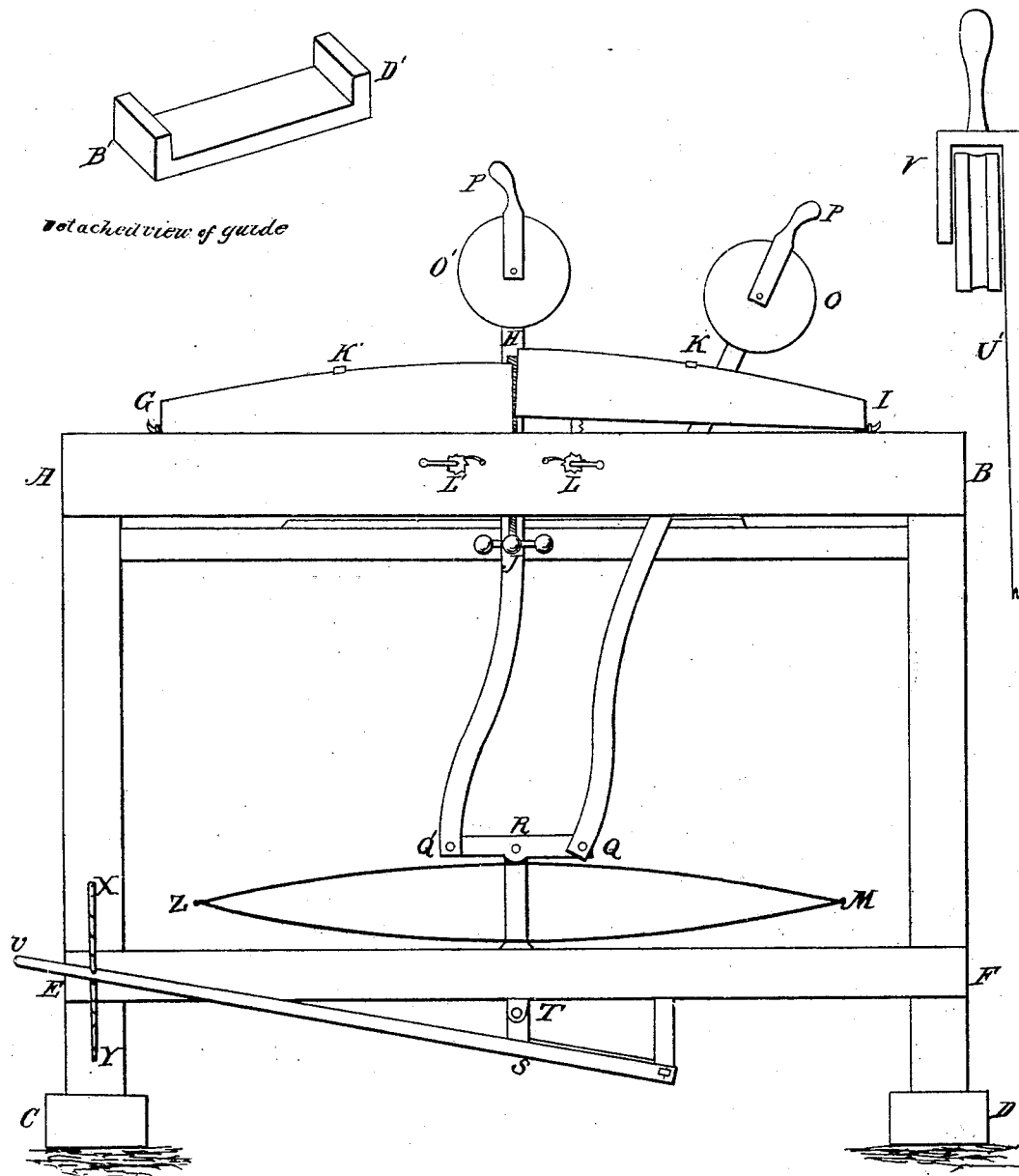


G. I. NEVEIL.
Carriage Spring.

No. 1,333.

Patented Sept. 20, 1839.



UNITED STATES PATENT OFFICE.

GEO. J. NEVEIL, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR SETTING AND FITTING ELLIPTIC SPRINGS.

Specification of Letters Patent No. 1,333, dated September 20, 1839.

To all whom it may concern:

Be it known that I, GEORGE J. NEVEIL, of Philadelphia, Pennsylvania, have invented a Machine for Setting or Fitting Elliptic or Horizontal Springs, of which the following is a specification.

Two upright posts A C, B D are connected at the top and near the bottom by two horizontal cross-beams A B and E F. Upon the upper cross-beam A B are placed the beds or forms G H and H I, on which the spring is to receive its curve. They are made of cast or wrought iron and their upper surfaces are elliptical. These beds or forms are of the same size and shape.

The curve of the spring is regulated by the beds or forms G H H I, being raised where they meet at H. The spring to be set is kept in its proper place upon the beds or forms by a screw H J which passes between the forms G H, H I and through the upper cross-beam A B, and by guides K', K, being flat pieces of metal with a rectangular elevation at each end, of which a detached view B' D' is represented in the drawing. There is one of these guides slid into a cavity on each form or bed. These guides may be taken out and wider or narrower guides substituted, according to the width of the spring to be fitted or set. The forms or beds are raised by cogged-wheels working in racks within the beam A B and secured by ratchet-wheels and catches L' L. The immediate pressure is given to the spring to be fitted or set by a pair of wrought or cast iron rollers O' O, grooved in the center (as represented in the detached view U' V' in the drawing) to avoid contact with the tips of the spring to be set. These rollers are attached to a pair of perpendicular levers P' Q', P Q. The levers are plane bars of wrought or cast iron. They have their fulcrums Q', Q at the opposite ends of a short horizontal bar Q' R Q which is situated a little above the lower cross-beam E F and is attached by a movable joint R in its center to a perpendicular piece of metal R T called a sword, which passes through the lower cross-beam E F and is connected by a double-joint T S to a horizontal lever U V. To the outer end U of this lever the foot is to be applied, which will give pressure to the spring to be set by

acting through the whole series, viz: horizontal lever U V, double joint S T, sword T R, horizontal cross bar Q' Q, perpendicular levers P' Q' P Q, and rollers O' O. The pressure may be continued for any length of time by catching the horizontal lever U V in the rack X Y attached to the upright post A C. When this lever is disengaged the whole series will be raised by an elliptic spring Z M which rests upon the lower cross-beam E F and is attached to the upper end R of the sword R T.

When the machine is used, the forms are adjusted to the desired curve, the perpendicular levers are brought together at the top of the machine and the spring to be set is laid upon the beds or forms in a heated state.

The horizontal lever is then pressed down with the foot until the rollers come in contact with the spring to be set, and the rollers are drawn assunder until they reach the end of the spring. The lower lever is then made fast in the rack and thus left until the spring cools.

One of the advantages of this machine besides a great saving of labor and an accuracy and perfection which cannot be given to springs made by the hammer and the eye, which is the common method, consists in the facility of giving to each plate of the spring its proper draw or bearing. When one plate has received its set and become cool and another is placed above it in a heated state the curve of the beds or forms may be increased by raising the beds by the cogged-wheels and racks in the upper beam, as before mentioned, and thus greater curve be given to the upper plate, while the lower plate having been cold during this process returns to its former curve upon a relaxation of the machine.

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

The combination of the two beds or forms regulated as described with the rollers attached to the levers and governed by a lever and springs for the purpose and in the manner described.

GEORGE J. NEVEIL.

Witnesses:

WM. KEYSER,
JOSEPH S. WARNER.