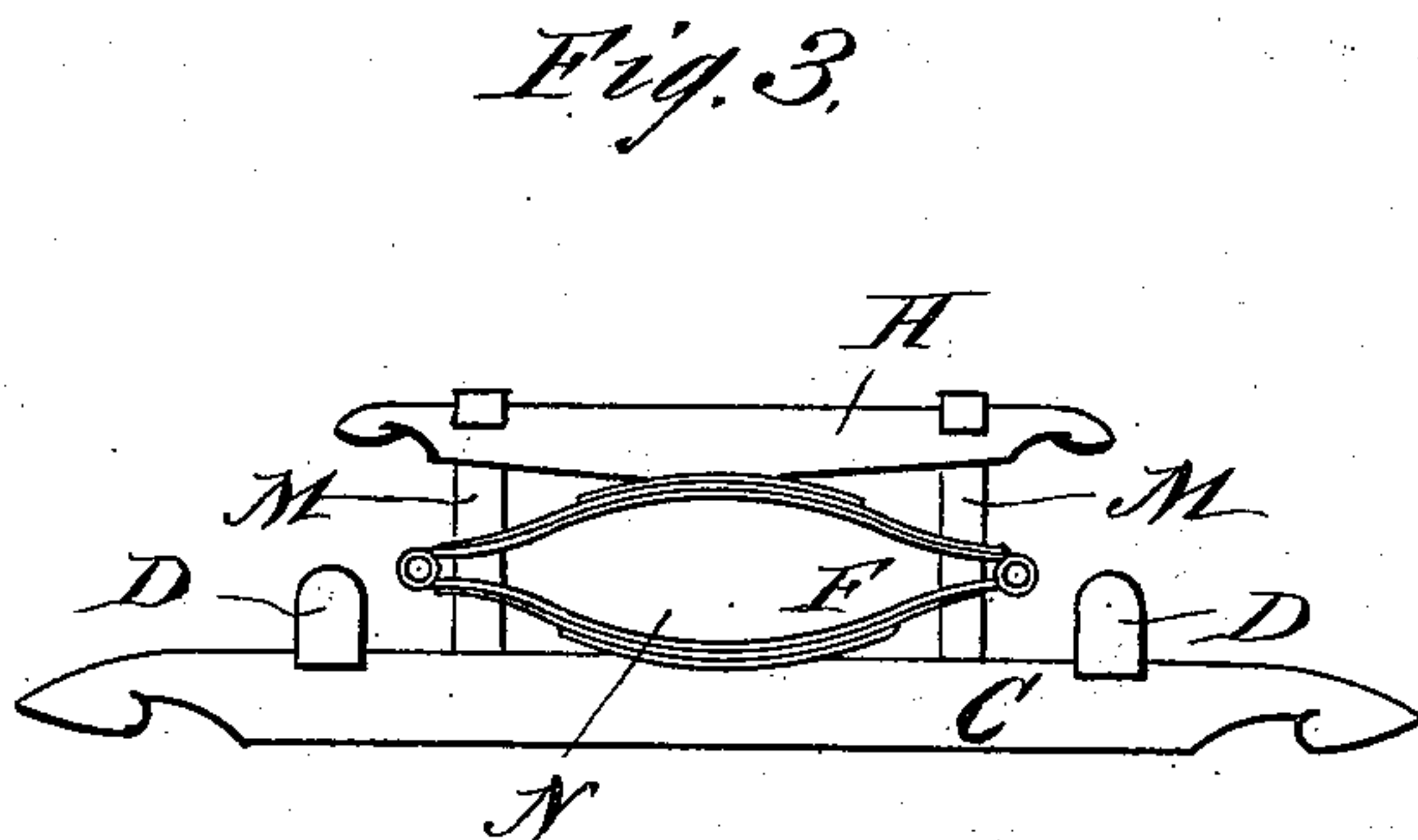
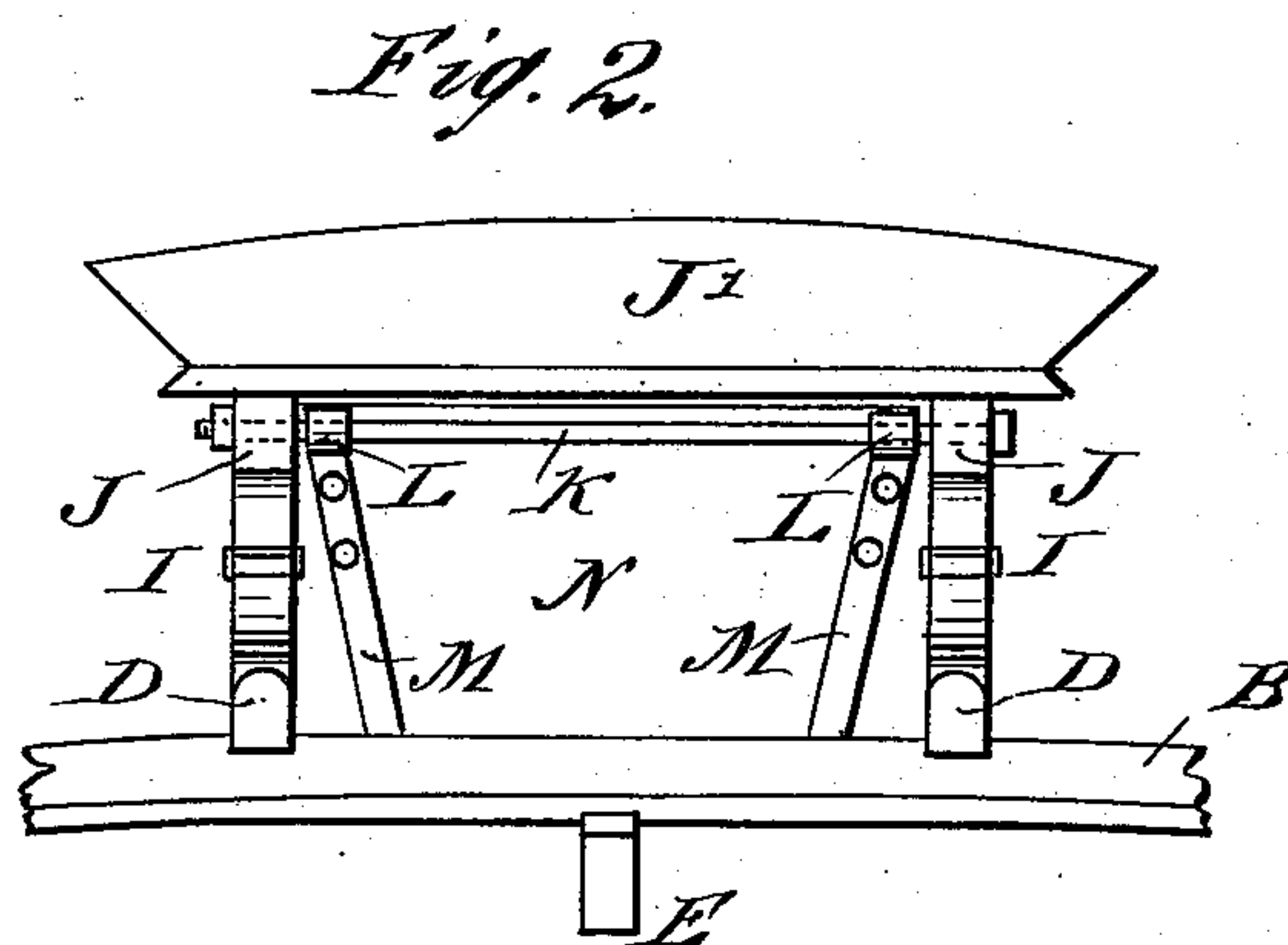
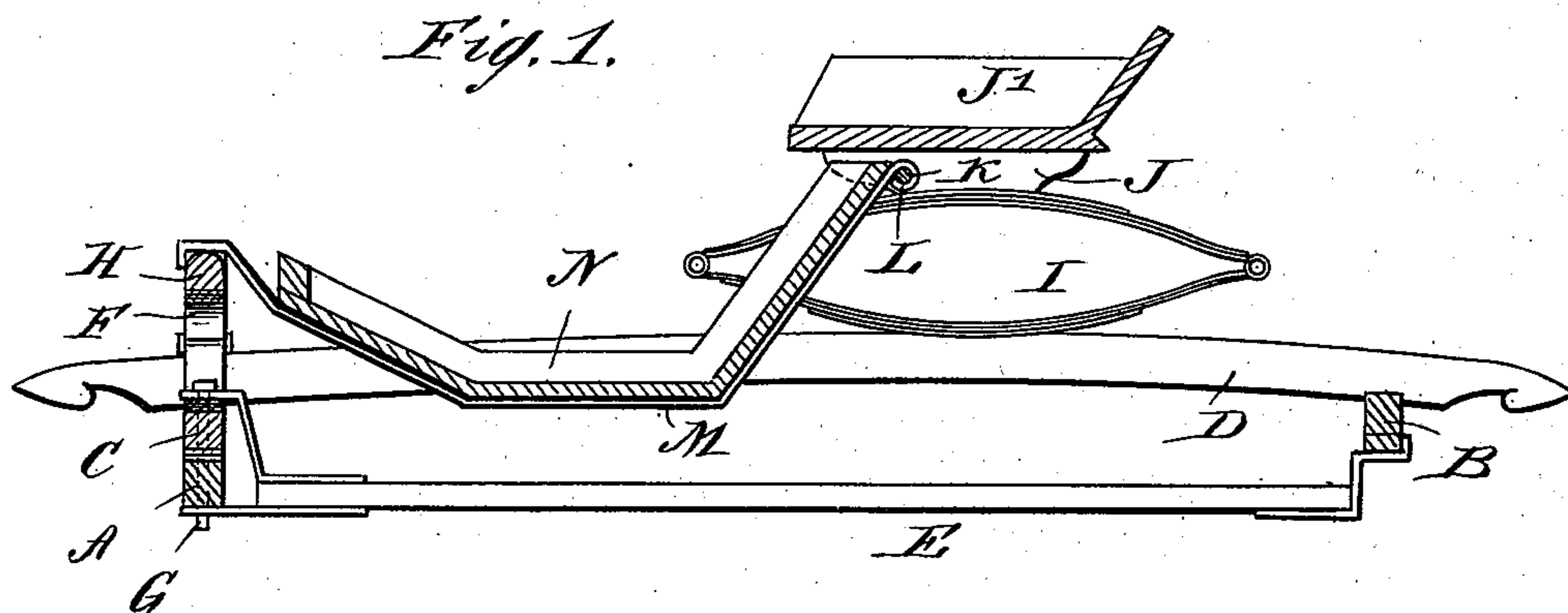


(No Model.)

J. G. & L. H. HUFF.
SPRING VEHICLE.

No. 376,957.

Patented Jan. 24, 1888.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JONATHAN GATES HUFF AND LEMUEL HAMPTON HUFF, OF EAST BEND,
NORTH CAROLINA.

SPRING-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 376,957, dated January 24, 1888.

Application filed May 13, 1887. Serial No. 238,147. (No model.)

To all whom it may concern:

Be it known that we, JONATHAN GATES HUFF and LEMUEL HAMPTON HUFF, of East Bend, in the county of Yadkin and State of North Carolina, have invented new and useful Improvements in Vehicles, of which the following is a full, clear, and exact description.

Our invention has reference to the lighter class of vehicles—as buggies and phaetons—of the “side-bar” description, and has for its object to relieve the same of injurious strains, and thus render them lighter, more durable, and easier in riding, and to simplify and cheapen their construction, while improving their appearance.

To this end the invention consists in certain novel features of construction and combinations of parts, as hereinafter fully described, and defined by the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal section of the body of a skeleton side-bar buggy embodying our improvements. Fig. 2 is a rear view, and Fig. 3 is a front view, of the same.

A designates the forward axle; B, the rear axle; C, the cross-bar resting on the forward axle; D, the side bars supported on and rigidly attached to the forward cross-bar, C, and rear axle, B, respectively, and E the longitudinal brace connecting the forward and rear axles.

The forward end of the brace E is provided with a fork which embraces at their centers the cross-bar C and axle A and the lower section of a reverse-bowed spring, F, resting on and bolted to said cross-bar C. A bolt, G, is passed vertically through said lower spring-section, the axle, cross-bar, and the branches of the fork, and serves to pivot the axle A to the cross-bar.

To the top section of the forward spring, F, is rigidly attached, at its middle part only, an upper cross-bar, H. To the tops of the side bars, D, at their rear parts, are also secured the parallel reverse-bowed springs I, and to the upper sections of the same are rigidly at-

tached, at their middle parts only, the bars J, which are thus opposite and parallel with each other and support the seat J'.

A rod, K, is passed transversely through the forward end parts of the upper spring-bars, J, and receives loosely on its ends, just inside said bars, eyes L, formed on the rear ends of the box-suspension straps M.

The straps M extend downward, forward, and then upward, to fit the side parts of the bottom of the box N, and their forward ends are looped over the ends of the upper spring cross-bar, H, to which they are bolted or otherwise secured. By thus pivotally connecting the rear upper end of the box N to the seat-spring bars J and suspending the forward end of the box from the forward spring-bar, H, strains coming upon either the forward box-spring, F, or the rear seat-springs do not affect the other spring or springs, so that an extremely easy riding vehicle is produced. Further, owing to this isolation of the strains on the forward and rear springs from each other, all violent wrenching of the vehicle is relieved, and its durability thus increased, while the seat-springs may be made much lighter without danger of breakage.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a vehicle, the combination, with the axles A and B, front cross-bar, C, and side bars, D, of the spring on top of the front cross-bar, the opposite springs, I, on top of the side bars, D, the upper bar, H, on the front spring, F, the seat-bars J on the springs I, and the box N, suspended from and between the front spring-bar, H, and the side seat-bars, J, substantially as shown and described.

2. The combination, in a vehicle, with the axles, side bars, and the front and the opposite side springs, of seat-bars on the side springs, a transverse rod connecting said seat-bars, straps having their rear eyes secured on said transverse rod and their forward ends supported on the front spring, and the box resting on said straps, substantially as shown and described.

3. The combination, in a vehicle, with the

axles, side bars, transverse front spring, and parallel side springs, of a bar secured at its middle part to the top of each side spring, a rod connecting the forward end parts of the
5 side upper spring-bars, suspension-straps having eyes on the rear ends held loosely on the ends of the connecting-rod and their forward ends secured to the front upper spring-bar,

and a box suspended on the straps, substantially as shown and described.

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