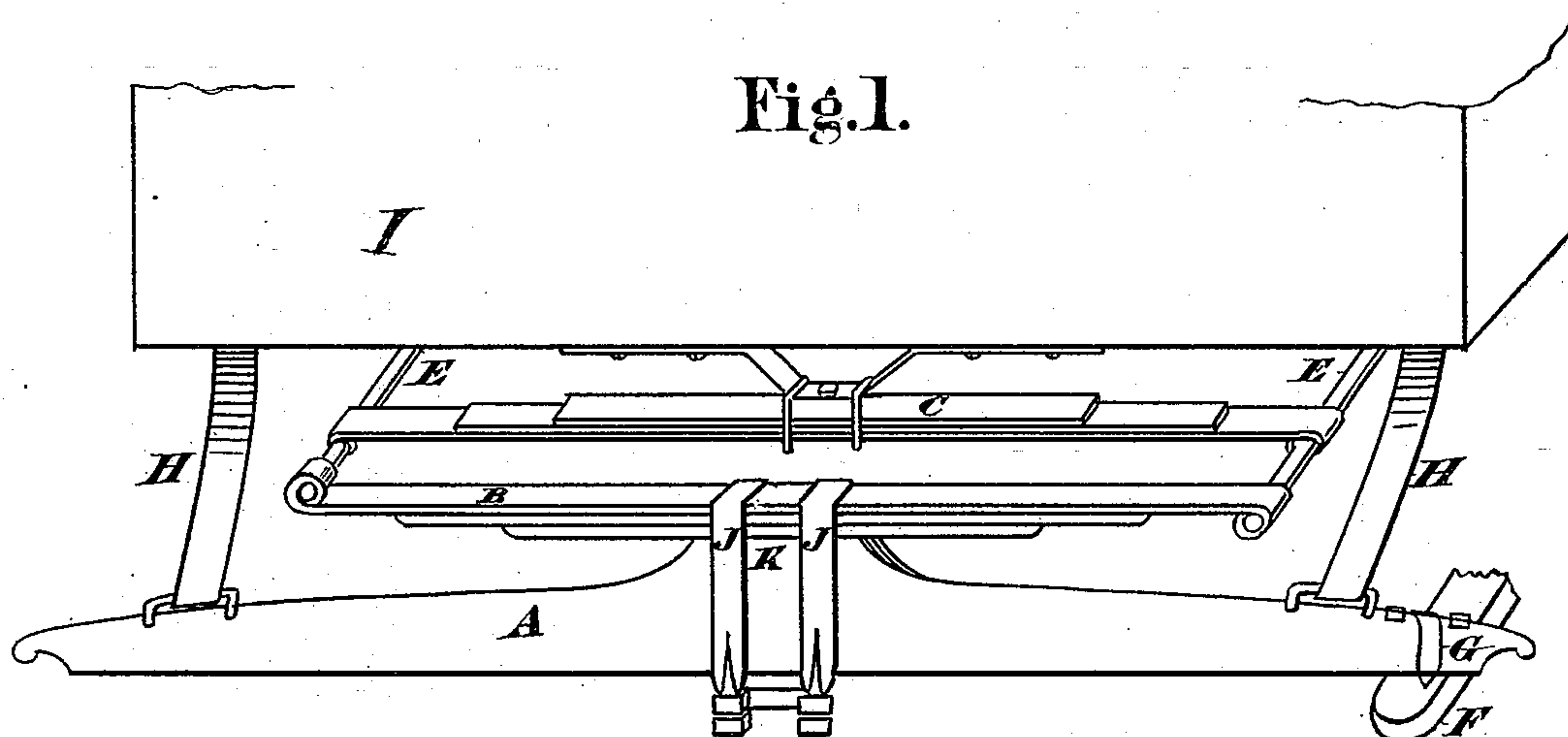


J. ENDERS.  
Vehicle-Spring.

No. 202,341.

Patented April 16, 1878.



Witnesses.

Frank Pardon.  
W. F. Lincoln

Inventor.

Joseph Enders  
By A. W. Stout atty

# UNITED STATES PATENT OFFICE.

JOSEPH ENDERS, OF LOUISVILLE, KENTUCKY.

## IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **202,341**, dated April 16, 1878; application filed January 14, 1878.

*To all whom it may concern:*

Be it known that I, JOSEPH ENDERS, of Louisville, county of Jefferson, and State of Kentucky, have invented certain Improvements in Spring and Running-Gear of Wagons and other like Vehicles, of which the following is a specification:

My invention relates to seating straight plate-springs upon the side bars of spring-wagons, in such a manner that the body of the wagon shall be sustained by cross-rods attached to the ends of such springs, respectively, and that the ends of such springs shall yield to pressure downwardly.

I have a pending application, which was filed in the year 1877 in the United States Patent Office, for Letters Patent for certain improvements in spring-carriages, in which is shown and described a straight plate-spring operating under the side bar, and mounted upon a cross-bar extending across to another like spring under the opposite side bar, and also two other like springs mounted on the same bars, each near to and within the outer springs, and in the same plane with the under springs, and these springs so located will not, therefore, be claimed herein.

My improvements herein claimed are further and more fully described with reference to the accompanying drawings, in which Figure 1 is a perspective view taken from a point above and to the left of a side bar and a straight

plate-spring, mentioned above, and upon an elevation or bearing-piece upon it, with its ends mounted upon cross-bars, and another like spring mounted upon the same cross-bar, and at a little distance within the side bar.

A is the side bar; K, the elevation upon its central portion to form a seat for the straight plate-spring B; J J, the clips to confine the spring B to its position. C is the inner spring, and E E the cross-rods upon which both springs are mounted. I is the body; H H, stay-straps; F, the head-block or bolster; and G G, the bent rods, composing, with their nuts, a double clip.

The elevation K upon the side bar A may be made of any suitable material or in any suitable form.

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

The combination of the flat straight spring B, seated above and upon the side bar A, the ends of which yield downwardly, and the like spring C, seated under the body I and within the side bar A, and yielding downwardly from its middle portion, the ends of both of said springs being mounted upon the same cross-rods E E, and in the same plane, substantially as shown and described.

J. ENDERS.

Witnesses:

J. M. STEPHENS,  
G. W. CONWAY.