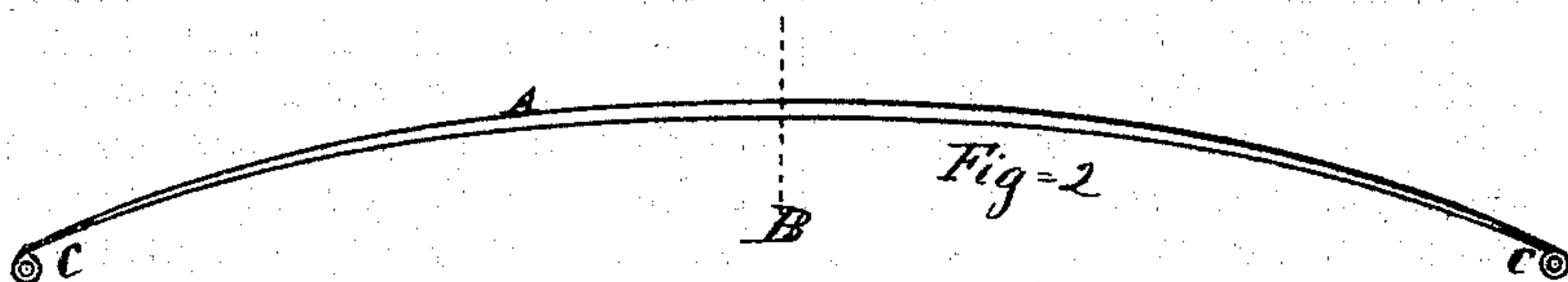
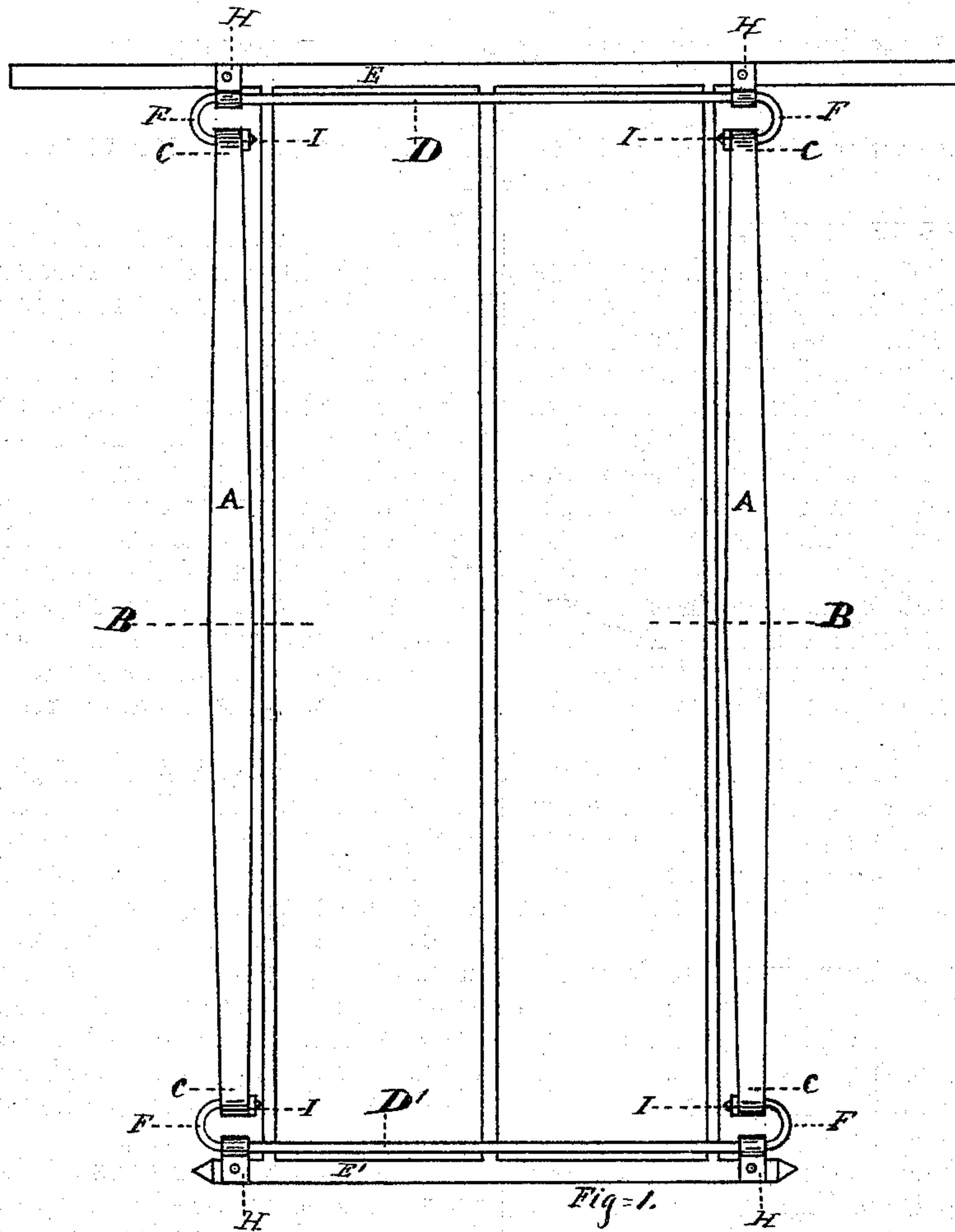


C. W. SALADEE.  
Improvement in Springs for Vehicles.  
No. 127,272. Patented May 28, 1872.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF ST. CATHARINE'S, CANADA.

## IMPROVEMENT IN SPRINGS FOR VEHICLES.

Specification forming part of Letters Patent No. 127,272, dated May 28, 1872.

### SPECIFICATION.

Be it known that I, CYRUS W. SALADEE, of St. Catharine's, in the Dominion of Canada, have invented certain new and useful Improvements in Springs and their Connections for Pleasure-Vehicles, of which the following is a specification embodying my invention.

The nature of my invention consists in a new and improved form of side and elliptic springs for pleasure-vehicles, the same being constructed from single plates of steel; and in a new and improved mode of connecting side springs to the rear axle and front bolster of the vehicle, substantially as and for the purpose hereinafter more particularly shown and described.

In the drawing, Figure 1 is a top view of a buggy-gearing, showing the rear axle-bed, perches, and front bolster, with the springs and their connections in position thereon. Fig. 2 is a detached side view of the spring seen in Fig. 1.

The spring-plates A are wrought from one solid piece of steel, and so formed that the plate shall taper on the edges from the cross-center B, Fig. 1, both ways toward the ends C. So likewise in thickness the plate shall taper from the cross-center B, Fig. 2, both ways, to the ends C, thus producing a single plate for side and elliptic springs, tapered both in width and thickness from the center toward both ends, and thereby provide for a perfect equalization of strain and vibrating motion upon every portion of the plate from its cross-center to the ends, making a stronger spring from a given weight of metal than can be produced under the old system of making springs from a number of separate plates or "leaves."

In the manufacture of these springs I propose to get the tapering form shown and described by the use of appropriate rolls made expressly for the purpose, through which the steel will be passed in its manufacture, and afterward shaped, tempered, and finished as desired.

I connect the ends of the side springs shown in the drawing to the rear axle and front bolster by means of connecting-rods D and D'.

I am fully aware that the idea of connecting-rods so placed, for the purpose of equalizing the action of springs, is old and well-known, and to which I lay no claim; but this

part of my invention consists in the formation of the ends of the connecting-rods D and D' for the reception of the ends of the springs in such manner as to greatly simplify and cheapen the manufacture of the same.

Experience has demonstrated that the welding of links to the ends of these rods, or the forming of the links separate, and otherwise rigidly securing them, or the formation of a crank requiring two bends on the ends of the rod for the reception of the ends of the springs, is attended with too much expense in their manufacture; and hence they cannot be placed in the market at the reduced price requisite to their success as a staple article of carriage hardware.

By the improved form of the ends shown in the drawing it will be seen that a single bend, F, upon each end of the rods, is all that is required for the connection of the ends of the springs as effectually as if "links" were used, or the ordinary crank having two bends at right angles with each other; while at the same time this mode of forming the ends of the connecting-rods and securing the springs thereto presents a neater and cleaner appearance than is had under any other known method of doing the same thing.

The extreme outer ends of the connecting-rods are first prepared as may be required to fit the eyes in the ends of the springs, and a screw-thread is cut thereon for the reception of the nut I, by which the ends of the springs are held in their position on the turned ends of the connecting-rods, as seen in Fig. 1, and then, by a single operation, the ends are bent substantially as shown at F. The connecting-rods are fastened in position by clips or bearings H, in the usual manner.

I claim as my invention—

1. In side and elliptic springs, the single plate A, tapering both in width and thickness from the cross-center B to the ends C, substantially as and for the purpose set forth.

2. The connecting-rods D D', having their outer ends bent in toward each other for the reception of the ends of the springs, in the manner and for the purpose substantially as shown and described.

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Witnesses:

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