June 28, 1966 W. R. OLSON 3,258,260

SPRING STRUCTURE FOR FURNITURE

Filed Jan. 27, 1964

Fig. 1.

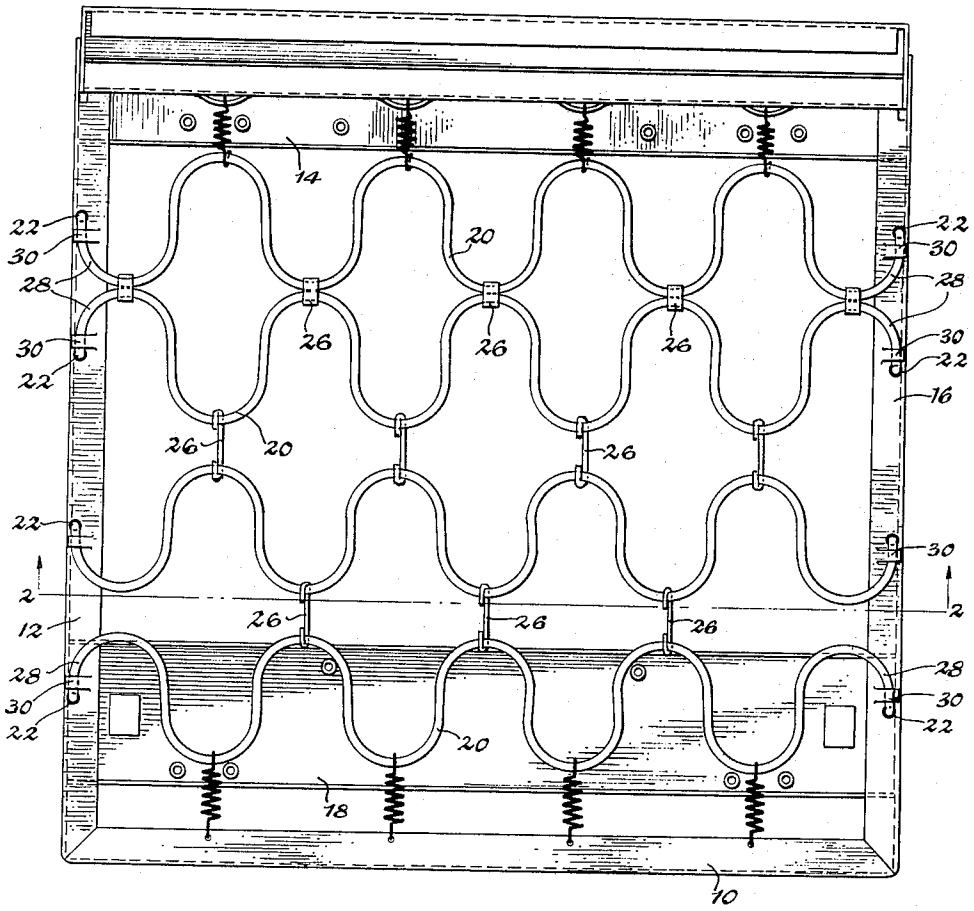
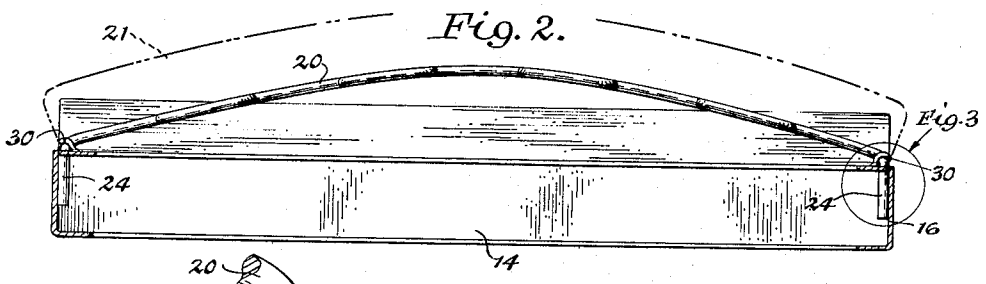


Fig. 2.



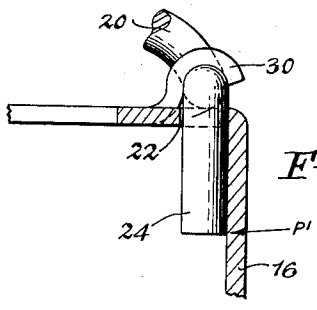


Fig. 3.

INVENTOR.
WILTON R. OLSON

BY

Beam, Brooks, Buckley & Beam
ATTORNEYS

United States Patent Office 3,258,260 Patented June 28, 1966

3,258,260

SPRING STRUCTURE FOR FURNITURE

Wilton R. Olson, Frewsburg, N.Y., assignor to Art Metal Inc., Jamestown, N.Y.

Filed Jan. 27, 1964, Ser. No. 340,349
3 Claims. (Cl. 267—110)

This invention relates to furniture springs; and more particularly to sinuous wire type springs such as are used for supporting the upholstery of seats and backs of chairs, settees, sofas, benches, and the like.

The present invention has for one of its objects the provision of an improved arrangement for mounting a sinuous wire type spring in a chair frame, or the like.

Another object is to provide an improved spring of the type referred to which is arranged to be supported at its ends in novel manner, whereby to provide an improved spring suspension and an improved spring action.

The invention further contemplates the provision of an improved sinuous wire spring arrangement as a foresaid in combination with a novel support means therefor, whereby to provide an improved spring action and upholstery support.

Other objects and advantages of the invention will be apparent from the description which follows and from the accompanying drawing, in which:

FIG. 1 is a fragmentary top plan view of a typical chair seat or back frame embodying one form of the invention;

FIG. 2 is a vertical sectional view of the device of FIG. 1, taken along line 2—2 of FIG. 1; and

FIG. 3 is an enlarged scale view of the portion encircled in FIG. 2.

As shown by way of example herein, the invention is applied to a seat frame comprising side and end rails **10**, **12**, **14**, **16**, and a cross brace member **18**. The frame is provided with a series of sinuous type wire springs **20**, for support of the cushion and upholstery materials as indicated at **21** (FIG. 2). Whereas in the drawing herewith the spring and cushion profiles are shown to be crowned, it will be understood that they may be formed to any intermediate degree of crowning, or flat, as may be preferred. The top flanges of the side rails **12**, **16** are punched as indicated at **22** to permit slide-fitting insertion therein of the down-turned foot end portions **24** of the springs **20**; whereby it will be seen that the desired number of such springs may be arranged to transversely span the seat frame in generally parallel dispositions. The springs are preferably tied together for stabilization purposes by means of wire clips or the like, as indicated for example at **26**.

It is a particular feature of the present invention that the spring leg portions **28** (which are immediately adjacent the abrupt bend sections leading into the end or foot portions **24**) are formed to lie down on and run in substantially the same direction as the top flanges of the frame rails. Also, they are clipped thereto by retainer tabs or tongues **30** which are struck out from the metal of the top flanges and initially bent upwardly to permit insertion of the spring ends alongside thereof. Then, when the springs are in place, the tongues **30** are bent over the spring leg portions **28** to hold the ends of the springs down in the apertures **22** (FIG. 3). Thus, each end of each spring is anchored firmly against rocking in any direction, and the spring ends are thereby in effect cantilever-mounted in the frame against movement in any direction; the bottom ends pressing outwardly against the side rail which thereby reacts against the foot as illustrated at *p1* (FIG. 3). This method of anchoring the spring ends stabilizes each spring member in improved manner and provides an optimum cushion support and spring action by means of the simplest type of easily fabricated devices.

Whereas only one form of the invention has been illustrated and described in detail hereinabove, it will be understood that various changes may be made therein without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A spring structure comprising a frame including a pair of spaced-apart parallel rails each having a vertical side wall portion and a horizontal flange portion, and a plurality of sinuous wire type springs bridging the space between said rails, each of said springs having at its opposite ends a leg portion running generally in the direction of and lying flatwise upon a flange portion of one of said rails and terminating in a right-angle bent foot portion, each rail flange being apertured immediately adjacent its corresponding side wall portion to accommodate slip-fitted insertion therethrough of said spring foot portion so that the latter thereupon rests against said rail side wall portion and extends therealong in a direction normal to the plane of said spring whereby spring loadings are resiliently resisted by said foot portion acting in cantilever anchored manner relative to said rail, each spring being of a length greater than the spacing between said side wall portion of the rails so that the spring foot portions of said springs bear forcibly against respective side wall portions to place each spring initially under compression and hold-down means carried by said rail to engage said spring leg portion and clamping it against said rail flange and thereby stabilizing said spring end portion against rocking in any direction relative to said rail.

2. A spring structure comprising a frame including a pair of spaced-apart parallel rails each having a vertical side wall portion and an inwardly directed horizontal flange portion, and a plurality of sinuous wire type springs bridging the space between said rails, each of said springs having at its opposite ends a leg portion running generally in the direction of and lying horizontally flatwise upon a flange portion of one of said rails and terminating in a right-angle bent vertically extending foot portion, each rail flange being apertured immediately adjacent its corresponding side wall portion to accommodate slip-fitted insertions therethrough of said spring foot portions so that the latter thereupon rest against the inner surfaces of said rail side wall portions and extend therealong in directions normal to the plane of said springs whereby spring loadings are resiliently resisted by said foot portions acting in cantilever anchored manner relative to said rails, each spring being of a length greater than the spacing between said side wall portion of the rails so that the spring foot portions of said springs bear forcibly against respective side wall portions to place each spring initially under compression and hold-down means carried by said rails to engage said spring leg portions and clamping them against said rail flanges and thereby stabilizing said spring end portions against rocking in any direction relative to said rails.

3. In a spring structure comprising a frame including a pair of spaced-apart parallel rails each having a vertical side wall portion and a horizontal flange portion, and a plurality of sinuous wire type springs bridging the space between said rails, said springs having at their opposite ends a leg portion running generally in the direction of and lying flatwise upon a flange portion of one of each rails and terminating in a bent foot portion, said rail flanges being apertured immediately adjacent its corresponding side wall portion to accommodate slip-fitted insertion therethrough of said spring foot portions so that the latter thereupon rest against said rail side wall portions and extend therealong in a direction trans-

verse to the plane of said spring whereby spring loadings are resiliently resisted by said foot portions acting in cantilever anchored manner relative to said rails, each spring being of a length greater than the spacing between said side wall portion of the rails so that the spring foot portions of said springs bear forcibly against respective side wall portions to place each spring initially under compression and hold-down means carried by said rails to engage said spring leg portions and clamping them against said rail flanges and thereby stabilizing said spring end portions against rocking in any direction relative to said rails.

References Cited by the Examiner

UNITED STATES PATENTS

2,480,667	8/1949	Neely	267—1 X
3,008,555	11/1961	Neely	5—260 X
3,072,228	1/1963	Neely	189—36

FOREIGN PATENTS

535,439	2/1955	Belgium.

ARTHUR L. LA POINT, *Primary Examiner.*