I. M. LINDERMAN.

Vehicle-Spring.

No. 209,695. Patented Nov. 5, 1878.

Fig. 1.

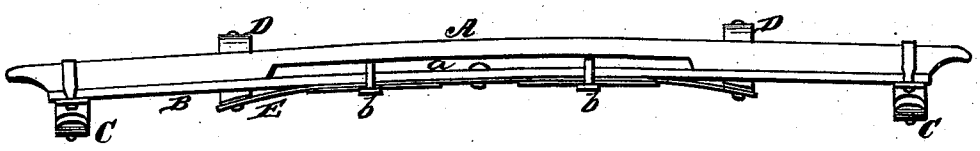
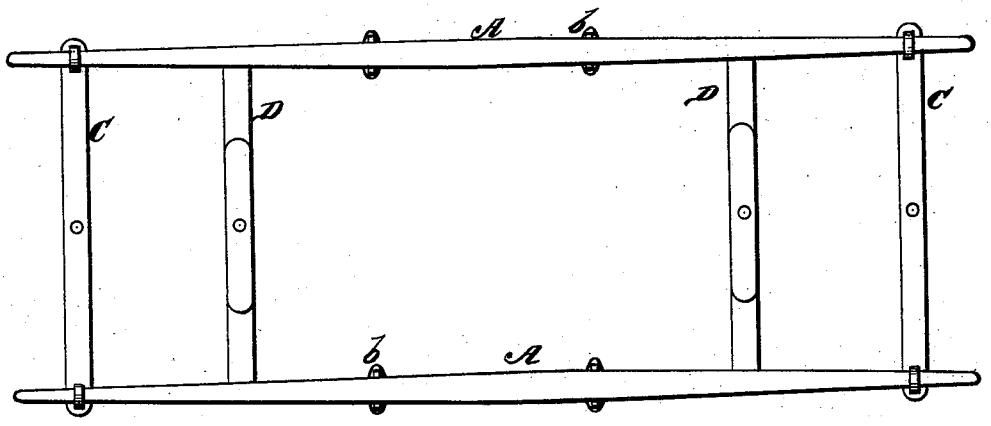


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

IRA M. LINDERMAN, OF ELMIRA, NEW YORK.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **209,695**, dated November 5, 1878; application filed October 12, 1878.

To all whom it may concern:

Be it known that I, IRA M. LINDERMAN, of Elmira, in the county of Chemung and State of New York, have invented a new and valuable Improvement in Wagon-Springs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my wagon-spring, and Fig. 2 is a plan view of the same.

My invention relates to that class of vehicles known as "side-bar wagons"; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth.

I construct the side bars with a wooden upper portion, recessed for a suitable distance underneath on each side of the centers thereof, and having a steel or other metal plate on the lower surface, upon which the leaf-springs are hung by clips, and these plates are adapted to spring slightly in the recess in the side bars. Upon each end of the side bars are secured by clips upwardly-concaved springs, which are secured to the vehicle-axles, and intermediately between these axle-springs are the upwardly-convexed body-springs, to which the body is attached, and which are secured to the steel plate under the recessed side bars by means of the leaf-springs.

Referring to the drawings, A represents the side bars, recessed at *a*, as shown, and B represents a steel plate secured to the under side thereof. C represents the upwardly-concaved axle-springs, and D the body-springs, upwardly convexed. These body-springs D are secured to the leaf-springs E, which are held to the lower surface of the plate B by clips *b* and extend under the recessed portion of the side bars A.

As the outer ends of the leaf-springs are depressed the inner portions between the clips press upward upon the central portion of the plate B, which springs upward in the recess *a*.

The important feature of my invention consists in the recess *a*, allowing the leaf-springs to be secured to the plate by clips within such recess, and affording a greater spring motion.

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

The vehicle attachment consisting of the side bars A, having recess *a*, the strengthening spring-plate B, the leaf-springs E, secured thereto by clips *b* within the recess, and the reversely-concaved axle and body springs C D, constructed and adapted to operate as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

IRA M. LINDERMAN.

Witnesses:

JAMES N. WARD,

EDWARD C. VAN DUZEN.