T. KLIPPEL.

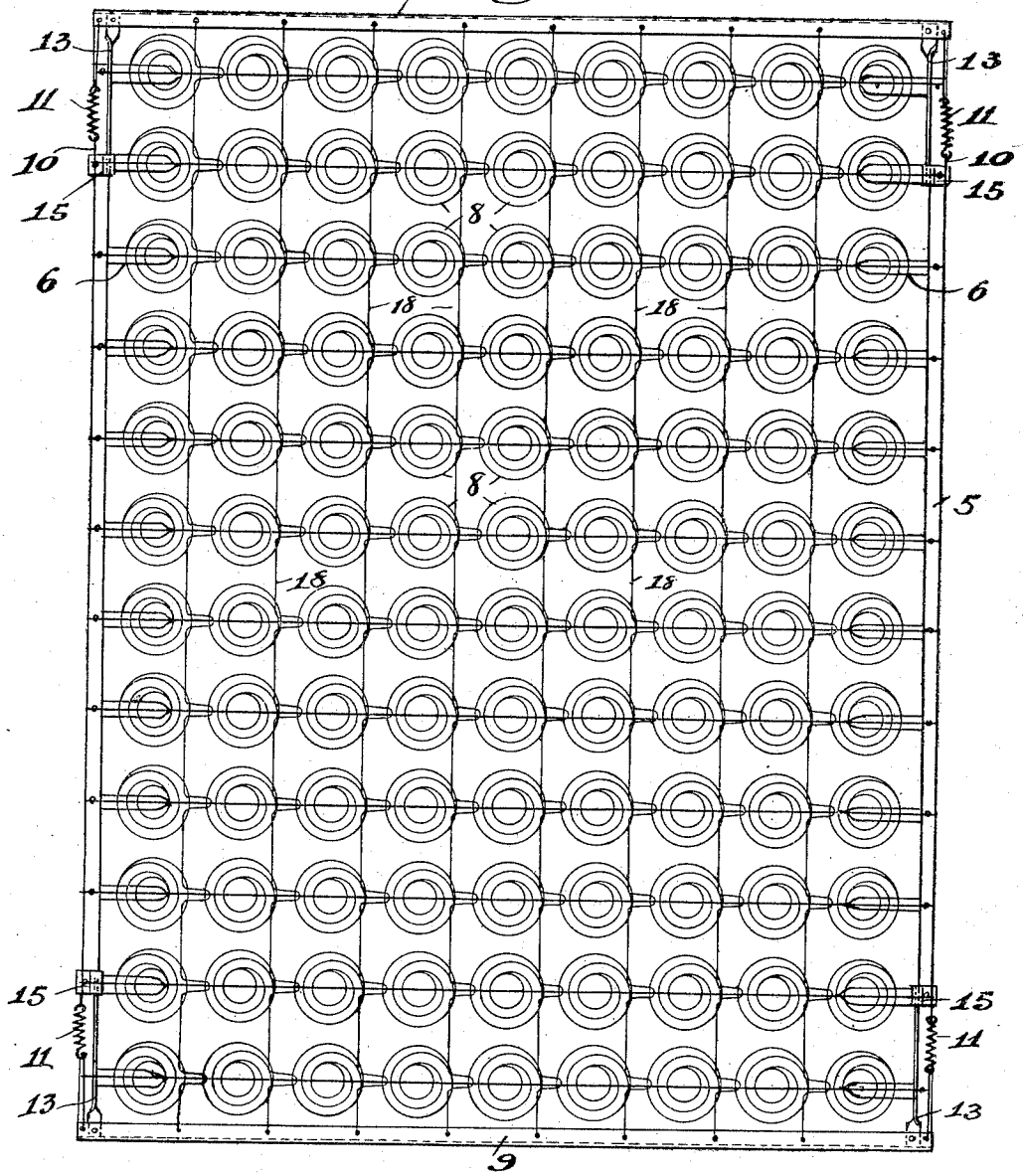
SPRING BED BOTTOM.

APPLICATION FILED DEC. 26, 1908.

927,982. Patented July 13, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



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2 SHEETS—SHEET 2.

Fig 2.

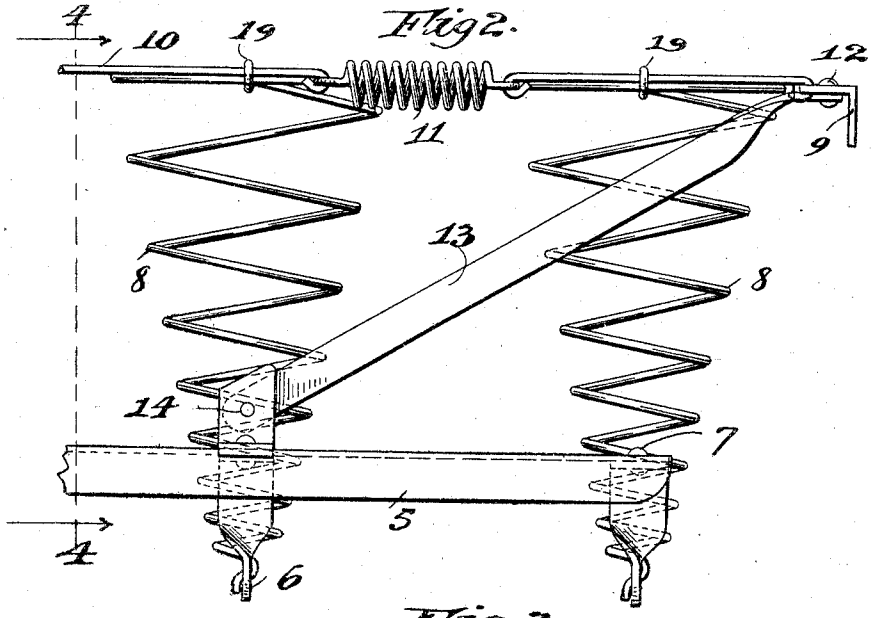


Fig. 3.

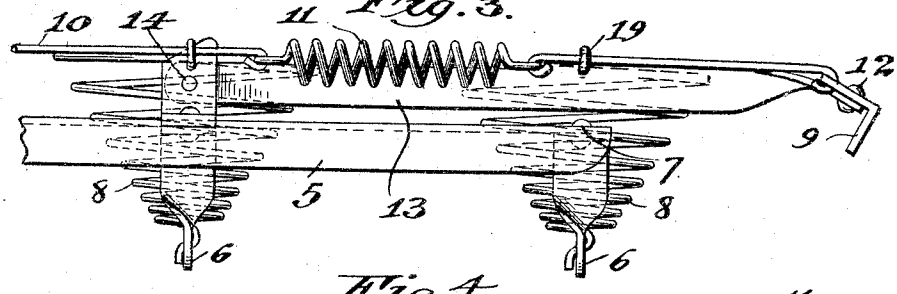
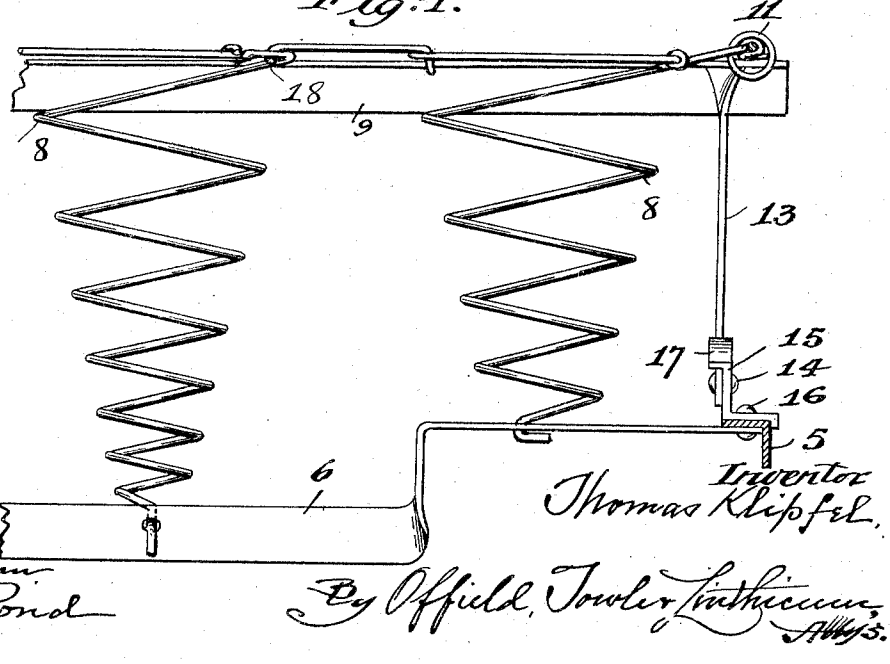


Fig. 4.



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UNITED STATES PATENT OFFICE.

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SPRING BED-BOTTOM.

No. 927,982. Specification of Letters Patent. Patented July 13, 1909.

Application filed December 26, 1908. Serial No. 469,211.

To all whom it may concern:

Be it known that I, THOMAS KLIPFEL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Spring Bed-Bottoms, of which the following is a specification.

This invention relates to spring bed bottoms of that type employing a plurality of longitudinal and transverse rows of helical springs secured to and supported at their lower ends on a frame structure that engages the side rails of the bed and at their upper ends connected to each other and to the side and end members of an upper frame so as to secure each spring against substantial lateral displacement while permitting free vertical yield thereof; and my present invention resides more particularly in a new and improved mechanism for connecting the upper frame to the side rails of the lower frame in such a manner as to permit of the compression of the structure throughout its entire area, without necessitating any dismantling thereof in shipment. Spring bed bottoms of this type, being bulky articles, it is desirable to compress or compact them into as small a space as possible for purposes of shipment. It is also, obviously, desirable to render the head and foot portions, as well as the main intermediate portion, of the upper surface of the spring structure depressible, for added ease and comfort in use. I am aware that constructions permitting both of these desirable qualities in a spring bed bottom have heretofore been proposed, but in my present invention I believe I have simplified and improved upon all prior constructions heretofore known for these purposes.

The invention and its mode of operation and advantages will be readily understood from the subjoined description, when considered in connection with the accompanying drawings, in which,—

Figure 1 is a plan view of a complete bed bottom embodying my improvements. Fig. 2 is a fragmentary side elevation, on an enlarged scale, of one corner of the structure, the same being shown in expanded or service condition. Fig. 3 is a view similar to Fig. 2 and of the same parts, showing them as they appear in compressed position, such as they occupy when prepared for shipment. Fig. 4 is a view at right angles to Fig. 3 on line 4—4 of the latter figure.

Referring to the drawings, 5 designates the parallel side rails of the lower supporting frame of the structure, herein shown as of angle-iron, and connected at intervals by the cross-rails or metallic slats 6 permanently secured to said side rails as by rivets 7, all as common in bed bottom frames of this type. Supported at their lower narrow ends on the cross-rails 6, and suitably secured to the latter are longitudinal and transverse rows of helical springs 8.

The upper frame structure comprises the head and foot rails 9, herein shown as of angle-iron form, and side rods 10 connecting the ends of the head and foot rails 9. In each of the rods 10, near each corner of the structure, is interposed a tension spring 11, although a single spring interposed in each side rod will answer the purposes of the invention. Secured to the head and foot rails 9 at or near each end thereof as by rivets 12, is a diagonal strut 13, which is pivotally connected at its lower end at 14 to the vertical limb of an L-shaped bracket 15 that is in turn riveted through its horizontal limb, as at 16, to the side rail 5 somewhat inwardly of the end of the latter. The vertical limb 15 of this bracket has an oblique inward lateral extension 17, best shown in Fig. 4, that overlies the upper edge of the strut 13 and, when the latter is in the position which it occupies in the expanded or service condition of the bed bottom, constitutes a stop to limit the height at which the head and foot rails 9 are elevated by the springs.

The upper ends of the springs are connected with each other by the usual tie-wires 18 that extend longitudinally of the structure, being looped between the springs of adjacent longitudinal rows and at their ends connected to the rails 9 in a well known manner. The springs of the two outside rows are also connected with the side rods 10 by short tie-wires 19, as usual.

The operation and advantages of the structure will be readily apparent from the foregoing description. By reason of the longitudinally extensible character of the upper side rods 10, the entire upper frame consisting of the end rails 9 and side rails 10, can be depressed under any weight or force compressing the springs without the necessity of disconnecting the struts 13 at

either end; Fig. 3 showing the fully compressed form of the structure, such as is employed in shipping the article, wherein the inclined struts 13 have been swung downwardly to a position substantially parallel with the side rails 5. When the article is unpacked, however, or any other compressive strain applied thereto is withdrawn, the springs immediately expand, and the struts 13 at once resume the oblique position shown in Fig. 2, the extent of the opening movement of the struts being, as hereinabove mentioned, limited by the contact of the upper edge of each strut with the inclined stop shoulders 17 of the several brackets to which the struts are pivoted.

I claim:

1. A spring bed bottom comprising upper and lower rectangular frames, the former having extensible side members, springs mounted on said lower frame and suitably tied at their upper ends to each other and to said upper frame, struts connecting said upper and lower frames in the corner regions thereof, said struts having a pivotal connection with one of said frames whereby to permit a bodily movement of said frames toward each other under compression, and stops coöperating with said struts to limit the extent of separation of said frames, substantially as described.

2. A spring bed bottom comprising upper and lower rectangular frames, the former having elastically extensible side members, springs mounted on said lower frame and suitably tied at their upper ends to each other and to said upper frame, struts connecting said upper and lower frames in the corner regions thereof, said struts being rigidly connected to said upper frame and pivotally connected to said lower frame whereby to permit a bodily movement of said frames toward each other under compression, and stops coöperating with said struts to limit the extent of separation of said frames, substantially as described.

3. A spring bed bottom comprising upper and lower rectangular frames, the former having rigid top and bottom rails and elastically extensible side rods, springs mounted on said lower frame and suitably tied at their upper ends to each other and to said upper frame, struts rigidly connected to said top and bottom rails of the upper frame near the ends thereof, and brackets rigidly secured to the side rails of said lower frame, to which brackets the lower ends of said struts are pivoted, said brackets having inwardly bent upper ends constituting stops to limit the upward swing of said struts, substantially as described.

4. A spring bed bottom comprising upper and lower rectangular frames, the former comprising rigid transverse top and bottom rails and side rods connecting the ends thereof and having tension springs interposed therein, helical springs mounted on said lower frame and suitably tied at their upper ends to each other and to said upper frame, oblique struts rigidly connected to said top and bottom members of the upper frame near the ends thereof, and brackets rigidly secured to the side rails of said lower frame, to which brackets the lower ends of said struts are pivoted, said brackets having inwardly bent transversely oblique upper ends constituting stops engaging the upper edges of said struts whereby to limit the upward swing of the latter, substantially as described.

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