

J. BOWMAN.  
Vehicle-Spring.

No. 204,707.

Patented June 11, 1878.

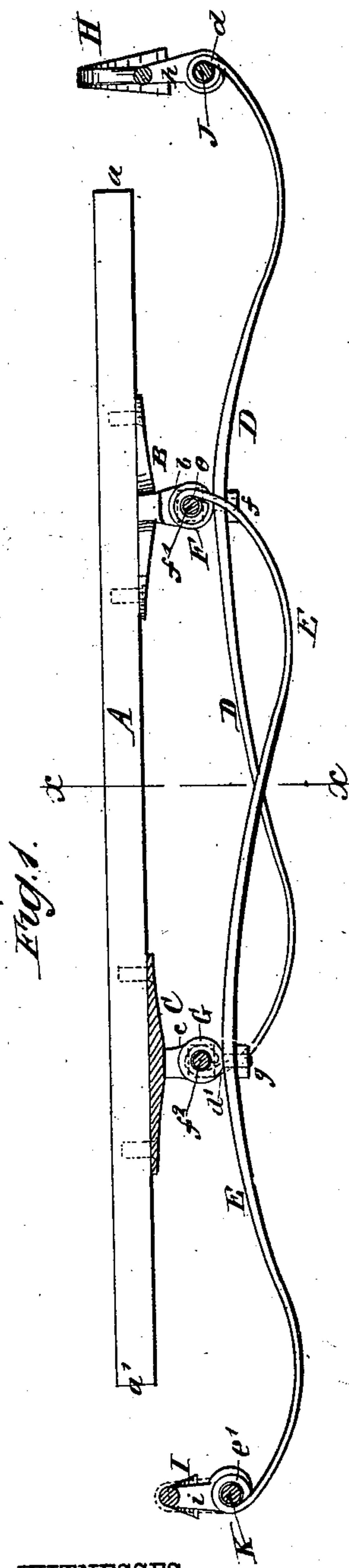


Fig. 2.

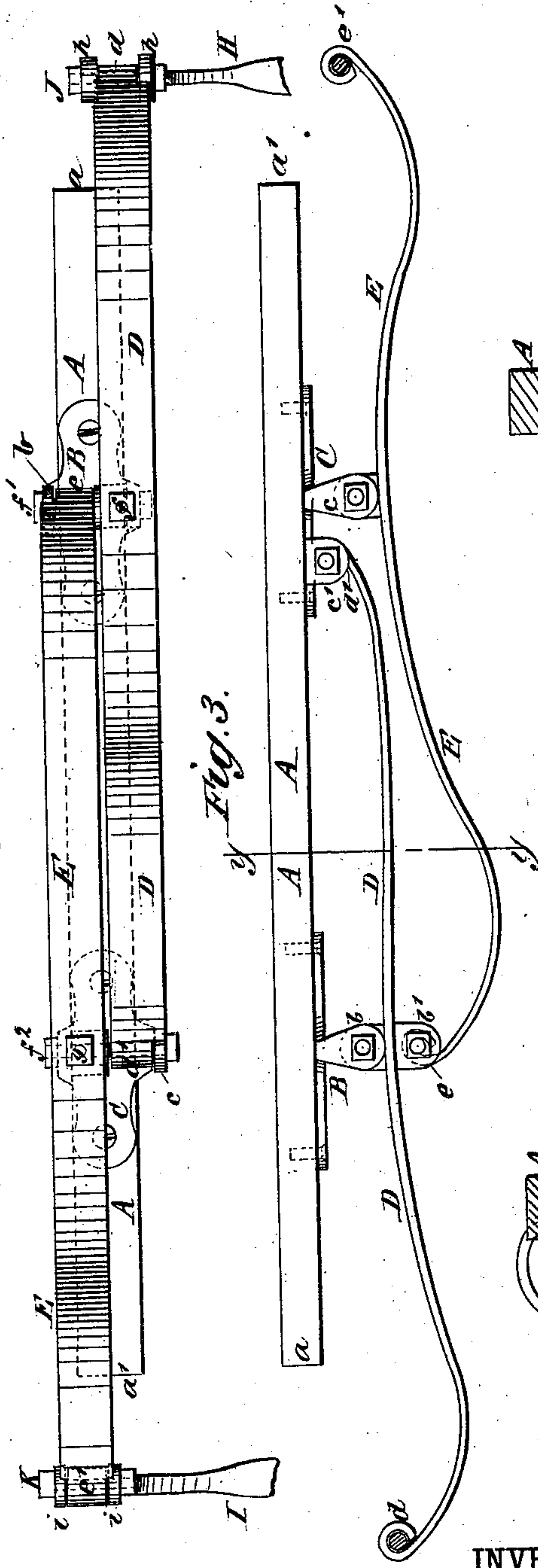
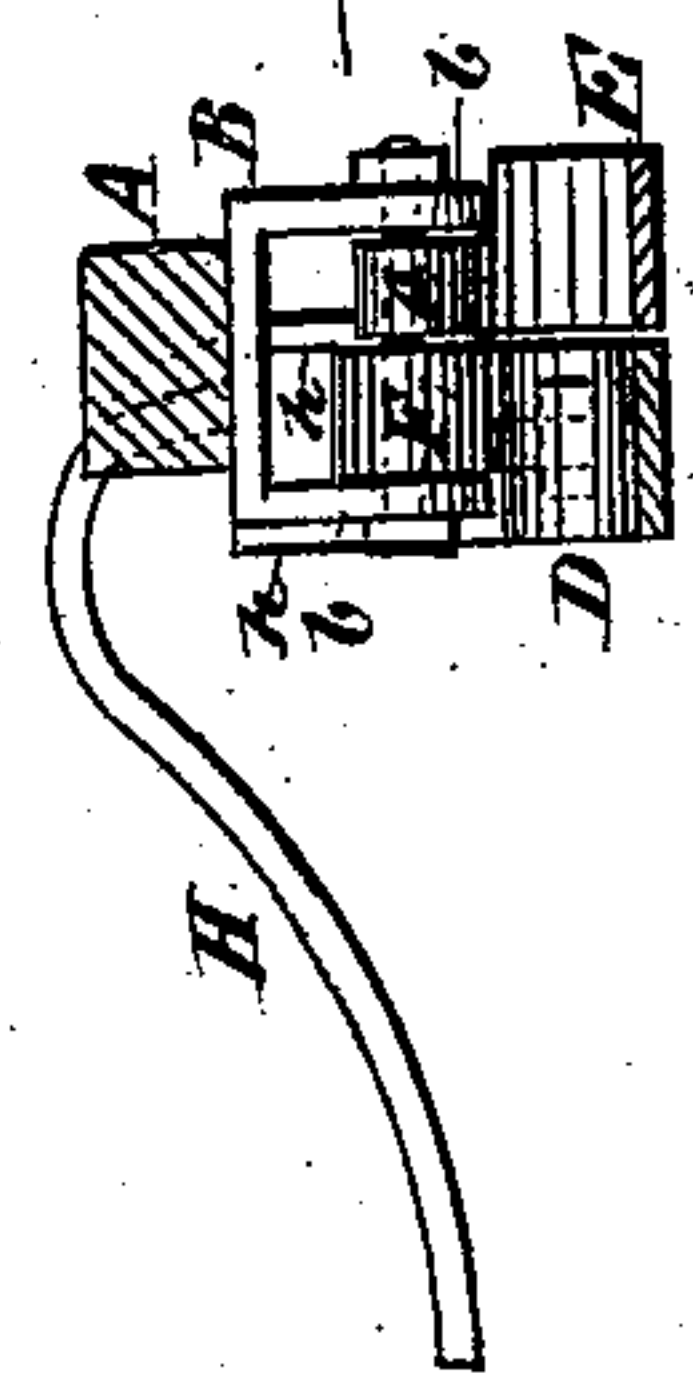


Fig. 4.



WITNESSES:

Francis. McArdle.  
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INVENTOR:

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# UNITED STATES PATENT OFFICE.

JONAS BOWMAN, OF SOMERSET, OHIO, ASSIGNOR TO HIMSELF AND ISAAC MECHLING, OF SAME PLACE.

## IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. 204,707, dated June 11, 1878; application filed April 13, 1878.

*To all whom it may concern:*

Be it known that I, JONAS BOWMAN, of Somerset, in the county of Perry and State of Ohio, have invented a new and Improved Buggy-Spring, of which the following is a specification:

The object of my invention is to provide an improved construction of buggy-springs, by which side bars are dispensed with, thus taking less space to turn on, and by which the tilting and pitching motion usual with springs as heretofore constructed is avoided.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

In the accompanying drawing, Figure 1 represents a side view of a portion of a buggy embodying my present invention. Fig. 2 is an under-side view of the same. Fig. 3 is a side view of a modification in the attachment of the springs. Figs. 4 and 5 are cross-sections through the lines  $xx$  and  $yy$ , respectively.

Similar letters of reference indicate corresponding parts.

A is the sill of the body of the vehicle. To the under side of the sill A or bottom of the said body, and equidistant from its front and rear ends  $a a'$ , are secured plates B C, having downward-projecting lugs  $b c$ , for attaching the side springs directly to the body A without the use of side bars.

D and E are the side springs for one side of the vehicle. These springs are arranged side by side, so as to partly lap each other, the forward one-half part of the rear side spring E being outside of the rear one-half part of the front side spring D.

The springs D E are half-elliptic, of one or more leaves, (the convexity upward,) with each end bent up and formed into an eye. For attaching them to the lugged plates B C, the springs D E are provided, at about their centers, with lugs or eyebolts F G, riveted to the springs or fastened by nuts  $f g$ .

The lug F of the spring D and the eye  $e$  of the spring E are secured side by side between the lugs  $b$  of the plate B by a bolt,  $f^1$ , inserted through the said eyes and lugs simultaneously, and fastened by a nut. The lug G (or eyebolt) of the spring E and the eye  $d'$  of the spring D are similarly attached, side by side, between the lugs  $c$  of the rear plate C, by the

bolt  $f^2$  inserted through them all simultaneously, and also fastened by a nut.

I and H are half-elliptic springs (the concavity upward) of one or more leaves, and are attached to the center of the rear axle and to the center of the front head-block, respectively. They take the place of the ordinary cross-bars, which thus are dispensed with. Their ends are bent down and forked like the front spring H, or ending about horizontal, like the rear spring I, in either case forming two lugs,  $h h$  or  $i i$ , between which the front eye  $d$  of the side spring D and the rear eye  $e'$  of the side spring E are attached by inserting the hinging pins or bolts J K, respectively.

By this construction the object first stated is accomplished, and the springs are more readily adjusted to the body of the buggy and to the bodies of vehicles of more different styles than can be done by side springs as heretofore constructed, and can be hung high or low, at the pleasure of the builder.

Instead of placing the springs D E side by side, as before described, one may be placed above the other, as shown in Fig. 3, the rear half of the front side spring D overlapping the front half of the rear side spring E.

In this arrangement the lugs  $b$  of the plate B are extended below the edges of the spring D, and the front eye of the rear spring E is hinged between the extended lugs  $b'$ , and the rear eye  $d'$  of the front spring D is hinged between lugs  $c'$ , attached to the plate C or body A, a little in front of the rear lugs  $c$ , above the spring E.

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

1. The plates B C, arranged on body-sill A, equidistant from its ends, and having downwardly-projecting lugs  $b c$ , for attaching the side springs directly to the body, as shown and described.

2. The combination, with plates B C, having lugs  $b c$ , of the lapping springs D E, each hinged at one end between said lugs, and provided near their middles with eyebolts F G, as and for the purpose specified.

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Witnesses:

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