A. CARTER.

Springs for Mattresses.

No. 201,158. Patented March 12, 1878.

Fig. 1.

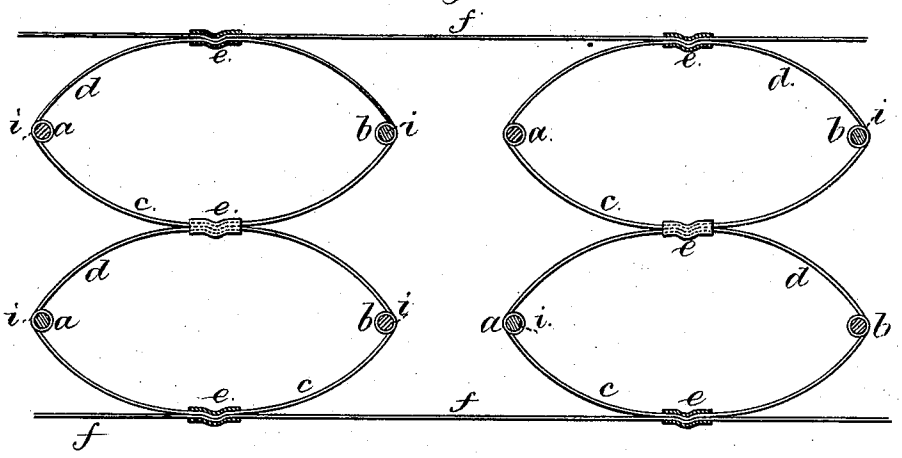


Fig. 2.

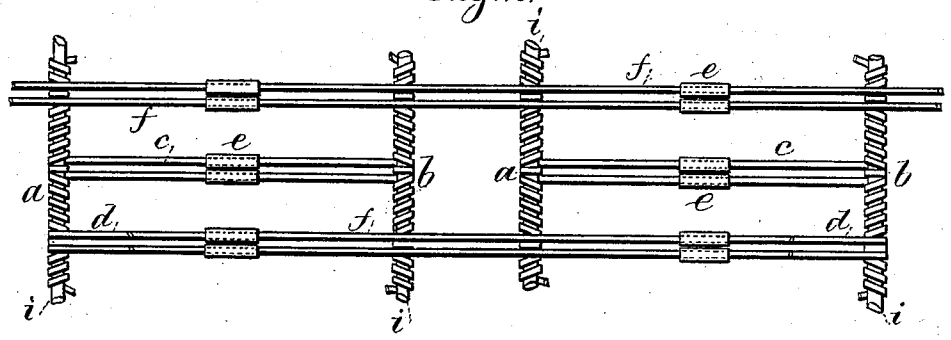


Fig. 3.

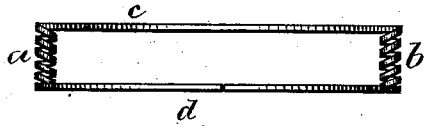


Fig. 5.

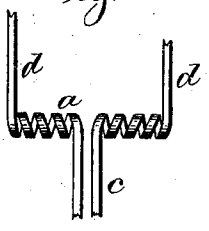
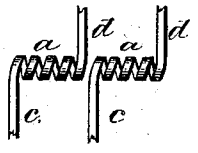


Fig. 4



Witnesses

Chas. H. Smith

Geo. T. Pinckney

Inventor

Albert Carter

per Lemuel W. Serrell

Atty

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERT CARTER, OF NEW YORK, N. Y.

IMPROVEMENT IN SPRINGS FOR MATTRESSES.

Specification forming part of Letters Patent No. **201,158**, dated March 12, 1878; application filed February 1, 1878.

To all whom it may concern:

Be it known that I, ALBERT CARTER, of the city and State of New York, have invented an Improvement in Springs for Mattresses, Upholstery, &c., of which the following is a specification:

Single and double elliptical springs have been made use of in connection with furniture and upholstery; but there is great risk of their breaking, especially at the ends, when flattened by pressure.

My present invention relates to a double elliptical spring, made of flattened wire, and having helices that connect the upper and and lower arches of the spring, which helices allow the top and bottom arches to be flattened without risk of injury at the junction of the two arches; and said helices also allow of connecting-bars passing through them to unite the respective springs into ranges suitable for a bed-bottom, or for upholstery, or for any other article, such as a bustle, to which said spring may be applied.

In the drawing, Figure 1 is a side view of a group of springs, and Fig. 2 is a plan of the same. Fig. 3 is a plan of a single spring. Figs. 4 and 5 are views of the springs endwise.

The wire made use of for said springs is flattened, and of the character known as "hoop-skirt wire," and of greater or less strength, according to the use to which it is to be put.

The wire is twisted into two coils or helices, *a b*, between the lower arch *c* and the upper arch *d;* and it is preferable to bring the two ends together in forming the upper arch *d*, as seen in Fig. 3; or they may be lapped more or less. Under any circumstances the ends are secured together, and for this purpose a clasp or clip, *e*, of sheet metal is made use of, similar to that employed in hoop-skirts. Each spring made as aforesaid becomes elliptical, and the upper and lower arches being united by the helices or coils, the arches can be pressed down flat without risk of breaking the spring.

These springs are to be used in pairs or in groups. In Figs. 2 and 5 I have shown these springs as placed together in groups, the upper arches coming toward each other, and the lower arches also coming together. This arrangement is preferable for upholstery, as the springs form a mutual support, and do not strain the helices laterally as they are compressed. I have also shown the rods *i* as passing through the helices to connect them together into ranges; and the tie-rods *f*, passing from the top of one arch to the next, serve to connect the ranges and maintain them at the proper distances apart.

In Fig. 1 there are two tiers of springs shown, one above the other.

It will be evident that for mattresses and upholstery these ranges of springs may be more or less numerous, and connected to each other by the rods *f*, as aforesaid.

For bustles and similar articles one or more ranges of such springs are employed; but it is preferable to arrange the helices so that they occupy the position shown in Fig. 4, in order that the respective arches of the elliptical springs may be at equal distances apart laterally.

I claim as my invention—

1. The elliptical spring formed of one piece of wire, having the upper and lower arches *d c* and the helices *a b*, that connect such arches, substantially as set forth.

2. The combination of the elliptic-spring arches *c d* and helices *a b* with the connecting-rods or wires *i* passing through the helices, substantially as set forth.

3. The connecting wires or rods *i* and clasps *e*, in combination with the elliptical spring-arches *c d*, helices *a b*, and connecting-wires *f*, substantially as set forth.

Signed by me this 30th day of January, A. D. 1878.

ALBERT CARTER.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.