

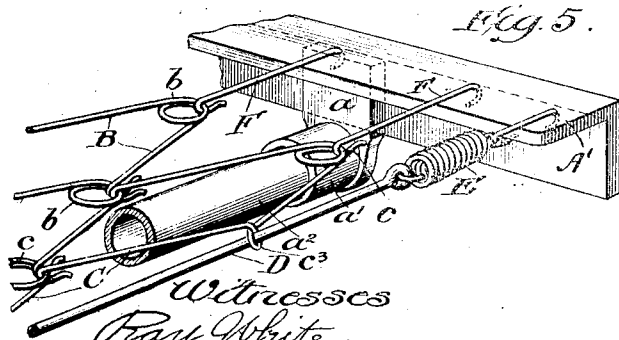
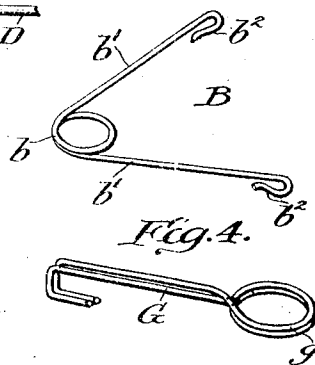
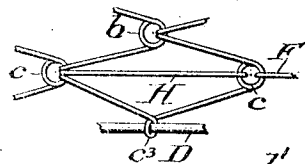
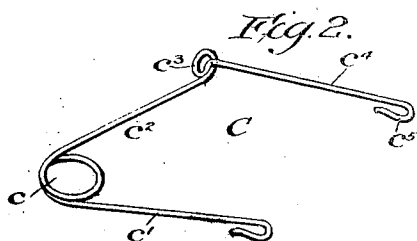
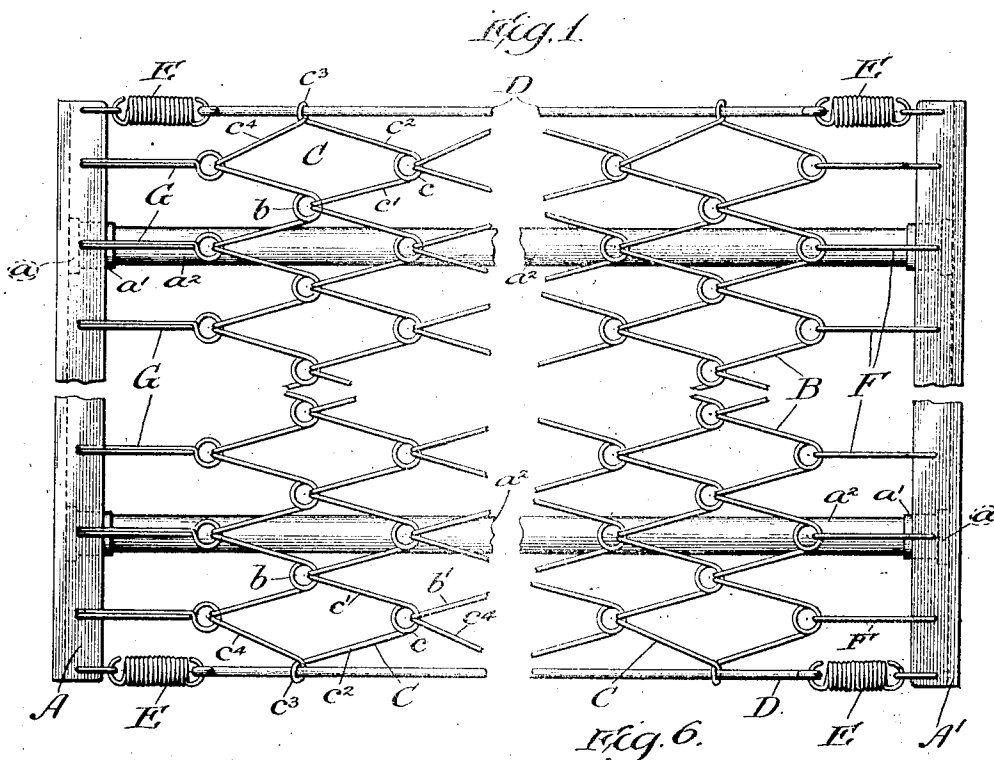
No. 876,340.

PATENTED JAN. 14, 1908.

M. W. FLOTO.

WIRE FABRIC AND ATTACHING MEANS THEREFOR.

APPLICATION FILED MAR. 11, 1907.



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WIRE FABRIC AND ATTACHING MEANS THEREFOR.

No. 876,340.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed March 11, 1907. Serial No. 361,657.

To all whom it may concern:

Be it known that I, MATTHEW WM. FLOTO, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wire Fabrics and Attaching Means Therefor; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in wire cloth fabrics and attaching means therefor and more particularly to that class set forth in my prior application for patent filed July 24, 1905, Serial No. 270,924.

In constructing the bottoms of beds, couches, etc., it has been usually customary to use many and various kinds of springs in order to afford the desired resiliency. Such constructions are unnecessarily expensive and are exceedingly difficult to repair. In some instances woven wire netting or a wire cloth fabric made of separable units has been employed and is fastened to the end and side members of the spring frame. Where the fabric is thus engaged to rigid side bars or rails there is of course at all times a hard ridge, along each side and for this reason said constructions have not heretofore been adaptable for couches and davenports owing to the discomfort and fatigue caused by the rigid side rail. Furthermore in the construction of bed bottoms the ridges along each side prevent the occupant from lying on the edges of the bed and a considerable area for this reason cannot be utilized. Again where the sides of the fabric are engaged to rigid, unyielding side bars the resiliency of the fabric is not evenly distributed over the entire area of the fabric or springs and it therefore sags toward the center so that if more than one person occupies the bed both roll toward the middle.

It is an object of this invention to provide a fabric bottom in which rigid unyielding side members or bars are dispensed with and which affords approximately equal resiliency over the entire area of the bottom and in which the objections heretofore caused by sagging are eliminated.

It is also an object of this invention to provide means whereby the fabric when used for

a couch, davenport, etc., may be stiffened any desired amount and in which the stiffening means may be quickly and easily inserted and removed.

It is finally an object of this invention to reduce the number of units and attaching parts to a minimum and to provide a construction so cheap to manufacture and easily assembled as to be within the reach of all users.

The invention relates to the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a plan view of a device embodying my invention with parts omitted. Fig. 2 is an enlarged detail of one of the side units or members. Fig. 3 is an enlarged perspective detail of one of the intermediate units or members. Fig. 4 is an enlarged perspective view of one of the hooks for securing the end of the fabric to the bar or frame. Fig. 5 is an enlarged perspective fragmentary detail of one corner of the bottom. Fig. 6 is a fragmentary detail illustrating one method of stiffening the fabric.

As shown in said drawings: A—A' indicate end bars or members of any suitable material which as shown are angle bars having the web directed downward and the flange inwardly. Engaged to said bars at approximately the same distance from each end is a bracket *a* provided with an internally threaded socket *a'* to receive the longitudinal tubular rods *a*². The corresponding sockets on opposite end bars are oppositely threaded and said tubular rods if rotated in one direction serve to tighten the fabric.

The fabric comprises a plurality of units or spring members of which the intermediate units or members B, comprise a wire formed centrally to afford a spiral coil *b*, having divergent arms *b'*—*b'*, each of which is provided with a hook *b*², at its outer end, the extremity of which is directed inwardly upon the arm and is then turned outwardly forming a rounded end. The hook of said intermediate units are engaged in the coils of the adjacent units and afford together therewith a solid network intermediate the sides. The outer arm of each unit or member B adjacent the sides is in such a position that it does not engage a coil or loop of an adjacent intermediate unit.

Engaged to the intermediate units or members B at the sides of the fabric are unit or spring members C which each comprise a wire twisted intermediate its ends to afford a spring coil c and outwardly divergent arms c' — c'' of which the arm c'' is approximately twice the length of the other. The arm c' is provided with a hook at its outer end as before described and the arm c'' at approximately the same distance from the coil is turned to form a loop c^3 , at an angle with the coil c and the end c^4 of said arm is directed inwardly in the same general direction as the arm c' and provided with a hook c^5 .

As shown, the arm c' engages the coil or loop b of the intermediate units or members and the free arm b' of said members B engages the coil c as does also the arm c^4 , of each side unit or member. When thus constructed the coils or loops c^3 , along each side of the fabric are in alinement. Secured through said alined loops c^3 is a rod D of greater size and strength than the units and provided at each end with an eye adapted to engage one end of a helical pulling spring E, the opposite ends of which are engaged to the end bars or members A—A'. The coils or loops b — c of the units or members B—C adjacent the bar or member A' are secured thereto by means of fasteners F which are provided at one end with hooks f as before described and at the opposite end by a plain hook. The units or members B—C adjacent the bar A are engaged thereto by means of fasteners G which as shown consist each of one piece of wire turned to form a coil g which is engaged by the hooks at the ends of said members or units B—C and the opposite end of said fastener G is bent to engage suitable apertures in the angle bar A.

The operation is as follows: The fabric is very quickly and easily assembled and by the use of the novel units or members C and the hook G, the use of a great number of independent coils and half unit members is obviated. The fabric so constructed affords uniform resiliency over the entire area and does not draw from the sides or tend to sag at the middle when occupied. Furthermore there being no side rail a soft edge is assured and the bed is comfortable to its edge either for a seat or as a bed. Should the edge prove too soft or resilient it may be stiffened by increasing the strength of the springs E or strong wires or rods H may be employed which are provided at each end with a hook similar to the hook b^2 or c^5 before described and which engage the longitudinally alined coils or loop b or c of said units or members B—C next adjacent the rod D, of course more than one line of such rods or wires may be employed if desired and helical springs in that case may be substituted in lieu of the hook f or G in such strengthened line. Said connecting rods a^2 may also be employed to

tighten the fabric and of course the sockets may be of sufficient depth to admit of considerable lengthening of the bed.

The unit or member C may be modified to form a spring hook to engage the rod D if preferred and various modifications in the construction may be made. I therefore do not limit this application as to details, as obviously they may be varied without departing from the principles of this invention.

I claim as my invention:

1. In a device of the class described the combination with end bars, of a fabric comprising intermediate mutually connected units or members and engaged at its ends to said bars, side units or members engaged to said intermediate units or members having diverging arms, one of said arms of each member provided with a loop and having its end directed approximately parallel with the other arm, a rod extending through said loops and means yieldingly engaging the ends of said rods to said end bars.

2. The combination with end bars of resilient rods connecting corresponding ends, side units or members each provided with a loop to engage the respective rod, intermediate spring units or members engaged to said side units or members and to each other and all of said members having integral coils and hooks, fasteners engaging the coils at one end of the fabric thus formed with one of said bars and members engaging the fabric at the opposite end to the adjacent end bar having coils to receive the hooks of the side and intermediate members and a hook to engage the bar.

3. A wire fabric composed of intermediate spring units or members comprising a wire twisted to afford a spring coil and integral diverging arms each having a hook at its extremity adapted to engage the coils of an adjacent unit or member, side units or members engaged to the adjacent intermediate units or members comprising a wire twisted to form a spring coil, arms diverging therefrom, one of said arms affording a loop intermediate said coil and the extremity thereof and a hook at the extremity of each arm.

4. As an article-of manufacture a spring unit or member comprising a wire or rod adapted to afford a spring coil intermediate the ends, said ends diverging from said coil, one of said ends twisted intermediate the coil and extremity to afford a loop directed at an angle with the coil and a hook at the extremity of each arm.

5. As an article of manufacture a spring unit or member comprising a wire or rod shaped to afford a resilient coil, diverging arms integral therewith, a loop formed by one arm intermediate said coil and extremity and a spring hook formed at the extremity of each arm.

6. As an article of manufacture a spring unit or member composed of a wire or rod shaped to afford a coil, an arm extending tangentially from the coil and twisted to afford a loop directed at an angle with the coil at approximately its middle, the outer end of said arm directed at an angle with its inner end, an arm integral with the coil and extending parallel with the outer end of the aforesaid arm and hooks formed at the extremity of each arm.

7. In combination with end bars, a wire fabric comprising units or members adapted to be engaged to each other having coils directed toward one bar and hooks directed toward the other, a rod engaged to the members along each side of the fabric, a spring connecting each end of the rod with the end bars, fasteners connecting the bar and the unit members at one end comprising a wire having spring hooks, means securing the fabric to the opposite bar comprising a wire having an integral coil at one end and hooks at the opposite end, and means adapted to engage said unit members to stiffen the fabric.

8. In a device of the class described the combination with end bars, of a wire fabric comprising units or members each having a coil and divergent arms integral with the coil, a hook on the end of each arm, said members arranged so that the coil is directed toward one end bar and the hooks toward the opposite end bar, means connecting the end coils with the end bar and means connecting the hooks and the adjacent bar comprising a wire twisted to form a coil to engage the hooks and provided with forwardly directed arms each bent to form a hook at its outer end to engage the bar.

9. In a fabric of the class described the combination with intermediate unit members, each having a coil and diverging arms, side units or members each having coil and diverging arms, one of which is provided with a loop, said loops in all of the side members being in alinement, and a rod or wire having spring hooks at each end to engage the coils in the intermediate and side units or members.

10. The combination with end bars of rods adjustably connecting the same, a wire fabric comprising members each having a coil and hooks and the coils directed toward one end bar and the hooks toward the other, a wire or rod engaged at its ends to the coils of the members a rod engaged in loops at the sides of the fabric, springs engaging the last named rod to said end bars, hooks engaging the coils at one end of the fabric to the adjacent end bar and a member engaging the fabric to the opposite end bar, each having a coil at one end to engage the hook of the aforesaid members and a hooked end to engage the adjacent bar.

11. A wire fabric comprising intermediate members each comprising a coil, divergent arms integral therewith, a hook on each arm, side units or members comprising a coil, diverging arms engaged thereto, one provided with a loop directed at an angle with said coil and the end thereof directed parallel with the other arm and means engaging said loops on the side members firmly holding the same equal distances apart and means engaging said fabric to a support.

12. A bed bottom having non-rigid side bars and rigid end bars of lower adjustable tension rods connecting the end bars, a spring fabric engaged on said end bars and comprising separable spring side and intermediate units, of which the intermediate units comprise a wire having a spring coil and diverging arm and the side units comprise a wire having a coil and diverging arms of unequal length the longer arm of which is provided with a loop directed transversely of the coil, hooks at the extremity of each arm, a rod yieldingly engaged at its ends on the end bars at each side the fabric and to which the side units are yieldingly engaged by means of the loops.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

MATTHEW WM. FLOTO.

Witnesses:

K. E. HANNAH,
J. W. ANGELL.