

(No Model.)

C. HAENDLE.

SIDE SPRING FOR VEHICLES.

No. 312,844.

Patented Feb. 24, 1885.

Fig. 1.

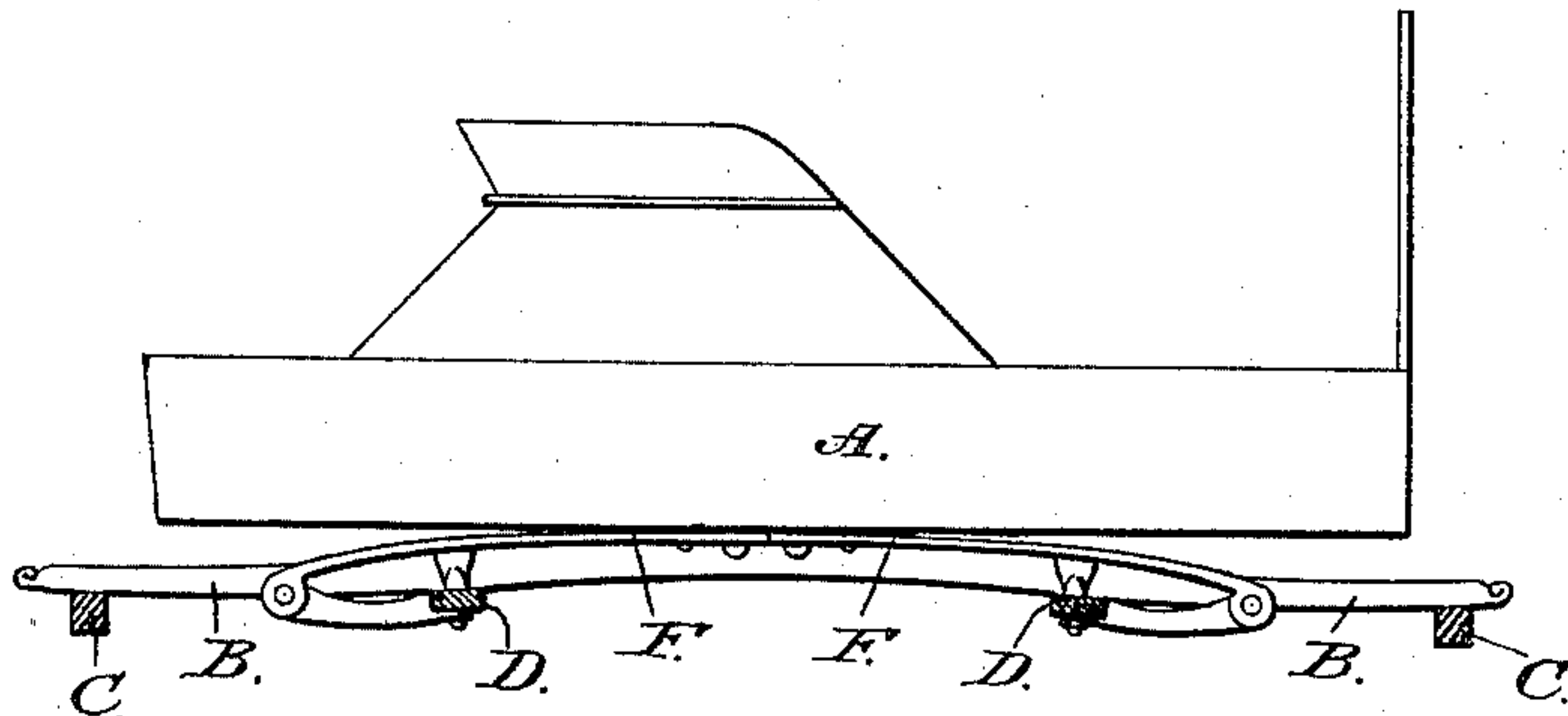
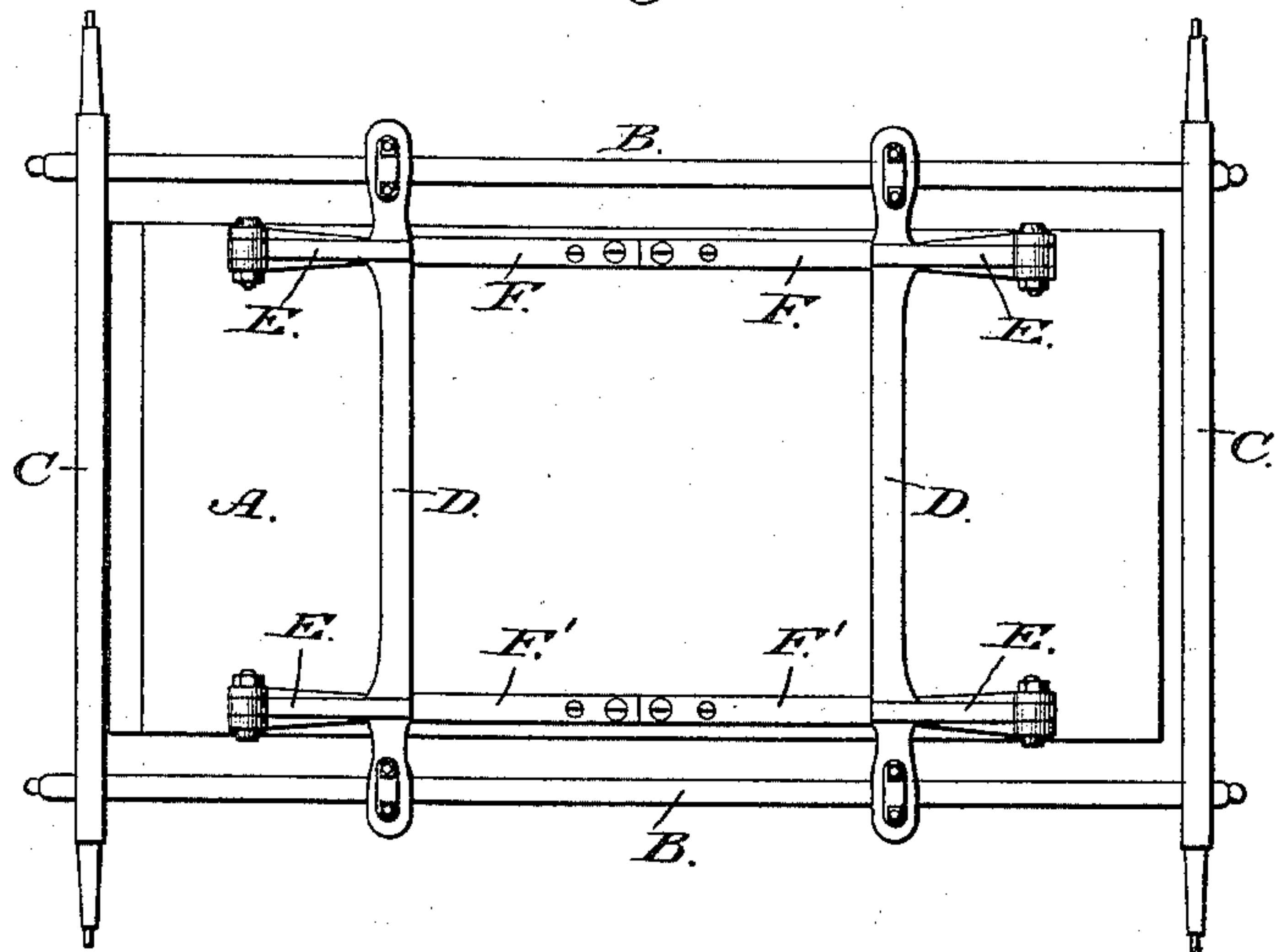


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

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SIDE SPRING FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 312,844, dated February 24, 1885.

Application filed December 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, CONRAD HAENDLE, of the city, county, and State of New York, have invented a new and useful Improvement in
5 Springs for Side-Bar Wagons; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a
10 part of this specification.

It consists in the combination, with the side bars of a wagon, and with transverse connecting-bars made fast to the side bars and having arms or goose-necks projecting rigidly
15 therefrom outwardly toward the ends of the wagon and parallel with its sides, of spring-plates which, extending likewise parallel with the sides of the wagon, are pivoted at their outer ends to the ends of said rigid arms, and
20 are made fast at their inner ends to the under side of the body of the wagon, near the middle thereof, as hereinafter fully described.

In the accompanying drawings, Figure 1 is a side elevation of the body, side bars, and
25 springs of a wagon, the axles and transverse bars being in cross-section; and Fig. 2 a bottom view of the same.

A represents the body, and B B the side bars, of the wagon. The side bars, B B, are
30 secured to the axles C C in the customary manner.

D D are cross-bars extending from one side bar to the other and made fast thereto, each at a point about midway between the center
35 of the side bar and its point of attachment to the axle. These cross-bars D D, made fast to the side bars, are each formed with goose-necks or arms E E projecting therefrom at a right angle therewith, near each end, and on the
40 side thereof next to the axle. The intervals between the two outwardly-projecting arms E E on each cross-bar are somewhat less than the width of the wagon-bed.

F F are spring-plates secured end to end to
45 the under side of the wagon-body, near to one side, and at or about the middle thereof, to extend therefrom in a right line with each other and parallel with the side of the body, far enough to reach the ends of the two arms
50 E E on that side, and F' F' are corresponding spring-plates secured in like manner to the bottom of the body on the opposite side. The outer ends of these springs F F and F' F' are

coupled with hinged joint to the ends of the rigid arms E E.

Although I prefer to divide the springs into
55 pairs consisting of two plates, F and F and F' F', secured in a right line, end to end, as illustrated in Fig. 2, the springs may consist each of a single plate of elastic steel extend-
60 ing entirely across in one piece from the end of one of the arms to the end of the opposite arm, or of two or more leaves superimposed, as in the ordinary semi-elliptic springs, and one of which extends from arm to arm. The
65 arms E E are forged in one piece with the cross-bars D D, or rigidly secured thereto. The hinged joint of the ends of the springs F and F', with the arms E E, may be made of any approved form. The cross-bars D D
70 are secured to the side bars by means of clips and bolts or other secure fastening.

In the operation of my improved springs, as the spring-plates F F' give under the load they flatten against the bottom of the wagon-
75 body, and are thereby supported and re-enforced against undue strain. The elasticity of these springs is, moreover, supplemented by that of the side bars, both being brought into play under the weight of the wagon and its
80 load. The cross-bars impart a desirable degree of rigidity to the suspension of the body without detracting from the needful elasticity and resiliency therein, and the weight upon any part of the wagon becomes evenly dis-
85 tributed thereby.

I claim as my invention—

The combination, with the two side bars of a side-bar spring-wagon, and with two cross-
90 bars connecting the same about midway between the center thereof and the axles to which they are secured, of arms projecting rigidly from the outer side of each cross-bar near each end thereof, and springs hinged to the outer end of each arm, and which, extend-
95 ing thence inwardly parallel with the side bars and above the cross-bars, are secured to the under side of the wagon-bed for its support, substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two sub-
scribing witnesses.

Witnesses: CONRAD HAENDLE.

A. B. MOORE,
G. H. SPENCER.