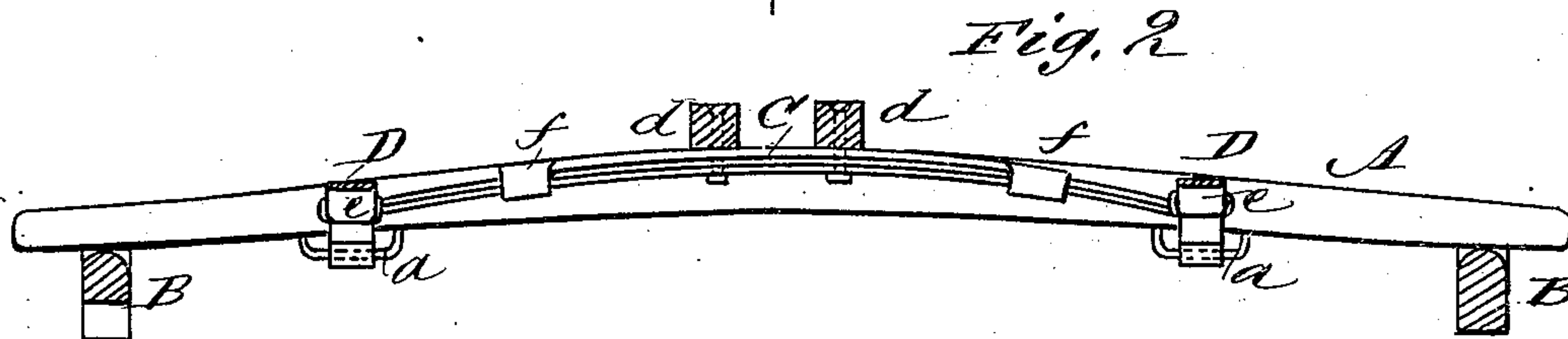
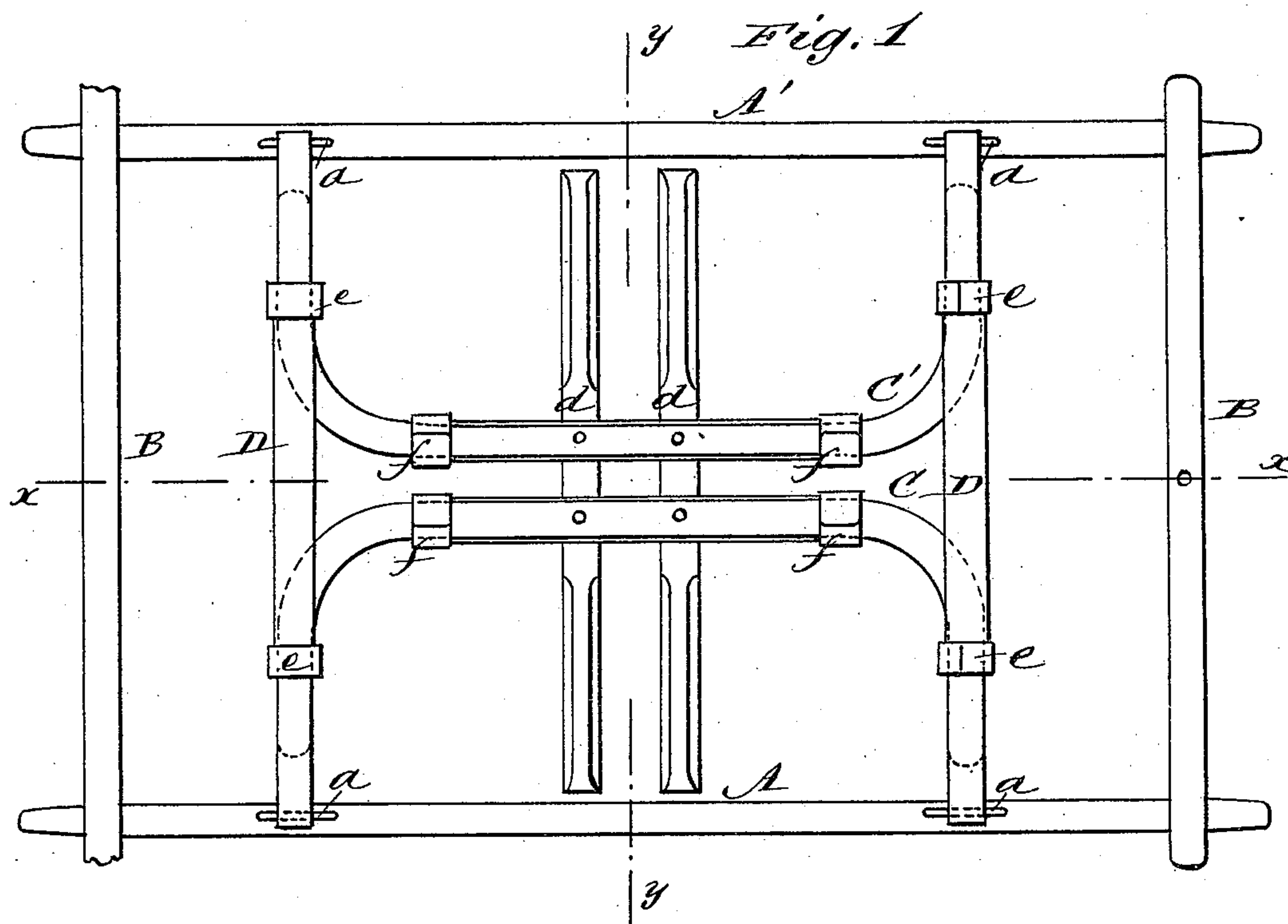


(No Model.)

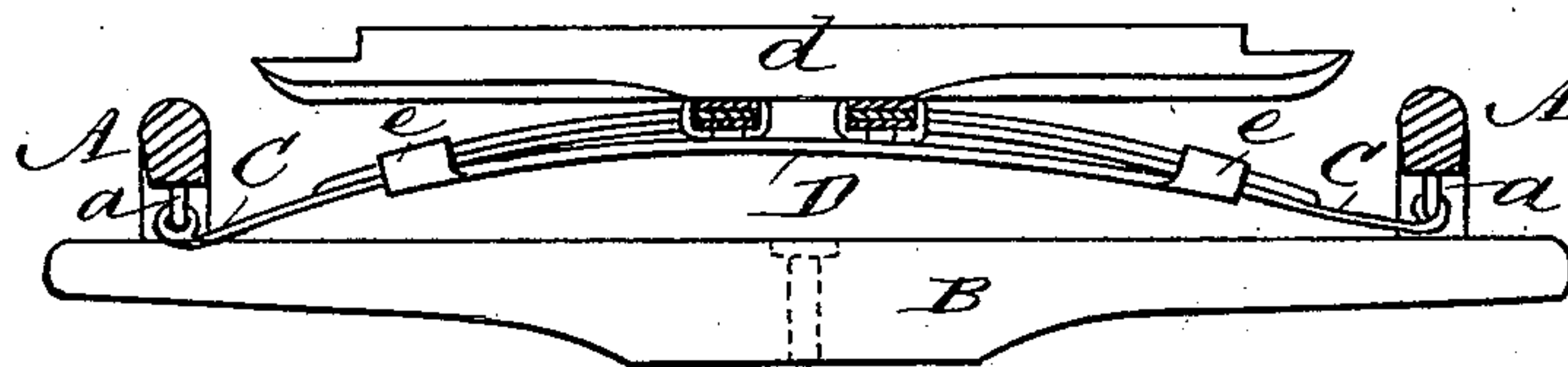
J. H. HOWE.  
VEHICLE SPRING.

No. 251,233.

Patented Dec. 20, 1881.



*Fig. 3* ...



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES H. HOWE, OF CONNEAUT, OHIO.

## VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 251,233, dated December 20, 1881.

Application filed October 8, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. HOWE, of Conneaut, in the county of Ashtabula and State of Ohio, have invented a new and useful Improvement in Buggy-Springs, of which the following is a full, clear, and exact description.

My invention consists of an improved spring, particularly adapted for side-bar buggies.

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 an elevation of the under side of a side-bar buggy frame having my improved spring attached. Fig. 2 is a longitudinal sectional elevation taken on the line *xx* of Fig. 1, and Fig. 3 is a cross-sectional elevation taken on the line *yy* of Fig. 1.

A A' represent the side bars. B B represent the bolsters of the buggy-frame, which are of ordinary construction; and C C' represent the springs, which are curved inwardly and upwardly, as shown. Both ends of each of the springs are attached to their respective side bars by means of the staples *a a*, or by any other suitable means, and the springs are of such size and form that they reach near to the center of the buggy, and run for some distance along the center parallel with each other, as shown, and are adapted to support the buggy-box upon the cross-pieces *d d*, which are secured to the springs in the center of the buggy-frame and about in the center of the length of the parallel parts of the springs. The springs may be built up with as many leaves as necessary to obtain the strength desired, and when

the springs are in place they are stiffened and made to work together by the cross or truss springs D D, which reach from spring to spring and clasp the springs near their ends, as shown at *e e*. The last or top leaf of the springs C C' will be clasped by suitable means to the other parts of the springs, as shown at *f f*, to stiffen them in the center from the upper side.

By this construction it will be seen that the springs are long, yet they occupy small compass in the buggy, thus making the buggy very easy riding; and the springs are durable, and a buggy provided with these springs will carry one or more persons with equal ease and comfort.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the side bars, A A', and the inwardly and upwardly curved springs C C', secured to the said side bars, of the cross or truss springs D, secured to the said springs C C' near their ends, substantially as shown and described, whereby the said springs are stiffened and made to work together, as set forth.

2. The combination, with the side bars, A A', provided with the staples *a*, the springs C C', secured to the said staples, and the cross-pieces *d*, of the cross or truss springs D, provided with the clasps *e*, which clasp the said springs C C' near their ends, substantially as and for the purpose set forth.

JAMES HENRY HOWE.

Witnesses:

MORT. G. ANDERSON,  
J. G. PALMER.