Sept. 22, 1970 J. GARRISON 3,529,815

EDGE-WIRE SUPPORT UNIT

Original Filed Oct. 10, 1966

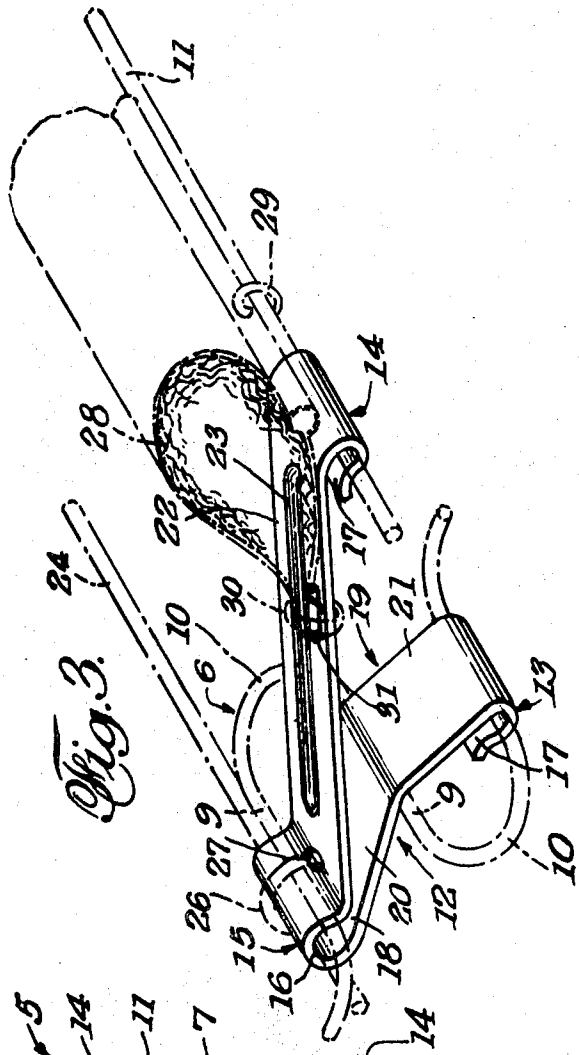


Fig. 3.

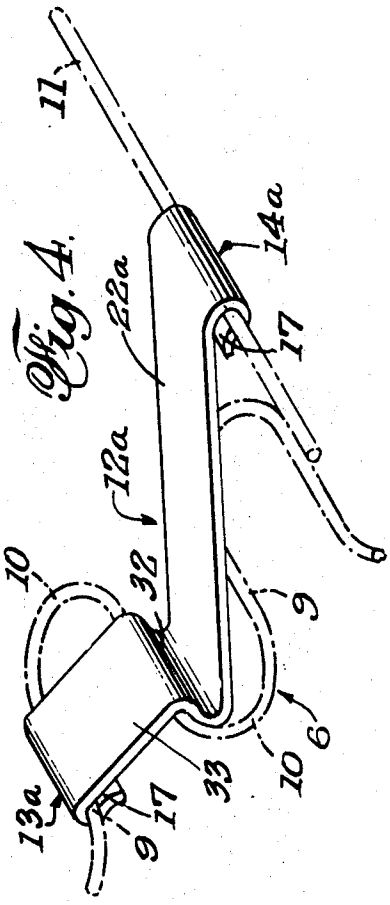


Fig. 4.

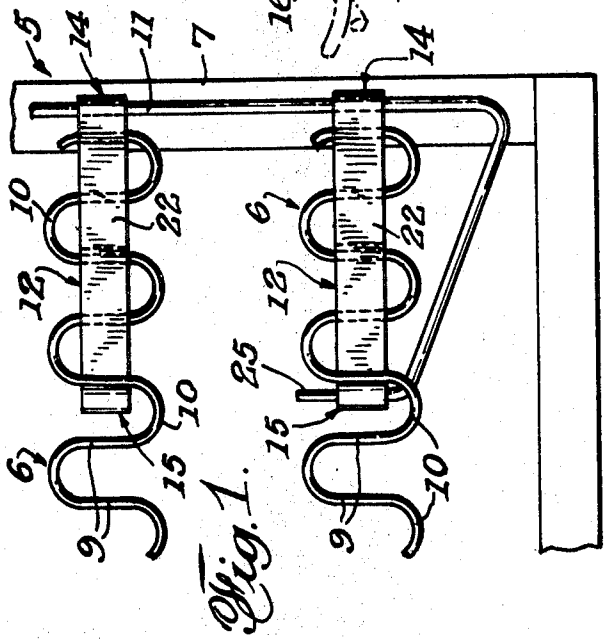


Fig. 1.

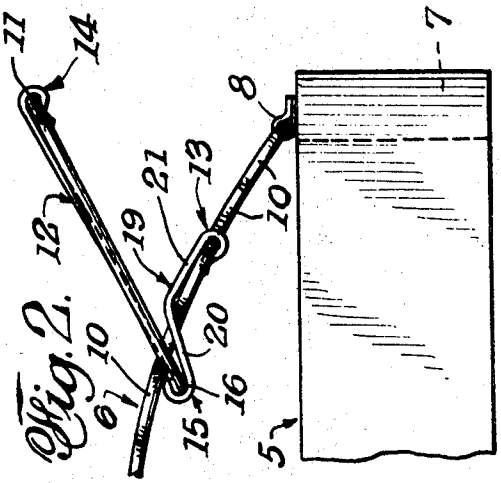


Fig. 2.

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EDGE-WIRE SUPPORT UNIT

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Int. Cl. F16f 3/00

U.S. Cl. 267—102 4 Claims

ABSTRACT OF THE DISCLOSURE

This invention is characterized by the provision, on the opposite ends of a flat steel support spring, of snap-in portions that have non-displaceable connection by one end with one of the cross bars of a sinuous or corrugated spring, and similar connection by the other end with an edge-wire that is resiliently supported in spaced relation to a frame across which a plurality of such sinuous springs spans. The snap-in engagement of one end of the support spring with the sinuous spring holds the former in steady operative position, making it a simple matter to apply the edge-wire by snap-in engagement with the opposite end of the support spring, thereby reducing the assembly time of items of upholstered furniture.

CROSS-REFERENCE TO RELATED APPLICATION

This application is a division of my pending application filed Oct. 10, 1966, Ser. No. 585,612, bearing the same title, and officially allowed July 31, 1968.

SUMMARY OF THE INVENTION

An object of the invention is to provide edge-wire support units having a "soft edge" character whereby the edge-wire will return to its initial, normal position after being depressed, and providing assurance that the supports will retain their mounted positions without endwise slippage or dislodgement for any reason.

This invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description, which is based on the accompanying drawing. However, said drawing merely shows, and the following description merely describes, preferred embodiments of the present invention, which are given by way of illustration or example only.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing, like reference characters designate similar parts in the several views.

FIG. 1 is a fragmentary plan view of a frame provided with edge-wire support units according to a preferred form of the present invention.

FIG. 2 is a side elevational view thereof.

FIG. 3 is an enlarged perspective view of one of said units modified to connect with an edge-roll and a trailing edge-wire.

FIG. 4 is a similar view of another modification.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the present disclosure, a preferably rectangular frame **5** is provided with a plurality of sinuous or corrugated load-bearing springs **6** that span across opposite sides **7**

of the frame and are convexly arched between their clips **8** that connect the ends of said springs **6** to the top edges of said frame sides. Each such spring **6** comprises uniformly spaced cross bars **9** that are connected by alternately opposite loops **10**. This frame structure is generally conventional and, per se, forms no part of the present invention.

It is common practice to provide such a frame with an edge-wire **11** at one or both sides thereof for the purpose of providing a soft edge to the cushion or other upholstery covering said frame and support springs.

According to the invention, each spring **6**, adjacent to at least one end thereof, is provided with a support unit **12**, as in FIGS. 1, 2 and 3, or **12***a*, as in FIG. 4, to support the edge-wire **11** in upper spaced relation to the frame **5**. Each said unit **12** or **12***a* is preferably formed of a strip of flat metal, of which spring steel, tempered so the same has limited springiness, is a primary example.

Each support unit **12** is formed to have an end **13** that is adapted for snap-retention engagement with a cross bar **9** of a spring **6**, an end **14** adapted for snap-retention engagement with an edge-wire, and an intermediate portion **15** which is in the form of a return-bend forming a loop **16**. The ends **13** and **14** are alike in that they are formed as loops having restricted openings **17**. A similar restricted opening **18** is provided in the loop **16**.

Between the end **13** and the intermediate portion **15**, the unit **12** is provided with a connection arm **19** that is preferably bent, as shown, to form a portion **20** that extends from the loop **16** and is adapted to pass through the space formed by two adjacent bars **9** of the spring **6**, and a portion **21** that extends from the end **13** and is adapted to span across the next space between the mentioned bars and the connecting clip **8** at the end of the spring **6**, and a preferably straight connection arm **22** between the end **14** and said loop **16**. Said connection **22** is preferably longer than the connection **19**, the same preferably being stiff or, if desired, stiffened by a longitudinal embossment or rib **23**, as shown in FIG. 3.

The mentioned springiness left in the unit **12** after tempering provides for resilience of the loop ends **13** and **14** as well as the loop **16**, so the respective restricted openings **17** and **18** leading to these loops may be resiliently spread merely by snap-in entry of either a cross bar **9** and edge-wire **11**, or a trailing edge-wire **24** (FIG. 3), as the case may be.

The above-described unit **12**, after its portion **15** is introduced into the space between two bars **9**, may be applied by snap-in engagement of loop end **13** with a cross bar **9** that is nearer the connection clip **8**. This leaves the unit firmly connected to the spring **6** since the portions **20** and **21** of connection **19** have over-and-under engagement with the spring between the loop end **13** and the loop-provided intermediate portion. The connection **22**, partly due to the arch in the spring **6** and partly because the same is directed at an angle to the connection **22**, will have an upwardly and forwardly directed position with the end **14** thereof spaced away from or, as shown, above the frame **5**. The same, while itself stiff, has resilience around the center of the loop **16** of the portion **15**, can be depressed toward the frame, and will return to its unstressed position upon release. An edge-wire **11** snapped into the loop in the end **14** will, therefore, serve to support a cushion or other upholstery to provide a soft edge, as above mentioned.

As shown in FIGS. 1 and 2, the edge-wire, at one or both ends, may be bent to have return ends **25** that are entered in the loop **16** of the endmost springs **6** of the construction.

A hog ring **26** may encircle the portion **15** and the cross bar **9** most adjacent thereabove. To this end, as

shown in FIG. 3, a suitable hole or holes **27** formed in said portion **15** accommodate said ring. In instances where it is desired to provide the wire **11** with an edge-roll **28**, hog rings **29** may be applied to clip longitudinally spaced portions of said roll to the wire **11**. Also, trailing portions of said roll **28** may be connected to the support connection arms **22** by hog rings **30** that pass through holes **31** in said arms.

In the modification of FIG. 4, the connection arm **22***a* may be similar to and preferably shorter than the arm **22**. The same, at one end, has a wire-connecting end loop **14***a* and, at the other, a re-entrantly bent offset **32** that has snap-retention engagement with a cross bar **9** after a hook-provided end **13***a* on the end of an extension **33** of said offset **32** has been snapped onto a cross bar adjacent to and more remote than the first-mentioned cross bar from the connecting clip **8**. It will be clear that the offset **32** may be reversed so that the extension **33** may lie beneath the spring **6** rather than above, as shown.

While the foregoing has illustrated and described what are now contemplated to be the best modes of carrying out the invention, the constructions are, of course, subject to modification without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. An edge-wire support unit having cross bars and adapted for mounting on a sinuous load-supporting spring that has its ends connected to opposite sides of a support frame and, as a convex arch, spanning across said frame, said unit comprising a length of strap metal having limited resilience, said unit integrally comprising:

(a) an end of said length of strap metal that is provided with a hook adapted for hooking engagement with one of said cross bars closer to one side of the support frame than to the other side,

(b) the opposite end of said length of strap metal being provided with a hook adapted for hooking and support engagement with an edge-wire,

(c) the intermediate portion of said length of strap metal being adapted for engagement, from above, with a cross bar of said sinuous spring located between the first-mentioned cross bar and the corresponding end of said spring, and

(d) said length of strap metal, between its point of engagement with the second-mentioned cross bar and said opposite end of the length of strap metal, being bent in a direction away from said corresponding end of the sinuous spring to space the edge-wire above said spring end.

2. An edge-wire support unit as claimed in claim **1** in which said length of strap metal, where the same is bent away from the said corresponding end of the sinuous spring, is provided with a re-entrantly bent offset that is adapted for snap-retention engagement with said second-mentioned cross bar.

3. An edge-wire support unit as claimed in claim **2** in which:

(a) the hook on the first-mentioned end of the length of strap metal is formed to have snap-in retention engagement with the first-mentioned cross bar, and

(b) the hook on said opposite end of said length of strap metal is formed to have snap-in retention engagement with said edge-wire.

4. An edge-wire support unit as claimed in claim **3**, the mentioned hooks each having a restricted opening to effect the mentioned respective snap-in engagements of the cross bar and edge-wire, said hooks being directed toward each other.

References Cited

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