Nov. 3, 1953 R. F. KRUSZONA 2,657,738

ANCHORING MEANS FOR WAVY WIRE SPRING ENDS

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FIG. 1.

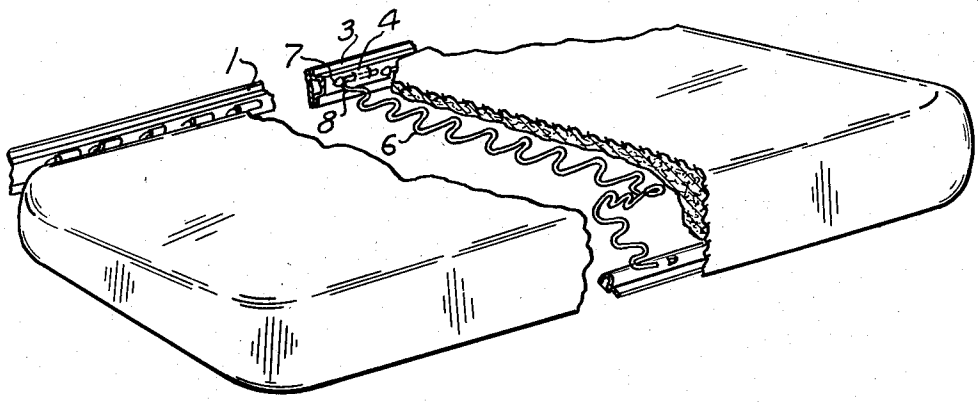
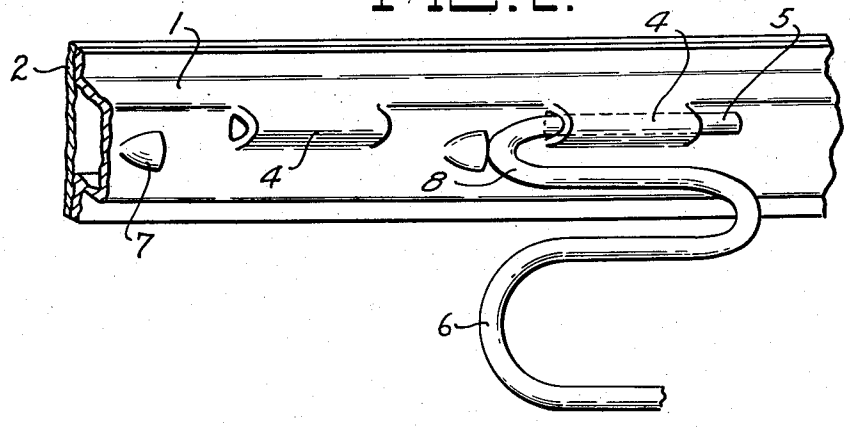


FIG. 2.



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ANCHORING MEANS FOR WAVY WIRE SPRING ENDS

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9 Claims. (Cl. 155—179)

1

This invention relates to means for fastening the ends of strips of wire to a frame, particularly the fastening of wavy wire spring ends to a seat bottom or seat back frame.

Recently seat bottom and seat back springs have been proposed, and some used, involving wavy wire springs. It has been quite a problem how to fasten the ends of these springs to sheet metal or tubular metal sheet frames. It has been found that this usually, if not always, has to be done by hand. It has heretofore been proposed to provide shallow hooks on each end of the wavy wire strip and hook each end through to adjacent perforations in the tubular frame member, but this involved considerable distortion of the stiff spring strip and is a difficult and tiresome job to do by hand, where hundreds of these spring strips have to be hooked each day by a workman.

It is the object of this present invention to afford a much easier and quicker way of fastening the spring ends to the frame member.

Figure 1 is a perspective of a seat spring showing a spring strip fixed to the seat frame by my new fastening arrangement.

Figure 2 is an enlarged detail perspective showing the fastening arrangement.

The seat frame bar 1 may be either a tube or a sheet metal bar such as shown in the drawings. As shown in the drawings this bar comprises outwardly turned flanges 3 welded to a flat strip 2. The bottom of the channel has tunnels 4 struck out to form an eye or knuckle to take the end 5 of the spring 6. Adjacent to one end of the knuckle is a struck out nub or tab 7 which is located a definite distance from the end of the knuckle and slightly below and out of line of the knuckle. The purpose of this nub is to catch the end of the wavy wire and thereby hold the end of the spring from coming out of the knuckle or eye 4.

The assembly is made by simply taking the end 5 of the spring and threading it through the eye or knuckle and then allowing the end of the wave to snap behind the nub or tab 7. This keeps the spring located in the knuckle or tunnel. The spring can be easily removed when desired by simply lifting up on the spring strip and disengaging it from the nub, but as long as the strip remains in its normal or a depressed position the end of the wavy wire spring is located behind the nub and the end of the spring is securely held in the loop or knuckle.

What I claim is:

1. In a seat spring, the combination of a sheet metal frame provided with a struck out knuckle

2

and a struck out nub with an abrupt shoulder facing the end of the knuckle, said nub offset from the center line of the knuckle, and a bent wire spring having the straight free end of the bend and the adjacent bent portion overlying the free space between the nub and the adjacent end of said knuckle, the bent portion being turned and snapped behind the shoulder of the nub to hold it in place.

2. In a seat spring, the combination of a sheet metal frame with a struck out knuckle and a nub struck out of the metal and spaced from the end of the knuckle and offset from the center line of the knuckle, a wavy wire spring with an end bent into a loop extending transversely of the length of the spring, the free leg of the loop hooked into the struck out knuckle of the metal frame and the bent end of the wire loop turned and snapped behind the struck out nub to hold the spring end locked in the struck out knuckle of the metal frame.

3. In a spring structure, the combination of sinuously corrugated wire springs formed at their ends with straight attachment portions rectangularly related to the axes of said springs, and a metal frame for supporting said springs, said frame having one wall thereof provided with trunnions struck out from the surface thereof and projecting toward the interior of said frame and portions struck out from said wall and axially laterally offset with respect to said trunnions, said trunnions having the attachment portions of said wire springs extended therethrough and said struck out portions being positioned in engagement with curved wire portions of said springs to prevent lateral shifting of the springs when the attachment portions thereof are received in the trunnions of said supporting frame.

4. In a spring structure the combination of sinuously corrugated wire springs formed at their ends with straight attachment members rectangularly related to the axes of said springs, and channeled supporting sheet metal members formed in their walls with axially aligned upwardly extended trunnions and struck-up portions axially laterally offset with respect to said trunnions, said trunnions having the attachment members of said wire springs extended thereinto and said struck-up portions being positioned to engage curved wire portions of said springs to prevent lateral shifting of the springs when the attachment members thereof are engaged by the trunnions of said supporting members.

5. In a spring structure the combination of sinuously corrugated wire springs formed at their

ends with straight attachment members rectangularly related to the axes of said wire springs, and channeled sheet metal supporting members having formed in their wall portions axially aligned upwardly extended trunnions, said supporting members having projecting peripherally offset portions axially laterally offset with respect to said trunnions, said supporting members seating said wire springs and said trunnions having the attachment members of said wire springs extended therethrough, said projecting portions being positioned to engage curved wire portions of said springs to prevent their lateral shifting when the wire springs, by their attachment members, are properly mounted and seated on said sheet metal supporting members.

6. A frame member for mounting elongated, sinuously corrugated wire springs formed at their ends with straight attachment portions rectangularly related to the axis of said springs, said frame member including front and rear rails, each of said rails having axially aligned, upwardly extended trunnions, said rails having projecting portions associated with said trunnions, peripherally offset and axially laterally offset with respect thereto, said trunnions being associated with said struck-up portions, and said struck-up portions being positioned and arranged to engage curved portions of corrugated wire springs having their attachment members threaded into the trunnions of said rails.

7. A metal frame member for mounting elongated, sinuously corrugated wire springs formed at their ends with straight attachment portions rectangularly related to the axes of said springs, said frame member including front and rear rails having one wall thereof provided with axially aligned trunnions projecting from the surface thereof and other portions projecting from said wall, peripherally offset and axially laterally offset with respect to said trunnions, said trunnions adapted to seat the attachment portions of said wire springs and said other projecting portions positioned to engage with curved wire portions of springs seated with their attachment portions in said trunnions to prevent lateral shifting of the springs.

8. In a frame construction having longitudinally extending members spaced by side members, one of said longitudinally extending members containing spaced knuckles, each knuckle extending outwardly from the normal surfaces of said member and having one end open for receiving the end of a wire spring and a tab for each knuckle spaced from the open end thereof and laterally out of alignment with each knuckle and positioned for retaining the end of the wire spring within the knuckle, after the end of the spring has been inserted in said knuckle and moved laterally transverse to said longitudinal member.

9. In a frame construction having longitudinally extending spaced members, projecting knuckles extending outwardly from the surface of at least one of said members each knuckle having one end open, and fixed projecting tabs extending outwardly from said member, each spaced from and laterally out of alignment with the open ends of said knuckles for retaining the ends of wire springs therein after substantial pivotal movement of the spring ends within the knuckles.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,072,562	Lee	Mar. 2, 1937
2,175,062	Menge	Oct. 3, 1939
2,244,469	Menge	June 3, 1941
2,469,216	Spunt et al.	May 3, 1949