

(No Model.)

J. DEUTSCH.
FLATTENED COILED WIRE SPRING.

No. 581,457.

Patented Apr. 27, 1897.

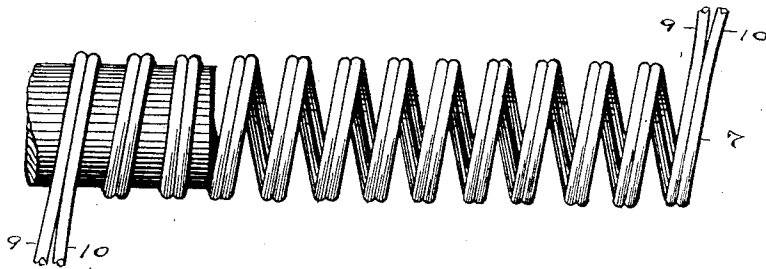


Fig. 1.

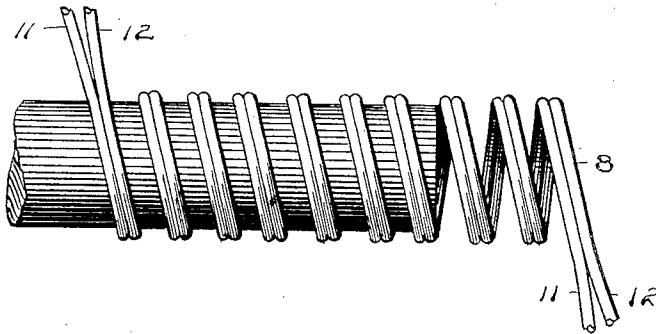


Fig. 2.

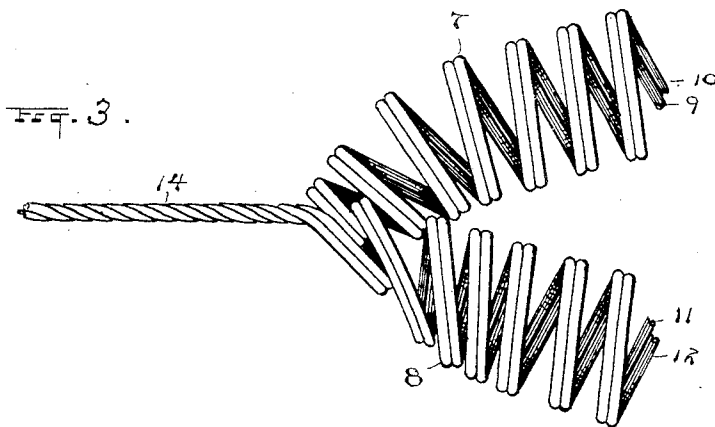


Fig. 3.

ATTEST.

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FLATTENED COILED-WIRE SPRING.

SPECIFICATION forming part of Letters Patent No. 581,457, dated April 27, 1897.

Application filed July 9, 1895. Serial No. 555,441. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH DEUTSCH, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Wire Springs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The said invention has reference to wire springs; and the invention consists in the construction substantially as shown and described, and particularly pointed out in the claim.

In the accompanying drawings, Figures 1 to 3, inclusive, relate to what may be termed a "double compound" or "quadruple" form of coiled spring made according to my invention, there being four strands of wire combined from two coils of two intertwined wires each. Thus Fig. 1 shows a section of a mandrel about which are spirally twined two wires side by side on a left-hand turn or coil, making a left-hand coil. These wires when removed from the mandrel are interlocked with one another on each convolution. Fig. 2 shows a section of a mandrel with two wires twined spirally about it from left to right, making a right-hand spiral coil. These wires likewise are intertwined or interlocked. Fig. 3 is a mixed view showing at its right the two right and left compound coils seen in Figs. 1 and 2 in position to have the said coils pressed together one upon or into the other and at its left the said coils are shown as rolled flat, disclosing the edge of a finished spring or product.

These springs are designed more especially for use as stays in ladies' dresses and corsets, but may also be used as a braid to decorate the sleeves, collars, and the like of men's uniforms, as well as for useful and decorative purposes in other places and ways, not necessarily enumerated herein, and brass, copper, or other wire may be used according to taste or purpose.

The method of producing the springs has already been plainly indicated. To make the double interlocked coils seen in Figs. 1 and 2, the wire strands 9 and 10 in Fig. 1 and the like strands 11 and 12 in Fig. 2 are first bent spirally on a suitable mandrel or tool or by any available means to the same size and

side by side, so as to be interlocked. This produces two compound interlocked coils. Then the two spirals or coils are pressed together or into one another, so that they make a single roll of double reverse coils. This being done the roll or compound coil so made is passed or fed longitudinally between suitable rolls or rollers and pressed perfectly flat. In this rolling operation the wires of the right and left hand coils are very firmly locked together and cannot be separated except by taking hold of their ends and pulling them apart edgewise. Nor can this be done without considerable strength, and for all practical purposes the double coils are as firmly and securely engaged with each other as they would be if they were knit or woven together. Then it will be noticed that each original coil has its threads or wires interlocked, so that they cannot be separated laterally, and when all these wires are pressed flat the edges of the spring are so firmly united and have the wires laced so closely together that though the spring be bent edgewise it will instantly resume its straight position when released. In this consideration of the spring the compound coils 7 and 8 are treated as units, their constituents being intertwined and forming essentially one coil or part.

One of the advantages of interlocking the wire strands in the respective coils 7 and 8 is the stiffening effect edgewise of the spring, which is directly due to the said interlocking and twining of the strands and not obtainable otherwise. It also adds materially to the reaction of the spring when bent flatwise and promotes the effective union of the coils when rolled or otherwise pressed to a flat state.

What I claim is—

The spring described, consisting of two sets of spirally-wound wires, each set having a plurality of wires coiled together in the same direction and interlocked with each other, and the two sets formed into a single roll or coil, one of said sets coiled to the right and the other coiled to the left, and said roll or coil pressed flat and forming a flat spring, substantially as described.

JOSEPH DEUTSCH.

Witnesses:

A. T. MITCHELL,
HENRY F. RUBE.