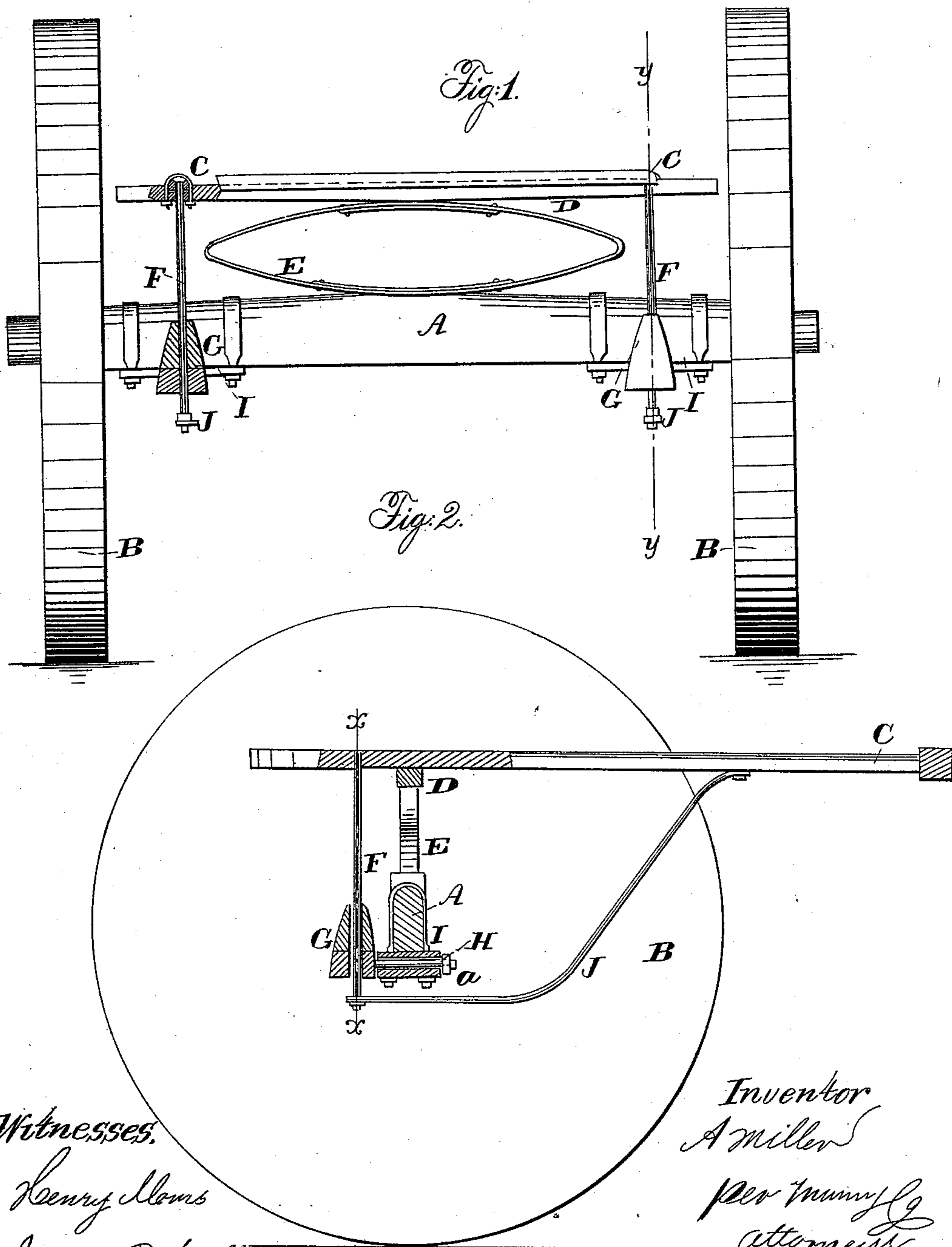


A. MILLER.
Carriage-Spring.

No. 44,012.

Patented Aug. 30. 1864



Witnesses.

Henry Adams
James P. Hall

Inventor
A. Miller
per Murray &
attorneys

UNITED STATES PATENT OFFICE.

A. MILLER, OF ANGOLA, INDIANA.

IMPROVEMENT IN SULKIES.

Specification forming part of Letters Patent No. 44,012, dated August 30, 1864.

To all whom it may concern :

Be it known that I, A. MILLER, of Angola, in the county of Steuben and State of Indiana, have invented a new and Improved Sulky; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear view of my invention, partly in section, as indicated by the line *xx*, Fig. 2; Fig. 2, a side sectional view of the same taken in the line *yy*, Fig. 1.

Similar letters of reference indicate like parts.

This invention relates to a new and useful improvement in the application of an elliptic spring to a sulky, whereby an easier-riding sulky than usual is obtained, and one that is very strong and durable.

A represents the axle, and B B the wheels of a sulky. C C are the shafts, which may be formed out of one piece of wood bent in curved form at the rear, the curved part extending a short distance back of the axle. The two parts or sides of the shaft are connected by a cross-bar, D, to which and the axle A an elliptic spring, E, is attached, the cross bar D being directly over the axle A.

Each shaft C at a point back of the axle A, has a pendent rod, F, attached to it, and these rods pass loosely through boxes G G, which serve as guides. These boxes or guides G G have each a rod, H, attached horizontally to the lower parts of their front ends, and said rods pass through the bottoms of clips I, on the axle A, and are secured therein by nuts *a* on their front ends. The rods H are allowed

to turn in the bottoms of the clips, and admit of the boxes or guides G assuming a position in line with the rods F when the latter are thrown in an oblique position by the bearing down of the spring E more at one end than at the other. This adjustable feature of the boxes or guides G prevents the rods F from binding in them, and obviates much friction and wear which would otherwise occur, as well as all play of the rods in the boxes or guides, which would, without the adjustable feature of the guides, be necessary in order to admit of the rods working in the boxes or guides.

The lower ends of the rods F F are connected by braces J J with the shafts C C.

From the above description it will be seen that the rods F F, boxes or guides G G, and braces J J serve to protect the spring E from the longitudinal pull of the shafts C C under the draft movement, while a single spring is only required and a free movement of that allowed so that the body of the sulky may spring up and down, vertically or more or less obliquely at either side, the turning of the boxes or guides G G admitting of the latter movement.

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

The elliptic spring E, in combination with the rods F F, adjustable boxes or guides G G, and braces J J, all arranged and applied to a sulky, substantially as herein shown and described.

A. MILLER.

Witnesses:

L. H. STACKER,
W. I. HOWARD.