

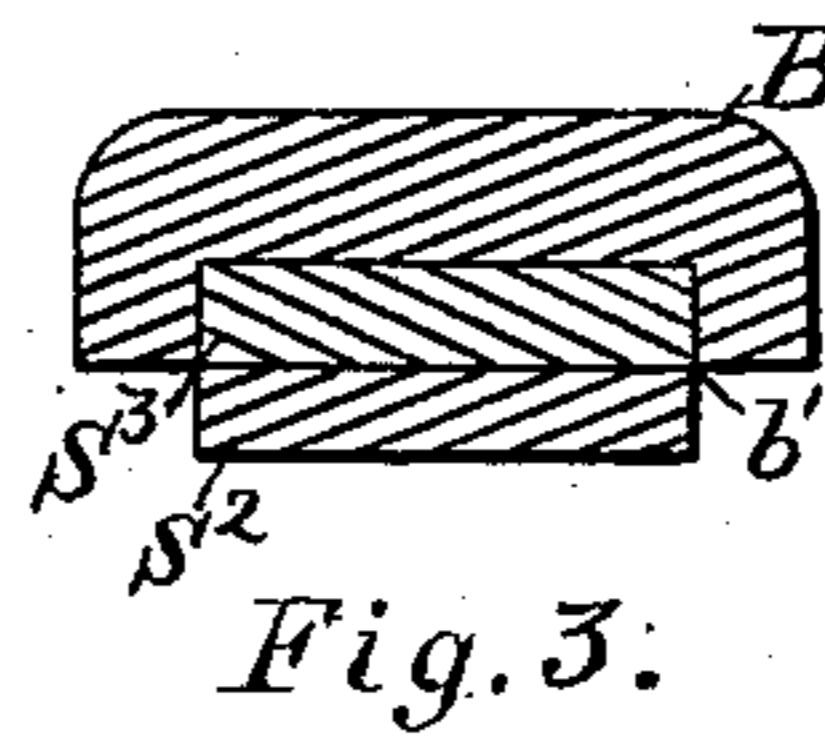
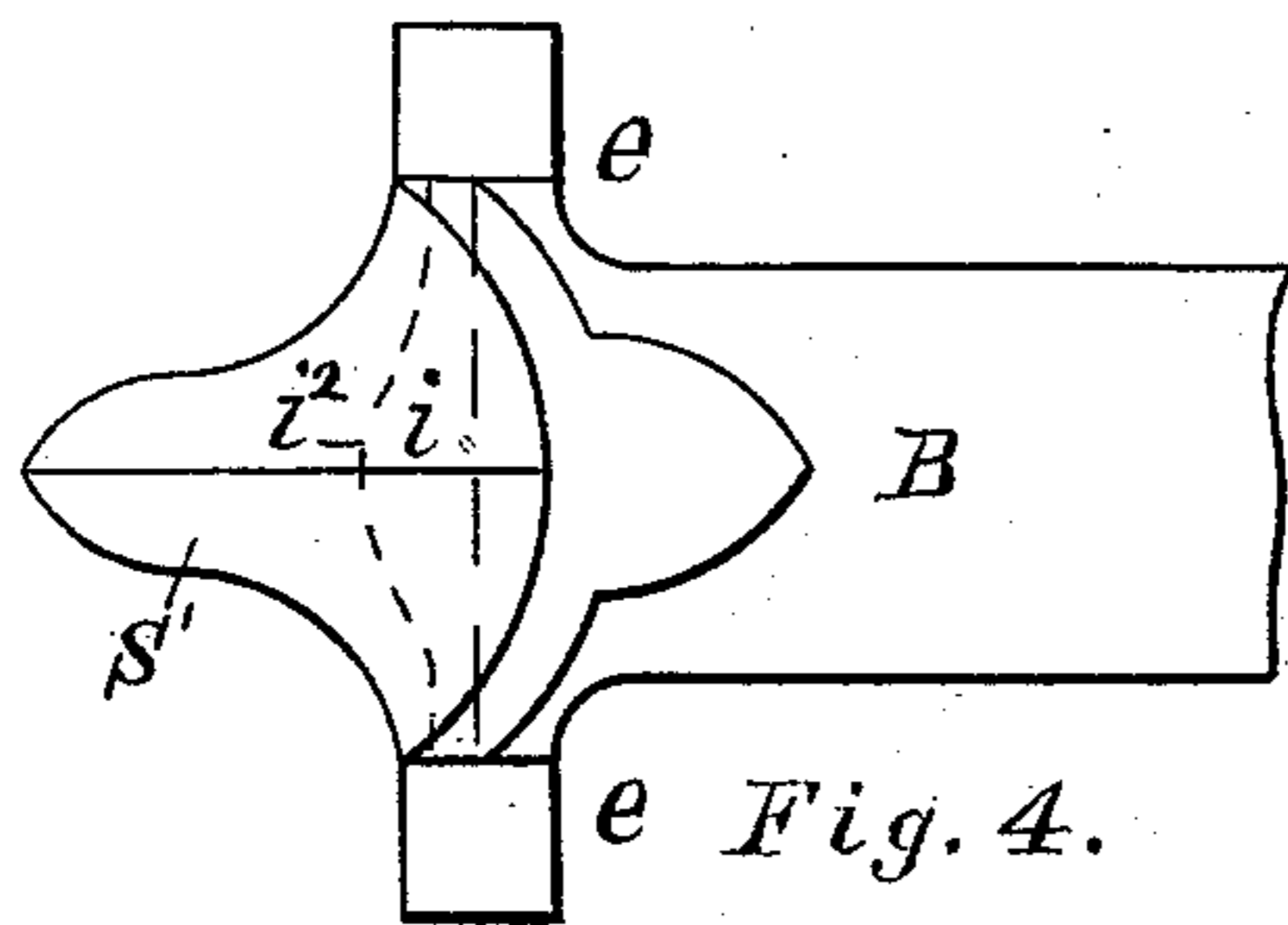
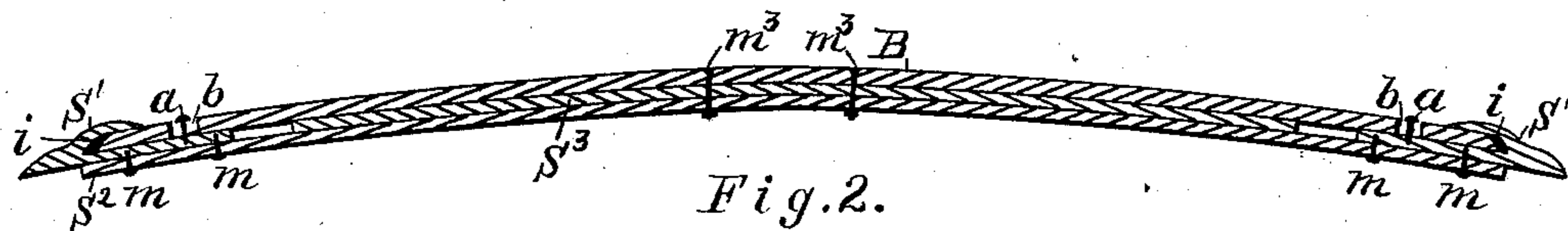
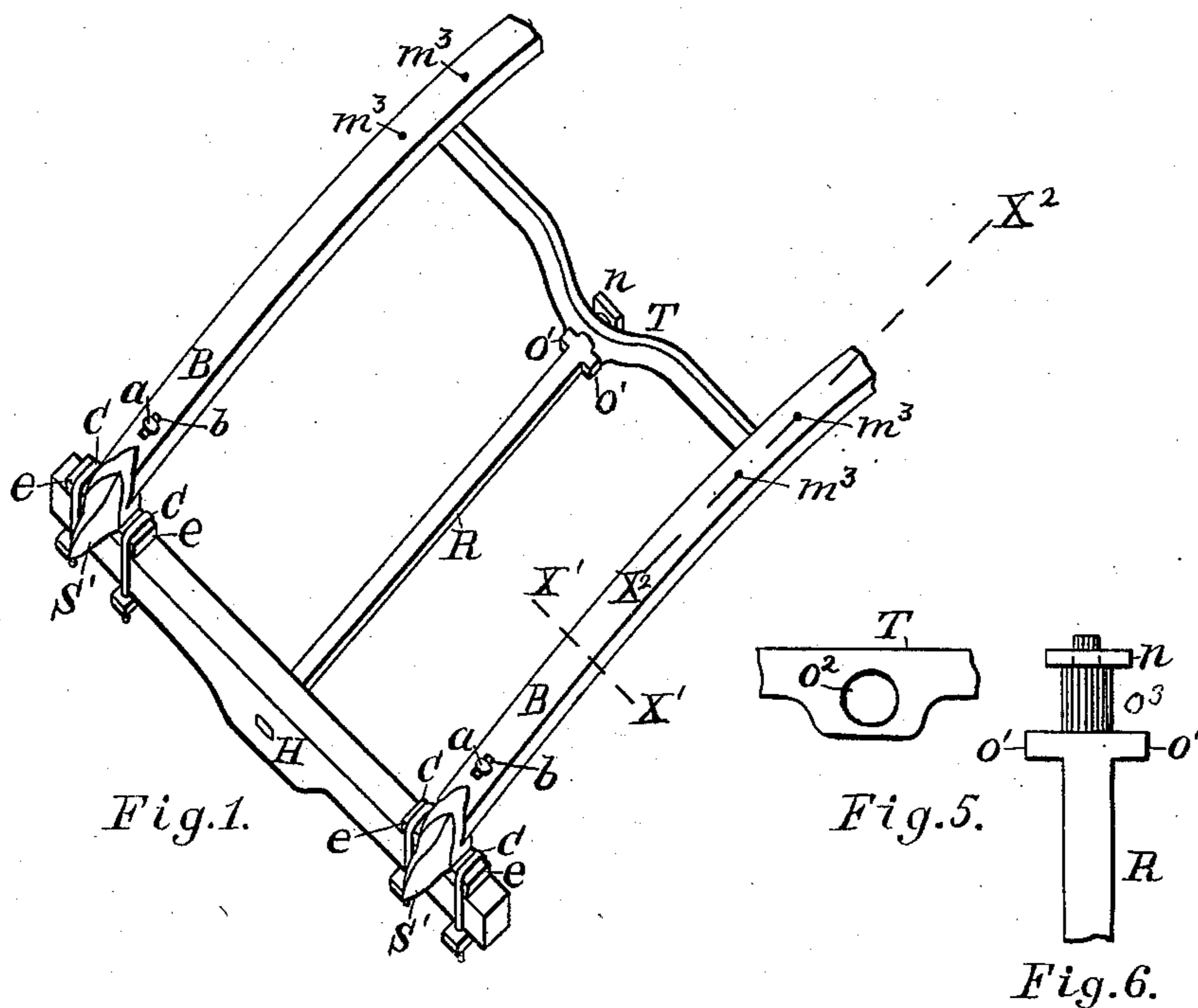
(No Model.)

H. L. SHERWOOD.

SPRING BOARD WAGON.

No. 298,245.

Patented May 6, 1884.



Witnesses:

Charles S. Brintnall
Jm a. Saxe.

Inventor:

Henry L. Sherwood
by W. E. Hagan
his Attorney

UNITED STATES PATENT OFFICE.

HENRY L. SHERWOOD, OF NORTH HOOSICK, NEW YORK.

SPRING-BOARD WAGON.

SPECIFICATION forming part of Letters Patent No. 298,245, dated May 6, 1884.

Application filed December 1, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. SHERWOOD, of North Hoosick, county of Rensselaer, and State of New York, have invented a new and
5 useful Improvement in Spring-Board Wagons, of which the following is a specification.

My invention relates to certain improvements in spring-board wagons, and to a method
10 of combining with the spring boards or bars used upon each side of the vehicle to support the box or seat metallic springs that are placed in curved parallel contact with the boards or
15 bars, the object of my invention being to dispense with the use of the large and cumbersome structure of boards used in this class of vehicles, and by substituting for them boards or
20 bars of smaller dimensions, and in combining with the latter metallic springs that are in contact with and have a parallel adjustment with the wooden bars or boards in their elastic action.

My invention consists, as will hereinafter be more fully described, in the combination, with
25 of an elliptically-curved metallic spring that is in parallel contact with the board or bar on its under side, and with the ends of the metal spring, each curved upwardly and inwardly toward each other, and adapted to receive and
30 retain a rubber cushion and the abutting ends of the board or bar.

In the accompanying drawings, forming a part of this specification, there are six figures illustrating my invention, and in all of which
35 the same designation of parts by letter-reference is used.

Figure 1 illustrates in perspective a view of my improved spring boards or bars as attached
40 at the front to the head-block of the vehicle, the bars being broken off back of the half-reach and cross-bar. Fig. 2 is a longitudinal vertical section of the combined under bar or board and the metallic springs taken on the
45 line $x^2 x^2$ of Fig. 1; and Fig. 3 is a cross vertical section of the same taken on the line $x' x'$ of Fig. 1. Fig. 4 shows, in an enlarged top view, the upwardly and inwardly turned shoe-form ends of the lower spring, and the manner in which they are adapted by construction
50 to receive a rubber cushion and the abutting ends of the board. Fig. 5 illustrates, in a front

elevation and as enlarged, the central part of a cross-bar, that connects the two sets of boards and springs, and which bar, by means of a swivel-joint, connects with the half-reach. 55
Fig. 6 is an enlarged top view of the end of the half-reach, showing the position of the swivel that connects the latter with the cross-bar.

The several parts of the apparatus are designated and their function described as follows: 60

The letter B indicates a board or wooden bar, that is grooved out longitudinally on its under side, as designated at b' , Fig. 3, and which is curved elliptically, as shown. 65

The letter S^3 indicates an intermediately-placed metallic leaf-spring, arranged to fit into the groove b in the bar B, and which spring is shorter than the latter.

At S^2 there is designated a bottom leaf-spring 70 of metal, which is longer than the board or bar B. As a continuation of the bottom spring, S^2 , there is shown as attached at $m m$ to it the upwardly and inwardly turned shoe-form ends S' , arranged to receive a rubber cushion, i' , 75 and the abutting ends of the board B. In each end of the latter there is formed a slot, b , and at a there is in each of the slots a guide-pin which has a headed top, with its lower end firmly secured to the plate part of the shoe end S' . At $m^3 m^3$ the combined board or bar and the parallel springs S^2 and S^3 are connected by bolts. The ears $e e$, formed on the shoe end of the spring S' , are constructed to attach the combined board or wooden bar and 85 the springs to the head-block, as indicated at C, by means of clips, and to the stock of the rear axle in the same manner and by the same means.

The letter T indicates a cross-bar connecting the sets of combined boards and springs arranged at each side of the vehicle. This cross-bar at the center is lower than at its sides, the latter rising to meet the crown of the combined springs at the sides. 95

The letter R designates a half-reach, upon the end of which is the swivel-pin O^3 , which is constructed to fit into the opening O^2 in the cross-bar T; and the letter N indicates a nut upon the end of the reach, to keep the latter 100 within the bearing O^2 and back of the ears O' . This swivel-joint thus formed for the

half-reach admits of the use of a cross-bar to connect the side springs for united longitudinal vibration, and allows either of the front wheels to be suddenly forced upwardly without causing the seat to lurch sidewise, the impetus being directed by the adjustment which the front of the springs, the half-reach, and head-block make on this swivel-connection. With the parts thus constructed the combined board or wooden bar and metallic springs take up and distribute together the vibration produced by the jolting of the vehicle, and this elastic action is neither that of wood or metal, but the modified elasticity of both. The wood part of the spring, although rigidly held near its center to the metal springs beneath it, is free to adjust at its abutting ends against the rubber cushion held within the upturned shoe end of the lower spring, and being held in place for such adjustment by means of the slots formed in the ends of the boards and the guide-pins in the slot attached to the spring beneath. By thus combining wood and metal the cumbrous measure of the former, where used in the main, is avoided and a light and graceful-looking spring-support produced.

While I have shown the lower spring, S^2 , and the shoe-shaped ends S' as made separately and attached, they may be made in one piece, if desired, without changing their action or function in the least, the piece S' being merely a continuation of the spring S^2 , the object of longitudinally grooving out the under side of the board or wooden bar being merely to hide a part of the spring, and thus make a lighter looking spring-support. If desired, the groove may be omitted and the spring placed on the exterior of the board in the same parallel adjusting-contact, and the operation of the parts will remain the same; and instead of the two leaf-springs shown, that indicated at S^3 may be omitted, it in fact being merely a re-enforce leaf to the spring S^2 .

It is obvious that the shoulders and rubber

cushions described may be dispensed with and still retain a material part of my invention.

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

1. A wagon box or seat supporting spring, consisting of an elastic board or bar of wood, a metallic leaf-spring beneath the same, having its ends curved upwardly to receive a rubber cushion and the abutting ends of said wooden board or bar, and provided with ears to secure said spring to the head-block at the front end and the stock of the axle at the rear, as shown and described.

2. A wagon box or seat supporting spring, consisting of a crowned elastic board or bar of wood, a metallic leaf-spring beneath the latter and in surface contact with it, with the ends of said metallic spring curved upwardly and inwardly to receive a rubber cushion and the abutting ends of said board or wooden bar, a slot formed in each end of the latter, and a guide-pin in said slot, with its lower end secured to said metallic spring, and the latter constructed to be attached to the head-block at the front and the stock of the axle at the rear, as shown and described.

3. The combination, in a carriage-spring, of a grooved, crowned, elastic wooden board or bar, provided with a slot at each end, and a metallic leaf-spring beneath and partially or wholly inclosed by said wooden bar, provided with projecting guide-pins to work in the slots in the wooden bar, substantially as shown and described.

4. The combination of a grooved and slotted elastic wooden bar and a metallic leaf-spring having projecting guide-pins, and constructed to be attached to the head-block and stock of the axle, as described.

Signed at Troy, N. Y., this 15th day of November, 1882.

HENRY L. SHERWOOD.

Witnesses:

WILLIAM C. BUELL,

CHARLES S. BRINTNALL.