

J. D. BRUNNER.
 SPRING WAGON.

No. 190,000.

Patented April 24, 1877.

Fig. 1.

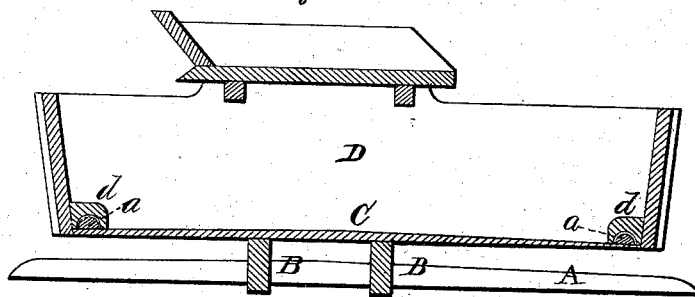


Fig. 2.

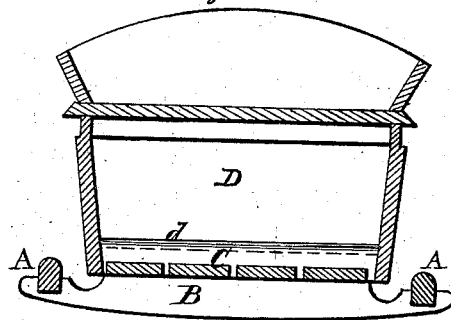
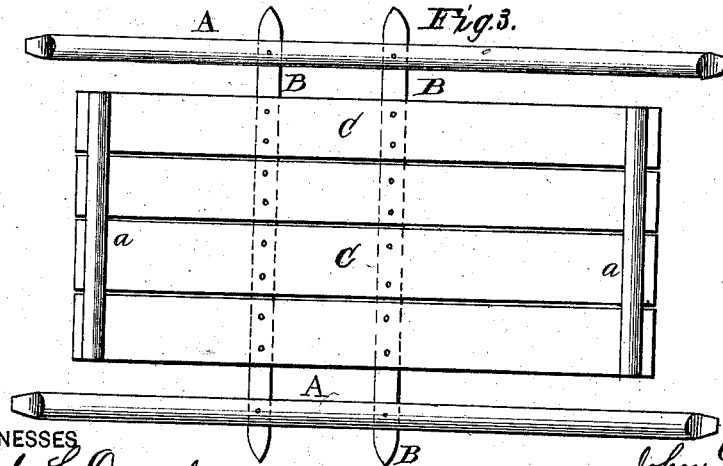


Fig. 3.



WITNESSES
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JOHN D. BRUNNER, OF DOYLESTOWN, PENNSYLVANIA.

IMPROVEMENT IN SPRING-WAGONS.

Specification forming part of Letters Patent No. **190,000**, dated April 24, 1877; application filed October 31, 1876.

To all whom it may concern:

Be it known that I, JOHN D. BRUNNER, of Doylestown, in the county of Bucks, and in the State of Pennsylvania, have invented certain new and useful Improvements in Carriage-Bodies; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a spring arrangement for carriage or other vehicle bodies, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of a carriage-body embodying my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a plan view of the bottom of the body.

A A represent the side spars of the carriage-body, the ends of which spars are to be set on, and secured to, the half-springs on the axles.

B B are two cross-bars, connected to the side spars A A near the center, and on top of these cross-bars is secured a series of slats, C C. These slats are made thicker in the center, and taper slightly toward both ends, to form a spring-bottom for the body of the ve-

hicle, said slats being fastened, near their centers, to the cross-bars B, and their ends left free.

D is the body of the vehicle, which is supported upon the ends of the slats C, thereby causing the bottom to bend up in the middle, and makes a light, cheap, and strong spring for the carriage-body.

To the end pieces of the body D are secured cross bars or cleats *d*, which are grooved longitudinally on their under sides, and fit over half-round bars *a a*, fastened on top of the slats C, near their ends. This admits the spring to play when in motion; otherwise the bottom would drag on the body-piece, and cause an unpleasant noise.

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

1. The combination, with a carriage-body, D, of the spring-slats C C, cross-bars B B, and side spars A A, substantially as and for the purposes herein set forth.

2. The combination of the spring-slats C, the half-round cross-bars *a a*, and the body D, with grooved cross bars or cleats *d d*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of October, 1876.

JOHN D. BRUNNER.

Witnesses:

HENRY C. MICHENER,
G. W. SNYDER.