March 8, 1966 C. E. KLICKI 3,239,208

SPRING SEAT CONSTRUCTION

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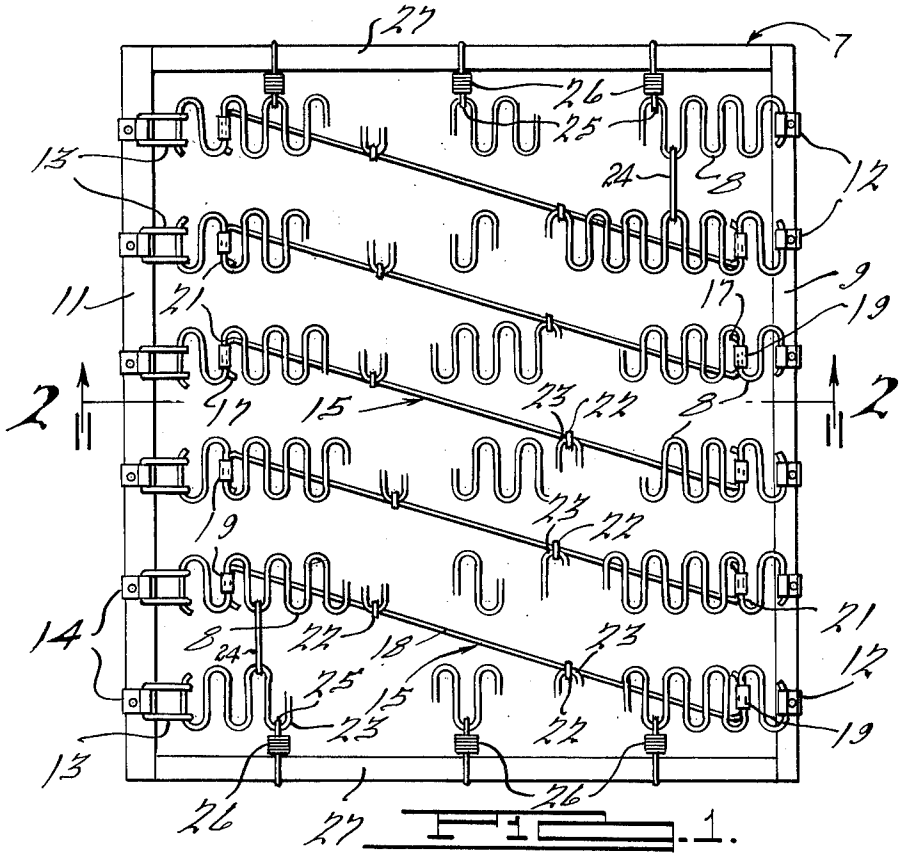


Fig. 1.

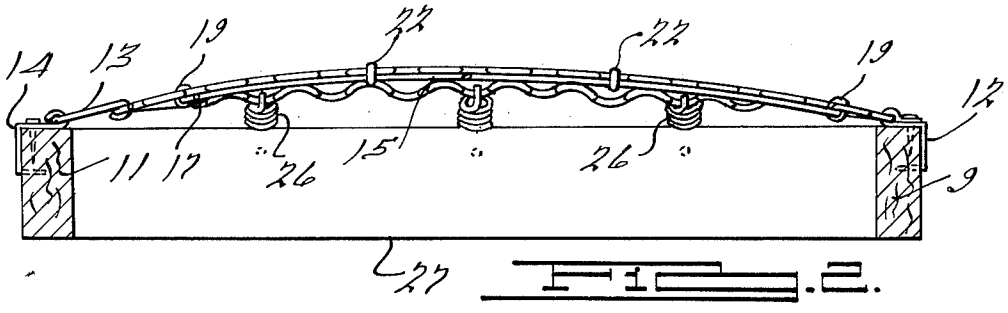


Fig. 2.

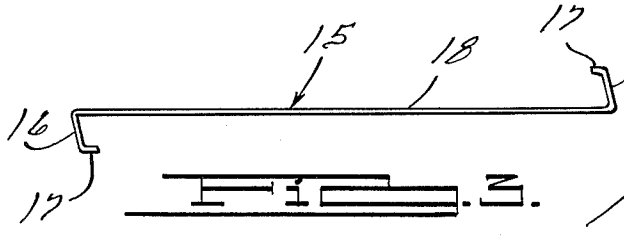


Fig. 3.

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SPRING SEAT CONSTRUCTION

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This invention relates to spring seat construction and particularly to a seat frame having springs thereacross joined diagonally by brace rods.

The cushion has a frame supporting a plurality of spring strips stretched between the front and rear rail members thereof with the sidemost spring strip connected by coil springs to the side frame members. Adjacent springs strips are connected by a brace rod which is secured to opposite ends of the spring strips in angular relation thereto and to the space therebetween. Bands are employed to interconnect spaced loops of the spring strips to the brace rod at the points of tangency thereof. The spring strips are preferably arced to provide a crown to the seat cushion and brace rods may be similarly crowned or a crown is produced therein when secured by the bands to the adjacent springs. A link joins adjacent spring strips at diagonal corners of the frame which are not connected by a brace rod.

Accordingly, the main objects of the invention are: to provide a seat cushion made of strips of sinuously formed wire which are supported in spaced relation across a frame with the adjacent strips interconnected by diagonal brace rods secured at opposite ends of the strips; to form a seat cushion from a plurality of spring strips secured across a frame member in spaced, arced relation to each other with arced brace rods secured diagonally across adjacent springs at the opposite ends thereof and at tangential points therebetween; to reinforce a seat cushion made from a plurality of spaced sinuous spring strips connected with Z-shaped bracing rods the ends of which are banded to opposite ends of adjacent spring strips with the adjacent unsecured spring strips at diagonal corners of the frame interconnected by links and, in general, to interconnect the spring strips of a seat cushion with diagonal brace rods which reinforces the spring strips and uniformly distributes the load over the resulting spring surface.

Other objects and features of novelty of the invention will be specifically pointed out or will become apparent when referring, for a better understanding of the invention, to the following description taken in conjunction with the accompanying drawing, wherein:

FIGURE 1 is a plan view of the interconnected spring strips of a seat cushion embodying features of the present invention;

FIG. 2 is an enlarged sectional view of the structure illustrated in FIG. 1, taken on the line 2—2 thereof; and

FIG. 3 is a view of a bracing rod employed in the structure illustrated in FIG. 1.

In the figures, a seat frame 7 has a plurality of spring strips 8 secured to the front and rear frame members 9 and 11 respectively. The spring strips are made of wire bent back and forth in sinuous form having adjacent oppositely disposed loops joined by straight portions which may be prestressed by being set on an arc of predetermined radius. The front end of the spring strips are attached to the front rail member 9 by a plurality of clips 12, the rear end thereof being secured by U-shaped elements 13 to clips 14 which are attached to the rear frame member 11. The spring strips are stretched between the clips 12 and 14 to remove most of the arc therein leaving only enough to form the crown of the seat. The U-shaped elements 13 permit greater deflection at the rear end of the spring strips than that present when the end of the

spring strips are directly connected to the clip 14, which often occurs.

A Z-shaped brace rod 15 as illustrated more specifically in FIG. 3 has attaching ends 16 terminating in locking ends 17 with the ends 16 disposed in acute angular relation the body portion 18 so as to be parallel to a straight portion 21 of the sinuous spring strips when the body portion 18 is disposed diagonally across adjacent spring strips. The ends 16 are secured by band 19 to a straight portion 21 of the spring strips 8 with the body portion 18 connected by bands 22 to loops 23 of the spring strips substantially at the point of tangency therebetween. It is important to make clear that when it is stated that the ends or extremities of the respective brace rods 15 are secured or connected to adjacent spring strips 8 that the meaning to be deduced therefrom is that the respective brace rods 15 are connected to adjacent spring strips 8 and that the respective brace rods do not extend sufficiently to abut or to be attached to the frame of the assembly. The body portion 18 of the brace rods 15 are arced to follow the arc of the spring strips as clearly illustrated in FIG. 2. The brace rods interconnect the spring strip and add reinforcement thereto to have the entire unit act in unison when deflected under load.

The endmost spring strips 8 at diagonal corners of the frame not interconnected by a brace rod are joined to an adjacent spring strip by links 24 which have facing U-shaped end portions which hook over aligned loops 23 of the adjacent spring strips. Loops 23 at the endmost spring strips are engaged by an eye 25 of a coil spring 26 the opposite end of which is driven into the side frame members 27 or otherwise secured thereto. The coil springs 26 tie the sidemost spring strips to the frame and produce a tilt thereto so that the four sides of the spring surface slope toward the adjacent frame members.

What is claimed is:

1. In a seat cushion, a frame, a plurality of spaced spring strips spanning opposite sides of said frame, the spring strips being made of wire bent back and forth in sinuous form having adjacent oppositely facing loops joined by straight portions, and a plurality of brace rods each having their respective extremities attached to straight portions of adjacent spring strips at opposite ends thereof, each of said rods disposed to extend diagonally across adjacent spring strips and the space therebetween.

2. In a seat cushion, a frame, a plurality of spaced spring strips spanning opposite sides of said frame, the spring strips being made of wire bent back and forth in sinuous form having adjacent oppositely facing loops joined by straight portions, bracing rods each having laterally disposed securing ends attached to straight portions of adjacent spring strips at opposite ends thereof, each of said rods disposed to extend diagonally across adjacent spring strips and the space therebetween so as to be substantially tangent to a first loop in each of said adjacent spring strips, and means connecting each of said rods to said respective first loops.

3. In a seat cushion, a frame, a plurality of spaced spring strips spanning opposite sides of said frame, the spring strips being made of wire bent back and forth in sinuous form having adjacent oppositely facing loops joined by straight portions, bracing rods each having laterally disposed securing ends attached to straight portions of adjacent spring strips at opposite ends thereof, each of said rods disposed to extend diagonally across said adjacent spring strips and the space therebetween so as to be substantially tangent to a first loop in each of said adjacent spring strips, means connecting each of said rods to said respective first loops, and links interconnecting adjacent spring strips at diagonal corners of the frame where the brace rods are lacking.

4. In a seat cushion, a frame, a plurality of sinuous spring strips made of wire bent back and forth to provide adjacent oppositely directed loops joined by straight portions, clips for securing opposite ends of said spring strips to front and rear rails of the frame, and a plurality of Z-shaped brace members each including a pair of parallel spaced end sections with an interconnecting body section forming an acute angle with each of said end sections, said end sections of each of said brace members connected to opposite end portions of adjacent spring strips with said body section extending diagonally across said adjacent spring strips and the space therebetween.

5. In a seat cushion, a frame, a plurality of sinuous spring strips made of wire bent back and forth to provide adjacent oppositely directed loops joined by straight portions, clips for securing opposite ends of said spring strips to front and rear rails of the frame, a plurality of Z-shaped brace members each including a pair of parallel spaced end sections with an interconnecting body section forming an acute angle with each of said end sections, said end sections of each of said brace members connected to straight portions adjacent opposite end portions of adjacent spring strips with said body section extending diagonally across said adjacent spring strips and the space therebetween so as to be substantially tangent to a first loop in each of said adjacent spring strips, and means connecting each of said rods to said respective first loops.

6. In a seat cushion, a frame, a plurality of sinuous spring strips made of wire bent back and forth to provide adjacent oppositely directed loops joined by straight portions, clips for securing opposite ends of said spring strips to front and rear rails of the frame, a plurality of Z-shaped brace members each including a pair of parallel spaced end sections with an interconnecting body section forming an acute angle with each of said end sections, said end sections of each of said brace members connected to straight portions adjacent opposite end portions of adjacent spring strips with said body section extending diagonally across said adjacent spring strips and the space therebetween so as to be substantially tangent to a first loop in each of said adjacent spring strips, means connecting each of said rods to said respective first loops, and links interconnecting adjacent spring strips in diagonally opposite corners of said frame which lack brace members.

7. In a seat cushion, a frame, a plurality of sinuous spring strips made of wire bent back and forth to provide adjacent oppositely directed loops joined by straight portions, clips for securing opposite ends of said spring strips to front and rear rails of the frame, a plurality of Z-shaped brace members each including a pair of parallel spaced end sections with an interconnecting body section forming an acute angle with each of said end sections, said end sections of each of said brace members connected to straight portions adjacent opposite end portions of adjacent spring strips with said body section extending diagonally across said adjacent spring strips and the space therebetween so as to be substantially tangent to a first loop in each of said adjacent spring strips, means connecting each of said rods to said respective first loops, links interconnecting adjacent spring strips in diagonally opposite corners of said frame which lack brace members, and coil springs connecting certain loops of the sidemost spring strips to said frame.

8. In a seat cushion, a frame, a plurality of sinuous spring strips made of wire bent back and forth to provide adjacent oppositely directed loops joined by straight portions, clips for securing opposite ends of said spring strips to front and rear rails of the frame, a plurality of Z-shaped brace members each including a pair of parallel spaced end sections with an interconnecting body section forming an acute angle with each of said end sections, said end sections of each of said brace members connected to straight portions adjacent opposite end portions of adjacent spring strips with said body section extending diagonally across said adjacent spring strips and the space therebetween so as to be substantially tangent to a first loop in each of said adjacent spring strips, means connecting each of said rods to said respective first loops, links interconnecting adjacent spring strips in diagonally opposite corners of said frame which lack brace members, and coil springs connecting certain loops of the sidemost spring strips to the side members of the frame, said spring strips and brace members being arced to provide a crown.

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