

E. SOPER.
SIDE BAR WAGON.

No. 177,291.

Patented May 9, 1876.

Fig 1

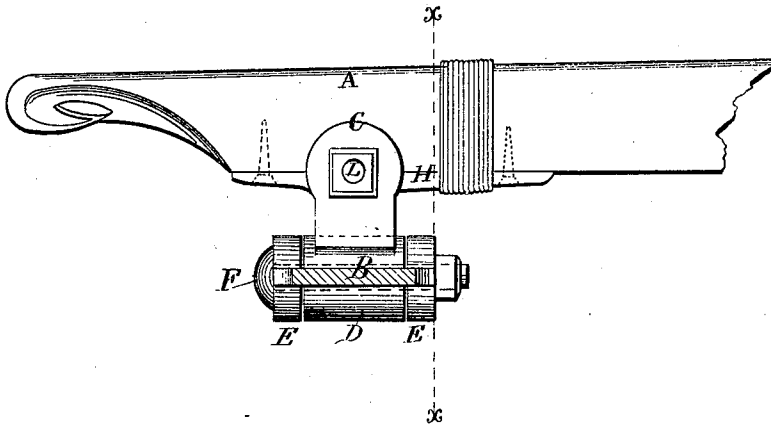
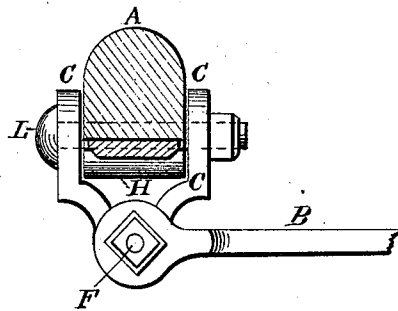


Fig 2



WITNESSES

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EPHRAIM SOPER, OF NEW YORK, N. Y.

IMPROVEMENT IN SIDE-BAR WAGONS.

Specification forming part of Letters Patent No. **177,291**, dated May 9, 1876; application filed November 7, 1874.

To all whom it may concern:

Be it known that I, EPHRAIM SOPER, of New York, in the county of New York and State of New York, have invented a new and Improved Side-Bar Coupling, of which the following is a specification:

The object of my invention is to so contrive the couplings of the side bars and springs of side-bar wagons that the torsion the side bars are subject to in the ordinary coupling will be avoided, the same being very destructive to the bars, and also being opposed to the easy and free action of the springs. It is caused by the effect of the lengthening and shortening of the spring as it curves and straightens in working up and down on the rigid joint of the side bar, with the spring continuously twisting the side bar forward and backward. There is also some spring in the side bar, which has a corresponding effect on the spring. These two actions materially interfere with the elastic functions of both the spring and side bar by changing considerably the measure of their elasticity, the same being varied in the proportion that the spring and side bar are twisted; but the greater objection is the destructive effect on the integrity of the fiber of the side bars, which is soon destroyed by the splitting effect of the twisting action. My improved connection for the remedy of these difficulties is a two-motion joint or coupling, by which each part is free to turn or oscillate on a pivot without twisting the other, the said motions being at right angles to each other, thus corresponding with the arrangement of the spring and side bar.

Figure 1 is a side elevation of the joint and section of the spring. Fig. 2 is also a side

elevation of the joint, but in a different plane, and it shows a section of the side bar.

Similar letters of reference indicate corresponding parts.

A is the side bar, and B the spring to which the side bar is coupled, the spring being the means of supporting the side bars, and thereby supporting the body, itself being connected to and supported by the axle or bolster. In this coupling, as now shown, the jaw-piece C has an eye at D, in which the pivot F holds the ears E of the spring B, while the said jaw-piece is suitably secured to the side bar A by pivot L, which passes through the ears of the jaw-piece C and an eye in plate H, which is fastened to the side bar, and said pivots being at right angles to each other, so that the spring oscillates freely on pivot F, and the side bar oscillates freely on the pivot L, thus entirely relieving both of torsion.

The coupling may be constructed in different ways to accomplish the same results, and it is not the particular construction of the coupling that I claim; but,

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

A two-motion joint, connecting the side bar and spring of a side-bar wagon, in which the spring and side bar are free to oscillate each in a plane at right angles to the other, and without subjecting either to torsion, substantially as specified.

EPHRAIM SOPER.

Witnesses:

T. B. MOSHER,
C. SEDGWICK.