted at the opposite end as the side springs are depressed, the strain being communicated from said side springs to the torsion-springs. The said springs may be located between the vehicle-body and the side bars.

I am aware that a vehicle-spring has been constructed of a bar or rod extending transversely across the body of the vehicle and secured thereto at one end, its other end being bent at right angles to the transverse portion, so as to lie horizontally along the vehicle, and secured to the axle. I am also aware that a spring has been made consisting of a transverse bar having side springs connected at each end thereof. Such constructions are not my invention, and are not claimed by me.

What I claim is—

The combination of the side bars, B B′, and the front and rear transverse equalizers, D D′, connected at their ends with the side bars, with the pairs of brackets G G′, each constructed with a square and a circular orifice, the front and rear pairs of torsional springs, F F′, the former having square ends engaging the square orifices in the brackets, and the others having circular ends engaging the circular orifices in the brackets, and each of said torsional springs having its other end bent, as described, the side springs, E E′, connected with the equalizers, and clips H, connecting the bent ends of both pairs of torsional springs with the side springs, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

Witnesses: EDWARD S. SMITH.

N. S. WRIGHT,

M. B. O'DOGHERTY.