

W. R. SMITH.
 SPRING CONSTRUCTION.
 APPLICATION FILED SEPT. 21, 1908.

916,622.

Patented Mar. 30, 1909.

Fig. 1.

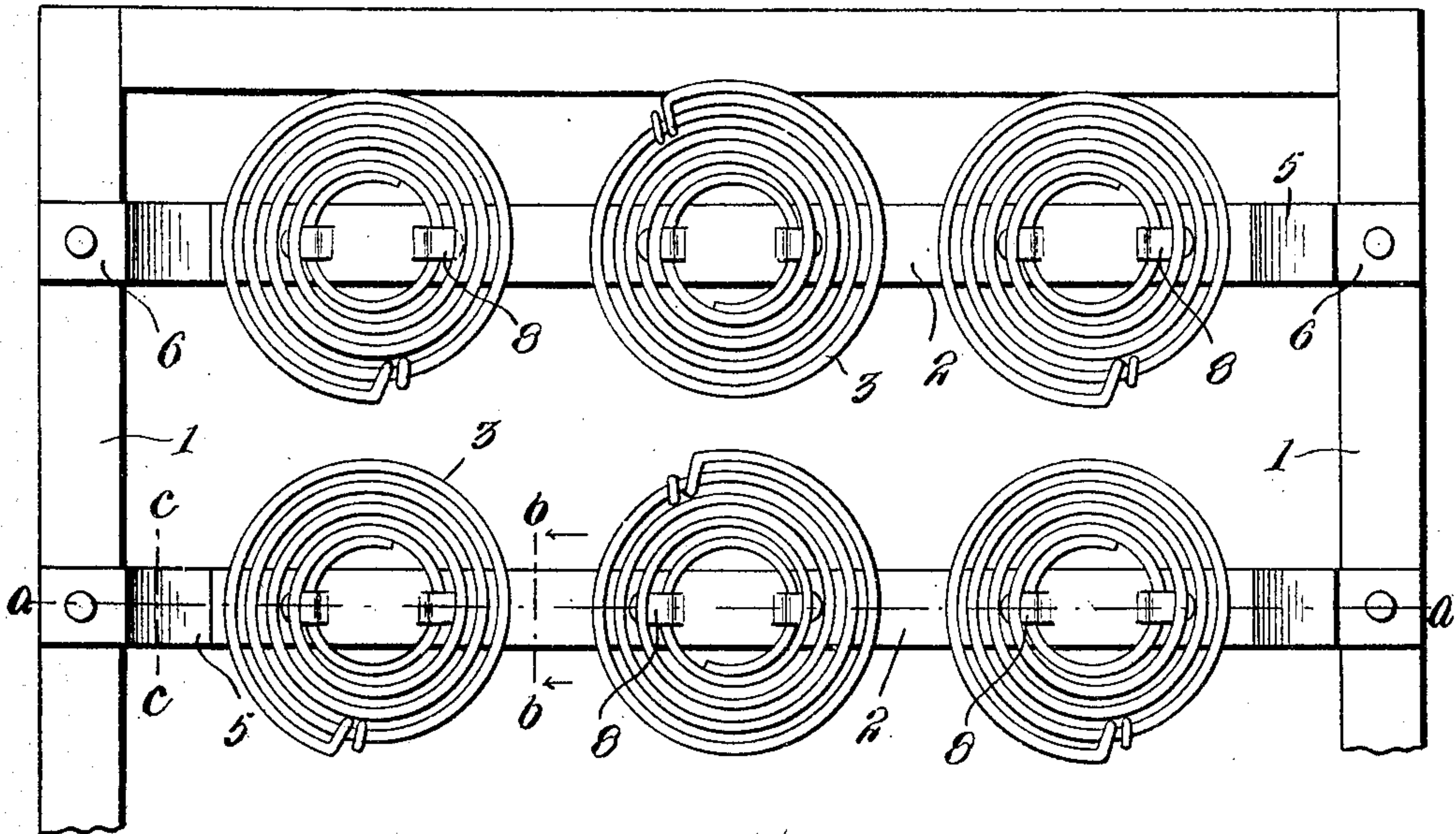


Fig. 2.

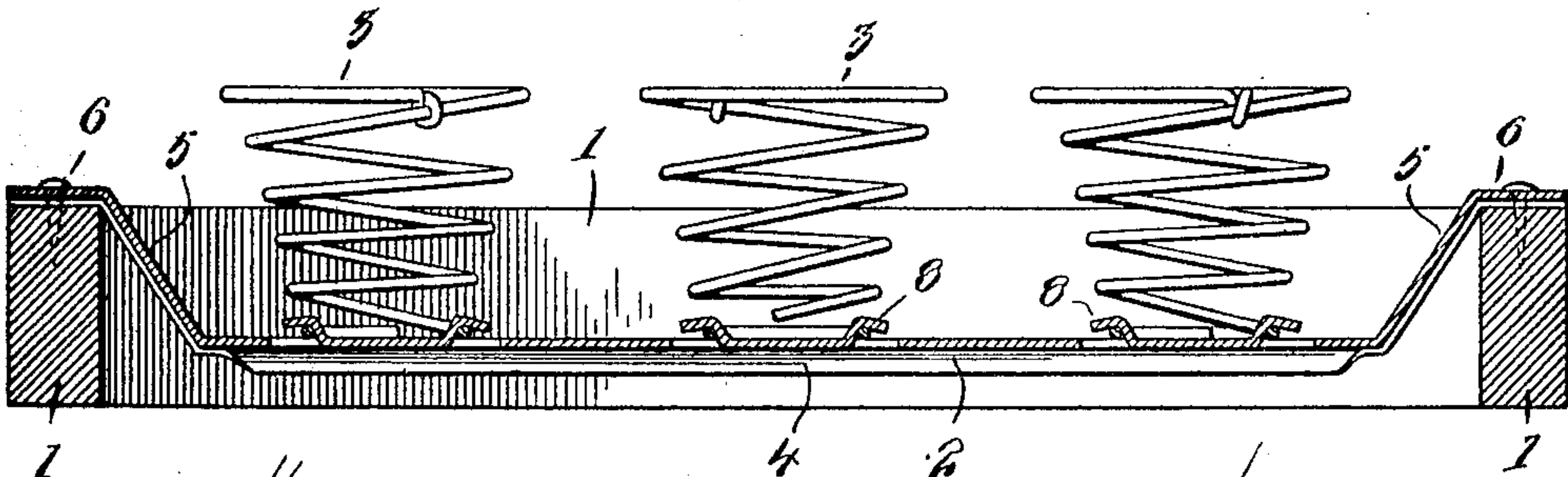


Fig. 3.

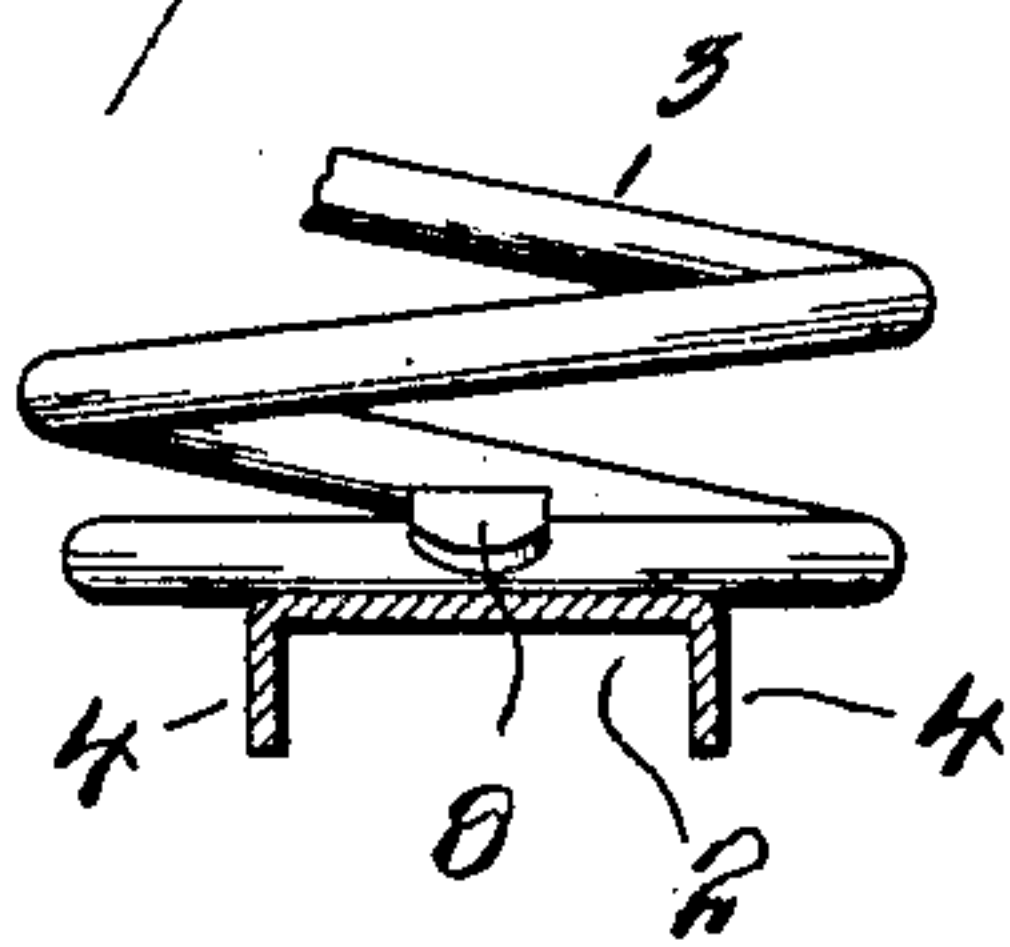


Fig. 4.

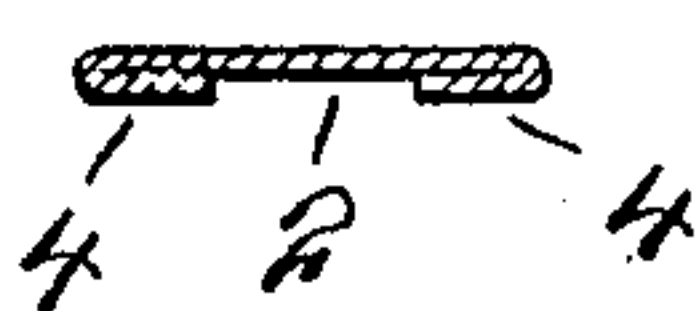
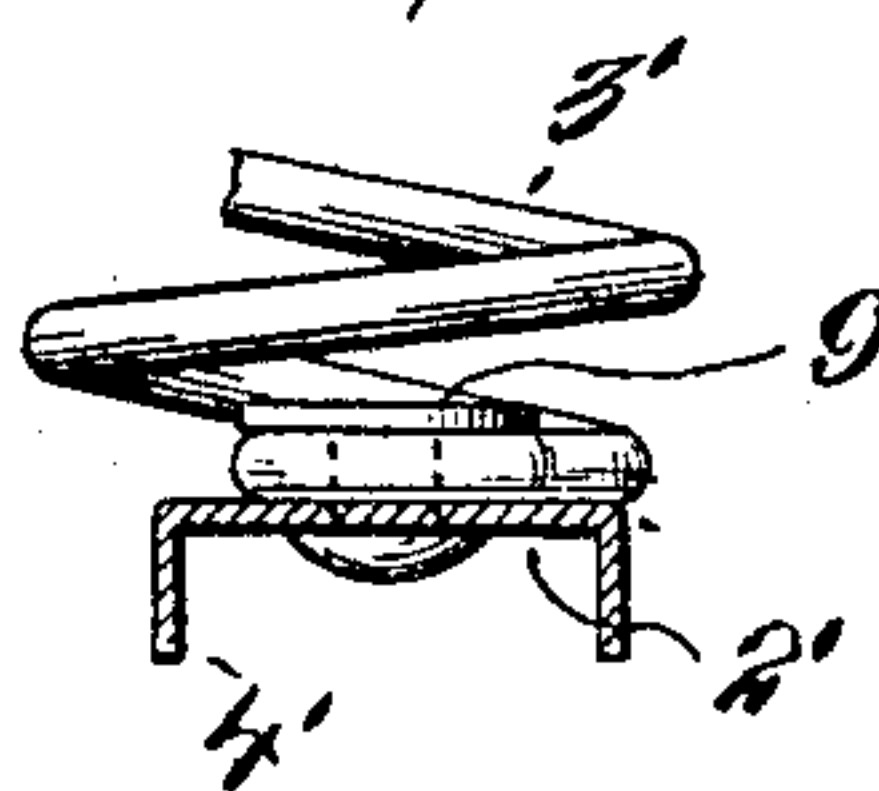


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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SPRING CONSTRUCTION.

No. 916,622.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WATSON R. SMITH, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Spring Constructions, of which the following is a specification.

This invention relates to spring constructions.

One object of the invention is to provide a supporting bar for the springs embodying such characteristics that it will not be subject to compression incident to the weight of the rider upon the structure under normal conditions or in the event that the vehicle should strike an obstruction in the roadway and jar the vehicle in which the structure is employed.

Another object of the invention resides in the provision of a spring structure capable of being transported in what is known as a "knockdown" condition and set up or assembled by any person desirous of using the device.

A still further object of the invention resides in the provision of a spring structure embodying such elements that all of the parts may be easily and quickly assembled and locked in coöperative relation and the springs of the structure mounted upon a broad flat bearing surface of the supporting bars which latter are so formed and constructed that they will not be subject to compression, but provide for a rigid support for the springs.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a top plan view of a portion of a frame illustrating my invention. Fig. 2 is a cross sectional view on the line *a—*a** of Fig. 1. Fig. 3 is a transverse sectional view on the line *b—*b** of Fig. 1. Fig. 4 illustrates a modified form of means for fastening the springs to the bars.

Referring now more particularly to the accompanying drawings, the reference character 1 indicates a portion of a frame to which

are secured my improved bars 2 adapted to support the springs 3. Any number of bars may be employed according to the size of the frame.

The bars 2 are each formed preferably of flat steel pressed into the shape of a channel iron with the flanges 4 extending throughout the entire length of the supporting part of the bar at a direct right angle to the body portion of the latter. Thus the flanges are continuous throughout the supporting part of the bar and, as shown, they are directed downwardly in preference to directing them upwardly or forming them upon a curve or irregular longitudinally of the body of the bar. I therefore effectually reinforce or strengthen the bar against compression and provide a firm and rigid support for the springs 3. The opposite ends of the bars at each end are formed to provide hangers, that is, each end is directed upwardly at 5 and then outwardly at 6 so that the portions 6 may be secured to the top of the frame in any suitable manner and the body of each bar depend within the frame. The flanges 4 at each end of the bars are bent into engagement with the underside of the bars from the points 7 to the extremities thereof to reinforce the hanger portions 6—7 of the bars without destroying the junctions of the flanges with the supporting part of the bars.

I am aware that it is old in the art to provide V-shaped bars and also bars that are semi-circular in cross section and perforate or slot the upwardly or downwardly directed longitudinal portions of the bars to receive portions of the springs of the structure. However, such constructions do not provide for a firm mounting of the springs, as the latter are supported only by the openings or slots and consequently do not have substantial mounting upon the bodies of the bars. Furthermore, in such constructions the springs have to be twisted into the perforations or slots in order that they may be secured upon the bars, all of which requires considerable time and energy on the part of the user in setting up the structure. Moreover, aside from the above disadvantages these slots and perforations greatly weaken the bars. I am also aware that it is old to direct the longitudinal edges of the bars upwardly over and upon the tops of the bodies of the bars to overlap the lower convolutions of the springs to secure the latter in place. However, it is difficult to mount the springs

in such devices, and moreover, unless the flanges are directed downwardly and are regular and continuous and at right angles to the bars, the latter are subjected to compression and will not effectually provide for such rigidity as is essential in bars of this character.

In order that I need not mount the springs 3 in the flanges of my improved supporting bar and thereby weaken the flanges and make the bars liable to compression, and in order to provide for a firm mounting of the springs 3 upon the bodies of the supporting bars, I provide the body of each bar intermediate the longitudinal edges thereof with a plurality of spaced pairs of tongues 8, by virtue of which I am enabled to secure the springs to the supporting bars without twisting the springs into coöperative relation with the bars. In other words, it is simply necessary for me to place each spring adjacent and between the corresponding pair of the tongues 8 and then merely bend the tongues 8 over the lower convolutions of the springs, as shown. This is obviously a very simple method of securing the springs to the bars and it is also obvious that if the structure is shipped in parts that the user or the maker of a complete structure may readily assemble the parts without the twisting operation and with very little, if any, energy at all. These tongues are preferably struck up from the bodies of the bars, as shown.

From the foregoing, it will be seen that by virtue of the flanges 4 being directed downwardly at a direct right angle to the bodies of the bars and being arranged parallel with each other throughout the length of the supporting bars, that I provide for a rigid support of the springs and that the bars are not subject to compression, as would be the case in the use of flat bars or bars provided with upwardly directed flanges.

If preferred, I may secure the lower ends of the springs 3' to the body portion of the bar 2' by means of a suitable fastening 8, as

shown in Fig. 4. Thus either method of fastening the springs to the bars disclosed herein may be employed to secure the springs firmly to the bars.

Having thus described my invention, what is claimed as new is:—

1. In a spring construction, a frame, a spring supporting bar connected to the frame embodying a metallic member including a body having downwardly directed flanges at its opposite longitudinal edges extending continuously throughout the length of the supporting portion of the bar and at a direct right angle to the body portion to maintain the latter against compression, said flanges being imperforate, hanger portions formed at the opposite end of the bar, the aforesaid flanges of the body portion being bent at the hanger portions into intimate contact with the body of the hanger portions throughout the length of the latter to strengthen the same, springs mounted upon the body of the bar above said flanges, and means for securing the springs upon the body portions of the bars.

2. As an article of manufacture, a supporting bar for springs embodying a metallic member including a body having downwardly directed flanges extending continuously throughout the length of the supporting portion of the bar and at a direct right angle to the body portion to maintain the latter against compression, hanger portions formed at the opposite ends of the bar, the aforesaid flanges of the body portion being bent at the hanger portions into intimate contact with the body of the hanger portions throughout the length of the latter to strengthen the same.

In testimony whereof I affix my signature, in presence of two witnesses.

WATSON R. SMITH.

Witnesses:

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