

F. S. RICKERD.

SPRING SEAT.

APPLICATION FILED MAY 14, 1910.

976,396.

Patented Nov. 22, 1910.

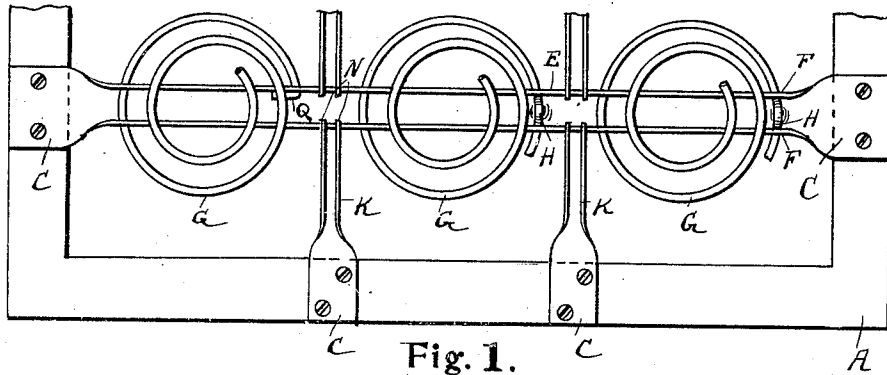


Fig. 1.

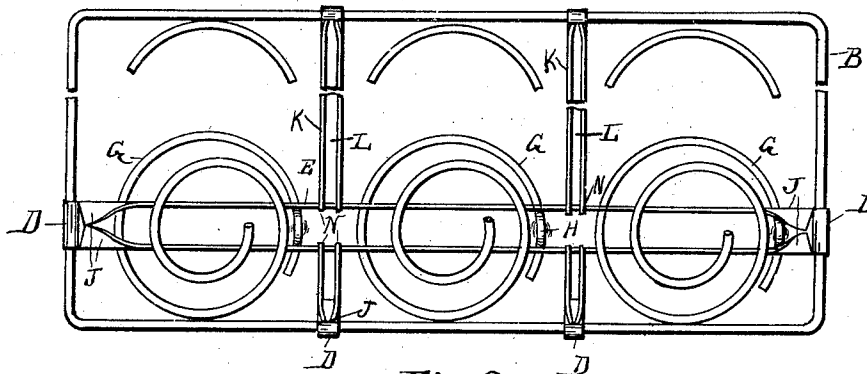


Fig. 2.

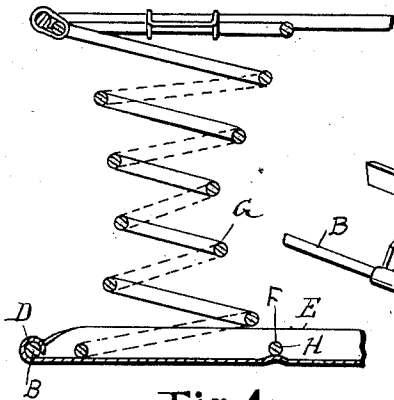


Fig. 4.

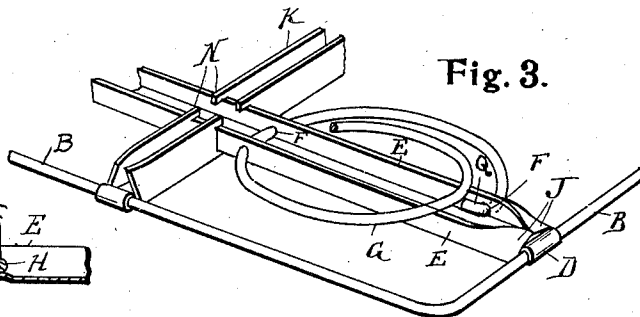
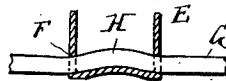


Fig. 5.

Witnesses

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# UNITED STATES PATENT OFFICE.

FRED S. RICKERD, OF DETROIT, MICHIGAN, ASSIGNOR TO DETROIT WIRE SPRING COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

## SPRING-SEAT.

976,396.

Specification of Letters Patent. Patented Nov. 22, 1910.

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*To all whom it may concern:*

Be it known that I, FRED S. RICKERD, who am a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Spring-Seats, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to spring constructions of vehicle seats and to an arrangement of the members whereby the springs employed are held rigidly from working loose or rattling without the aid of rivets or the like, and whereby a very light, durable and strong structure is obtained.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a part of one form of spring structure that embodies features of the invention; Fig. 2 is a plan view, partly broken away, of a modification of the structure; Fig. 3 is a view in detail in perspective showing the method of securing a spring; Fig. 4 is a view in detail partly in longitudinal section of a spring supporting member; and Fig. 5 is a view in detail in section of a supporting member and contacting portion of the spring.

As herein shown, an outer main frame A, as shown in Fig. 1, or B, as disclosed in Fig. 2, supports channel bars E which are secured thereon in spaced relation with their flanges upturned. Transversely disposed cross bars K at regular intervals, have upturned sides  $k$  that are slotted or notched to receive the main bars E. The margins are undercut and the resultant tongues N extend over the proximate margins of the webs of the channels E, thereby retaining the latter in position.

A plurality of upright spiral springs G rest on the main channel bars E to which they are secured by passing the lower coils of each spring through suitable apertures in the upturned webs of the channels. The springs are preferably secured in place by indenting the web portions of the channel bars against the spring coil, preferably forcing the metal far enough to also bend the

wire of the spring as indicated in Fig. 5 to form a slight off-set indicated at H therein. The end portion of the lower coil may be passed through both flanges of the channels and secured as above described or may be returned as indicated at F of Fig. 3, against the inner face of one of the channels.

The upper coil of each spring is suitably secured to an upper frame O as by suitable clips P. Where the base or sub-frame A is of wood the ends of the main and transverse channels are flattened, preferably by outspreading the flanges and are secured to the frame by suitable screws R or the like. If the base frame A is of metal, the flanges of the channel bars are cut away near each end for a short distance. The web J beyond the ends of the flanges is rolled around the frame with its inner end lying between the end portions of the flanges which are in bent over the extremity of the web. By this construction a very light structure is obtained in which the springs are held in place without the aid of rivets or the like and in which the bottom coils are firmly supported in such manner to prevent their tilting or rocking when in use.

Obviously, changes in the details of construction may be made without departing from the spirit of the invention and I do not care to limit myself to any particular form or arrangement of parts.

I claim as my invention:

1. A spring construction comprising a main frame, channel bars extending longitudinally thereof in spaced relation with their flanges upturned, transverse channel bars secured across the frame in spaced relation with their upturned flanges notched and interlocked with the flanges of the main channels, and a plurality of upright spiral springs whose lower coils pass through mating apertures in the flanges of the main channel bars, the webs of said bars being indented against the portions of the coils between the flanges.

2. A spring construction comprising a main frame, main channel bars supported at their end portions only thereon in spaced relation with their flanges upturned, transverse channel bars secured across the frame in spaced relation with their upturned flanges notched and interlocked with the flanges of the main bars, the end portions of the main bars having their flanges cut

away with the web portions secured against the frame members, and upright spiral springs whose lower coils pass through mating apertures in the flanges of the main channels, the webs of the latter being indented to engage said coils between the bar flanges.

3. A spring construction comprising a main frame, a channel bar extending across the frame with its channels upturned, the flanges of the bar being cut away from the end portions thereof and the end portions of the webs being folded around the frame, the end portions of the flanges being inbent over the reverted part of the web, and spiral springs whose lower coils rest on and are secured to the main bar in apertures in the flanges thereof.

4. A spring construction comprising a base, channel bars on the frame in spaced relation with their flanges upturned, the end portions of the flanges being cut away and the webs at the ends being bent around the adjacent members of the frame between the flanges, the ends of the latter being inbent to overlap the webs, transverse channel bars secured across the frame in spaced relation, the upturned flanges of the latter having notches with under-cut margins engaged by the main cross bars with which said flanges

are interlocked, and springs whose lower coils pass through registering apertures in the flanges of the main channels, the web portions of said channels being off-set to engage the springs between the flanges.

5. A spring construction comprising a base, channel bars on the frame in spaced relation with their flanges upturned, the end portions of the flanges being cut away and the webs at the ends being bent around the adjacent members of the frames between the flanges, the ends of the latter being inbent to overlap the webs, transverse channel bars secured across the frame in spaced relation, the upturned flanges of the latter having notches with under-cut margins engaged by the main cross bars with which said flanges are interlocked, springs whose lower coils pass through registering apertures in the flanges of the main bars, the web portions of said channels being offset to engage the springs between the flanges, and a free end of the lower coil of each spring being inbent against the adjacent channel flange.

In testimony whereof, I sign this specification in the presence of two witnesses.

FRED S. RICKERD.

Witnesses:

WILLIAM M. SWAN,  
VERA PILLMAN.