

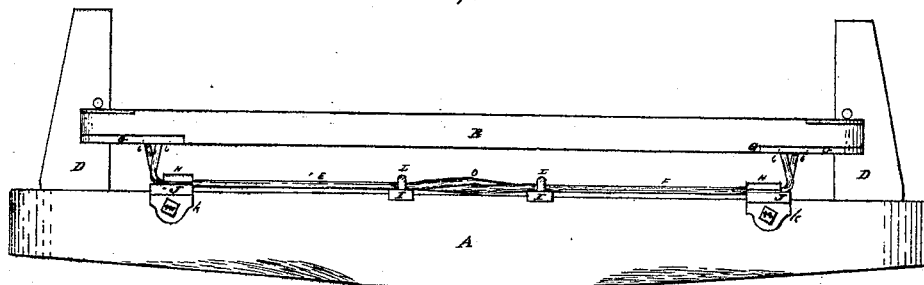
N. FREY.

Improvement in Wagon-Springs.

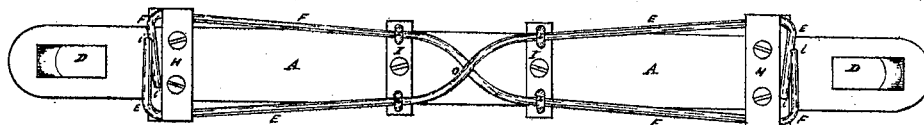
No. 114,796.

Patented May 16, 1871.

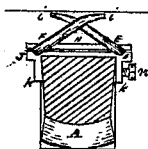
*Fig. 1.*



*Figure, 2.*



*Figure, 3.*



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

NATHANIEL FREY, OF ERIE, PENNSYLVANIA.

## IMPROVEMENT IN WAGON-SPRINGS.

Specification forming part of Letters Patent No. **114,796**, dated May 16, 1871.

I, NATHANIEL FREY, of Erie, county of Erie, and State of Pennsylvania, have invented certain Improvements in Springs for Wagons, Drays, Carts, and other uses.

The nature of my invention consists in forming springs out of round or square bars or rods of steel, or other metal suitable for springs, simply by bending to form hereinafter described without forging.

### *Description of the Accompanying Drawing.*

Figure 1 is a side elevation of a wagon bolster and springs. Fig. 2 is a plan of the same, showing the peculiar form of the springs. Fig. 3 is a cross-section, showing the elevation of the points of the springs above the bolster.

### *General Description.*

A is a bolster or bed-piece, to which the springs E F are fixed by means of the plates H, clamps J, plates I, and staples L. B is a spring-bar, resting on the points I of the springs, and exhibiting the method of applying burden to the springs. J are clamps, with jaws *k*, secured to the bolster with set-

screws *m n*. Said clamps, being made long enough, with the set-screws, may be firmly fixed to bolsters varying in width.

L are staples in plates I, to retain that portion of the spring with which they come in contact in position while in use. H H are plates, fitted, in connection with the clamps J, in a manner that springs E F may turn freely in a cavity or bearing between them. E F *i*, Figs. 1, 2, 3, shows the form of two springs bent or formed from two pieces of metal without forging, and crossing each other at *o*, Figs. 1, 2.

The position of the springs may be inverted or changed to suit convenience in use.

I claim—

The arrangement of two torsion-springs, E and F, crossing each other at *o*, secured to the bolster by means of the plates I and H, and operating in combination with the spring-bar B, substantially as described.

NATHANIEL FREY.

Witnesses:

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