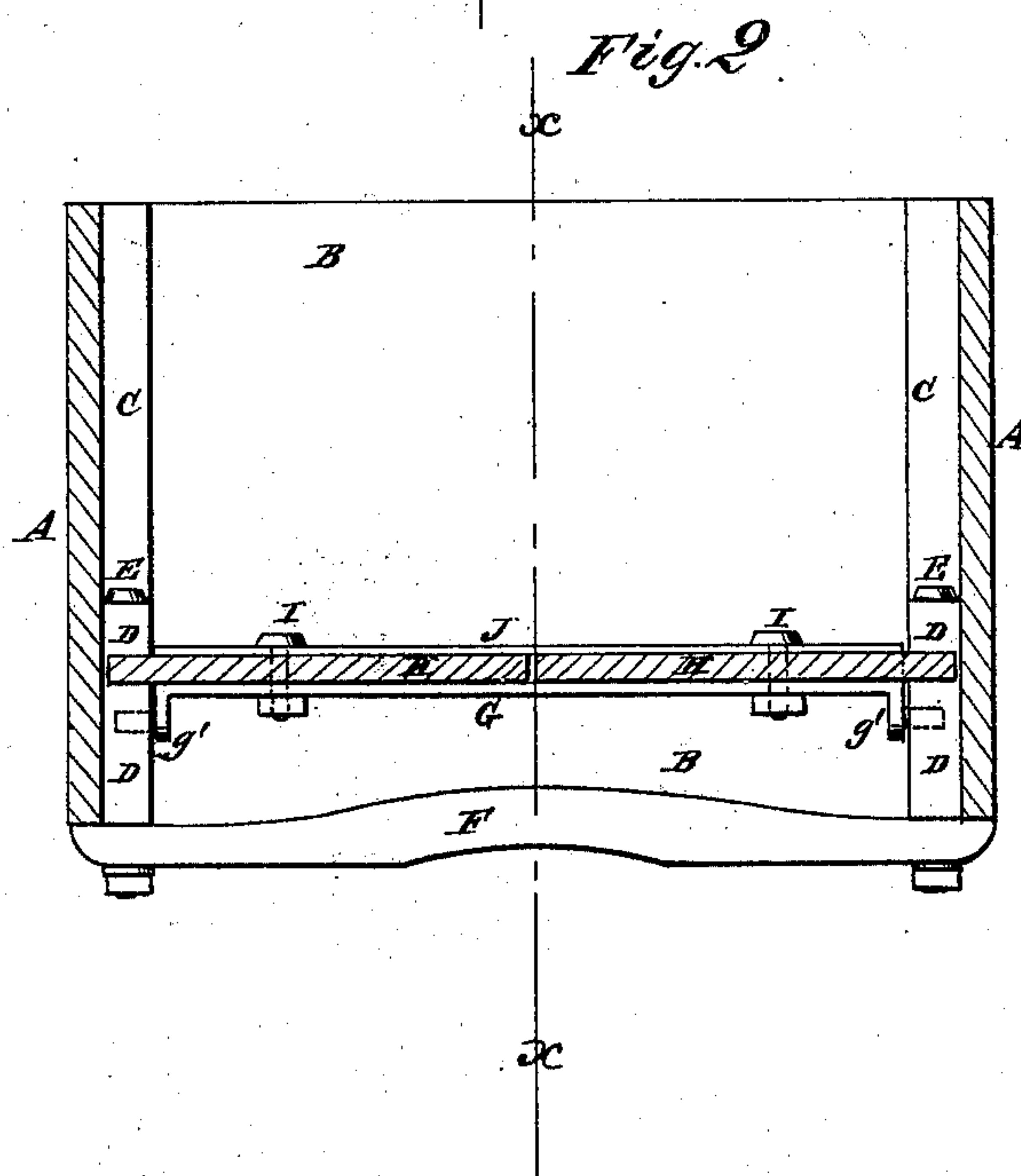
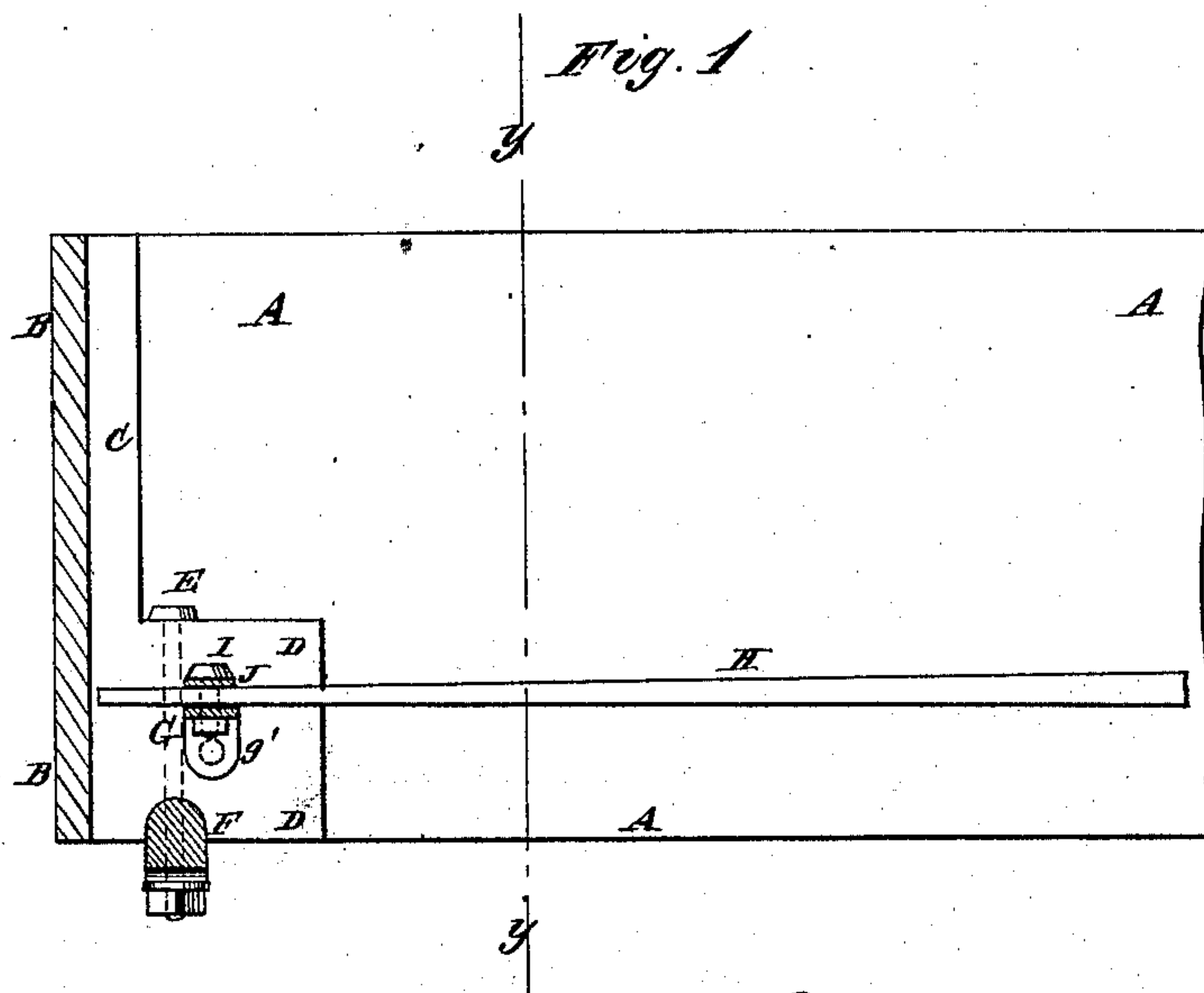


E. D. CRAMER.  
Spring-Bottom for Vehicles.

No. 203,597.

Patented May 14, 1878.



**WITNESSES:**

WITNESSES:  
A.W. Almqvist  
J.H. Scarborough.

**INVENTOR:**

INVENTOR:  
E. D. Cramer.  
BY Mumfles

**ATTORNEYS.**

# UNITED STATES PATENT OFFICE.

EPHRAIM D. CRAMER, OF HACKETTSTOWN, NEW JERSEY.

## IMPROVEMENT IN SPRING-BOTTOMS FOR VEHICLES.

Specification forming part of Letters Patent No. **203,597**, dated May 14, 1878; application filed October 6, 1877.

*To all whom it may concern:*

Be it known that I, EPHRAIM D. CRAMER, of Hackettstown, in the county of Warren and State of New Jersey, have invented a new and useful Improvement in Spring-Bottoms for Wagon-Bodies, of which the following is a specification:

Figure 1 is a vertical longitudinal section of a part of a wagon-body to which my improvement has been applied, taken through the line *x x*, Fig. 2. Fig. 2 is a vertical cross-section of the same, taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved spring-bottom for wagon-bodies which shall be so constructed that it may spring up and down within the wagon-bodies without danger of getting out of place, and which will thus give an elastic support to the seat, while allowing the body to be placed lower upon the axles than is possible when the body is supported upon steel springs in the usual way.

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

A represents the sides, and B the ends, of a wagon-body, which may be strengthened at the corners by upright pieces C. To the side-boards A, at their lower corners, are attached blocks D, through which pass the vertical bolts E, that secure the wagon-body to the cross-bars F. The cross-bars F rest upon and

are secured to the bolsters or axles of the running-gearing. To the blocks D are pivoted the crank-arms *g'*, formed upon or attached to the ends of the cross-bars G, which are made of iron, and to which the ends of the bottom H are secured by bolts I.

The connection between the bottom H and the bars G is strengthened by the iron straps or plates J, placed upon the upper side of the said bottom H, and through which the bolts I also pass. The bottom H is made of ash or other suitable strong and elastic wood, may be made in one, two, or more pieces, and is tapered from the center, or the place where the seat is attached toward each end.

With this construction, as the bottom springs, the bars G turn upon their crank-arms *g'*, to adjust their position to the varying length of the bottom H, and to the direction of the ends of said bottom, enabling its elasticity to have full play, and preventing the bolts from being subjected to an undue strain.

I am aware that it is not new to support a spring-bottom on rolls, the two being connected by flexible material; but

What I claim is—

The cross-bars G, having pivoted crank-arms, in combination with the elastic bottom H of a wagon-body, substantially as and for the purpose specified.

EPHRAIM D. CRAMER.

Witnesses:

JOHN N. SHARP,

MATTHIAS THOMAS.