March 3, 1970 E. G. OTT 3,497,880

SPRING ASSEMBLY

Filed June 9, 1967

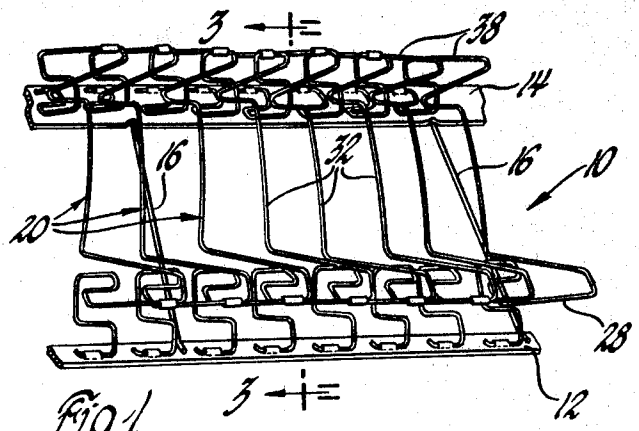


Fig. 1

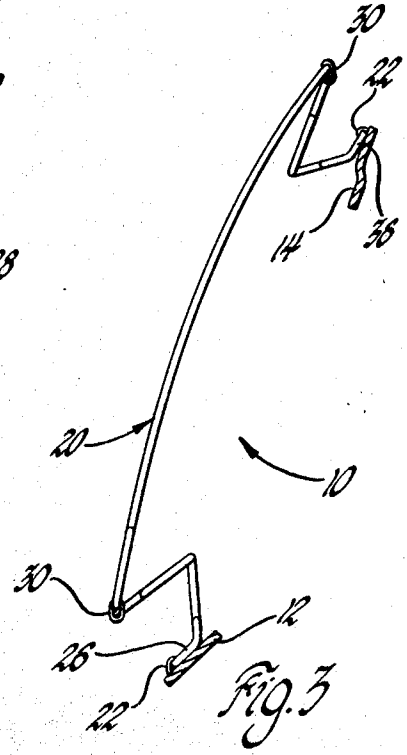
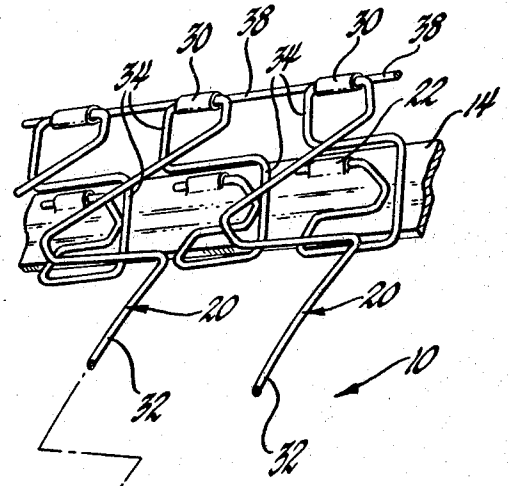


Fig. 3



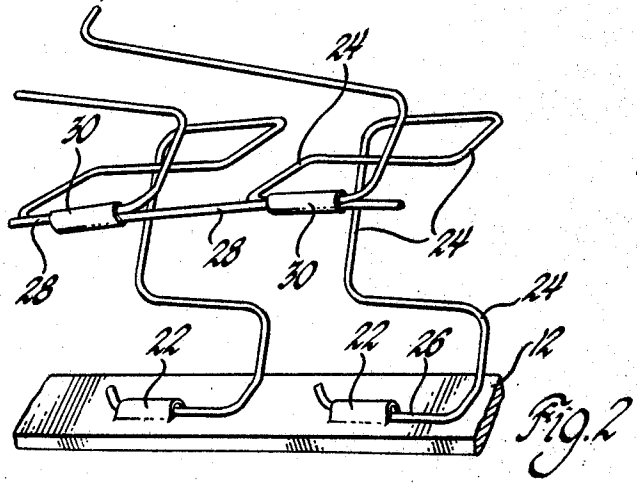


Fig. 2

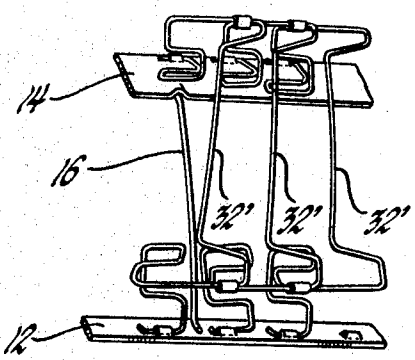


Fig. 4

INVENTOR.
Ernst G. Ott

BY

Bernard, McElhannon & Strauss
ATTORNEYS

United States Patent Office 3,497,880
Patented Mar. 3, 1970

3,497,880

SPRING ASSEMBLY

Ernst G. Ott, Essex, England, assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,934
Int. Cl. A47c 23/12, 23/00
U.S. Cl. 5—247 12 Claims

ABSTRACT OF THE DISCLOSURE

A furniture spring assembly including a pair of first and second spaced frame members interconnected by a plurality of spring members. Each spring member includes an offset portion disposed in overlapping relationship with an adjacent spring member and a clip secures the overlapping portions of adjacent spring members together, thereby eliminating the necessity for a border wire.

In most furniture spring assemblies known in the prior art, there is included a V-shaped portion above one of the frame members to define a resilient edge in the cushion assembly. Normally, adjacent spring members are interconnected by a border wire to define a peripheral edge, the wire being clipped to the outwardly extending extremities of the respective legs of the V-shaped portions of each spring member. Such a border wire requires an additional element, additional fabrication steps and therefore a more expensive assembly.

Accordingly, it is an object and feature of this invention to provide an improved spring assembly which does not utilize the well-known border wire.

In general, these and other objects and features of this invention may be attained in a spring assembly including a plurality of substantially parallel spring members which are attached to spaced frame members. Each spring member includes a substantially V-shaped portion at each end thereof with one leg of each V-shaped portion attached to one of the respective frame members. The outward or other leg of each V-shaped portion is integrally attached to a laterally offset portion which extends into overlapping relationship with an adjacent spring member so that the overlapping portions of adjacent spring members may be clipped together, thereby eliminating the necessity for a separate border wire.

Other objects, features and attendant advantages of the present invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIGURE 1 is an elevational view of a preferred embodiment of the instant invention;

FIGURE 2 is a perspective view of the preferred embodiment of the instant invention;

FIGURE 3 is a cross-sectional view taken substantially along line 3—3 of FIGURE 1; and

FIGURE 4 is an elevational view showing a modification of the instant invention.

Referring now to the drawings wherein like numerals indicate like or corresponding parts throughout the several views, a spring assembly constructed in accordance with the instant invention is generally shown at **10**. The spring assembly includes a pair of spaced first and second frame members **12** and **14** respectively. The frame members **12** and **14** may be interconnected by various members, one of which is shown at **16** in FIGURES 1 and 4.

Also included is a plurality of substantially parallel spring members, each of which is generally indicated at **20**. Each spring member extends between the frame members **12** and **14**. The frame members **12** and **14** have portions **22** struck therefrom so that the ends of the respective spring members **20** may be attached to the respective frame members **12** and **14**.

Each spring member comprises an integral piece of wire having various bends therein and includes a first generally V-shaped section as defined by the integrally connected loops or zigzags **24**. One leg of the first V-shaped sections is attached to the first frame **12** by way of a tunnel or struck out portion **22**. There is also included an angularly disposed portion **26** which is in engagement with the frame member **12** as best illustrated in FIGURE 3. The outward or other leg of each of the first V-shaped portions is integrally connected to an offset portion **28**. Each offset portion **28** extends laterally to overlap the offset portion of an adjacent spring member. There is included means comprising the clips **30** for securing the overlapping portions of adjacent spring members together. As will be evident from the description thus far, therefore, each spring member includes a laterally offset portion disposed in overlapping relationship with an adjacent spring member so that the necessity for the well-known border wire is eliminated.

Each spring member **20** also includes a support section **32** which is integrally connected to the offset portion **28** and extends toward the second frame member **14**. In addition, each spring member **20** includes a second generally V-shaped section as defined by the loops or zigzags **34** and which has one leg thereof attached to the second frame member **14** by way of a tunnel **22**. It will be noted that the second V-shaped portion also includes an angularly disposed portion **36** for engaging the frame member **14** as best illustrated in FIGURE 3. The second V-shaped section has one leg thereof attached to the frame member **14** and the other leg thereof integrally connected to a second offset portion **38**. The offset portion **38** is in turn integrally connected to the support section **32**. The second offset portion **38** extends laterally into overlapping relationship with a like portion of an adjacent spring member and is secured thereto by a clip **30**. Both offset portions **28** and **38** are offset in the same direction.

In the embodiment illustrated in FIGURES 1 through 3, the support section **32** of each spring member **20** is substantially above the attachment of the spring member to the frame members **12** and **14**. In the modification illustrated in FIGURE 4, however, the support section **32'** of each respective spring member is substantially offset laterally of the attachments of the respective spring members to the frame members **12** and **14**. In other words, in the modification illustrated in FIGURE 4, the support sections **32'** are laterally offset from the first and second V-shaped portions with which they are integrally connected. Among other advantages, the embodiment of FIGURE 4 requires less wire.

The invention has been described in an illustrative manner and it is to be understood that the terminology which has been used is intended to be in the nature of words of description rather than of limitation.

Obviously, many modifications and variations of the present invention are possible in light of the above teachings.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A spring assembly comprising; a pair of spaced first and second frame members, a plurality of identical and integral spring members extending between said frame members, each of said spring members including an offset portion disposed in overlapping relationship with an adjacent spring member, and means securing the overlapping portions of adjacent spring members together to provide a border wire defined by said overlapping portions.

2. A spring assembly as set forth in claim 1 wherein said spring members are generally parallel to one another, each spring member includes a first generally V-shaped section having one leg thereof attached to said first frame member and the other leg thereof integrally connected to said offset portion which extends laterally in one direction to overlap with the offset portion of an adjacent spring member.

3. A spring assembly as set forth in claim 2 wherein each spring member includes a support section integrally connected to said offset portion and extending toward the second frame member.

4. A spring assembly as set forth in claim 3 wherein each spring member includes; a second generally V-shaped section having one leg thereof attached to said second frame member, a second offset portion integrally interconnecting said support section and said second V-shaped portion and extending laterally into overlapping relationship with a like portion of an adjacent spring member, and means interconnecting said second overlapping portions of adjacent spring members together.

5. A spring assembly as set forth in claim 4 wherein the support section of each spring member is substantially above the attachments of the spring member to said frame members.

6. A spring assembly as set forth in claim 4 wherein the support section of each spring member is substantially offset laterally of the attachments thereof to said frame members.

7. A spring assembly as set forth in claim 4 wherein said second offset portions are offset in the same direction as the first-mentioned offset portions.

8. A spring assembly as set forth in claim 7 wherein said means for securing the overlapping offset portions together comprises a plurality of clips each of which is disposed about overlapping offset portions.

9. A spring assembly as set forth in claim 8 wherein each spring member includes integrally connected loops or zig-zags in the respective V-shaped sections thereof.

10. A spring assembly as set forth in claim 9 wherein the support section of each spring member is substantially above the attachments of the spring member to said frame members.

11. A spring assembly as set forth in claim 9 wherein the support section of each spring member is substantially offset laterally of the attachments thereof to said frame members.

12. A spring assembly as set forth in claim 9 wherein the leg of each V-shaped portion includes an angularly disposed portion which is in engagement with the associated frame member.

References Cited

UNITED STATES PATENTS

3,087,719	4/1963	Flint	267—107
2,047,411	7/1936	Freund	5—247 XR
2,462,539	2/1949	Neely et al.	5—247 XR

BOBBY R. GAY, Primary Examiner

ANDREW M. CALVERT, Assistant Examiner

U.S. Cl. X.R.

5—260; 267—107