

J. MURRAY.

Improvement in Spiral-Springs for Railroad Cars.

No. 132,213.

Patented Oct. 15, 1872.

Fig. 1.

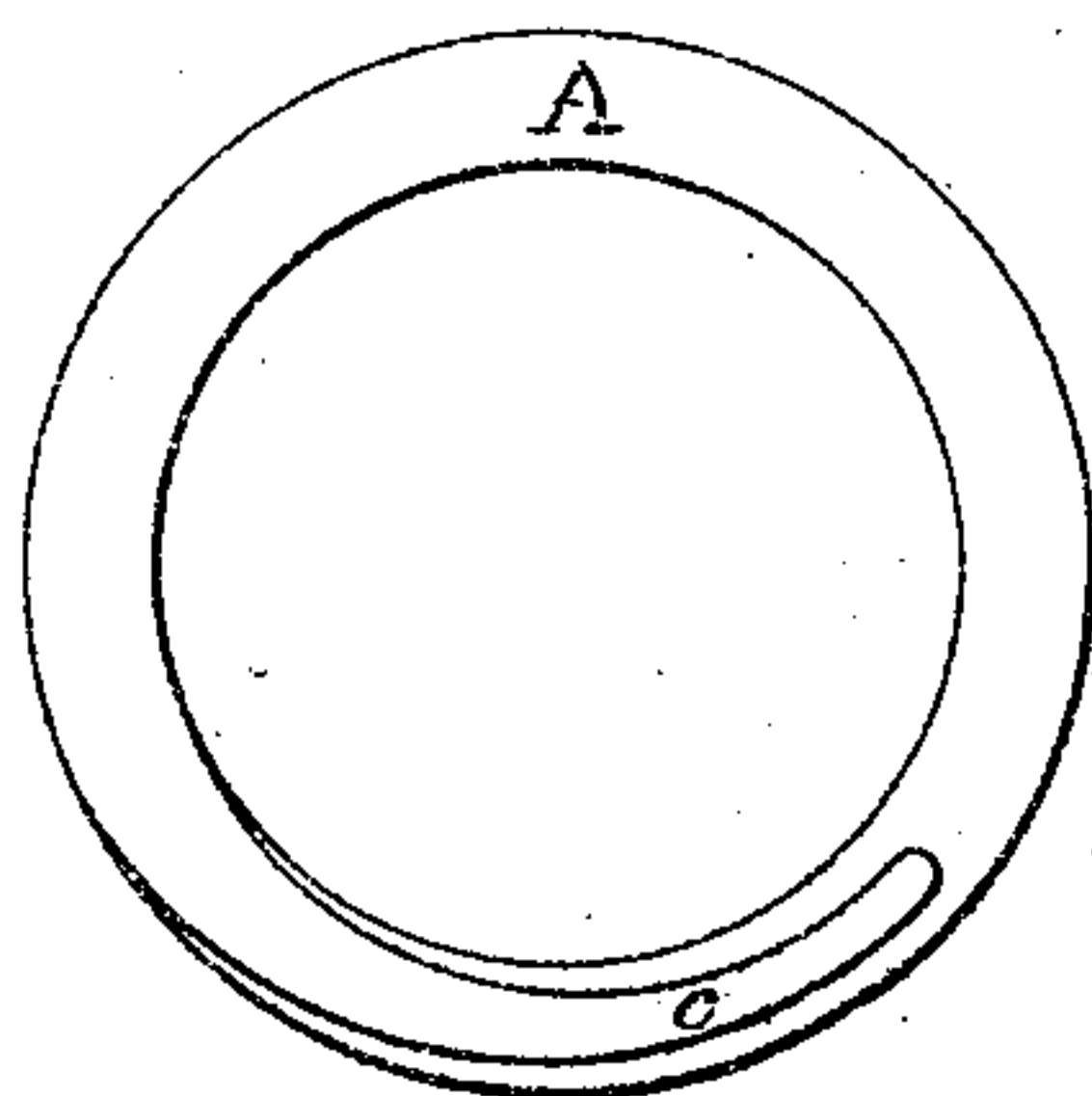
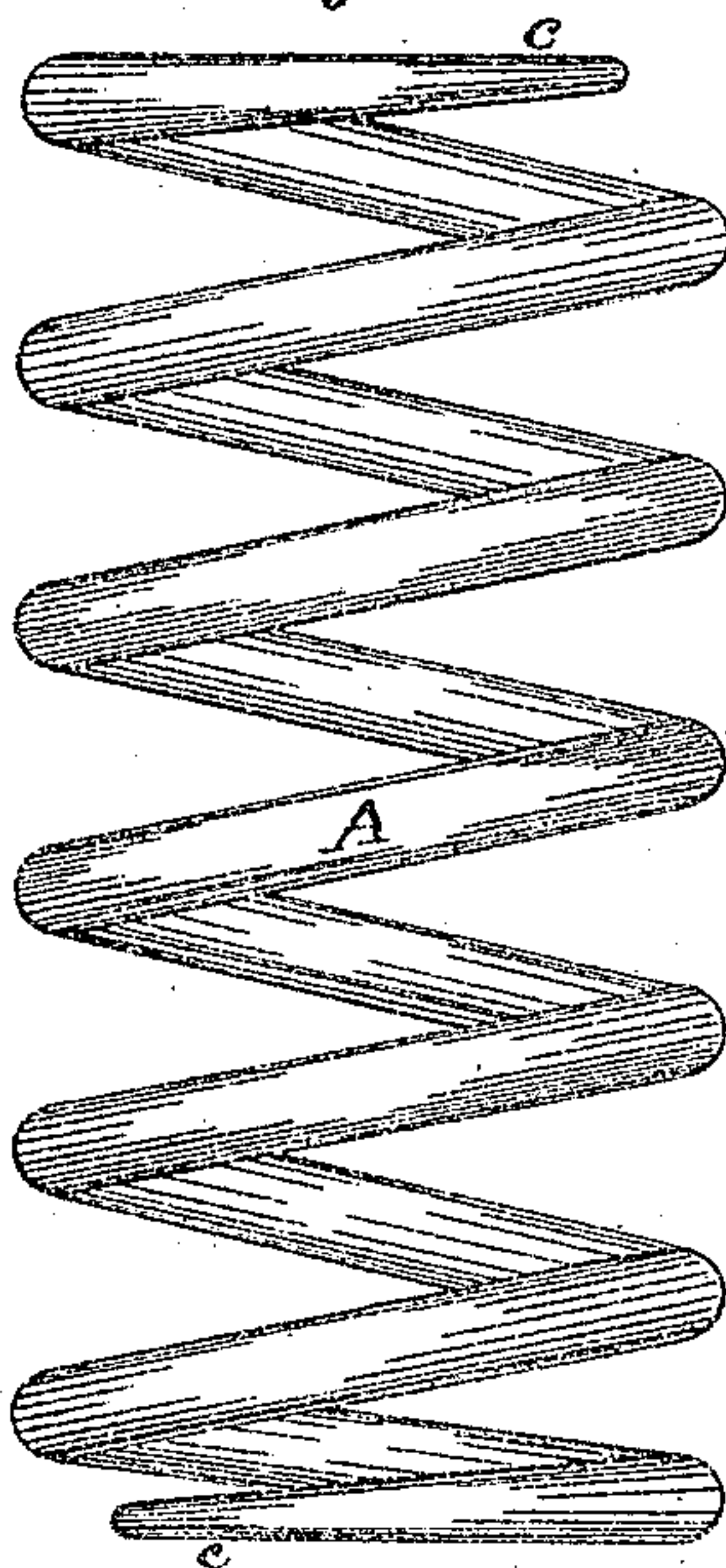


Fig. 2.



Witnesses:

A. S. Fitch.
J. P. Fitch

Inventor:

John Murray
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His Atty.

UNITED STATES PATENT OFFICE.

JOHN MURRAY, OF NEW YORK, N. Y.

IMPROVEMENT IN SPIRAL SPRINGS FOR RAILROAD CARS.

Specification forming part of Letters Patent No: **132,213**, dated October 15, 1872.

To all whom it may concern:

Be it known that I, JOHN MURRAY, of the city, county, and State of New York, have invented a new and useful Improvement in Spiral Springs for Railway Cars and other purposes, of which the following is a specification, reference being had to the accompanying drawing, which represents an elevation of a spring embodying my invention.

It is necessary that a spiral spring, which is designed to sustain pressure at opposite ends—applied as, for example, the bearing or buffer springs of railway cars—should have such pressure applied to the surface of the entire terminal coils in order to secure the most favorable action of the spring. This result is secured sometimes by providing spirally-grooved seats for the ends of the spring; but this is attended with certain inconveniences and objections, and the more recent plan has been to grind away or taper the ends of the spring so as to give them surfaces at right angles to the axis of the spring. When the spring is formed of a flat or square rod, and having an angular sectional area, the proper taper may be given to one side or edge of the rod before the operation of coiling, as the angular shape of the rod will enable it to be so held while being coiled, as to present the tapered side or edge squarely at the end of the spring when coiled; but when the spring is made of a round rod, or one having a circular sectional area, which on many accounts is the preferable shape, the flattening or tapering of the ends, so as to give the spring the desired surface at right angles to the axis of the spring, can be done only after the spring is coiled, as the natural tendency of a rod to twist in the act of coiling would make it altogether uncer-

tain what position the flattened surface would occupy after coiling.

The object of my invention is to obviate the difficulties above referred to; and it consists in constructing a spiral spring of a round rod of metal, or one having a circular sectional area, the ends of which are conically tapered before coiling, so that while the rod is left free to twist, as it has a tendency to do in the act of coiling, the terminal coils of the spring will always present a bearing-surface at right angles to the axis of the spring, and of course obviating the necessity of filing or grinding the ends after coiling, for the purpose of getting such a surface—an operation that is expensive and troublesome.

The spring is formed of a round rod, A, of steel or other suitable metal, that is coiled into a spiral in the ordinary manner, and by means in common use. Before being coiled the ends *cc* are conically tapered. This may be done by rolling with rolls suitably constructed, by grinding, or in any manner, at the option of the manufacturer. The taper should extend far enough back upon the rod to give a flat bearing upon the whole, or nearly the whole, of the terminal coils.

What I claim as my invention, and desire to secure by Letters Patent, is—

A spiral spring formed of a round rod or bar of metal, with conically-tapered ends, substantially as and for the purposes specified.

In testimony whereof I have hereto subscribed my name to this specification this 19th day of July, 1870, before two subscribing witnesses.

Witnesses:

JOHN MURRAY.

CURRAN DINSMORE,
R. R. WOOD.