2 Sheets--Sheet 1.

E. CHAMBERLIN.

Carriage-Springs.

No. 167,065. Patented Aug. 24, 1875.

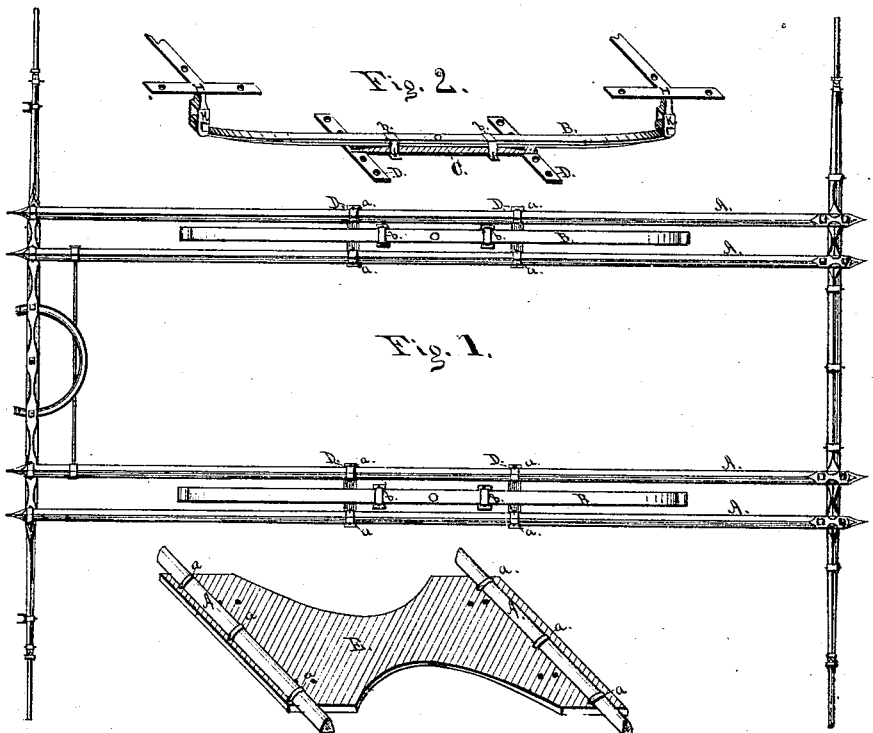

Fig. 2.

Fig. 1.

Fig. 4

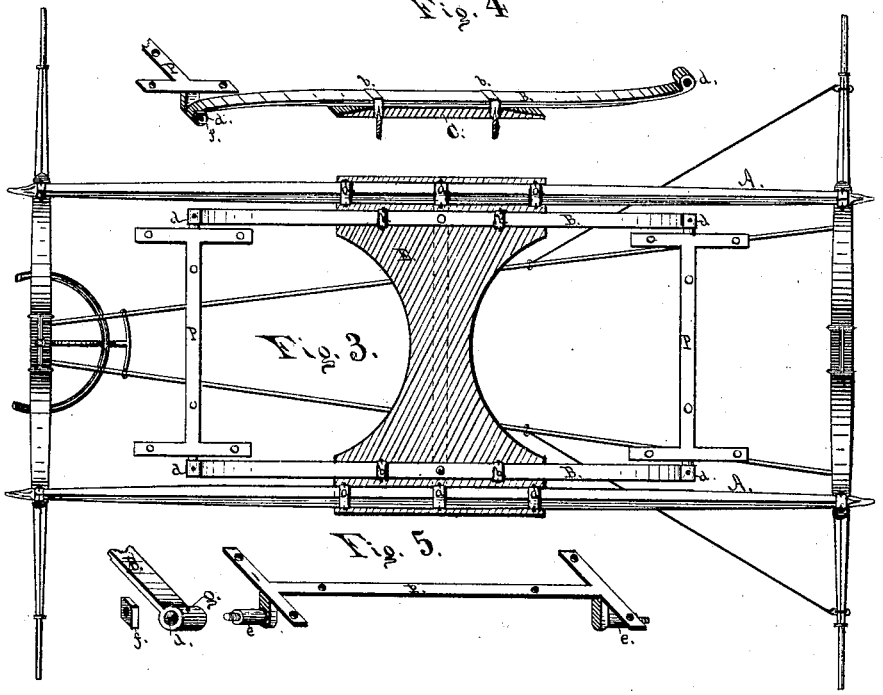

Fig. 3.

Fig. 5.

Witnesses.

Isaac Pitt.

John. W. McPherson,

Inventor.

Edwin Chamberlin,

2 Sheets--Sheet 2.

E. CHAMBERLIN.

Carriage-Springs.

No. 167,065. Patented Aug. 24, 1875.

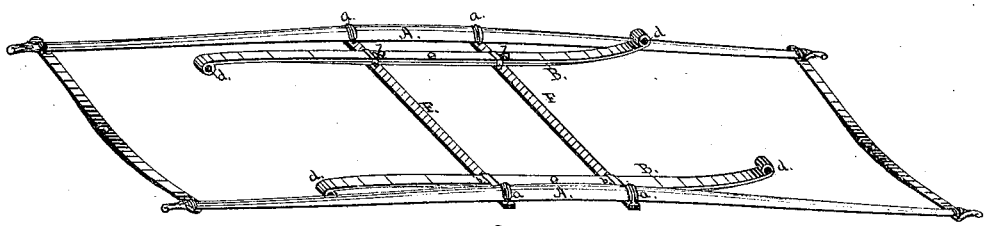

Fig. 6.

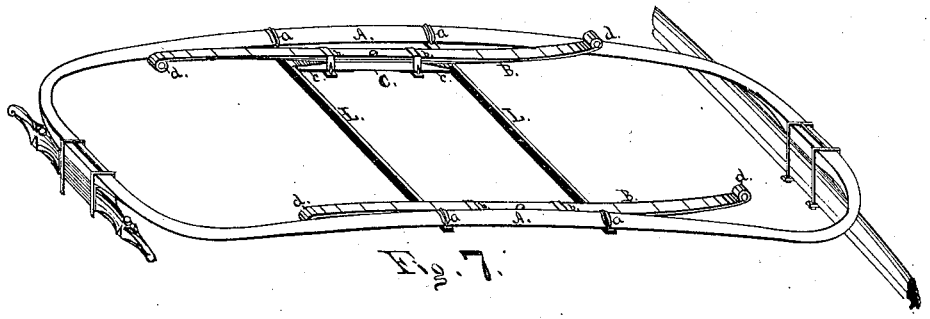

Fig. 7.

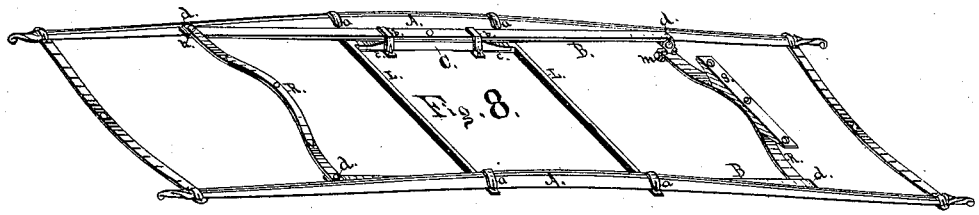

Fig. 8.

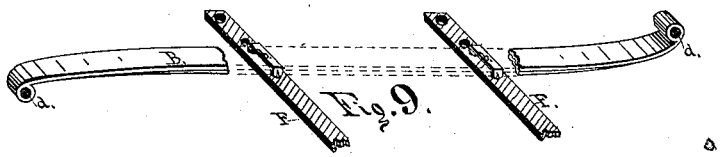

Fig. 9.

Witnesses.

Isaac Pitt,

John W. McSherson.

Inventor.

Edwin Chamberlin,

UNITED STATES PATENT OFFICE.

EDWIN CHAMBERLIN, OF TROY, NEW YORK.

IMPROVEMENT IN CARRIAGE-SPRINGS.

Specification forming part of Letters Patent No. **167,065**, dated August 24, 1875; application filed April 2, 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 improvement consists in increasing the elasticity of the springs and ease of riding of side-spar wagons by hanging the body of the wagon to steel springs that are secured at or near their centers to the side spars, and extending parallel therewith, said body being fastened at or near its four corners to the ends of said steel springs, 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, plan view of wagon-gearing without reaches or end springs A A A A, side spars made of wood or metal, rigid or elastic, and fastened at front ends to head-block or half-elliptic spring, and at back end to axle or half-elliptic spring D D D D, cross-bars with center-bars between, fastened to side spars A A A A by means of clips *a a a a a a a a* or other well-known means. B B are steel springs extending parallel with side spars A A A A and fastened to cross-bars D D D D by block C, Fig. 2, and clips *b b*.

Fig. 2 is a perspective view of steel spring B, block C, cross-bars D D with center connection, and clips *b b*, and also shows method of fastening ends of spring B to body of wagon, which is done by means of shackles K K in connection with cross-rests H H, to which body of carriage may be fastened by bolts or other well-known means. Cross-rests H H may extend entirely across bottom of wagon-body and be connected with shackle on opposite side.

Fig. 3, plan view of common side-spar buggy gearing, with rigid or elastic side spars A A fastened to end springs and axles in the usual well-known styles. E is a board rest for steel springs B B, which are fastened to it by means of block C and clips *b b*. (See Fig. 4). Board E may be strengthened by iron stays underneath, as shown by dotted lines, and is fastened to side spars A A by clips *a a a a a a*, or other well-known means. P P, cross-rests with crank-loop ends connected with ends *d d d d* of steel springs B B, and forming a rest for body of wagon.

Fig. 5 is a perspective view of the cross-rest for body, with crank-loop ends *e*, shaft passing through end *d* of steel spring B and fastened thereto by nut *f*, forming a joint end, which may be lubricated through hole *g*.

Fig. 6, perspective view of ordinary side-spar gearing A A, rigid or elastic side spars B B, steel springs connected at or near their center with side spars A A by means of cross-bars F F, clips *a a a a* and *b b b b*. Steel springs B B are fastened at ends *d d d d* to body of wagon by crank-loop P, Fig. 5, as heretofore fully described.

Fig. 7, perspective view of part of wagon-gearing, showing method of attaching my improvement to circular wood springs, or what is known as the Woburn spring. A A, wood or metal spring, rigid or elastic, circular at ends L L; cross-bars with lugs *c c*, forming a rest for block C, to which steel springs B B are fastened at or near their center by clips *b b* or other well-known means. Steel springs B B are fastened at ends *d d d d* to body of wagon by crank-loop P, Fig. 5, as heretofore fully described.

Fig. 8 is a perspective view of a side-spar wagon gearing, showing my improvement as heretofore fully described, with ends *d d d d* of steel springs B B connected with body of wagon by means of transverse steel springs R R fastened to body of wagon by block S, and to ends of steel springs B B by bolt *h* or shackle *m*.

Fig. 9 is an enlarged view of steel spring B and my method of fastening it to cross-bars F F, Fig. 6; *b b*, clips fastening steel spring B to cross-bars F F.

The construction of side-spar wagons has been such that ease of riding and elasticity have been sacrificed to lightness and compactness of form.

The object of my invention is to produce a wagon combining the style of the common side spar with as nearly as possible the

ease of the end spring, and still have it ride steady and free from the rocking and tipping motion so common to all wagons hung on springs. This result I have accomplished by hanging the body of the wagon at or near its four corners to the ends *d d d d* of steel springs B B, as heretofore fully explained, and as the steel springs B B have a broad and solid foundation-connection at or near their centers with the side spars A A an elastic platform is formed for the support of the body.

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

The longitudinal springs B B and transverse springs R R, in combination with shackles *m*, spars A A, blocks S, rigid cross-bars L and C, all constructed and arranged to operate substantially as and for the purpose herein set forth.

EDWIN CHAMBERLIN.

Witnesses:

ISAAC PITT,

JOHN W. MCPHERSON.