

(No Model.)

L. ERIKSON.
COILED SPRING.

No. 568,670.

Patented Sept. 29, 1896.

FIG. 1

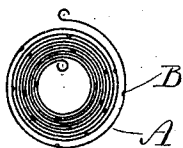


FIG. 2

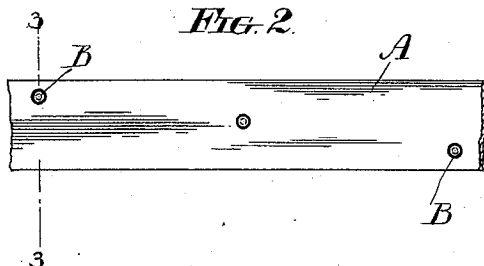


FIG. 3



FIG. 4



Witnesses:

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LAURENCE ERIKSON, OF EVANSTON, ILLINOIS.

COILED SPRING.

SPECIFICATION forming part of Letters Patent No. 568,670, dated September 29, 1896.

Application filed September 30, 1895. Serial No. 564,120. (No model.)

To all whom it may concern:

Be it known that I, LAURENCE ERIKSON, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Coiled Springs, of which the following is a specification.

The present invention relates to that class of springs that consists of a sheet-metal ribbon which is coiled or wound upon itself, a familiar example of which is a clock-spring. When a spring of this kind is under sufficient tension, its adjacent convolutions, or some of them, have contact with each other, and as a consequence of this contact, both in winding and in unwinding, the convolutions stick and cause the spring to jump. The object of the present invention is to provide a coiled spring that will not jump, either in winding or unwinding, and in order to accomplish this object I reduce the area of contact between the several convolutions of the spring, and this I do either by interposing a body between said convolutions or by providing the spring itself at suitable intervals with protuberances that are made of the metal of the spring itself, said interposed bodies or protuberances being at sufficiently close intervals to hold each and every convolution out of contact with the next throughout all of that portion of the spring that is liable to stick.

The invention consists in the features of novelty that are particularly pointed out in the claims hereinafter, and in order that it may be fully understood I will describe it with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a plan of a spring embodying the invention in its preferred form. Fig. 2 is an elevation of a portion thereof straightened out, showing the positions of the means for reducing the area of contact between adjacent convolutions of the spring. Fig. 3 is a cross-section thereof on the line 3 3, Fig. 2. Fig. 4 is a longitudinal section of a spring embodying the invention under a slight modification.

A represents the spring, which is made of

a sheet-metal ribbon coiled or wound upon itself, and B and B' represent the means with which it is provided for reducing the area of contact between the adjacent convolutions when the spring is under tension. In Figs. 1, 2, and 3 this means consists of a number of small pins or rivets B, that occupy perforations formed through the spring so as to form small heads. In Fig. 4 said means consists of the protuberances B', that are of the body of the spring itself, and may be formed by subjecting the spring to the action of a punch or a pair of dies having such features that portions of the body of the spring will be forced out of the general plane of the spring itself, but the spring will not be perforated. The pins or rivets in the one case and the protuberances in the other are interposed between each and every convolution and the next throughout all of that portion of the spring that is liable to stick, so that throughout said portion none of the convolutions will have contact with the next.

So far as I am aware, I am the first to provide a coiled spring with means for reducing the area of contact between its several convolutions, or, what is the equivalent thereof, holding its several convolutions entirely out of contact (as is the case where the protuberances are formed as shown in Figs. 1, 2, and 3) for the purpose of preventing it from jumping, and I desire to have it understood that my invention is not limited to the particular means shown in the drawings and above described for accomplishing this result, but, on the contrary, it comprehends the greatest possible range of equivalents.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. As a new article of manufacture, a spring consisting of a ribbon of metal coiled or wound upon itself and having protuberances that project from one convolution and bear against smooth unbroken surfaces on the next convolution, said protuberances being disposed at intervals throughout a given portion of the length of the spring so as to separate each convolution from the next, substantially as set forth.

2. As a new article of manufacture, a spring consisting of a ribbon of metal coiled or wound upon itself, perforated at intervals and having in said perforations pins or rivets that
5 project beyond the surface of the spring, said pins or rivets being sufficiently close to hold each and every convolution out of contact with the next throughout a given portion of the entire length of the spring substantially as set forth.

LAURENCE ERIKSON.

Witnesses:

L. M. HOPKINS,
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