

July 20, 1948.

L. S. WALLIS  
SPRING STRUCTURE FOR MATTRESS,  
CUSHIONS OR THE LIKE.  
Filed Sept. 15, 1944

2,445,375

Fig. 1.

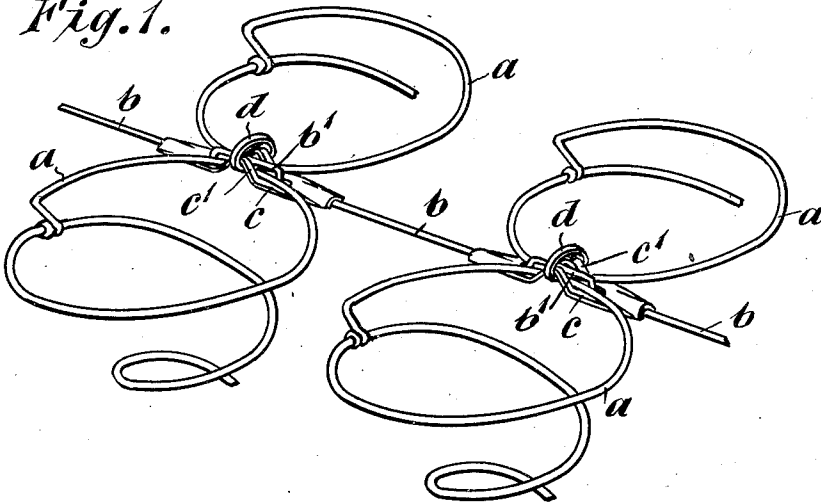


Fig. 2.

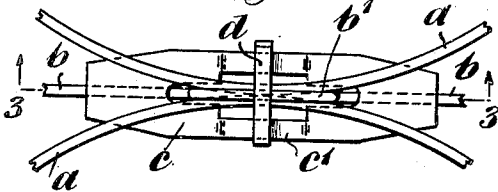


Fig. 4.

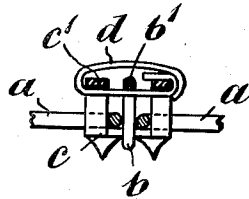


Fig. 3.

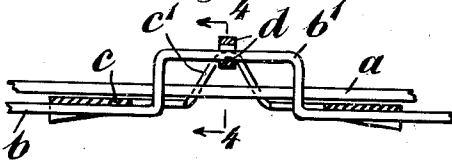
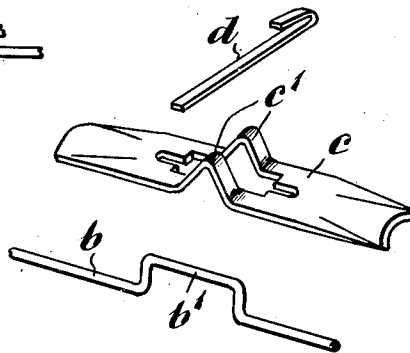


Fig. 5.



Lionel Selby Wallis  
Inventor  
Marshall & Marshall  
Attorneys

# UNITED STATES PATENT OFFICE

2,445,375

## SPRING STRUCTURE FOR MATTRESS, CUSHIONS, OR THE LIKE

Lionel Selby Wallis, Knowle, England

Application September 15, 1944, Serial No. 554,268  
In Great Britain October 1, 1943

3 Claims. (Cl. 5—270)

1

This invention has reference to improvements in or connected with a spring interior assembly of the kind which primarily embodies a number of helical spiral springs adapted for vertical disposition within a bedding or fabric cover.

The object of the invention is to provide an improved means of assembling, locating, and interconnecting the springs so as to effect an economy of material and labour while in no way detracting from the requirements in use of a mattress structure of this character.

The invention consists of a spring interior assembly for mattresses, cushions, seats, or like structures, comprising a plurality of helical springs, cranked positioning wire located intermediate adjacent terminal coils of said springs, sheet-metal bowed clip frames mounted on the positioning wires, and locking means adapted to intersect the positioning wires and co-operate with the clip frames of the spring assembly.

A preferred embodiment of the present invention as applied to the location and interconnection of a plurality of helical coiled springs employed as the resilient interior assembly of a spring mattress, cushion, seat, or the like is illustrated by the accompanying sheet of drawings, in which—

Fig. 1 is a perspective view of the upper turns of four helical springs associated and interconnected in accordance with the present invention.

Fig. 2 is a plan to an enlarged scale of the sheet-metal clip frame showing its interassociation with the upper terminal turns of a pair of helical springs and the means for interlocking the assembly.

Fig. 3 is a longitudinal sectional elevation on line 3—3 of Fig. 2.

Fig. 4 is a cross-sectional elevation on line 4—4 of Fig. 3.

Fig. 5 is a three-part fragmentary view showing the essential parts comprising the connecting units.

The upper terminal turns of each of the helical springs *a* are arranged in juxta-position side by side in the well-known manner of the interior assembly of a spring mattress or like structure. Adapted to be passed between the adjacent but not overlapping upper or terminal turns of each coil is a cranked positioning wire *b* on or about the cranked sections *b*<sup>1</sup> whereof is mounted a sheet-metal clip frame *c* which embraces the positioning wire adjacent the ends of each cranked section *b*<sup>1</sup>, the sheet-metal clip frames *c* being of open or slotted formation bowed or arched at *c*<sup>1</sup> at the centre of each longitudinal side member

2

of the frame (see more particularly the centre figure—Fig. 5) in such a manner that the adjacent upper or terminal turns of the helical springs can lie in between one side of the cranked section *b*<sup>1</sup> of the positioning wire *b* and the inner edges of the bowed or arched centre *c*<sup>1</sup> of the sheet-metal clip frames *c*. In order to interlock the spring assembly and the positioning wires and clip frames in position as seen more particularly in Fig. 1 of the drawings, a locking wire or strip *d* is passed through on under the said bows or arches *c*<sup>1</sup> of each clip frame *c* and through or under the cranked section *b*<sup>1</sup> of the positioning wires *b* but over the contained parts of the upper or terminal turns of the helical springs *a*, see more particularly Figs. 3 and 4. The locking wire or strip *d* is preferably bent around the parts embraced thereby in the manner clearly seen in Fig. 4 of the drawings to constitute an interlocking member for the coils, clip frame and cranked positioned wire.

In this manner the whole spring assembly is interlocked in the desired position while the now interconnected units are free to accommodate themselves to and to permit of any motion or distortion which may arise when the complete assembly is in use as a spring interior for a mattress, bedding, cushion, seat or like structure.

I claim:

1. A spring assembly for mattresses, cushions, seats and like structures, comprising a plurality of helical springs, a clip plate underlying the terminal turns of two adjacent helical springs having arches extending upwardly from one side of the clip between which pass the said terminal turns of two adjacent helical springs, a wire underlying said clip having an arched portion extending through an opening in the clip and between the arches of the clip and also between and in contact with said terminal turns to separate said turns, and retaining means extending through the arches of the clip and through the arch in said wire to prevent separation of the clip from the adjacent springs and to prevent separation of said wire in one direction from the clip.

2. A spring assembly for mattresses, cushions, seats and like structures, comprising a plurality of helical springs, a clip plate underlying the terminal turns of two adjacent helical springs having arches extending upwardly from one side of the clip between which pass the said terminal turns of two adjacent helical springs, said clip having arms extending laterally of the arches, a wire extending on the side of said arms opposite to the arches and having an arched portion ex-

3

tending through an opening in the clip and between the arches of the clip and also between and in contact with said terminal turns to separate said turns, and retaining means extending through the arches of the clip and through the arch in said wire to prevent separation of said wire and the adjacent springs from the clip.

3. A spring assembly for mattresses, cushions, seats and like structures, comprising a plurality of helical springs, a clip plate underlying the terminal turns of two adjacent helical springs having arches extending upwardly from one side of the clip between which pass the said terminal turns of two adjacent helical springs, said clip having arms which extend laterally of the arches and are provided with an opening and notches adjacent and between the arches, a wire extending on the side of said arms opposite to the arches and having an arched portion extending through said opening and notches and between the arches of the clip and also between and in contact with said terminal turns to separate said turns, and retaining means extending through the arches of the clip and through the arch in said wire to pre-

4

vent separation of said wire and the adjacent springs from the clip.

LIONEL SELBY WALLIS.

## REFERENCES CITED

The following references are of record in the file of this patent:

## UNITED STATES PATENTS

| Number    | Name              | Date          |
|-----------|-------------------|---------------|
| 581,097   | Barker -----      | Apr. 20, 1897 |
| 692,837   | Ellis -----       | Feb. 11, 1902 |
| 793,172   | Bigelow -----     | June 27, 1905 |
| 793,251   | Vallone -----     | June 27, 1905 |
| 1,049,048 | Carlson -----     | Dec. 31, 1912 |
| 1,120,887 | Barber -----      | Dec. 15, 1914 |
| 2,050,105 | Lewis -----       | Aug. 4, 1936  |
| 2,089,301 | Schwartzman ----- | Aug. 10, 1937 |
| 2,170,618 | Roeske -----      | Aug. 22, 1939 |
| 2,240,051 | O'Malley -----    | Apr. 29, 1941 |

## FOREIGN PATENTS

| Number  | Country             | Date          |
|---------|---------------------|---------------|
| 494,245 | Great Britain ----- | Oct. 24, 1938 |