

L. P. WORRALL.

CHECK-BRACE FOR VEHICLE-SPRINGS.

No. 176,570.

Patented April 25, 1876.

Fig. 1

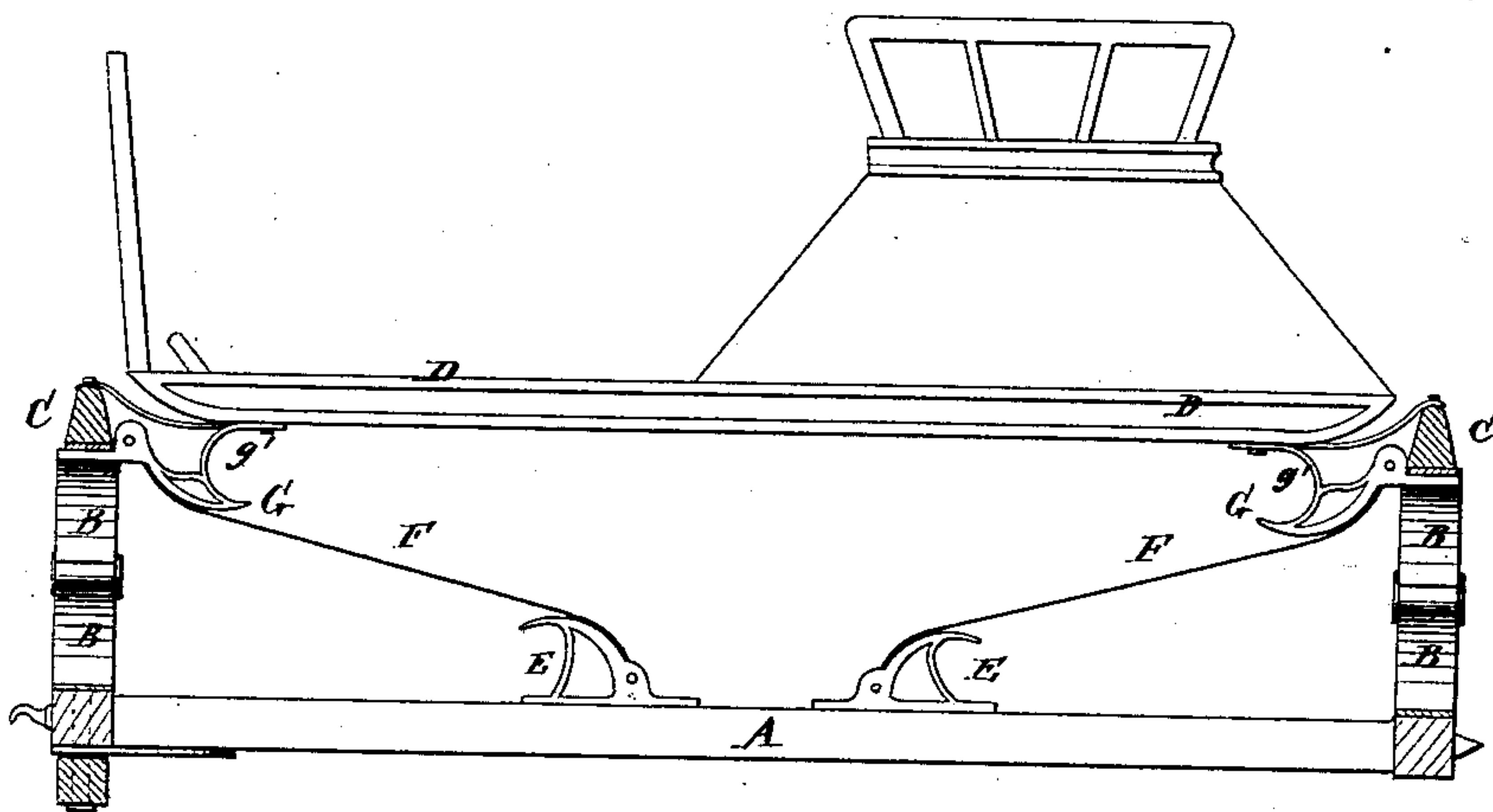
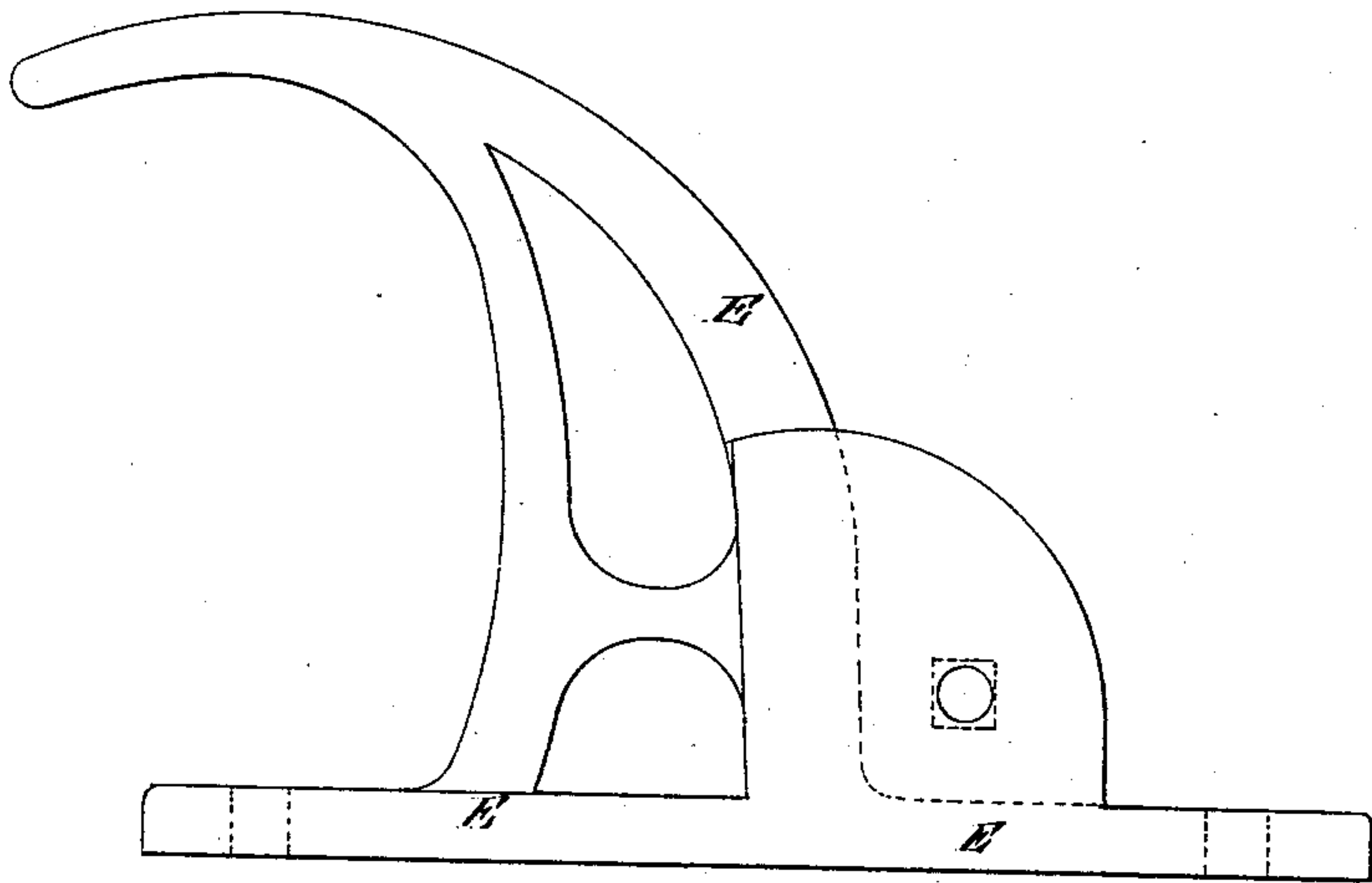


Fig. 2



WITNESSES:

A. W. Almqvist  
John Goethals

INVENTOR:

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BY

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

LEWIS P. WORRALL, OF SUGARTOWN, PENNSYLVANIA.

## IMPROVEMENT IN CHECK-BRACES FOR VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. 176,570, dated April 25, 1876; application filed March 13, 1876.

*To all whom it may concern :*

Be it known that I, LEWIS P. WORRALL, of Sugartown, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in Check-Braces for Carriages, of which the following is a specification:

Figure 1 is a vertical longitudinal section of a wagon-body and gearing, to which my improvement has been applied. Fig. 2 is a detail view of one of my improved brackets.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device for attachment to wagons having transverse springs to prevent the springs from being twisted or injured by the forward and backward surge of the wagon-body.

The invention consists in the coupling-boxes or sockets, formed at the bases of the curved arms of the brackets, to receive the ends of the brace, and in a check-brace for carriages, in which the opposite ends of the brace-plate are curved in opposite directions along the curved arms of the two brackets, and are secured to said brackets at the bases of said arms, to take up the slack of said brace-plate as the brackets are brought closer together by the compression of the springs, as herein-after fully described.

A represents the reach, B the springs, C the spring-bars, and D the body of the vehicle, about the construction of which parts there is nothing new. E are two brackets attached to the reach A, the arms of which are curved upon the arc of a circle.

In the angle between the convex side of the arm of the brackets and its base-plate are formed sockets or boxes to receive the eyes of the brace-plates F, where they are secured by bolts.

G are two brackets attached to the upper part of the springs B, and the arms of which are curved upon the arc of a circle, and have

sockets or boxes formed at the bases of said arms to receive the ends of the brace-plate F, where they are secured in place by bolts. The brackets G have shoulders formed upon their bases to rest against the forward edge of the springs B.

When the body D extends over or close to the spring-bars C, the brackets G are made with braces *g'*, which are bolted to the said body D. When the body D is farther from the spring-bars C, the brackets G are made without the braces *g'*, and have cross-heads formed upon their bases which underlap the springs B, and are secured to said springs by bolts or clips.

In the case of double-perch wagons, the brackets G may be attached to the lower parts of the springs B, and the brackets E to the bottom of the body D.

By this construction, as the springs B are compressed, bringing the brackets G closer to the brackets E, the slack of the brace-plates F will be taken up by the curved arms of the brackets, so that the said brace-plates will always be sufficiently taut to prevent any twisting of the springs by the surging of the body D.

I am aware that brackets have been heretofore secured to a perch and springs, as well as coupled with a steel plate to form the brace; but

What I claim is—

The combination with a vehicle perch and springs, of brackets G having coupling-box at base, and plates F reversely curved at the ends, as shown and described, in order to form a double-acting brace that will allow the springs to come together without striking perch or body, and without making any rattling or noise.

LEWIS P. WORRALL.

Witnesses:

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