Dec. 8, 1931. G. W. BARNES 1,834,920

SPRING BED BOTTOM

Filed Feb. 23, 1928

Fig. 1

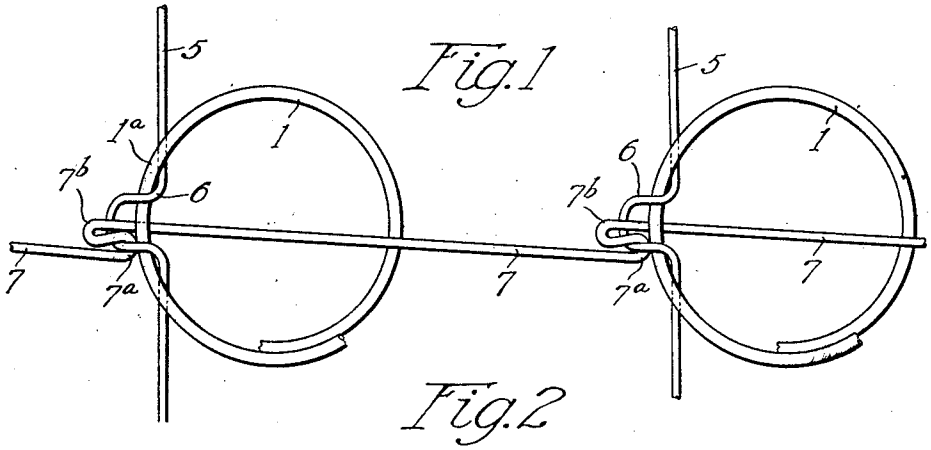


Fig. 2

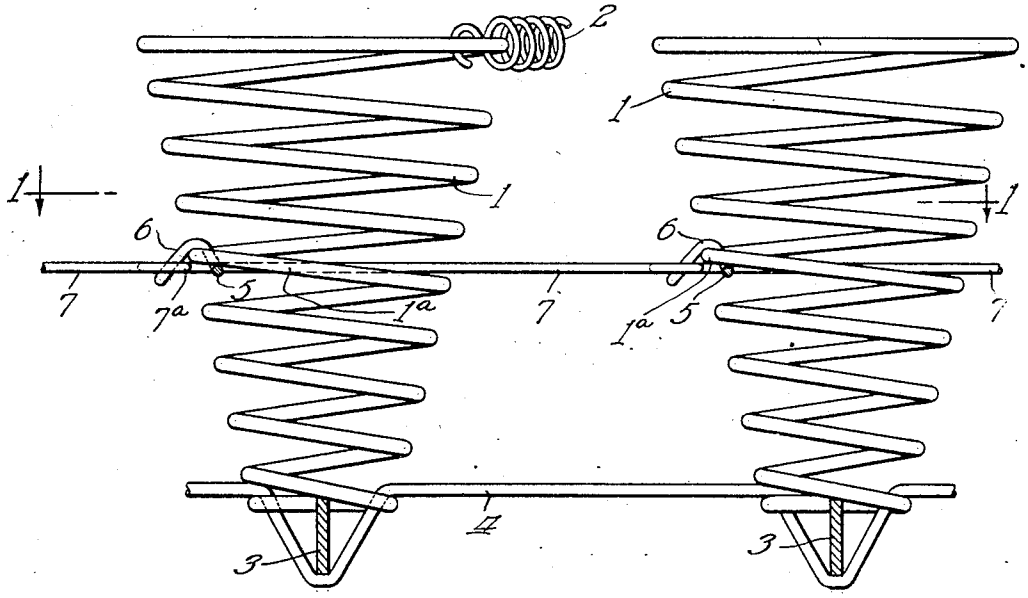
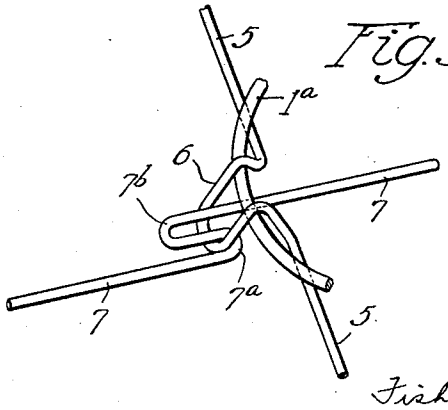


Fig. 3



Inventor
George W. Barnes

Fisher, Towle, Clapp & Soans Attys.

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UNITED STATES PATENT OFFICE

GEORGE W. BARNES, OF KENOSHA, WISCONSIN, ASSIGNOR TO SIMMONS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

SPRING BED BOTTOM

Application filed February 23, 1928. Serial No. 256,109.

This invention has relation to that class of spring bed bottoms (which term as herein used is intended to include lounges, spring seats, and the like, in which vertically disposed coil springs are employed; and the invention is designed to provide improved means for connecting the coil springs together in such manner as to insure against their distortion and displacement in use. The invention consists in the features of novelty hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claims at the end of this specification.

Figure 1 is a plan view showing portions of a spring bed bottom embodying my invention.

Figure 2 is a view in side elevation.

Figure 3 is a detail perspective view showing the manner in which the tie-wires and key-wires are united together and to the coil springs.

The coil springs 1, which may be of any usual or suitable form, will be arranged in parallel rows extending longitudinally and transversely of the bed bottom. The top convolutions of these springs may be connected in the usual manner by helical springs 2, and the lower ends of the springs 1 may be mounted upon supporting bars 3 to which they will be secured by loop wires 4, in manner well understood in the art.

From the springs 1, at a suitable point thereon and preferably about centrally of the springs, extend continuous tie-wires 5 that are formed with spring-engaging loops 6. As shown, the tie-wires 5 pass along one side of and preferably beneath one of the convolutions 1^a of the springs 1, while the adjacent loop 6 of the tie-wire 5 extends across and partially around said convolution.

The tire-wires 5 engage the continuous key-wires 7 that are interlocked with the tie-wires and preferably with the loop 6 of said wires. In the preferred embodiment of my invention, each key-wire 7 is formed with straight offset portions between which are made S-shaped bends to produce the laterally offset loops 7^a and 7^b.

In making my improved bed bottom, the springs 1 may be assembled in parallel rows, their lower ends being mounted upon the supporting bars 3 that are connected by the loop wires 4 in the usual manner, and the upper ends of the springs 1 may be united in the usual way, as for example, by helical springs 2 engaging their top convolutions.

A tie-wire 5 will be engaged with each of the coil springs of a row, preferably by passing such tie-wire beneath one of the convolutions of each spring, after which each loop 6 of the tie-wire 5 will be brought across and partially around said convolution, as clearly shown in Figs. 2 and 3 of the drawings. When the tie-wires have thus been positioned with respect to the coil springs 1, each key-wire will be inserted transversely of the tie-wires and through the rows of springs 1 in such manner that each loop or bend 7^b of the key-wires 7 shall pass through the companion loop 6 of the tie-wire 5 and thus securely retain the tie-wire in engagement with the corresponding coil spring and prevent any movement of the spring in the direction of the length of the tie-wire. When the loop 7^b of the key-wire 7 is thus passed through the loop 6 of the tie-wire 5, the loop 7^a of the key-wire 7 will engage one of the arms of the tie-wire loop 6, as shown in Fig. 3 of the drawings. With the parts thus assembled, the loops 7^a and 7^b will be compressed or closed sufficiently, as shown in Fig. 1 of the drawings, to cause the loop 7^a to be retained in interlocked engagement with the loop 6 of the tie-wire 5. When the key-wires 7 have been thus placed, they will effectively serve to prevent any movement or distortion of the coil springs in the direction of the length of the key-wires. When the key-wires and tie-wires are arranged intermediate the top and bottom of the coil springs, which is the preferred location, all the springs are held in true vertical alignment and the danger of their becoming buckled or distorted under severe usage is avoided.

While I have described what I regard as the preferred form of my invention, it is to be understood that modifications may be made without departure from the scope of the invention and that features of the inven-

tion may be employed without its adoption as an entirety.

I claim as my invention:

1. A spring bed comprising the combination of coil springs, of tie wires, the bodies of which pass on one side of a convolution of each spring and are formed with loops which extend through a convolution and are bent at an acute angle around the opposite side thereof, and key wires extending transversely of said tie wires, said key wires having bent portions interlocking with and substantially enclosing parts of said wire loops, each of said loops being operatively related to a single coil spring.

2. A spring bed comprising the combination of coil springs, of tie wires, the bodies of which pass on one side of a convolution of each spring and are formed with loops which extend through a convolution and are bent at an acute angle around the opposite side thereof, and key wires extending transversely of said tie wires, said key wires having S-shaped bent portions interlocking with and substantially enclosing parts of said wire loops, each of said loops being operatively related to a single coil spring.

3. A spring bed bottom comprising the combination of coil springs, of tie wires, the bodies whereof pass on one side of a convolution of each spring and are formed with loops that extend across the opposite side of said convolution partially around the same, and key wires extending transversely of said tie wires, said key wires having offset portions with reverse bends between said offset portions to engage the tie wire loops, each of said loops being operatively related to a single coil spring.

4. A spring bed bottom comprising the combination of coil springs, of tie wires, the bodies whereof pass on one side of a convolution of each spring and are formed with loops that extend across the opposite side of said convolution partially around the same, and key wires extending transversely of said tie wires, said key wires having S-shaped bends forming a loop to interlock with the adjacent tie wire loop and forming also a part projecting through the crown of said tie wire loop.

5. In a spring bed bottom, the combination of axially vertical coil springs arranged in parallel rows, and means arranged intermediate the height of said springs for preventing movement of the springs longitudinally of the rows and also transversely thereof, comprising main continuous tie wires extending transversely of the rows and continuous key wires extending longitudinally of the rows, the main portion of each tie wire extending on one side of an intermediate convolution of the coil spring associated therewith and having a loop portion offset to extend across and partially around said convolution, each key wire having its main portion arranged on the same side of said convolution as the main portion of the tie wire and having an S-shaped bend therein, one of the bends of said S projecting through the tie wire loop and preventing rotation of said tie wire, and the other bend of said S being clinched around a portion of said loop, thereby to prevent substantially relative longitudinal movement of said key wire and tie wire.

6. The combination in a spring bed bottom, of a plurality of coil springs arranged in rows opposite each other, a tie wire connecting the springs of each row and having loops extending through a coil of each spring, and a plurality of key wires extending transversely of said tie wires, each key wire having offset bends forming sockets receiving and interlocking with said loops and clamping said tie wires to said coil springs, said tie wire loops projecting from said springs so that the offset bends of said key wires may readily be assembled into interlocking relation therewith by a simple movement of said key wires.

7. The combination in a spring bed bottom, of a plurality of coil springs arranged in rows opposite each other, a tie wire connecting the springs of each row and having loops extending through a coil of each spring, and a plurality of key wires extending transversely of said tie wires, each key wire having offset bends forming sockets receiving and interlocking with said loops and clamping said tie wires to said coil springs, said tie wire loops projecting laterally from said springs so that the offset bends of said key wires may readily be assembled into interlocking relation therewith by a simple relative movement between said key wires and said tie wires longitudinally of said key wires.

GEORGE W. BARNES.