H. M. JACKSON.

SPRING BED.

APPLICATION FILED JULY 28, 1919.

1,344,636.

Patented June 29, 1920.

2 SHEETS—SHEET 1.

Fig-1.

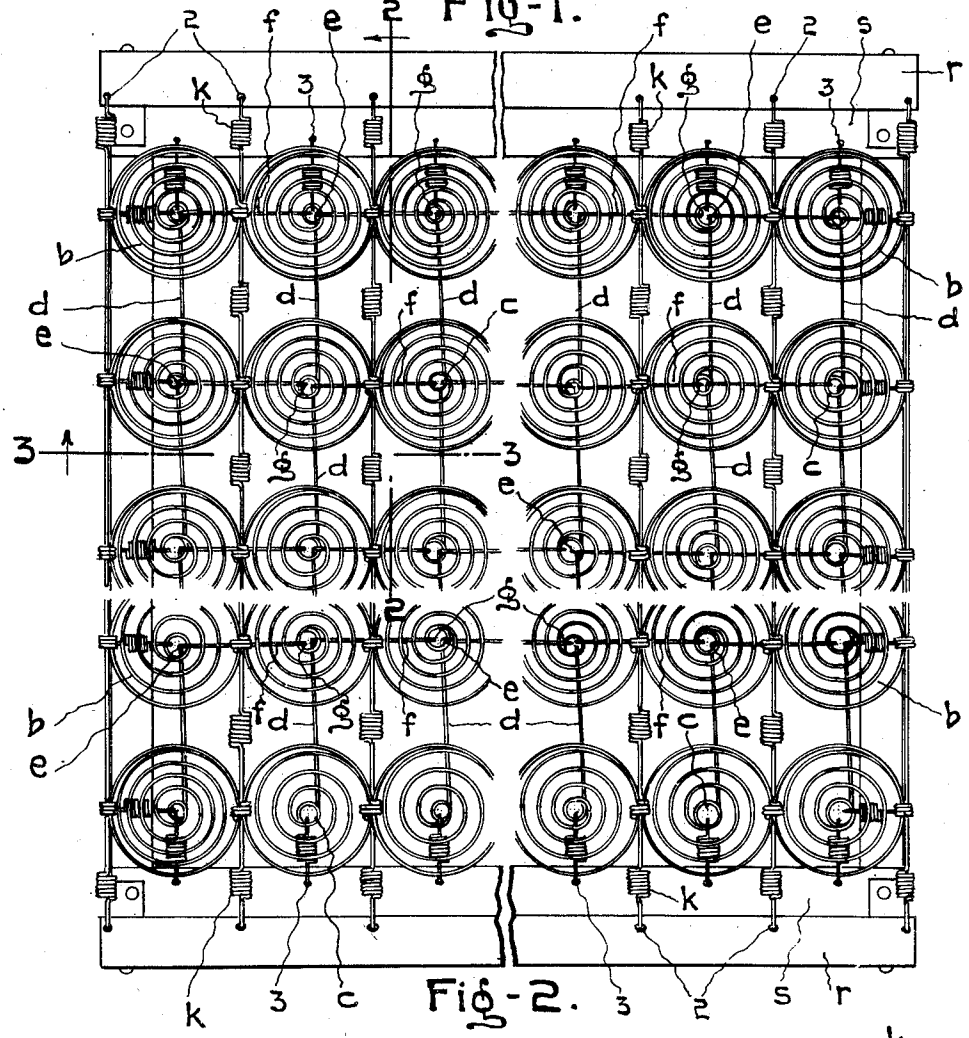
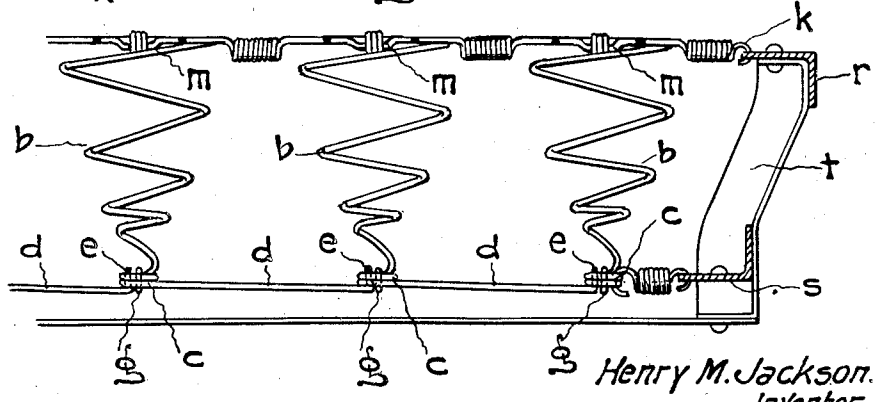


Fig-2.



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2 SHEETS—SHEET 2.

Fig. 3.

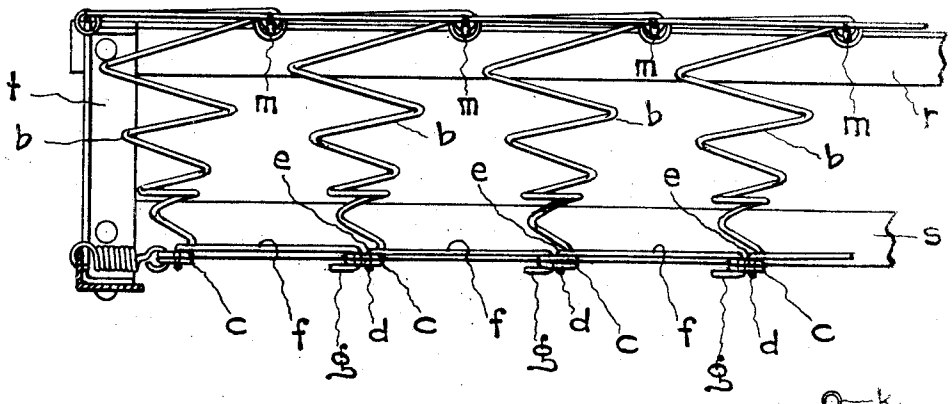


Fig. 4.

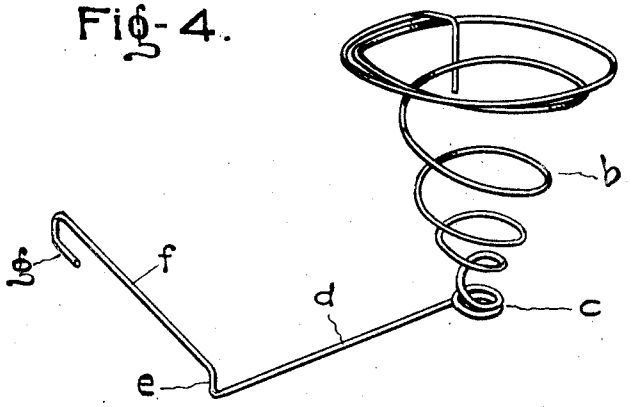


Fig. 5.

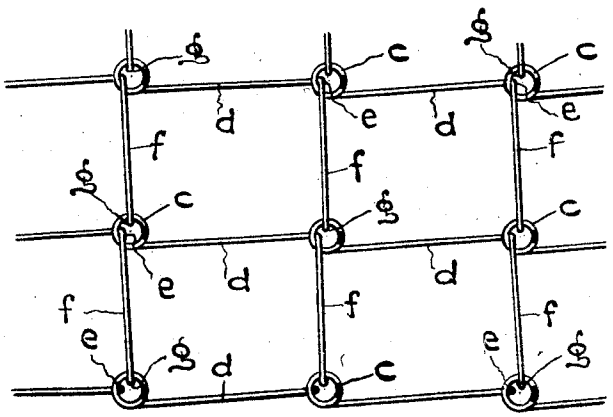
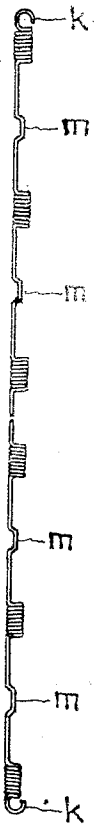


Fig. 6.



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UNITED STATES PATENT OFFICE.

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SPRING-BED.

1,344,636. Specification of Letters Patent. Patented June 29, 1920.

Application filed July 28, 1919. Serial No. 313,715.

To all whom it may concern:

Be it known that I, HENRY M. JACKSON, of the city of Montreal, Province of Quebec, Dominion of Canada, a subject of the King of Great Britain, have invented certain new and useful Improvements in Spring-Beds; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to spring beds of the spiral type.

Spring beds of spiral type as heretofore used were defective in that they were either too hard for a light person or too soft for a heavy person. In the latter case the springs were compressed until they touched the supporting device, usually wooden slats. This is not only uncomfortable for a comparatively heavy person to lie on, but also annoying, because of the noise made by the compressed springs striking the supporting slats.

My invention has for its object to overcome these defects, and produce a spring bed which will accommodate persons of any weight, without the springs producing noises by tapping upon their supporting devices, even when compressed to maximum extent.

To this end I have produced a spring bed with its spirals of simple-cone type and disposed with their truncated apices downward, each apex ending in an eye; the eyes of adjoining springs being connected together by links, thus forming a supporting fabric; while certain longitudinal members co-act with the crowns of the springs and retain them in their proper relative position, thus forming the top construction, and at the same time each of the springs upon which the occupant of the bed lies individually sustains its proper proportion of the weight.

In the preferred embodiment of my invention, the eyes of the springs are formed practically by a double circle of the end of the spring, such end extending horizontally from the lowermost circle at right angles of the axes of the cone, which is in a vertical plane, and engaging the eye of an adjacent cone by passing through the same and extending thereto at right angles and horizontally to a third cone, the eye of which it engages in the form of a hook.

For full comprehension, however, of my invention, reference must be had to the accompanying drawings in which similar reference characters indicate the same parts, and wherein:

Figure 1 is a plan view of a single-cone spring bed constructed according to my invention;

Fig. 2 is a fragmentary longitudinal sectional view taken on line 2—2 Fig. 1, and drawn to a larger scale;

Fig. 3 is a transverse sectional view taken on line 3—3 Fig. 1 and drawn to a larger scale;

Fig. 4 is a detail elevation of one of the spring elements;

Fig. 5 is a fragmentary plan view of the supporting fabric; and

Fig. 6 is a detail view of one of the longitudinal members of the top construction.

I will first describe one of the spring elements of my improved bed, and then these elements assembled to produce a supporting fabric combined with the springs, and a top construction fabric formed by the top convolutions of the springs and a series of elastic longitudinal members serving as supplemental springs and at the same time retaining the spirals in proper relative positions.

Each spring element consists of an inverted truncated cone *b* the truncated apex of which is formed in an eye *c* produced by substantially two complete circles of the wire from which the spring is formed. This wire is continued at right angles to the axis of the spiral to present a link *d* which extends horizontally from the bottom of one side of the eye and it is of a length equal to the distance it is required to space the spirals apart. The wire is then bent upwardly to present a standard and then horizontally at right angles to the link as at *f*, and terminates in a hook *g* which has a substantially vertical portion corresponding in height to the standard *e*. The height of this vertical portion and the standard *e* is equal to the depth of the double-ring eye. This hook is turned downwardly. The link *d* is longer than the link *f* to give the proper longitudinal spacing to the spirals; while the standard *e* is adapted to engage the eye of the next adjacent spiral in a longitudinal direction with relation to the bed from which this angular link extends and the hook engages the eye of the spiral next to the latter in a diagonal direction. It is well recognized in the art of spring bed manufacture that the longitudinal member of the bed must have a capacity for greater strain than the transverse members, and this is taken care of in my spring element by the fact of the longitudinal link *d* being sustained at one end by the trans-

verse link *f* through the standard *e* and at its opposite end by being an original part of the spiral.

Each elastic longitudinal member is substantially equal in length to the length of the bed frame and consists of a wire both ends of which are bent in the form of hooks *k* and have integral alternating helices and offsets the helices being spaced correspondingly to the axes of the spirals and alternating therewith while the offsets are in transverse line with the spirals.

The helices are indicated at *n* and the offsets at *m*. The off-sets are of sufficient length to accommodate the contacting sides of the top convolutions which form the crowns of the spirals and present their main lengths in the same horizontal plane as the crowns.

The bed frame consists of longitudinal top irons *r* and bottom angle irons *s* with distance pieces or struts. The short helical springs are then hooked to the eyes of the series of spirals at the right hand side of the bed (looking at Fig. 2) and to the hooks at the ends of the angular links of the spirals at the opposite side of the bed. The hooks at the ends of the transverse elastic members are then hooked into holes 2 in the top side bars of the bed frame. The short spirals are then hooked to similar holes 3 in the bottom side, head and foot bars of the bed frame.

Although I have described my invention as applied to the construction of a spring bed, yet my original spring element with or without my elastic longitudinal members and the connection of the crowns of the spirals thereto, may be used for spring seats and backs of beds and any other article requiring a yielding surface, without departing from the spirit of my invention.

What I claim is as follows:

1. In a spiral spring structure the spirals of which are of truncated conical form disposed with their truncated apices downward and each ending in an eye; means connecting the eyes together in the form of a supporting fabric such means for connecting the eyes together consisting of an extension of angular form of the wire of each spiral, such extension passing through the eye of a second spiral and engaging the eye of a third spiral, and elastic means connecting together the inverted bases of the spirals.

2. In a spiral spring structure the spirals of which are of truncated conical form, disposed with their truncated apices downward and each ending in an eye; means connecting the eyes together in the form of a supporting fabric, and elastic means connecting together the inverted bases of the spirals; such elastic means consisting of longitudinal wires having spaced off-sets and intervening helices formed integrally therewith, and means for connecting the top convolutions of the spirals to the off-sets of the wires.

3. A single spiral spring structure, the spirals of which are of truncated conical form, disposed with their truncated apices downward and each ending in an eye; means connecting the eyes together in the form of a supporting fabric, such means consisting of an extension of angular form of the wire of each spiral, such extension passing through the eye of a second spiral and engaging the eye of a third spiral, and elastic means connecting together the inverted bases of the spirals; such elastic means consisting of transverse wires having spaced off-sets and intervening helices, and means for connecting the top convolutions of the spirals to the off-sets of the wires, such last mentioned means consisting of the end wire of the top convolution of each spiral being coiled about an off-set and the adjacent side of the top convolution of a contiguous spiral.

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

HENRY M. JACKSON.

Witnesses:

GORDON G. COOKE,

WILLIAM J. C. HEWETSON.