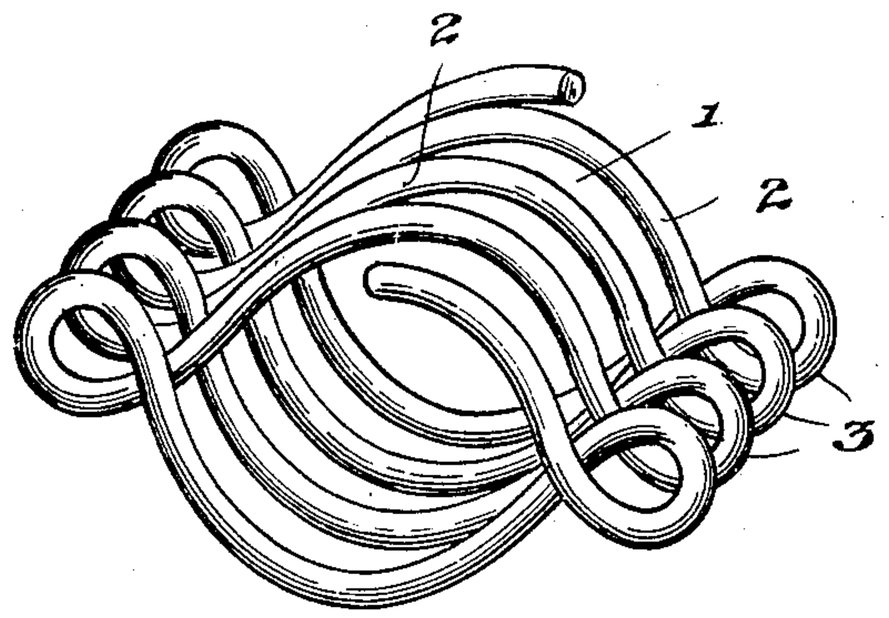
No. 829,912. PATENTED AUG. 28, 1906.

E. I. DODDS.

SPRING.

APPLICATION FILED FEB. 12, 1906.



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UNITED STATES PATENT OFFICE.

ETHAN I. DODDS, OF PULLMAN, ILLINOIS, ASSIGNOR TO THE PULLMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

SPRING.

No. 829,912. Specification of Letters Patent. Patented Aug. 28, 1906.

Original application filed September 18, 1905, Serial No. 278,932. Divided and this application filed February 12, 1906. Serial No. 300,755.

To all whom it may concern:

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

For some time past there has been a demand for a spring, especially one of large capacity, which will have considerable lateral elasticity. In devices such as friction draft-rigging, chucks, automatic screw-drivers, &c., there has been a need for a spiral spring which could encircle inclosed sectors, jaws, or the like and at the same time be capable of a large expansion laterally. To meet this demand and at the same time aid the various arts in developing along these lines, I have invented a spiral spring each coil of which has one or more loops or auxiliary means of other shapes, preferably two on opposite sides, to increase the lateral resiliency or elastic capacity thereof. The main spiral spring and the auxiliary loops are made, preferably, of a single wire which can be readily bent to shape and then tempered.

The accompanying drawing shows a perspective view of the preferred form of my improved spring.

An ordinary and usual spiral spring 1, consisting of the plurality of coils 2, has each of said coils bent out of its normal line, so as to augment the lateral resiliency of the device. This bending may take any one of many forms which will readily occur to those skilled in the art; but I prefer to so bend the wire constituting the spring as to form one or more loops 3 on each coil. By employing these auxiliary loops the transverse elastic capacity of the spring is greatly multiplied and adapts the spring for use in connection and coöperation with internal members which it incloses and which in operation expand and contract laterally of the spring. Such a spring is of particular advantage in friction draft-rigging for cars which employ expansible sectors with which the spring is adapted to coact to normally keep them in contracted condition, yet permitting although resisting their expansion. Springs of smaller sizes may be used in chucks, buffers of various types, and devices of all kinds where there are laterally-expansible members.

My invention is not limited to the specific form of spring shown in the drawing, but embraces many modifications which are at once apparent to workers in the various arts mentioned above—for example, my improvement in springs may be used in connection with a spiral spring or other types of springs, as well as with the helical spring described above.

This application is a division of my copending application, Serial No. 278,932, filed September 18, 1905, to which reference is hereby made.

I claim—

1. A helical spring, one or more coils of which are bent out of their normal lines to increase the lateral elasticity of the spring, substantially as described.

2. A helical spring, one or more coils of which each have one or more loops to increase its lateral elasticity, substantially as described.

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