W. FRIEDRICHSEN.

VEHICLE SPRING.

APPLICATION FILED JAN. 18, 1911.

993,236.

Patented May 23, 1911.

Fig. 1.

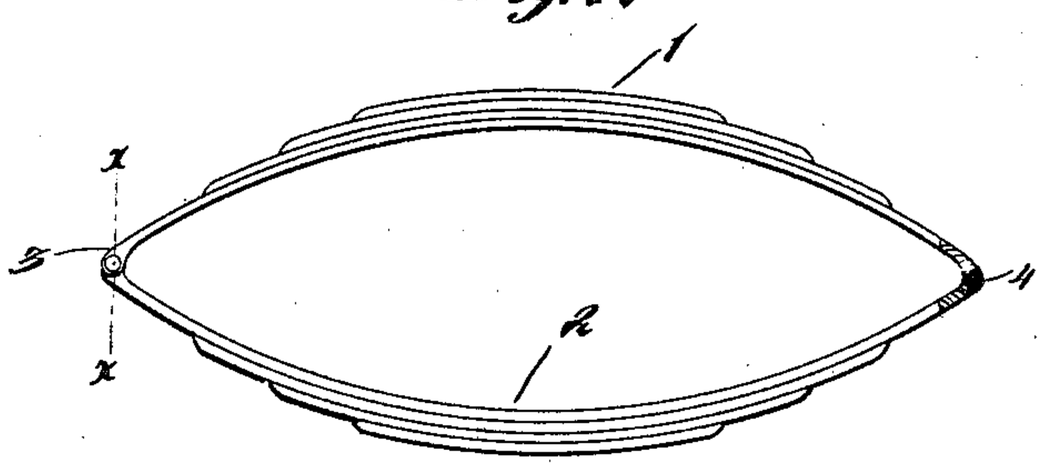


Fig. 2.

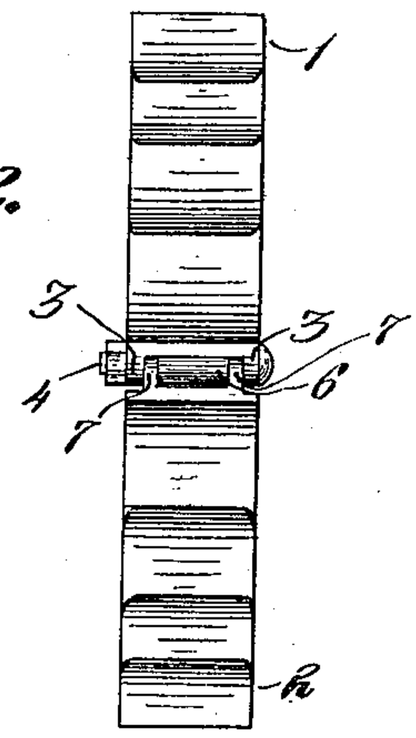


Fig. 3.

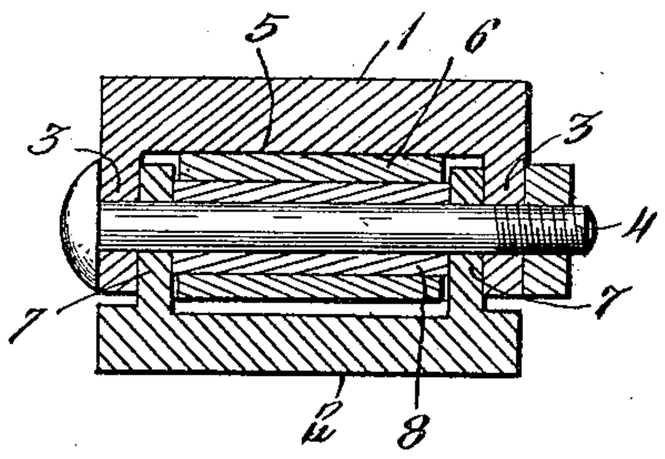
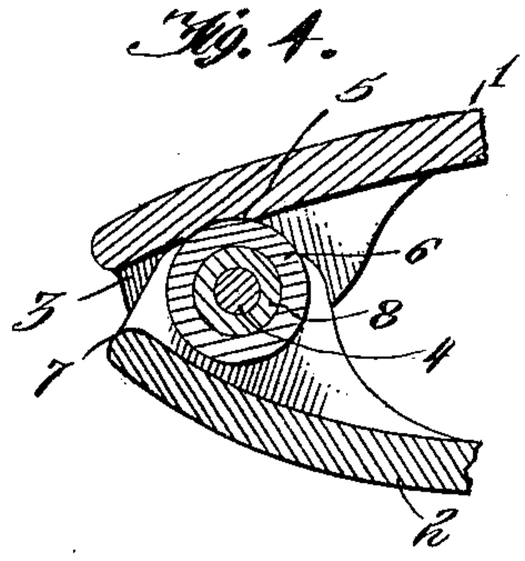


Fig. 4.



Witnesses

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VEHICLE-SPRING.

993,236. Specification of Letters Patent. Patented May 23, 1911.

Application filed January 18, 1911. Serial No. 603,327.

To all whom it may concern:

Be it known that I, WILL FRIEDRICHSEN, a citizen of the United States, residing at Miles, in the county of Jackson and State of Iowa, have invented new and useful Improvements in Vehicle-Springs, of which the following is a specification.

The present invention is designed primarily to provide connecting means between the members of vehicle springs of novel formation to insure the provision of a joint possessing stability and free from excessive wear and the production of disagreeable noises.

The invention relates more particularly to connecting means between the extremities of the bow or semi-elliptic members of vehicle springs of elliptic form, whereby the strain and wear are uniformly distributed and the friction between the moving parts reduced to a minimum so as to avoid the squeak incident to the joints of springs of this type as ordinarily constructed.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawing, and pointed out in the appended claims.

Referring to the drawing, forming a part of the application, Figure 1 is a side view of an elliptic spring embodying the invention, an end portion being in section. Fig. 2 is an end view of the spring on a larger scale. Fig. 3 is a section on the line *x*—*x* of Fig. 1, showing the parts enlarged. Fig. 4 is an enlarged longitudinal section of an end portion of the spring.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawing, by the same reference characters.

The elliptic spring illustrated comprises upper and lower sections 1 and 2 which are connected at their ends by means embodying the invention, said sections 1 and 2 being of any desired formation. Each end of the upper section 1 is provided with ears 3 which are transversely pierced to receive the bolt or like fastening 4. The ears 3 are somewhat rounded and merged at their inner ends into the body of the spring to provide a neat finish and a durable joint between the spring and ears. A slight depression 5 is formed in the lower side of each end portion of the section 1 in line with the ears 3 and constitutes a seat to receive a roller 6 mounted between the ears of the lower section 2.

The section 2 of the spring has pairs of ears 7 at its ends which are spaced apart a distance to fit snugly between the ears 3. The ears 7 are somewhat rounding on their edges and their inner ends merge into the spring 2. The ears 7 are transversely pierced to receive the bolt or fastening 4. When the springs are placed together the ears 7, at the ends of the section 2, fit between the ears 3 of the section 1 and the sections 1 and 2 are pivotally connected by means of the bolts or fastenings 4 which pass through registering openings formed in the ears 3 and 7.

Concentric rollers 8 and 6 are mounted upon each of the bolts or fastenings 4. The rollers 8 are a trifle longer than the rollers 6 and obtain a close fit between the ears 7. The rollers 6 fit loosely between the ears 7 and are adapted to turn upon the rollers 8 and also to rock upon the depressions or seats 5, thereby relieving the bolts or fastenings 4 of a material part of the strain. The rollers 6 are spaced from the upper sides of the section 2 of the spring, whereas they touch the lower side of the section 1 and obtain a bearing against the seats 5. The construction is such as to insure the provision of a substantial joint between the sections 1 and 2 of the spring and also to diminish the wear and to prevent the disagreeable noises commonly experienced when said springs are in active service.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new is:—

1. An elliptic vehicle spring comprising complemental sections provided at their ends with pairs of ears which are transversely apertured, the ears of one of the sections fit-

ting snugly between the ears of the other section, a fastening pivotally connecting the sections by passing through the registering openings of the ears thereof, and a roller mounted upon said fastening, said roller being spaced from the adjacent side of the lower section and obtaining a bearing against the adjacent side of the upper section of the spring.

2. An elliptic spring comprising an upper section having ears at its ends and a depression in the under side of its end portions, a second section having ears fitting between the ears of the upper section, a fastening passing through registering openings formed in the overlapping ears, and concentric rollers being mounted upon the fastenings, the inner roller being longer than the outer roller and fitting snugly between ears of the lower section and the outer roller mounted to turn freely upon the inner roller and obtaining a bearing in the depression formed in the under side of said upper section.

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

WILL FRIEDRICHSEN.

Witnesses:
R. J. JONES,
FRANK M. FEIGHAN.