F. T. BARBER.

WIRE SPRING CONSTRUCTION.

APPLICATION FILED MAR. 9, 1914.

1,120,887. Patented Dec. 15, 1914.

Fig. 1.

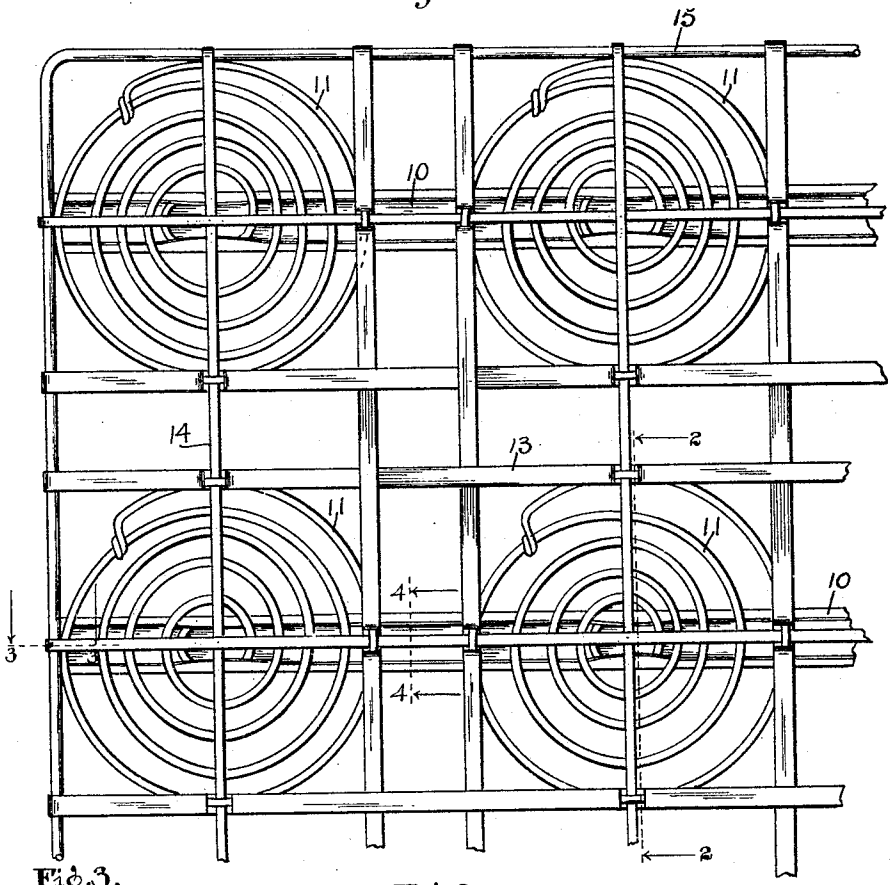


Fig. 3.

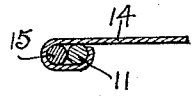


Fig. 2.

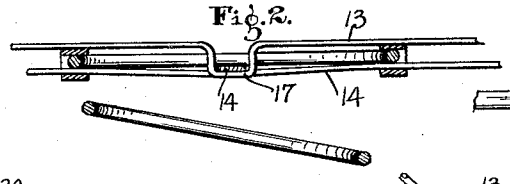


Fig. 4.

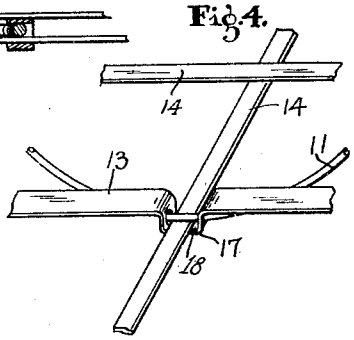


Fig. 5.

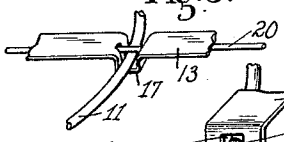
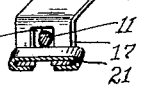
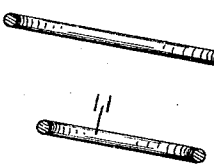
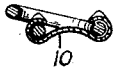


Fig. 6.







WITNESSES:

A. H. Eckerson.

O. M. McLaughlin

INVENTOR

Frederick T. Barber.

BY

W. H. Lockwood.

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK T. BARBER, OF ANDERSON, INDIANA.

WIRE-SPRING CONSTRUCTION.

1,120,887. Specification of Letters Patent. Patented Dec. 15, 1914.

Application filed March 9, 1914. Serial No. 823,553.

To all whom it may concern:

Be it known that I, FREDERICK T. BARBER, a citizen of the United States, and a resident of Anderson, county of Madison, and State of Indiana, have invented a certain new and useful Wire-Spring Construction; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

The object of this invention is to improve wire spring constructions such as used in bed springs, car seats, chair seats and in upholstering furniture and the like, so that the upper or lower surface thereof will be formed chiefly of flat metal strips which are flexible so as to reduce the wear of the wire pressure on the cover thereof and to simplify and cheapen the construction thereof and also to reduce the noise or vibration of parts of the wire spring structure. Heretofore such wire spring structures have usually been formed of round rods or wires upon which the covering or upholstering rests and whereby it was eventually worn and abraded or cut. Furthermore it has been sometimes difficult to assemble and unite the parts of such wire spring construction. Also such constructions sometimes make a noise when compressed on account of the vibration of parts. This invention overcomes such difficulties.

The chief feature of the invention consists in utilizing flat metal strips, flexible and resilient, on the upper and lower sides of said structure and extending at right angles to each other.

Another feature of the invention consists in the combination of said flat metal strips with end coils of the spiral springs so that the parts may be quickly assembled or taken apart and when together will form a secure structure and one free from noise.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a plan view of a portion of a chair seat. Fig. 2 is a section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of a portion of the upper part of Fig. 2, parts being broken away. Fig. 5 is a perspective view of a portion of the top of the device shown in modified form. Fig. 6 is a perspective view of a portion of the device showing another modified form.

There is shown herein in the drawings a series of bottom metal bars 10 adapted to be secured to the frame work of a chair or other structure and it is formed in cross section, as shown in Fig. 2, consisting of a sheet of metal with the lateral edges curved up to form loops for holding the lower coil of a spiral spring 11. Upon said spiral springs two series of flat spring metal strips 13 and 14 are secured. The strips 13, which are relatively wide, may be considered marginal strips inasmuch as they engage only the margin of the upper coil of the spiral spring, while the narrow flat metal strips 14 extend diametrically across the upper coils of the springs, and both classes of strips are looped or otherwise secured to the border wire 15 of the structure. The wide metal strips 13 are depressed to form loops 17 therein which have a central and longitudinal slot 18 so that the loop of the flat metal strip may fit astride the upper coil of the spring and project below the same. The narrow metal strip 14 is inserted crosswise at a right angle to such wide metal strip between said loop and the wire so that both strips will be interlocked with the wire spring.

The construction is readily assembled as the wide metal strips are first placed upon the upper coils of the springs, one strip on each side of the spring so that the upper coil of each spring has lying on it and tangentially of it four strips 13 at right angles to each other, excepting that where the springs are adjacent the border wire 15 they are secured directly to it. Two strips 14 extend diametrically across the end of each spring at a right angle to each other so that there is one of said strips 14 extending diametrically across each row of springs.

It is obvious that the foregoing construction provides a flat surface on top for receiving the upholstering, and, therefore, it will not cut or wear the same very rapidly. The strips are flexible and, therefore, a part of the structure will yield to pressure without affecting the whole surface. Also the combination of the two classes of strips with the springs is very strong and permanent and practically free from noise. Furthermore, the parts can be very rapidly assembled as the strips 13 are merely laid

down upon the springs and the other strips pushed through endwise between the end coil of the spring and the loop in the strips 13.

A modified form is shown in Fig. 5, which omits the cross bars 14 and locates the strips 13 so that they diametrically cross the tops of the springs and the upper coil 11 of the spring extends transversely of the strip 13 through the loop 17 thereof instead of longitudinally, as in Fig. 1, and the parts are locked by a wire 20 extending under and longitudinally of each strip 13 and passing through the slot 18 over the coils.

Another modified form is shown in Fig. 6, where there are no strips diametrically crossing the top of the springs and the strips 14 are omitted and the strips 13 are left at the margins of the springs, as shown in Fig. 1, and are locked to the top coil of the spring by a clasp 21. The loop 17 in this form is slotted the same as in the other forms and the top coil of the spring is kept from escaping by the clasp 21. This construction particularly by reason of the resilient flat metal strips enables one to build a wire construction such as a chair seat with any desired form of surface, such as making the central part of the chair seat somewhat higher than the margins. All that is necessary is to have the central spring somewhat higher than the surrounding marginal springs, for the flexible flat metal strips will conform without difficulty to the various heights of the springs. This result of the invention is important because it dispenses with considerable upholstering material.

The invention claimed is:

1. A wire spring construction consisting of a series of spiral springs, two series of flat metal strips extending transversely of each other, one series of strips engaging tangentially the end coils of the springs and the other series of strips extending diametrically across the end coils of the springs, and means for securing said strips to the springs at the points where they engage and cross the same, substantially as set forth.

2. A wire spring construction consisting of a series of spiral springs, flat metal strips extending transversely of each other and provided at intervals with slotted loops in which the end coils of the wire springs are adapted to lie, and means for securing said flat strips to said end coils in the wire springs.

3. A wire spring construction consisting of a series of spiral springs, flat metal strips extending transversely at intervals with and tangentially of the end coils of the springs and provided with loops longitudinally slotted to receive in said slots the end coils of the springs, and means for securing the strips to said end coils of the springs.

4. A wire spring construction consisting of a series of spiral springs, a border wire secured to said springs, flat metal strips extending transversely of each other and lying upon the end coils of the spiral springs and having loops therein longitudinally slotted so that the loops fit astride the end coils of the spiral springs, and other metal strips extending transversely of each other and diametrically of the end coils of the springs and between said end coils and the loops in the first-mentioned metal strips.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

FREDERICK T. BARBER.

Witnesses:
JULIA H. WELLS,
O. M. MCLAUGHLIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."