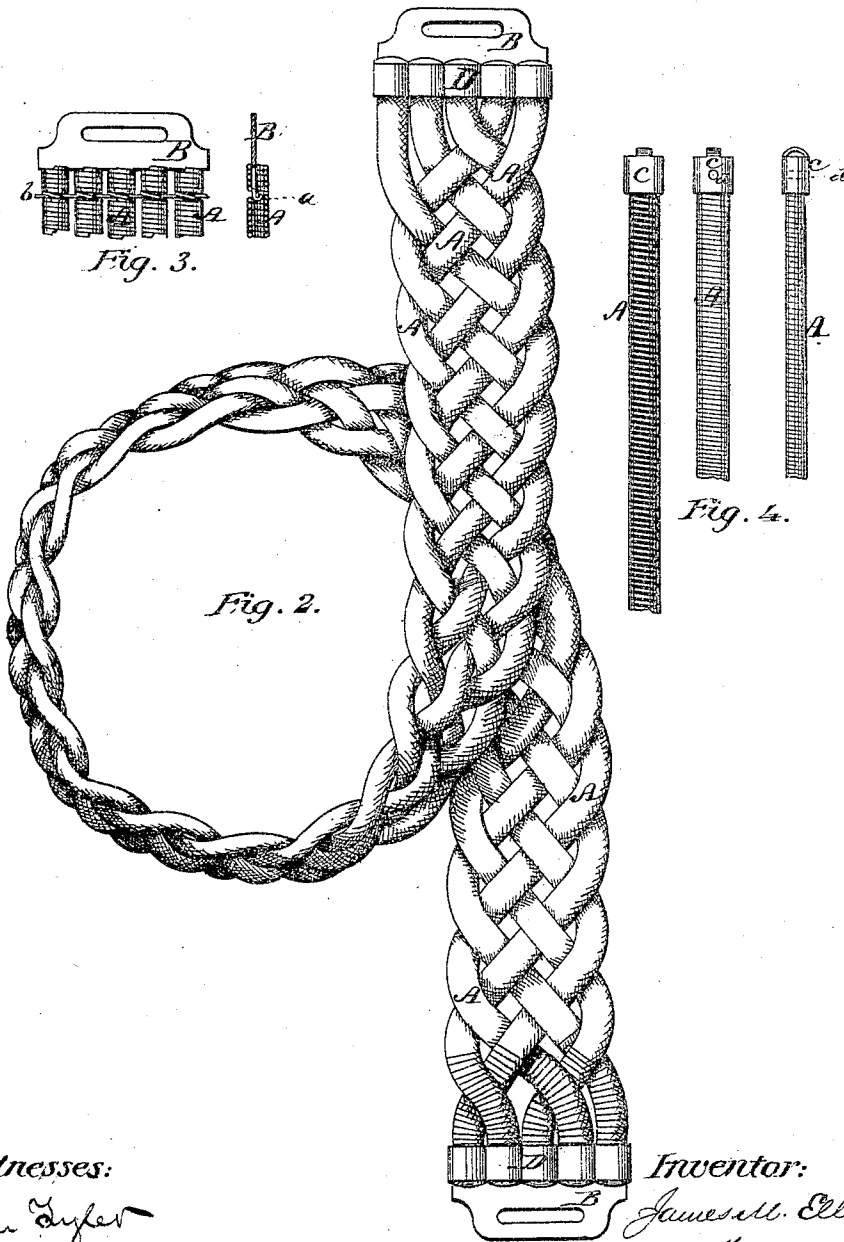
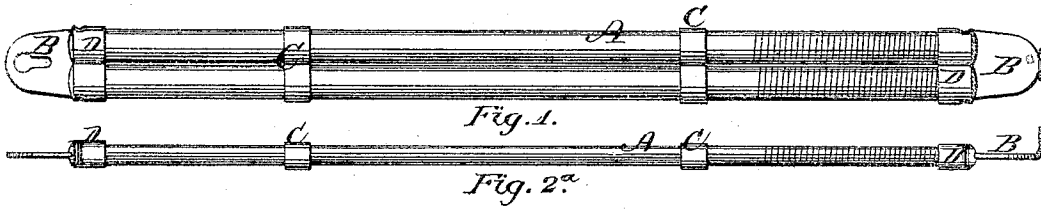


J. M. ELLIS.

Coil-Spring Garters and Belts.

No. 145,160.

Patented Dec. 2, 1873.



Witnesses:

John Taylor
Wm. Smith

Inventor:

James M. Ellis
By *Adm. Ellis*

J. M. ELLIS.

Coil-Spring Garters and Belts.

No. 145,160.

Patented Dec. 2, 1873.

Fig. 5.

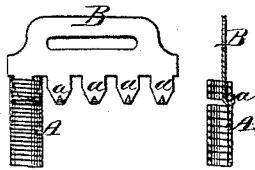


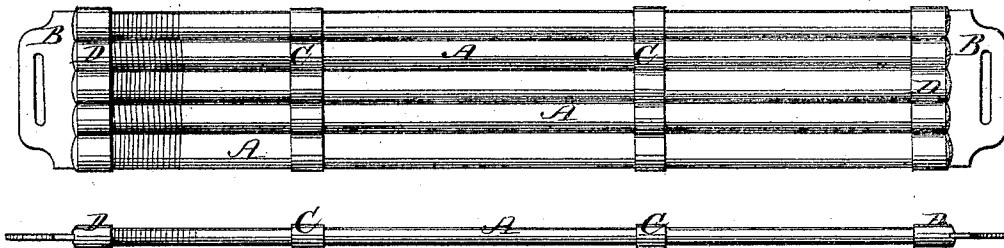
Fig. 6.



Fig. 8.



Fig. 7.



Witnesses:
John Tyler
Wm Smith.

Inventor:
James M. Ellis
By atty Amos W. Squire

UNITED STATES PATENT OFFICE.

JAMES M. ELLIS, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO DOOLITTLE MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN COIL-SPRING GARTERS AND BELTS.

Specification forming part of Letters Patent No. **145,160**, dated December 2, 1873; application filed November 15, 1873.

To all whom it may concern:

Be it known that I, JAMES M. ELLIS, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Coiled-Spring Belts, Garters, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making a part of this application.

My invention relates to certain improvements in goods manufactured from coiled wire. It has for its object to render the joining of the wire coils with the steel-metal ends or clasps more secure and easily accomplished, and to do away with the necessity of intermediate lateral stays, and the previously necessary "two-way" coiling of the wire.

Previous to my invention the ends of the wire-coils have been secured to the end plates or clasps by being depressed into nicks in the edges, which rendered it expensive and troublesome, especially where more than two coils were to be laid side by side. It was also necessary to coil the springs half left and half right, and provide them with intermediate sliding stays. By my invention all of these difficulties are overcome, and I am enabled to braid or plait the coils, so that the article will present an attractive appearance.

To these ends and objects my invention consists in securing the ends of the coils to the plate by means of hooks formed on the latter, which are upset upon the coil, or fastened by means of a transverse securing needle or wire, as will be hereinafter more fully set forth.

To enable those skilled to more fully understand my invention, I will refer by letters to the accompanying drawings, in which—

Figure 1 is a plan view of a garter as made prior to my invention. Fig. 2 is a plan view of a finished belt made according to my invention, and embracing the features of being braided. Fig. 2^a is an edge view of Fig. 1. Fig. 3 is a detail plan and edge view, showing one means of securing the coils to the end plates. Fig. 4 shows a modification of my invention. Fig. 5 is a similar view to Fig. 3, but with the securing needle or wire left out,

and the hooks upset upon the coil. Fig. 6 is a view of the securing-plate, as made prior to my invention. Fig. 7 is a plan and edge view of a wide garter with the end plates secured according to my invention, but showing the right and left coils as used prior to my invention; and Fig. 8 represents a plaited garter, made according to my invention.

Similar letters indicate like parts in the several figures.

A represents the coils, which are made of suitable wire, the ends of which are secured to end or clasp plates B by being passed over hook-points *a, a*, &c., when a needle or wire, *b*, is passed through the coils and under the hooked ends of the points *a, a*, &c., the extremity of the coil being first so compressed as that it shall firmly hold the needle in place, as fully represented in Fig. 3; or the ends of the coils may be passed over the points *a a* and compressed, when the points *a a* are upset directly upon the coil, as shown in Fig. 5; or the end of the coil may be passed into a sheet-metal ferrule, *c*, and secured, by a rivet, *d*, on the same principle as the needle shown in Fig. 3. The devices for securing the plate and coils are then hidden by a sheet-metal "tip," *D*, and to avoid the necessity of the intermediate braces *c c*, Figs. 1 and 7, the coils are braided or plaited, as seen at Figs. 2 and 8, which also gives a tasteful appearance to the article.

The end plates B may be struck up with any proper fastening device, as seen at Fig. 8; or they may be adapted to received an independent buckle, as seen at Figs. 2 and 7.

As before mentioned, the coils were secured, prior to my invention, to the plates by means of nicks in the edges of the plates. This method is fully represented at Fig. 6, which is a face view of such a plate, and the expense and difficulties of such a fastening will be obvious; and by reference to Fig. 7 the right and left coils will be seen, as also the intermediate braces. This peculiarity of the coils and the braces was necessary in order to avoid the interlocking or tangling of the coils, and it will be seen that by my invention the coils may be made all alike, and by the braiding no intermediate braces are necessary.

A difficulty is experienced in the use of the old fastening-plate seen at Fig. 6, to which the coil is secured by passing one or more coils of the wire into the nicks *f*, the opposite side of the coils lying in the slot *g*, and a metal tip put over so as to squeeze and hold the coils in the nicks. This is not always sure, especially when it becomes necessary to use a greater number of coils or stands of coiled wire, as in the manufacture of ladies' belts, as shown at Fig. 2.

By the use of the plate shown at Fig. 6 the width of the article is limited to two springs.

In the manufacture of garters, belts, and analogous articles, I use plates within the springs, to guard against distending the spring beyond the elastic capacity; but this forms no part of my invention, it being the subject-matter of a patent already in existence.

Having described my invention, so that others skilled in the art can understand and make the same, what I claim as new, and desire to secure by Letters Patent, is—

1. The method herein described of fastening the springs to the end plates by means of the hooked points *a*, with or without the needle or wire, substantially as set forth.

2. As an article of manufacture a garter or belt, composed of a series of coiled springs, braided or plaited, substantially as and for the purpose set forth.

Witness my hand and seal this 4th day of November, 1873.

JAMES M. ELLIS. [L. s.]

In presence of—

GEO. G. THOMPSON,
GEO. DOOLITTLE.