G. F. GODLEY.

Machine for Coiling Spiral Springs.

No. 209,254. Patented Oct. 22, 1878.

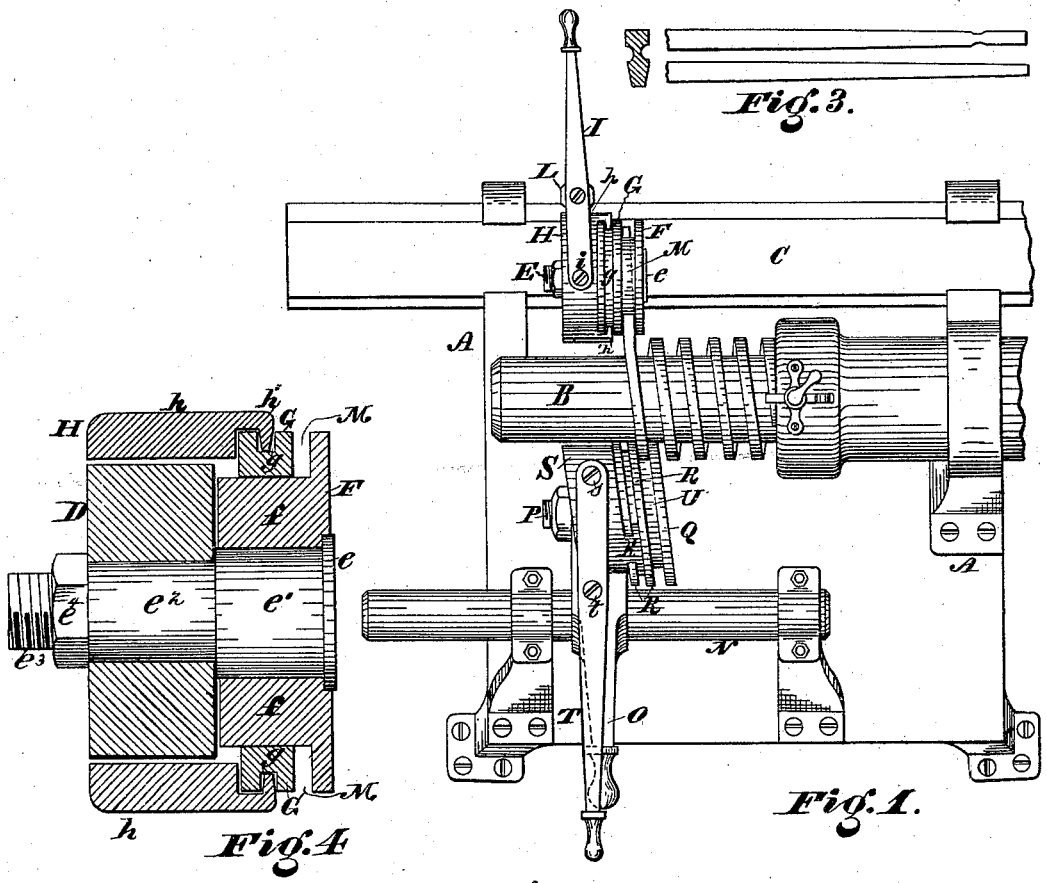

Fig. 3.

Fig. 1.

Fig. 4

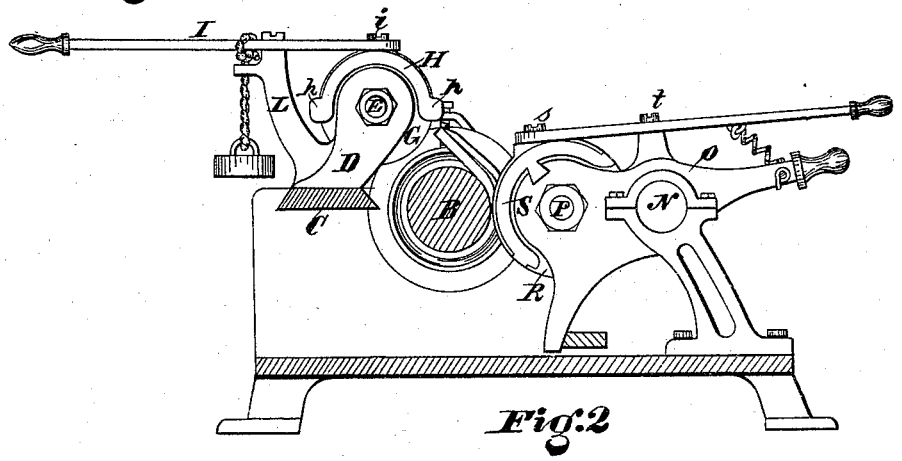

Fig. 2

WITNESSES:

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GEORGE F. GODLEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR COILING SPIRAL SPRINGS.

Specification forming part of Letters Patent No. **209,254**, dated October 22, 1878; application filed August 29, 1877.

To all whom it may concern:

Be it known that I, GEORGE F. GODLEY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Machines for Coiling Spiral Springs; and I do hereby 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 it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a plan view of my improvements. Fig. 2 is a transverse vertical section. Fig. 4 is a detail longitudinal vertical section of one of the wheel-clamps. Fig. 3 is a broken plan, showing the tapered end of a bar before coiled into a spiral spring.

The object of my invention is to provide an adjustable clamp for holding spiral springs and the bars from which said springs are made while being coiled on the mandrel.

My invention consists of a clamp composed, essentially, of two guide-wheels, one of which is constructed and arranged so as to permit it to be adjusted to and from the other, so as to regulate the space between said wheels according to the varying thickness of the bar being coiled.

Referring to the accompanying drawings, A A represent two sides of a coiling-machine, and B the mandrel. C represents the carriage, which is caused to move in the usual manner parallel with the mandrel by means of a screw-spindle. (Not shown in the drawing.) D is an arbor on the carriage C, sustaining a short shaft, E, having a head, e, body e^1, enlarged neck e^2, and threaded end e^3, by means of which it is secured in position by the aid of a nut, e^4. F is a wheel, having a hub or collar, f, which surrounds the enlarged neck e^1 of the shaft E, turning freely thereon, and G is a loose wheel turning on said hub f. H is a concave shield or plate, resting on the arbor D, and connected to the wheel G by clips h h, whose turned-down ends h' enter an annular groove, g, in the periphery of said wheel. I is a lever, pivoted on a standard, L, secured to the carriage C, said lever having a pivotal connection at i with the shield H. By turning the lever on its pivot L the wheel G may may be moved on the hub f to or from the wheel F, so as to diminish or increase the width of the annular channel M between said wheels, to conform to the varying thickness of the bar being coiled.

N represents a shaft parallel to the mandrel B, and sustained on the sides A A in such manner that it may be moved longitudinally and rocked on its longitudinal axis by means of a handle, O. The body of said handle is extended toward the mandrel and affords support to a shaft, P, wheels Q R, and shield S, of the same construction as the shaft E, wheels F and G, and shield H, but of larger dimensions than the last named.

T is a lever, pivoted at t and connected to the shield S at s, to move the wheel R to and from the wheel Q to vary the width of the channel U.

The operation is substantially as follows: The end of the bar to be coiled is passed into the space M beneath the shaft E and above the carriage C, when it is fastened to the mandrel. If the coil be left-hand, the bar will pass above the shaft E. The mandrel being now caused to revolve and the carriage to be moved lengthwise, the bar is drawn through the space M between the wheels F and G and coiled. As soon as the machine starts or the mandrel begins to revolve the end of the coil passes into the groove U. The bar continues passing through the space M until its final end leaves the latter. While thus progressing the wheel G is kept constantly held up to it, pressing it against the wheel F, and controlling its tendency to turn over on its side or twist, said wheel G being moved by means of the handle or lever I toward the wheel F, so as to diminish or increase the width of the channel M, according to the varying thickness of the bar, it being desirable to have said channel just wide enough to permit the passage of the bar, and the principal necessity for the adjustment of the wheel G arises from the variation in the thickness of the bar caused by the tapered end of the latter, the bar diminishing in width toward the ends, as shown in Fig. 3. The sectional detail in Fig. 3 shows merely the shape of the bar in cross-section.

As soon as the coiling begins the end of

the coil passes into the space U between the wheels Q and R, and as the operation progresses said wheels follow the coil, the shaft N being moved longitudinally. As soon as the end of the bar leaves the space M it is still drawn by the mandrel, and is received in the space U, and held between the wheels Q and R until the coil is completed. The shaft N is then rocked to lift the wheels Q and R away from the mandrel B and release the spring coiled on the latter from engagement with said wheels. During the operation of coiling the width of the channel U is changed to correspond with the varying thickness of the bar by moving the wheel R toward the wheel Q by means of the lever T.

What I claim as my invention is—

The combination of the shaft E, wheel or guide F, adjustable wheel G, and lever I, substantially as shown and described, said parts being constructed and arranged to form an adjustable holding and guiding clamp, for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of August, 1877.

GEORGE F. GODLEY.

Witnesses:
SAML. J. VAN STAVOREN,
CHAS. F. VAN HORN.