No. 748,072. PATENTED DEC. 29, 1903.

A. HIRSH.

UPHOLSTERY SPRING SUPPORT.

APPLICATION FILED MAR. 27, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

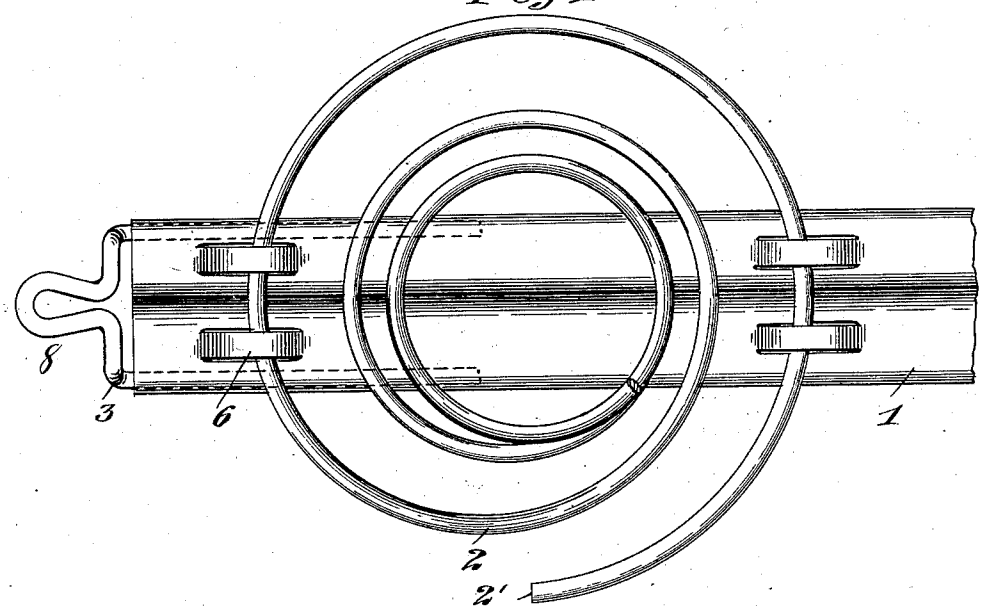


Fig. 2.

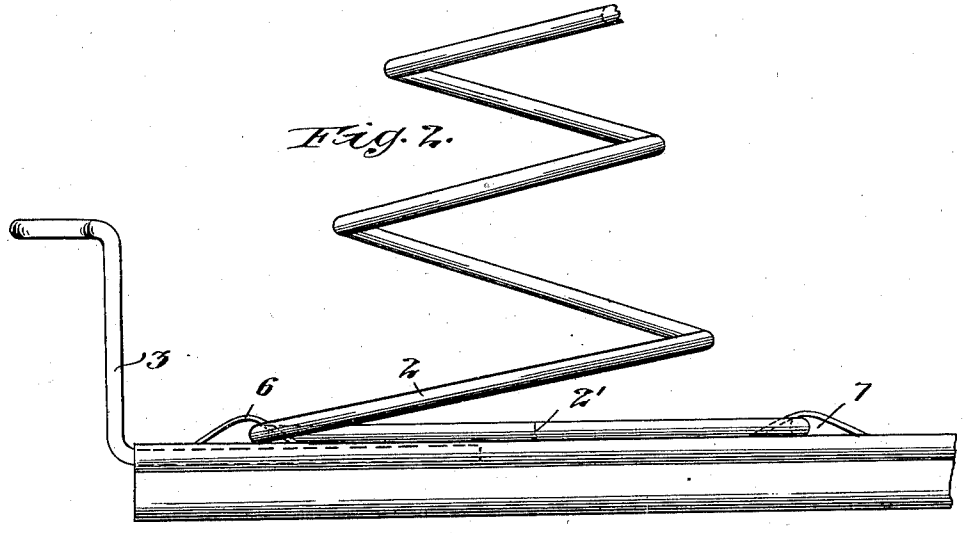
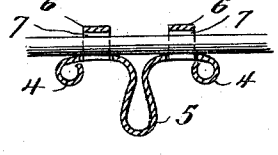


Fig. 3.



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A. HIRSH.

UPHOLSTERY SPRING SUPPORT.

APPLICATION FILED MAR. 27, 1902.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

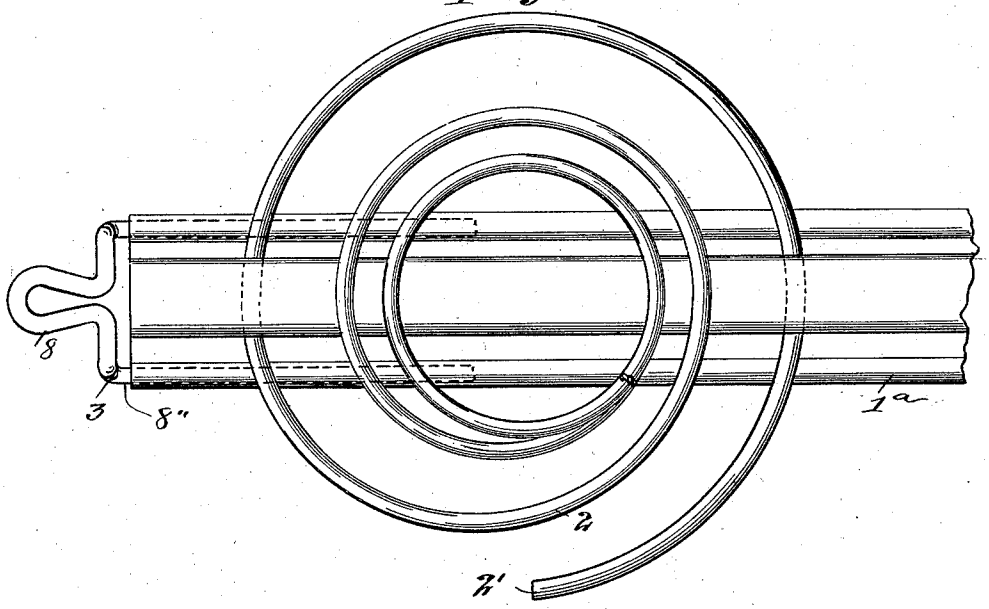


Fig. 5.

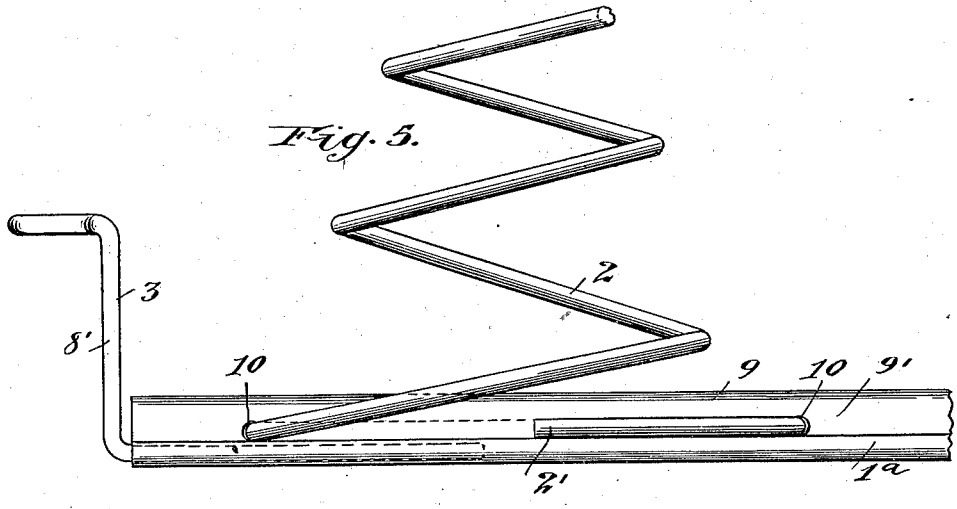
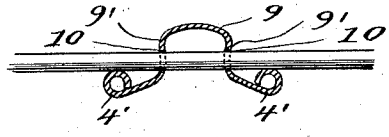


Fig. 6.



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UNITED STATES PATENT OFFICE.

ARTHUR HIRSH, OF CHICAGO, ILLINOIS.

UPHOLSTERY-SPRING SUPPORT.

SPECIFICATION forming part of Letters Patent No. 748,072, dated December 29, 1903.

Application filed March 27, 1902. Serial No. 100,276. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR HIRSH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Upholstery-Spring Supports, of which the following is a specification.

This invention relates to improvements in upholstery-spring supports, and refers more specifically to an improved construction in which the lower ends of a set of springs are supported upon strap-like sheet-metal members or supports provided with suitable means whereby the ends of the springs are not only united with the support, but are also locked accurately in position.

The salient object of the invention is to provide a construction by which I am enabled to employ sheet-metal supporting members formed up from strap-like strips to afford a suitably-rigid support having eyes or recesses with which the ends of the springs may be interlocked, and a secondary feature of the invention is to provide improved means for attaching the ends of said supporting-springs to the marginal frame of the mattress or the like.

To the above ends the invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims, and the same will be readily understood from the following description, reference being had to the accompanying drawings, in which—

Figures 1, 2, and 3 respectively represent in plan, side elevation, and cross-section a preferred embodiment of my invention. Figs. 4, 5, and 6 respectively represent a modified construction in plan, side elevation, and cross-section.

Referring to the drawings, 1, 1^a, and 1^b respectively represent the main supporting-strips as a whole, 2 the coiled springs interlocked therewith and supported thereby, and 3 the end clips or extensions whereby the main supporting-strips are adapted to be attached to the marginal frame.

Describing first the construction shown in Figs. 1 to 3, inclusive, the main strip 1 is formed of strap metal, which in order to render it rigid against flexure in a direction transverse to its plane is provided with marginal beads 4, formed by bending over or returning the edges upon the main body, and is also provided along its median line with an integral downwardly-extending fold or bead, forming a rib 5, whose depth vertically is greater than its width. Desirably the marginal beads 4 are made circular and hollow to provide for the reception of the extension members or end clips 3; but it is obvious that the circular form of the bead need not be continued throughout the full length of the strip or support, although, of course, this is the most economical construction. The supporting-strip formed as described is provided with a series of engaging eyes or loops 6, which in the preferred construction shown herein are formed by striking up strap-like loops from the main body and within the margins of the latter to form horizontally-disposed eyes 7, which in this construction are all in the same horizontal plane. An important feature of the arrangement of these interlocking eyes consists in locating them in transverse alinement with each other and laterally separated a substantial distance, so that when the coil of the spring is inserted through all four eyes it will be held at four angularly-separated points. The coiled springs 2 which are employed have succeeding coils of varying diameter at their lower ends, the coils being in the case of a cone-spring of constantly-diminishing diameter downwardly or in case of an hour-glass form or double-cone spring, like that shown in the present drawings, the coils of the lower end portion of the spring are of diminishing diameter upwardly toward the center of the spring. In either case the eyes are so spaced apart as to receive the first coil at the lower end of the spring freely, so that the spring may be interengaged by simply twisting its end, as 2′, through the several loops or eyes successively. Upon rotating the spring, however, after the first portion of the coil has been passed through the loops the diminishing diameter causes the succeeding portion of the coil to pass into wedged engagement with the inner sides of the eyes 7,

thereby bringing the coil of the spring into positive bearing with each of the four eyes and effectively wedging and locking the coil of the spring to the main support. When the coil has been twisted into the eyes far enough to bring about a decided wedging engagement, (this being possible by the natural resilience of the spring,) it is found in practice that all tendency of the spring to work loose is overcome and the spring remains held in rigid and secure engagement with the support indefinitely. On the other hand, whenever it becomes necessary to disengage the spring it can be done instantly by simply imparting a sufficient rotative pull or twist upon the spring to unscrew the same from the support against the spring tension holding it locked. In the case of a cone spring precisely the same construction and arrangement of eyes or holding loops is effective, but the coil will be locked in such case by engagement with the outer or remote ends or sides of the eyes or loops by reason of the increasing diameter of the coil through the lower end of the spring upwardly. The principle is, however, substantially the same.

The improved clip forming a part of the support consists simply of a rod or wire bent or formed to provide a horizontally-disposed loop 8, adapted to receive a nail or screw and overlie the upper edge of the mattress or other frame, two ends of the wire or rod being bent at right angles to the horizontal loop and extended downwardly, as indicated at 8′, a sufficient distance to carry the end of the main supporting bar or strip in proper relation to the top of the mattress-frame and then bent at right angles horizontally inwardly parallel with each other and at such distances apart as to register with and enter the hollow beads 4 of the supporting-strip, as indicated at 8″. By thus forming the clips or supporting extensions 3 it is found in practice that they do not require to be secured within the beads 4 otherwise than by simple frictional engagement, since the weight of the mattress upon the supporting-strips has little tendency to engage the strips from the extension-clips.

In Figs. 4 to 6, inclusive, the main supporting-strip is provided with marginal beads 4′, substantially like those of the first construction, except that they are desirably formed by an upturned bend instead of a downturned bend or roll, and the supporting-strip is also provided with a central longitudinal rib 9, which, however, in this instance is formed to extend upwardly, is of less vertical width, and is relatively wide transversely, so that the two sides thereof, as 9′, are spaced at a substantial distance apart. Through the said sides of the rib 9′ are formed interlocking eyes 10 in transversely opposite pairs, the two pairs being located at a longitudinal distance apart suitable to receive the lower end coil of the spring 2. It is a feature of importance in this construction that the eyes 10 be located in a horizontal plane substantially coincident with the upper sides of the beads 4′, so that when the coil of the spring is threaded therethrough it will overlie and rest upon the upper edges of said beads, as shown clearly in Figs. 5 and 6. The interlocking engagement of the spring with the eyes is the same in principle as that described in the explanation of the first construction.

It will be seen from the foregoing description that in each of the examples which I have shown and described there are two distinct features of improvement—namely, the forming of the support in such manner as to afford great rigidity against vertical flexure and the provision of interlocking eyes or loops laterally separated, so as to insure a wedging engagement with the coil at more than two points. It is to be noted in this connection that these features of improvement are not necessarily combined, since they are each capable of embodiment independently of each other, but when combined coöperate to produce an extremely effective and economical structure.

The advantages of so supporting the lower end of the springs that they rest upon what constitutes, in effect, a base of considerable area are well understood, and it is sufficient to say that in the present invention these advantages are fully attained.

It will be obvious from the foregoing description that the details of construction may be modified without departing from the invention, and I do not, therefore, limit myself to these details except to such an extent that they are made the subject of specific claims.

I claim as my invention—

1. A mattress-spring support comprising a main strap member of sheet metal, a plurality of beads extending longitudinally throughout the length of said strap member, a rib extending throughout the length of said strap member, oppositely-disposed apertures in said strap member to receive the lowermost coil of said spring, said apertures lying in a plane contiguous to the plane occupied by the surface of said beads, whereby the coil of said spring, when passed through said apertures, is frictionally engaged by said beads and held in operative position, and means for supporting said strap member, substantially as shown and described.

2. A mattress-spring support comprising a main strap member, a pair of beads extending longitudinally throughout the length of said strap member, a rib interposed between said beads and extending throughout the length of said strap member, oppositely-disposed apertures in the sides of said rib to receive the lowermost coil of said spring, said apertures lying in a plane contiguous to the plane occupied by the upper surface of said

beads, whereby the coil of said spring, when in operative position, is frictionally engaged by said beads and securely held in such position.

3. A mattress-spring support comprising the main strip 1, the marginal beads 4, the rib 5, the end clips 3, the engaging loops 6, and the eyes 7, associated together in the manner here shown and described.

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