

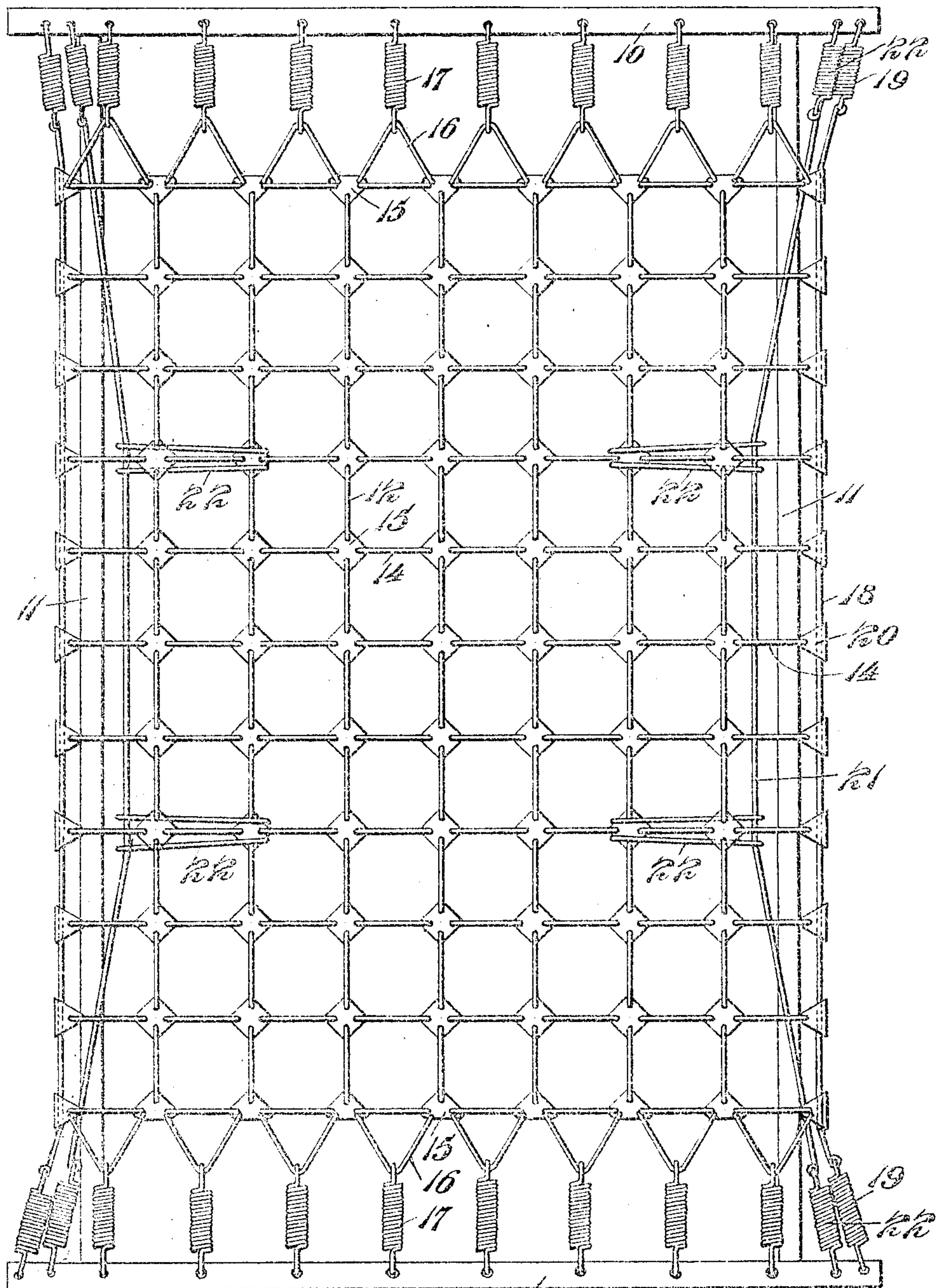
No. 882,264.

B. MCINTOSH.
BED SPRING.

PATENTED MAR. 17, 1908.

APPLICATION FILED JULY 25, 1907.

2 SHEETS--SHEET 1.



WITNESSES

WITNESSES
Julian D. [Signature]
 [Signature]

7-11

10-10-68

INVENTOR

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BY
Gale B. Owens
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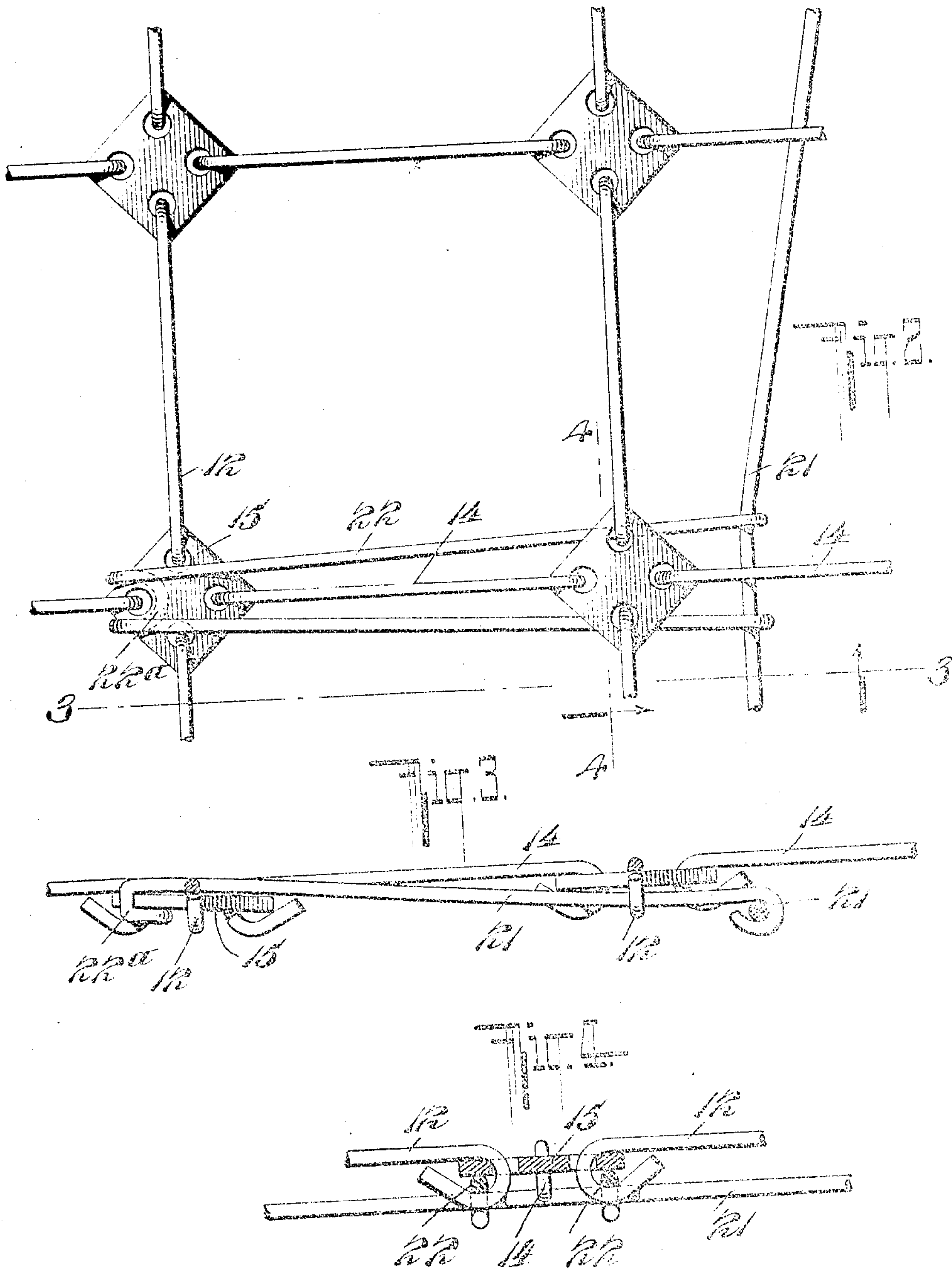
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WITNESSES
Julius B. [Signature]
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UNITED STATES PATENT OFFICE.

BURTNETT MCINTOSH, OF NEW YORK, N. Y., ASSIGNOR TO FRANK A. HALL, OF MONTCLAIR, NEW JERSEY.

BED-SPRING.

No. 882,264.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed July 25, 1907. Serial No. 385,413.

To all whom it may concern:

Be it known that I, BURTNETT MCINTOSH, of the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Bed-Springs, of which the following is a full, clear, and exact specification, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates especially to those bed springs which are constructed of longitudinally and transversely extending wire links, joined to each other by connecting plates or the like and connected to the edges of the rigid spring frame by retractile springs. A great disadvantage heretofore experienced with springs of this sort is that the weight of persons lying on the bed is borne almost exclusively by the center links and is communicated by them to the middle portions of the end rails of the spring frames with the two fold disadvantage that the spring sags perceptibly and, the entire strain being borne at the middle of the end bars of the frame, such bars frequently break at this point.

The object of my invention is to prevent these disadvantages and I accomplish this by a peculiar arrangement of tension strands located at the side edge portions of the spring and connected to interior points of the spring by transverse ties. In this manner an equal tension is exerted over the entire surface and hence sagging and the fracture of the end bars are prevented.

My invention involves various other features of major or minor importance and all will be fully set forth hereinafter and particularly pointed out in the claims.

Reference is now had to the accompanying drawings which illustrate, as an example, the preferred embodiment of my invention, in which drawings,

Figure 1 is a plan view of my improved spring; Fig. 2 is an enlarged fragment of the same. Fig. 3 is an enlarged sectional elevation on the line 3—3 of Fig. 2; Fig. 4 is an enlarged sectional elevation on the line 4—4 of Fig. 2.

The rigid spring frame is constructed in the usual manner and comprises end bars 10, and side rails 11, joined securely to the end bars in rectangular arrangement. Usually the side rails are depressed with reference to

the end bars, to allow the necessary sagging of the spring.

12 indicates the longitudinal and 14 the transverse links of the spring. These, as heretofore, are preferably of wire and are joined in rectangular arrangement by the metal connecting plates 15, the ends of the links being bent loosely in openings in the plates as may be seen from Figs. 2, 3, and 4. At the ends angle links 16 are connected to the adjacent plates 15 and these links 16 are in turn joined to retractile springs 17 fastened to the end rails 10.

At each side edge of the spring is arranged a tension strand 18, preferably of wire and connected at its ends to the ends of the end bars 10, by means of retractile springs 19. Said tension strands are joined to the outer ends of the transverse links 14 at the side edges of the springs by connecting plates 20. While I prefer to connect the strands 18 slidably with the plates, by bending the plates around the strands, nevertheless, this connection may be made non-removable without departing from the spirit of my invention. The spring is also provided near each side edge with tension strands 21 joined at their ends to the ends of the said bars 10 by means of retractile springs 22 located inside the springs 19. These strands 21 pass under the links of the spring without direct connection therewith and are each provided preferably with two transverse ties 23 joining the middle portions of the strands to the middle portion of the spring. As shown best in Figs. 2, 3, and 4, the ties 22 are formed of wires bent double or U-shaped, their ends being turned around the tension strands 21, and the ties passed under the second row of links 12 and connecting plates 15 and over the third rows. At their inner ends the ties are bent downward to form hooks 22^a engaging the adjacent connecting plates of said third rows of links 12. As shown best in Fig. 4, the adjacent links 12 of the second rows have their hooked ends engaged, not only with the connecting plate 15, but also with the lengths of the ties 22, thus firmly securing the parts together.

In a spring of this construction, the tension strands 18 exert a constant tension outward on the transverse links 14 and in the plane of the spring, balancing the longitudinal tension exerted by the springs 17 and maintaining the spring extended and taut both longi-

tudinally and transversely. The weight of a person lying on the spring and tending to sag the same and bow the end bars 10, is transmitted by the ties 22 to the tension strands 5 21 and these with the strands 18, transfer the strain to the ends of the side bars, resisting the sagging of the spring and relieving the middles of the end bars from excessive strain.

Having thus described the preferred embodiment of my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a bed spring, the combination with a rigid frame comprising side and end rails, of 15 links, connecting members articulating said links in angular formation, springs joining the links to the end bars of the frame, tension strands extending along the side edges of the spring, springs exerting longitudinal tension 20 on said strands and joining them to the end portions of the end bars of the frame, connecting members joining said strands to the adjacent links of the spring, additional tension strands extending along the side edge 25 portions of the spring, springs exerting longitudinal tension on said additional tension strands and joining them to the end portions of said end bars and transverse ties extending from said additional tension strands in- 30 ward toward the middle portion of the spring and engaged with certain of the first named connecting members for the purpose specified.

2. In a bed spring, the combination with a 35 rigid rectangular frame having side and end rails, of links, connecting members articulating the same in angular formation, elastic means joining the links to the end rails of the frame, tension strands extending longitu-

dinally along the side edge portions of the 40 spring, elastic means connecting the ends of the tension strands with the end rails of the frame, the second named elastic means being independent of the first named means and 45 transverse ties fastened to the tension strands and extending inward toward each other and toward the center of the spring and joined to parts of the spring at their inner ends, whereby to exert strain on the trans- 50 verse links and relieve the strain on the middle portions of the end rails of the frame.

3. In a bed spring, the combination with a rigid rectangular frame having side and end rails, of links, connecting members articulat- 55 ing the same in angular formation, elastic means joining the links to the end rails of the frame, tension strands extending longitudinally along the side edge portions of the spring, elastic means connecting the ends of 60 the tension strands with the end rails of the frame, the second named elastic means being independent of the first named elastic means and transverse ties fastened to the tension strands and extending inward toward each 65 other and toward the center of the spring, and joined to certain of the said connecting members at the inner ends of the ties, whereby to exert strain on the transverse links and relieve the strain on the middle portions of 70 the end rails of the frame.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BURTNETT McINTOSH.

Witnesses:

I. A. CASSIDY,
H. F. COLA.