E. CHAMBERLIN.

Side-Spar Vehicles.

No. 167,067. Patented Aug. 24, 1875.

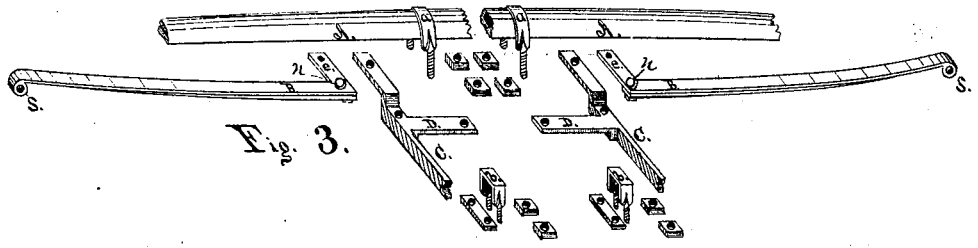

Fig. 3.

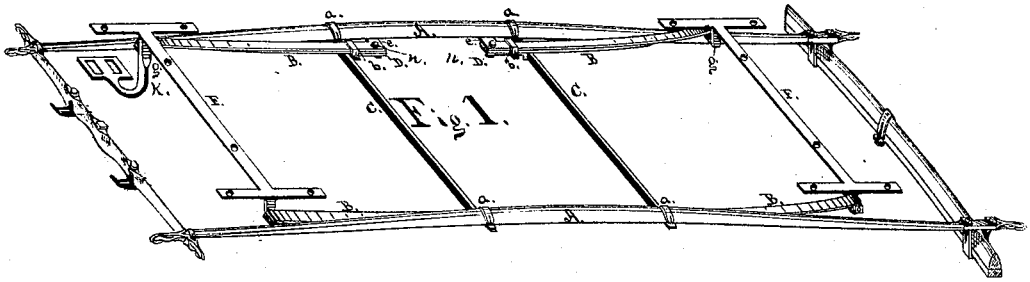

Fig. 1.

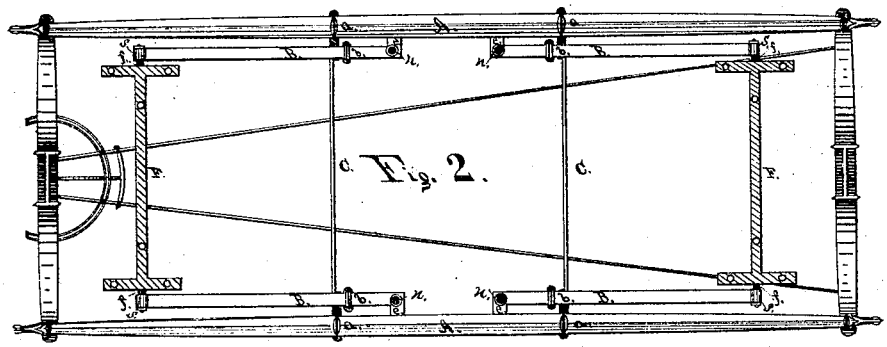

Fig. 2.

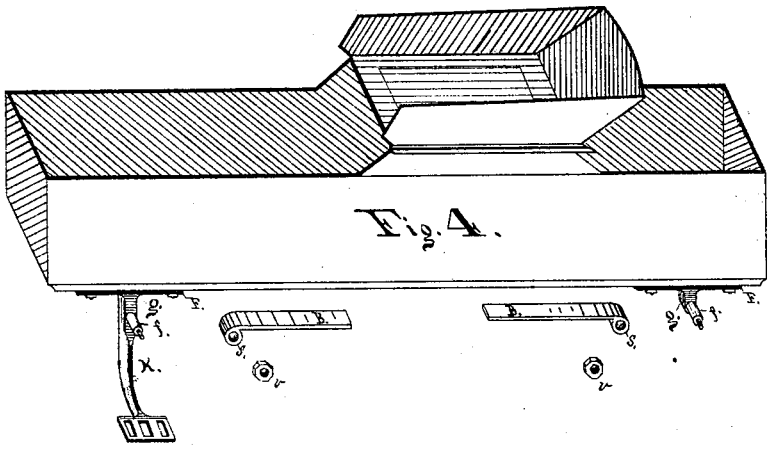

Fig. 4.

Witnesses.

Isaac Pitt.

John. W. McPherson.

Inventor.

Edwin. Chamberlin.

UNITED STATES PATENT OFFICE.

EDWIN CHAMBERLIN, OF TROY, NEW YORK, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO LEE CHAMBERLIN AND EDWARD CHAMBERLIN, OF SAME PLACE.

IMPROVEMENT IN SIDE-SPAR VEHICLES.

Specification forming part of Letters Patent No. **167,067**, dated August 24, 1875; application filed April 3, 1875.

To all whom it may concern:

Be it known that I, EDWIN CHAMBERLIN, of the city of Troy, county of Rensselaer and State of New York, have invented certain new and useful Improvements in Side-Spar Wagons, which are simple in construction, efficient in operation, and durable in use; and the improvements consist in increasing the ease of riding of side-spar wagons by the introduction of additional steel springs extending parallel with the side spars, and fastened at one end to the body of the carriage, and at the other end to the side spars, as hereinafter more fully described; and I do declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to accompanying drawings, with letters of reference marked thereon, forming a part of this specification.

Figure 1 is a perspective view of an ordinary side-spar wagon gearing, with rear ends of side spars fastened to axle-bed and front ends fastened to head-block, in the usual well-known manner. Fig. 2 is a plan view of an ordinary side-spar-wagon gearing, with ends of side spars fastened to half-elliptic springs. Fig. 3 is an enlarged sectional view of separated parts of my improvement, the side spar A being broken in the center for the purpose of more clearly illustrating the connection between the different parts.

Similar letters of reference indicate corresponding parts in the three figures.

A A, wood or metal side spars, rigid or elastic; C C, cross-bars, with lugs D D, all fastened to side spars A A by clips *a a a a*, or other well-known means; B B B B, steel springs, fastened to cross-bars C C and lugs D D by clips *b b b b* (with accompanying nuts and bars) and bolts *n n n n*, or other well-known means. The top leaf of springs B B B B is bent at bolts *n n n n*, and passes under and is fastened to bottom of side spars A A. F F are cross-rests to receive body of wagon, Fig. 4. Cross-rests F F have crank-loop ends *g*, with shafts *f*, which pass through eyes S S S S of steel springs B B B B, and are fastened by nuts *v v*, forming a joint or movable connection between body of wagon and ends of springs. The front cross-rest F has crank-loop *g*, with shaft *f* connected solid with step K, as seen in Figs. 1 and 4.

In the construction of a gearing with my improvement I am enabled to overcome some very serious objections to the ordinary side-spar wagon, and also to many that have been improved, to wit: In most side-spar wagons the center of the spar is the first part to weaken. In my improvement the steel spring B is a lever, cross-bar C the fulcrum end of spring S.

The application of the power: Bent end *e* of steel spring B is in contact with center of side spar A, which is the object to be raised. By this means the center of side spar is raised and stiffened, while, by other applications, it bears the weight of wagon-body and load, and is weakened.

My improved spring, being longitudinal, can be used under a narrow as well as a wide wagon-body without detracting from its ease of riding, and as the body of the wagon is fastened to the ends of springs at or near its four corners, it is not liable to rock, tip, or roll.

The cross-bars C C may be used as a support for steel springs B B B B by making them plain or without the lugs D D D D.

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

1. The steel spring B, having angular projection *e*, in combination with the side spars A and cross-rests F, substantially as and for the purpose herein described.

2. The rigid cross-bars C and side spars A, in combination with the springs B, extending to near the center, and secured, by the angular projections *e*, to the spars A, and constructed substantially as and for the purpose herein set forth.

3. The body cross-rests F, with crank-loop *g*, shaft *f*, springs B, and cross-bars C, in combination with the spars A, the springs B ending near the center, and secured to the spars, all constructed and arranged substantially as and for the purpose herein set forth.

EDWIN CHAMBERLIN.

Witnesses:
ISAAC PITT,
JOHN W. MCPHERSON.