J. LUDLUM.

COILED-SPRING.

No. 192,175. Patented June 19, 1877.

Fig. 1

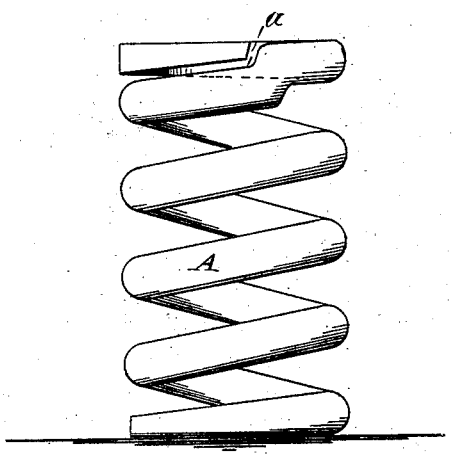
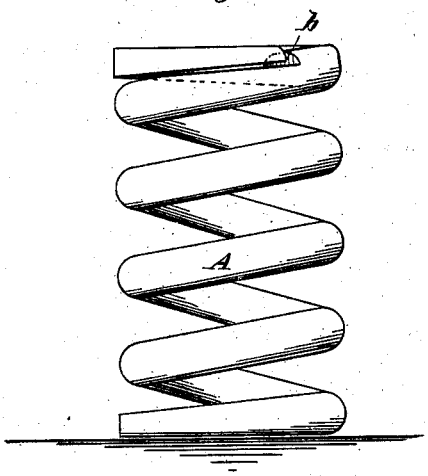


Fig. 2



WITNESSES:

A. W. Almquist

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INVENTOR:

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BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES LUDLUM, OF POMPTON, NEW JERSEY.

IMPROVEMENT IN COILED SPRINGS.

Specification forming part of Letters Patent No. **192,175**, dated June 19, 1877; application filed May 28, 1877.

To all whom it may concern:

Be it known that I, JAMES LUDLUM, of Pompton, county of Passaic, and State of New Jersey, have invented a new and Improved Spiral Spring, of which the following is a specification:

Figure 1 is a side elevation of one form of my improved spring, and Fig. 2 represents another form.

Similar letters of reference indicate corresponding parts.

My invention relates to spiral springs; and it consists in the peculiar construction of the the ends, whereby an improved bearing is secured and the spring is made stronger and more durable.

In the drawing, A is a spring formed from an ordinary round rod, the ends of which are tapered, but not to an edge, as is usual, and that portion of the terminal coil that lies below the extreme end of the rod forming the coil is offset, as in Fig. 1, or cut away, as shown at *b* in Fig. 2, so that, while the end of the coil is of sufficient thickness to give it the required strength, the coil presents a plane surface, and the ends of the coil are parallel.

The spring thus made rests squarely in its bearings, and is not liable to break, as are the springs of ordinary construction, the ends of which are so slight as to be easily overstrained or broken.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

A spring having in the terminal coil an offset to receive the end of the rod of which the spring is formed, substantially as shown and described.

JAMES LUDLUM.

Witnesses:

C. SEDGWICK,

ALEX. F. ROBERTS.