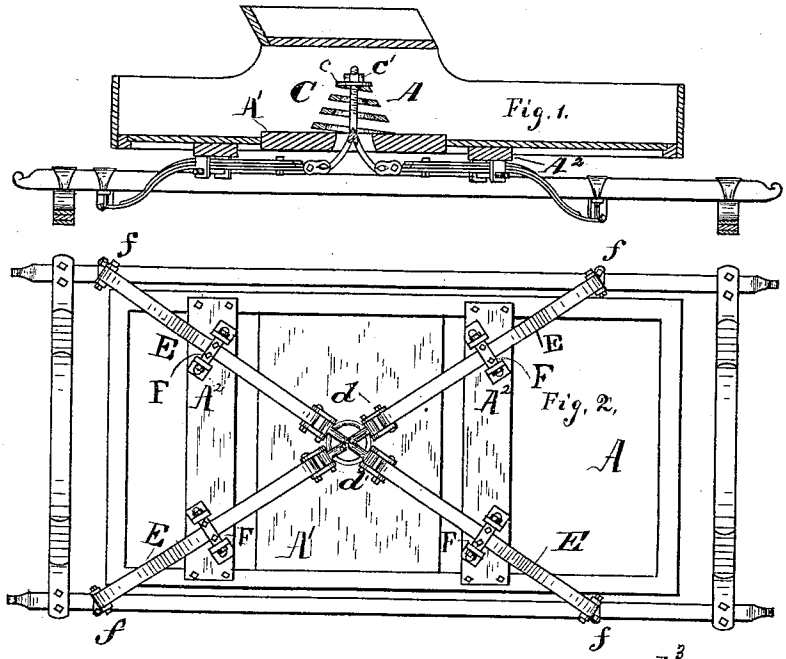
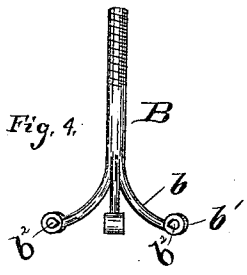
(No Model.)

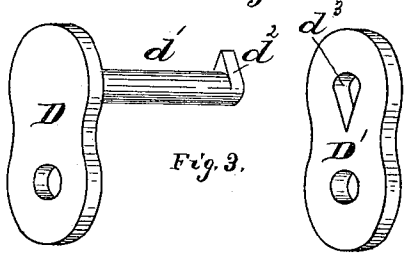
W. H. BOWE.

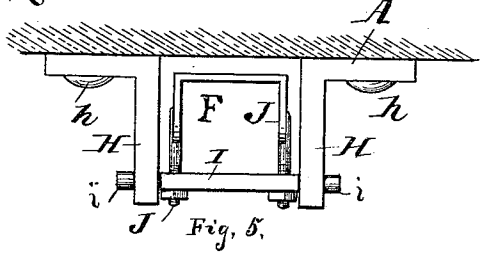
SIDE BAR VEHICLE.

No. 360,200. Patented Mar. 29, 1887.









Witnesses
Mary L. Murray
David S. Oliver

Inventor
William H. Bowe
By his Attorney Geo. J. Murray

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. BOWE, OF CINCINNATI, OHIO.

SIDE-BAR VEHICLE.

SPECIFICATION forming part of Letters Patent No. 360,200, dated March 29, 1887.

Application filed December 27, 1886. Serial No. 222,591. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BOWE, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Side-Bar Vehicles, of which the following is a specification.

My invention is an improvement in side-bar vehicles, and relates particularly to that class of side-bar vehicles in which the body is partially supported by a spiral spring.

The invention will be first fully described in connection with the accompanying drawings, and then particularly referred to and pointed out in the claims.

Referring to the drawings, in which like parts are represented by similar reference-letters wherever they occur throughout the various views, Figure 1 is a vertical longitudinal section of a vehicle body and frame provided with my improvement. Fig. 2 is an inverted plan view of the same. Fig. 3 is an enlarged perspective detail view of one of the coupling-links which unites the shaft of the spiral spring with the springs which connect the body to the side bars. Fig. 4 is an enlarged view in side elevation of the vertical shaft which forms part of the coupling connecting the spiral spring and the curved springs which reach from it to the side bars. Fig. 5 is a side elevation, greatly enlarged, of one of the stirrups or clips, which is secured to the bottom of the body, and through which the lever-springs pass from the vertical shaft to the side bars.

The body A of the vehicle may be of any approved form. It has centrally secured to its side sills a strong transverse truss, A′, and two cross-pieces, A^2. The cross-truss A′ is located underneath the seat, and is centrally perforated to pass the coupling-shaft B, which passes through said perforation and centrally through a spiral spring, C, the base of which rests upon the upper side of the cross-truss A′. The apex of the spring bears against a washer, *c*, which is held upon shaft B by a nut, *c*′. The lower end of the shaft B branches out in four curved arms, *b*, which terminate in perforated bosses *b*′. The coupling-links D D′, Fig. 3, are journaled to the arms *b* by journals *d*′, cast with the part D. The journal has a V-shaped flange or head, d^2, and the openings in the bosses *b*′ and one end of the opposite member of the link D have corresponding openings, b^2 d^3, to pass the head d^2. The purpose of this arrangement is to avoid the necessity of using more than one bolt to couple the ends of arms *b* to the ends of each spring E.

To couple the springs E to shaft B, the journals *d*′ are first passed through the eyes in bosses *b*′, and the links D′ passed over the journal at the opposite end of the bosses. The eyes on the inner ends of the springs E are placed between the outer ends of the links D D′ and secured by bolts *d* and nuts on their screw-threaded ends.

The springs E pass through stirrups or clips F, Fig. 5, and have their outer ends connected to the side bars by spring-shackles *f*. Referring to Fig. 5, H represents angle-lugs secured by bolts *h* to the bars or cross-pieces A^2. I is a clip-tie having journals *i*, which pass through bearings in the lower ends of the lugs H. The tie I is perforated to pass the screw-threaded ends of the clip J, which pass around the springs E and hold them securely upon the tie-bar. The clip-ties I serve as fulcrums for the springs E, support the body in a horizontal position, and secure uniform actions of the springs in use.

By the means above described I am enabled to hang the body lower than is practicable with the springs in common use, and by means of the nut *c*′, I am enabled to readily adjust the springs to accommodate any load required.

The coupling-links D D′, which are shown about full size in Fig. 3, furnish a very convenient means for coupling the springs E and the spring-shaft B; but it is evident that the inner ends of the springs may be coupled to the said spring-shaft by well-known means without departing from the main features of my invention.

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

1. The combination of the vehicle-body and side bars, of the spiral spring C, supported within the body, the spring-shaft B, and ad-

justing-nut c', the radially-disposed springs E, having their inner ends coupled to the spring-shaft B and their opposite ends shackled to the side bars, and fulcrum-clips such as shown for connecting the springs to the body-bottom between their ends, substantially as shown and described.

2. The combination, substantially as hereinbefore set forth, of the vehicle-body and side bars, the spiral spring C, resting within the body, the shaft B, having branches b and bosses b', the springs E, and links for coupling the inner ends of the springs to branches b, the shackles f, and fulcrum-clips intermediate the spring ends for uniting the springs to the body.

3. The combination, substantially as specified, of the body A A′ A^2 and the side bars, the spiral spring C, nut c', and shaft B b, the spring E, coupled to the shaft and side bars, as shown, and the fulcrum-clips F, consisting of the lugs H, rocking tie-bar I, and clip J, for connecting the springs to the bottom pieces, A^2.

WILLIAM H. BOWE.

Witnesses:
GEO. J. MURRAY,
MARY L. MURRAY