

(No Model.)

M. D. LOOMIS.

CONVERTING HELICAL SPRINGS TO STRAIGHT BARS.

No. 437,702.

Patented Oct. 7, 1890.

Fig-1-

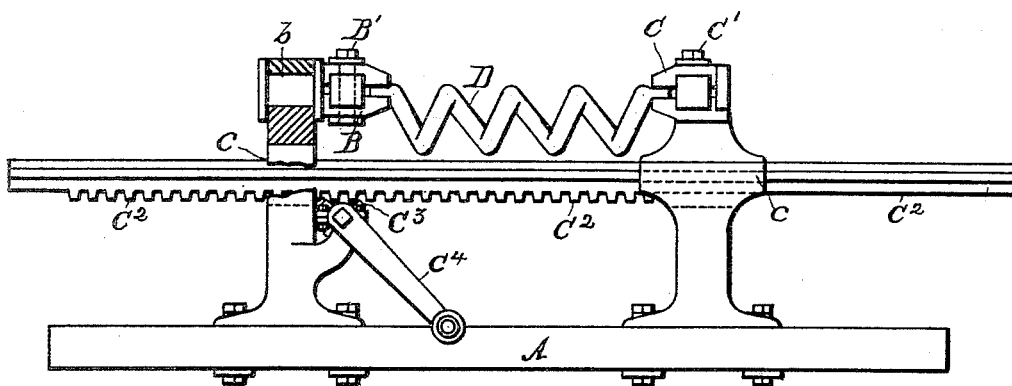
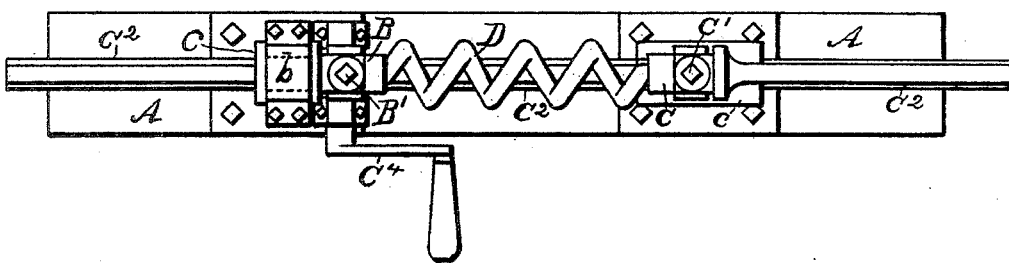


Fig-2-



WITNESSES

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CONVERTING HELICAL SPRINGS TO STRAIGHT BARS.

SPECIFICATION forming part of Letters Patent No. 437,702, dated October 7, 1890.

Application filed July 18, 1890. Serial No. 359,179. (No model.)

To all whom it may concern:

Be it known that I, MOSES DEWITT LOOMIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a certain new and useful Improvement in Straightening Spiral or Helical Springs; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a side elevation showing parts in section of a machine embodying my invention. Fig. 2 is a plan view of the same.

It is the object of my invention to produce mechanism designed to straighten out into the form of a bar a spirally or helically wound metallic spring, such as is used in car-springs and the like. Springs of this character are usually made of very heavy rod or bar metal, and in use they become gradually set so that they are no longer of any value, and it has been customary to throw them into the scrap-pile because of the difficulty experienced in again reducing the metal in the spring to any other useful form. If, however, the said metal can be again straightened out and reworked, it may be used for any of the purposes for which ordinary rod or bar of this character may be employed, or having been once straightened out might be again rewound into its spiral or helical form, thus converting it, when suitably tempered, into a new and useful spring; and to this end I purpose to adapt a machine which shall accomplish the said object of straightening out the metal.

A represents the bed of my machine.

B is one set of jaws provided with setting mechanism B', (or other engaging devices may be employed,) whereby the jaws may be caused to firmly engage one end of the spiral spring. These jaws may be stationary; but I prefer that they shall be swiveled at *b*, for a purpose hereinafter explained.

C represents another set of jaws provided with corresponding setting mechanism C', whereby they may be caused to firmly engage the other end of a spiral or helical

spring to be straightened out. These jaws may either be stationary or swiveled. They are shown as stationary, and are connected with traversing mechanism whereby the said jaws may be caused to travel away from the set of jaws B. Thus, for instance, they may be connected, as shown in Fig. 1, with a rack-bar C². This rack-bar rests in suitable guides *c*, and a pinion C³ meshes with the rack-bar, and is provided with a crank C⁴ or other suitable means for revolving the said pinion.

D represents a spiral spring in the operation of straightening the same.

The operation of the device is as follows:

A spirally or helically wound spring to be straightened out is first heated in a furnace, and is then brought into the machine. One end of the spring is engaged with the jaws B. The other end of the spring is in like manner engaged with the jaws C. The operator then, either by hand-power or by any suitable means, turns the pinions C³. This causes the rack-bar C² to be thrust out, carrying with it the jaws C, and so draws out the spring until it is in the form of a straight bar.

In drawing out the spring it is manifest that if the jaws B were stationary the rod would be twisted. This may not constitute any serious objection, and I would therefore have it understood that the said jaws B may, if desired, be stationary. To overcome the difficulty, however, I purpose usually to swivel one or both of the said sets of jaws, as shown at *b*, so that as the spring is drawn out this twisting tendency will simply cause the jaws to rotate and leave the bar straight and in an untwisted condition.

I do not limit myself to the precise form of jaws illustrated in the drawings, for any suitable tongs or jaws may be employed; nor do I limit myself to any particular means for drawing out or causing one set of jaws to move away from the other, for it is manifest this mechanism may be widely varied without departing from the spirit of my invention. I have simply illustrated in the drawings one method of accomplishing the result, which may be accomplished in a variety of ways—as, for instance, by any usual lathe movement.

What I claim is—

1. Mechanism for straightening spirally or

helically wound metallic springs, the same
 consisting of two sets of jaws or engaging de-
 vices, one set adapted to engage one end of
 the spring and the other set adapted to en-
 5 gage the other end of the spring, and means
 for causing said sets of jaws or engaging de-
 vices to separate the one from the other,
 whereby the spring is drawn out into the form
 of a bar, substantially as described.
 10 2. Mechanism for straightening spirally or
 helically wound metallic springs, the same
 consisting of two sets of jaws or engaging de-
 vices, one set adapted to engage one end of
 the spring and the other set adapted to en-
 15 gage the other end of the spring, and means
 for causing said sets of jaws or engaging de-
 vices to separate the one from the other,
 whereby the spring is drawn out into the form
 of a bar, one or both said sets of jaws or en-

gaging devices swiveled so as to rotate and 2
 permit the metal of the spring to untwist as
 it is drawn out, substantially as described.

3. Mechanism for straightening spirally or
 helically wound metallic springs into the form
 of a straight bar, consisting of the combina- 25
 tion, with suitable frame-work, of the jaws
 B and C, one of said sets of jaws being swive-
 led in connection with the jaws C, a rack-
 bar and pinion whereby said jaws may be
 caused to traverse toward and from the jaws 3
 B, substantially as and for the purposes de-
 scribed.

In testimony whereof I sign this specifica-
 tion in the presence of two witnesses.

MOSES DEWITT LOOMIS.

Witnesses:

MARION A. REEVE,
 W. H. CHAMBERLIN.