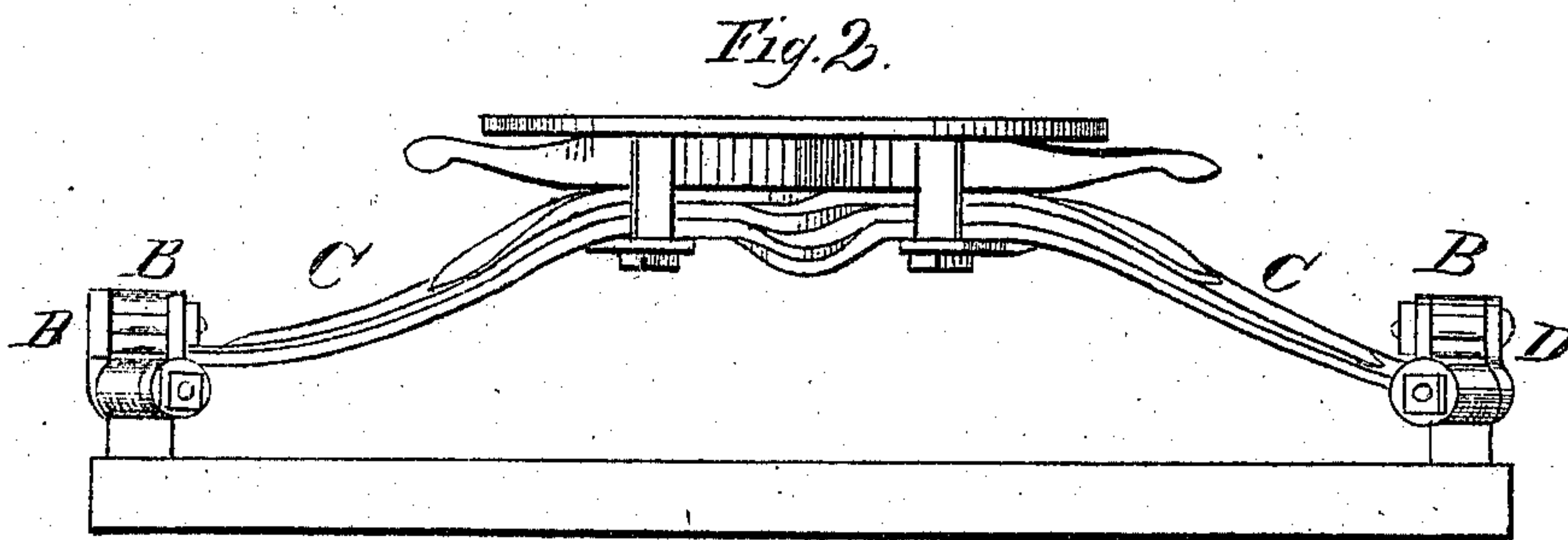
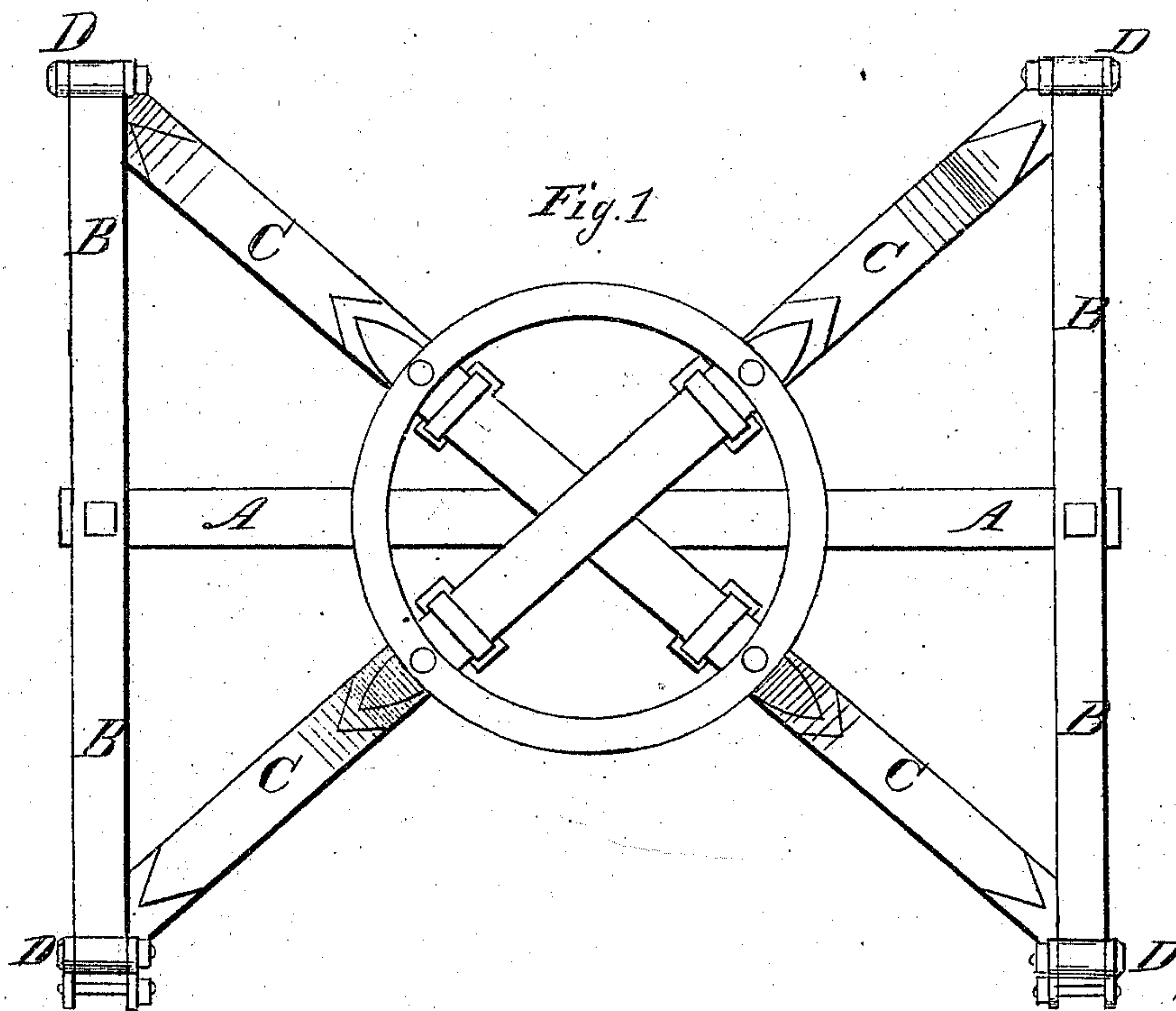


*C. D. Sutton,
Spring.*

No. 81,431.

Patented Aug. 25. 1868.



witnesses.
Am. A. Morgan
G. C. Sutton

Inventor:
C. D. Sutton
per Wm. J. B.
Attorney

UNITED STATES PATENT OFFICE.

CHARLES D. SUTTON, OF TARRYTOWN, NEW YORK.

IMPROVED SPRING FOR VEHICLES.

Specification forming part of Letters Patent No. **81,431**, dated August 25, 1868.

To all whom it may concern:

Be it known that I, CHARLES D. SUTTON, of Tarrytown, in the county of Westchester and State of New York, have invented a new and Improved Platform-Spring for Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those 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 top view of my improved springs attached to an axle-tree. Fig. 2 is a front view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish improved platform-springs for vehicles which shall be stronger, more durable, no heavier, and no more expensive than the ordinary platform-springs, and which will allow the draft to be attached lower down than it can be with the ordinary springs; and it consists in the construction and combination of the various parts, as hereinafter more fully described.

A represents the axle of a vehicle, to which are attached the side springs B by clip-bolts, or by other convenient and substantial means. The side springs B are half-elliptic springs, made in the ordinary manner, with any desired number of leaves, and from the ends of which are suspended the ends of the cross-springs C. The springs C are also half-elliptic springs, crossing each other at their centers at right angles, or at any other desired angles, and the leaves of which alternate with each other, as shown in Fig. 2.

The leaves of the springs are drawn out, fitted, and slotted in the same manner as ordinary springs. The cross-springs C are fitted at their centers by laying the leaves upside down upon a level surface prepared for that purpose, so as to preserve a level place upon the top of the spring for the fifth-wheel to rest upon, the size of said level part varying according to the size of the fifth-wheel to be used upon them.

The leaves are laid and fitted alternately, first a leaf of one spring and then a leaf of the other, until the desired number of each have been used. I prefer not to press the

leaves together immediately after they have crossed the leaves of the other spring, but to bring them together at or about the place where the fifth-wheel rests. This will add very much to the strength of the center of the springs C, and they are more easily fitted in this way. If desired, the leaves may be pressed together immediately after crossing each other. This requires a greater heat, and does not form so strong a spring as the construction before described.

The springs C may also be made by hammering the leaves, where they cross each other, to half their original thickness, making them wider in the center. By this construction they will lie straight across each other, and will have no bend or bow at the center, and will consequently not have so much strength.

After the centers are fitted, the leaves are marked and numbered. They are then taken apart, turned right side up, and the ends are bent and set to any desired shape, bending them from about the place where the fifth-wheel rests outward to their ends, in the same way as other springs are bent and set. There should be no holes drilled or punched in the springs, except an ordinary-sized bolt-hole in the center, to hold them together when made.

The fifth-wheel is secured to the cross-spring by clips or bolts passing through said fifth-wheel, and down upon each side of the said springs, their lower ends being connected by a bar, as shown in Fig. 2.

The ends of the cross-springs C are connected with and suspended from the ends of the side springs B by the shackles D, which are so constructed that the end of each spring may bear square upon its shackle-bolt, as shown in Figs. 1 and 2, so that the springs may all work freely.

The forward pair of shackles D are formed with ears to receive the bolt by which the shaft or tongue is connected to said springs.

If desired, the ends of the springs may be bent edgewise, the side springs outward, and the cross-springs inward, so that the holes in the cross-springs will stand parallel with those in the side springs, and thus, having French heads or common ears, they may be bolted together in the same manner as the ends of elliptical springs ordinarily are. This con-

struction will answer when they are used for the rear ends of some vehicles, or for the front end, when a standing pole is used and fitted on the top of said platform in ordinary manner. A standing pole may be used by having a bar attached to the front end of the springs, running across from one to the other, and being secured to their ends in the same manner or by the same bolt as the shafts are, or by two or more bolts, or in any other substantial manner. Upon the center of the bar the standing pole is fitted, and the back end of the pole passes back into a socket substantially secured to the springs C. The manner of attaching the pole may be varied to suit

the style of vehicle and the taste of the workman.

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

An improved platform-spring formed by the combination of the cross-springs C, constructed substantially as described, and forming a flat support for the fifth-wheel, with the side springs B and shackles D, as and for the purpose set forth.

CHARLES D. SUTTON.

Witnesses:

C. H. PALMER,

GEORGE W. LENT.