No. 830,512. PATENTED SEPT. 11, 1906.

C. S. LLOYD.

WIRE MATTRESS.

APPLICATION FILED NOV. 30, 1903.

2 SHEETS—SHEET 1.

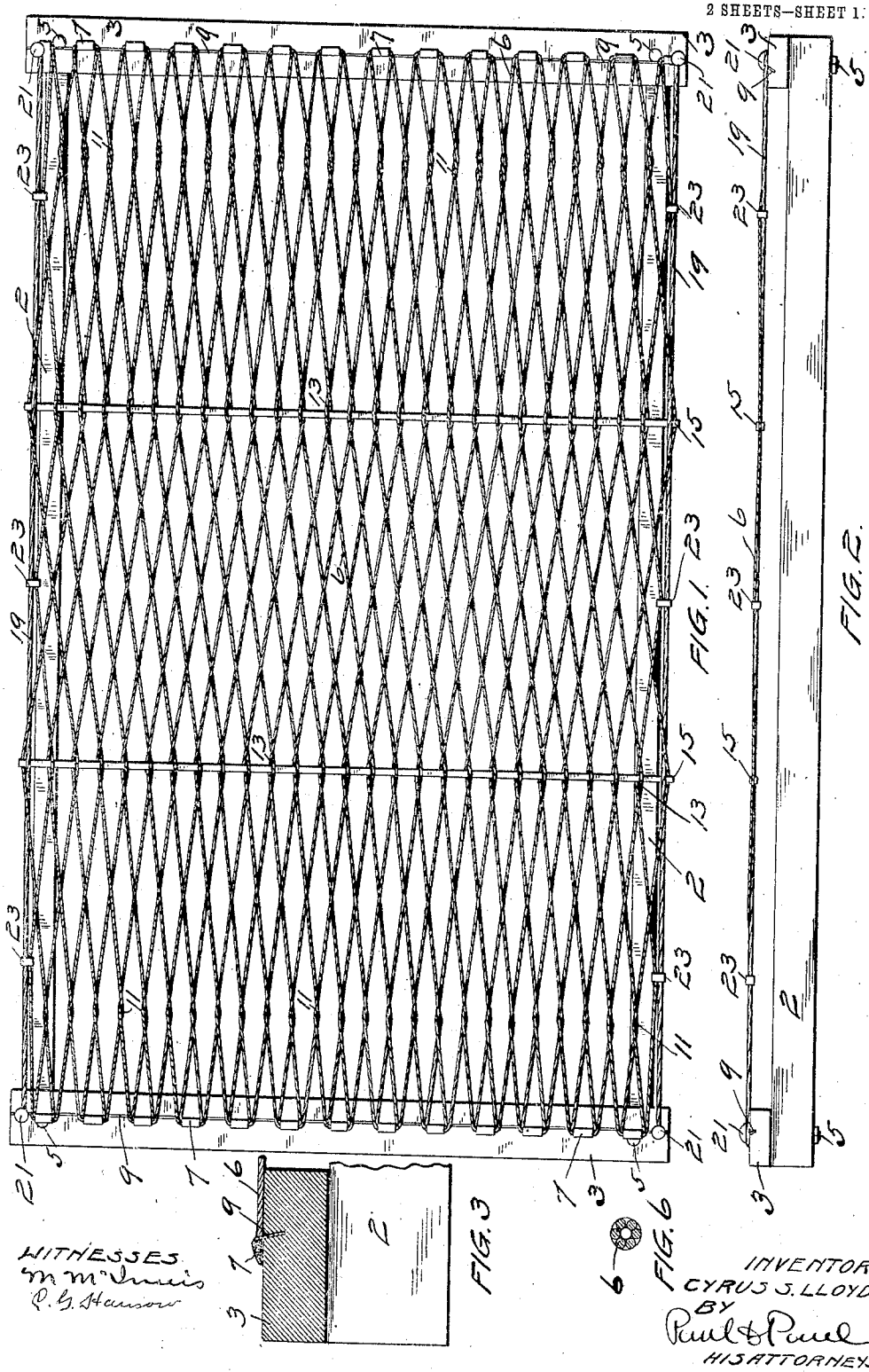


FIG. 1.

FIG. 2.

FIG. 3

FIG. 6

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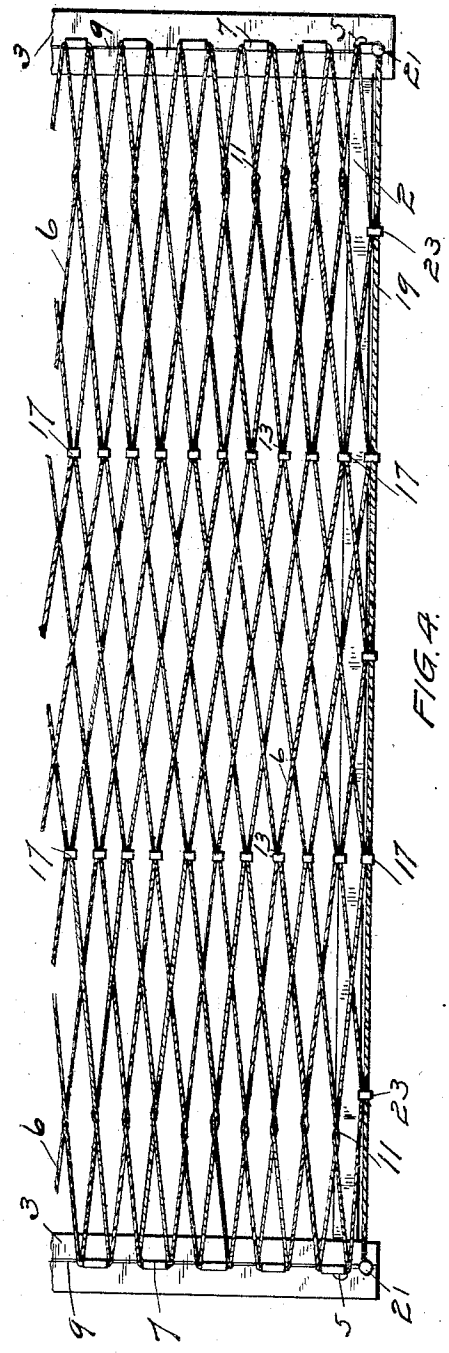


FIG. 4.

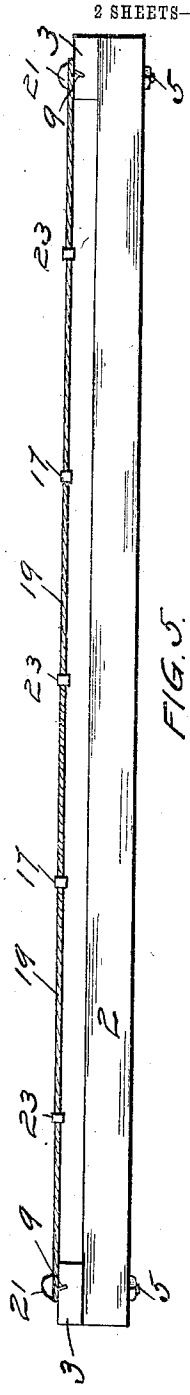


FIG. 5.

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UNITED STATES PATENT OFFICE.

CYRUS S. LLOYD, OF MINNEAPOLIS, MINNESOTA.

WIRE MATTRESS.

No. 830,512. Specification of Letters Patent. Patented Sept. 11, 1906.

Application filed November 30, 1903. Serial No. 183,107.

To all whom it may concern:

Be it known that I, CYRUS S. LLOYD, of Minneapolis, in the county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Wire Mattresses, of which the following is a specification.

This invention relates to improvements in the manufacture of wire mattresses or bed-springs; and the objects I have in view are to provide a mattress of this kind that is economical in construction, which possesses all the elasticity of the ordinary woven-wire mattress, and which at the same time possesses sufficient strength to pervent it from sagging in the center. The objection to the ordinary woven-wire mattress is found in the tendency of such mattress to sag in the center. I overcome this objection and at the same time produce a mattress that possesses as great elasticity as the mattress formed of woven wire.

The invention consists generally in the constructions and combinations hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view, and Fig. 2 a side elevation, of a mattress constructed in accordance with my invention. Fig. 3 is a detail section through the end rail, showing the means for securing the cables to the bed-frame. Fig. 4 is a partial plan view showing modified means for securing the cables to one another. Fig. 5 is a side elevation of the structure shown in Fig. 4. Fig. 6 is a detail.

In the drawings, 2 represents the mattress or bed-frame, provided with the transverse end rails 3. These rails are preferably secured in position by suitable bolts 5, and one or both of said rails may be made adjustable. A series of lugs 7 are provided upon each rail, these lugs being preferably integral with a metal strip 9, that is secured in position in the upper surface of the rail. The lugs 7, which form the means for attachment of the cables, are preferably bent downward over the cables, (see Fig. 3,) so as to form a permanent fastening therefor. For the surface of the mattress I provide a double series of cords or cables extending lengthwise of the mattress and secured to the end rails. Two cables are preferably looped around each of the lugs 7, and these cables as applied to the mattress extend parallel to one another and to the side rails of the bed-frame. I prefer to form each of these cables as a hollow tube 6, composed of a series of spirally-coiled wires. These wires being arranged close together form a hollow or tubular cable. These cables have considerable elasticity. It will be noted that by applying the cable in this way I have a double series of cables looped around each of the lugs and extending parallel to one another lengthwise of the bed-frame. I then loop each cable around the next adjacent cable, as shown at the point 11 in Fig. 1, and I then carry the portions of said cables that are toward the center of the frame in opposite directions and diagonally across the next two adjacent cables. I then bring the loops of the cable across each other, as represented at the point marked 13 in Figs. 1 and 4, and I then secure the loops of each two cables thus brought across each other by any suitable means—such, for instance, as a rod 15, which passes between the loops formed by the overlapping cables, as shown in Fig. 1 of the drawings, or by the clips 17, applied to said cables at the points where they meet, as shown in Fig. 4. The same method of twisting the wires together and passing one across another is employed at the other end of the mattress and, if desired, could be employed at an intermediate point. This, however, I have found to be unnecessary. A second bar 15 or second row of clips 17 is used for securing the wires where they are brought together toward the other end of the mattress. By this means each wire is not only intertwisted with the next adjacent wire at a point near each end of the mattress, but each cord or cable passes across at least one other cable and passes over or is joined to the next succeeding cable.

By having the adjacent cables intertwisted and having each cable cross one or more of the other cables I provide a mattress that is of great strength and that will retain its form after being used for any length of time. I also provide a mattress that may be constructed of light hollow cables, and hence that will require but a minimum weight of wire and will therefore be very inexpensive. Where the locking-bars 15 are employed, as shown in Figs. 1 and 2 of the drawings, only two of such bars are required to lock all of the cables together. Where the clips are employed, two rows of

such clips will be sufficient to secure the cables together.

I prefer with either construction to provide at each edge of the mattress two or more cables 19, twisted or braided together and secured to the end rails by suitable studs 21, and to which the cables 6 are connected at intermediate points by suitable clips 23.

By having the cables crossed, as described, and secured by the bar or the clips shown the mattress is prevented from drawing in from the sides and the diamond-shaped meshes formed by the crossing wires are not permitted to draw together when the mattress is tightened. The bed is formed by simply stretching the cables over the fastening device in the end rails of the frame and drawing the cables past one another, and thereby tightening the whole fabric. By this means the use of the usual stretching devices, which are expensive machines, is done away with. If it is desired at any time after the mattress is formed to tighten the fabric, this may be accomplished by moving the rods or the clips toward the end rails of the frame. This is a great advantage in any mattress.

I do not limit myself to any particular construction of devices for securing the cables to the end rails of the frame, nor to any particular size or material for the cables.

I claim as my invention—

1. A mattress comprising a supporting-frame, a series of cables extending lengthwise of said frame and secured to the end rails thereof, each cable being twisted around the contiguous cable on one side at each end of said frame and then carried diagonally across the corresponding cable on the other side and twisted around the next succeeding cable on the same side and then extended diagonally across a series of cables to form diamond-shaped meshes in the fabric, substantially as described and for the purpose specified.

2. A mattress comprising a suitable supporting-frame, a series of cables extending lengthwise of said frame and secured to the end rails thereof, each cable extending diagonally across the contiguous cable at each end of said frame and then being twisted around the next succeeding cable near the middle of said frame and carried diagonally across a series of cables intermediate to said twisted sections, substantially as described and for the purpose specified.

In witness whereof I have hereunto set my hand this 24th day of November, 1903.

CYRUS S. LLOYD.

In presence of—
A. C. PAUL,
C. G. HANSON.