(No Model.) 2 Sheets—Sheet 1.

J. S. PESSENGER.

MACHINE FOR SETTING SPRINGS.

No. 316,820. Patented Apr. 28, 1885.

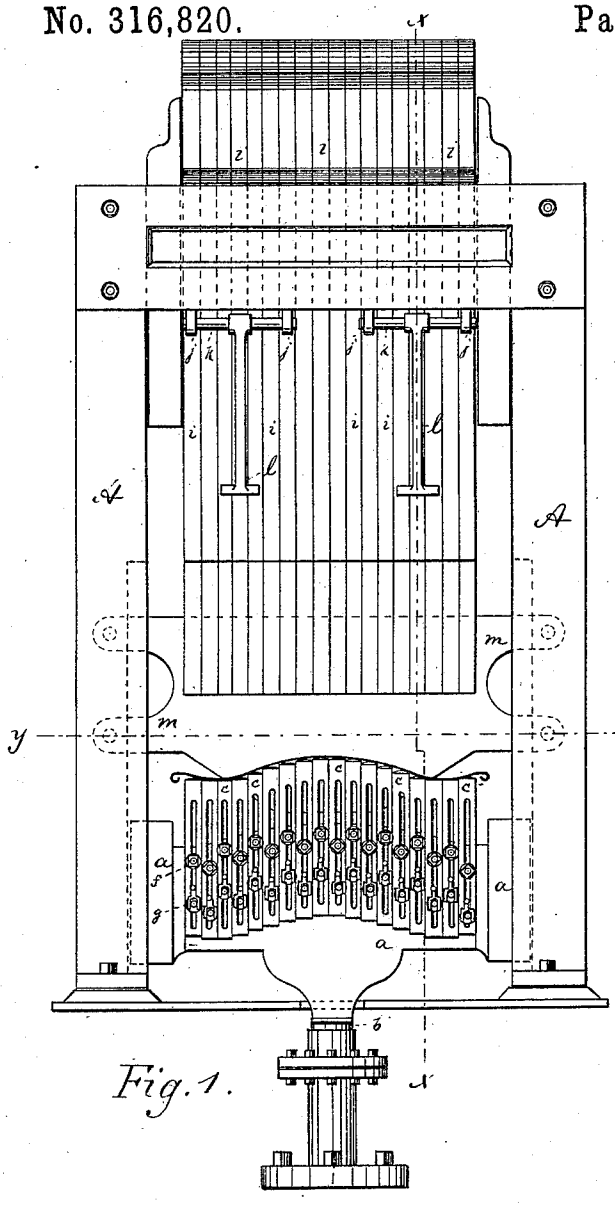


Fig. 1.

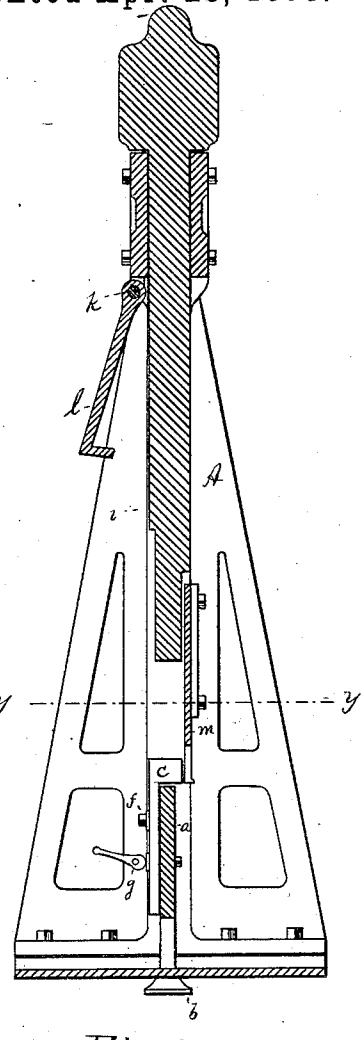


Fig. 2.

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by his attorneys

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

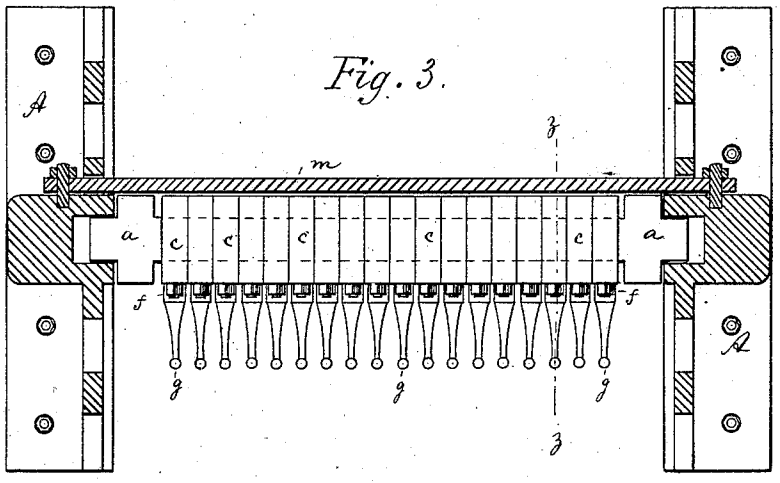


Fig. 4.

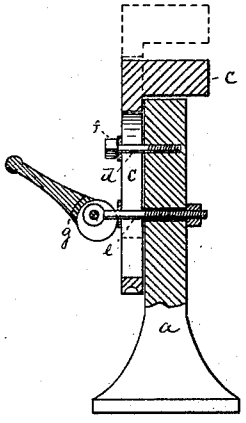


Fig. 6.

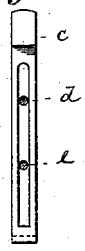


Fig. 7.

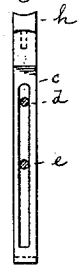


Fig. 8.



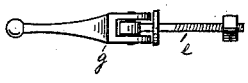


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN S. PESSENGER, OF BROOKLYN, NEW YORK.

MACHINE FOR SETTING SPRINGS.

SPECIFICATION forming part of Letters Patent No. 316,820, dated April 28, 1885.

Application filed January 20, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. PESSENGER, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Fitting Elliptic Springs, of which the following specification is a full, clear, and exact description.

This invention relates to that class of machines which set or fit elliptic springs—that is to say, which give the requisite curvature to the leaves.

More particularly does my invention relate to machines made with an adjustable bed reciprocating beneath a series of hammers or weights which are displaced by the upward motion of said bed. Such a machine is described in Patent No. 166,918, of August 24, 1875.

Now, my invention consists, principally, in the construction of the bed or former, by which I am enabled to readily adjust the same to any contour which may be desired. To this effect the former is composed of a series of vertical pieces or fingers, which are held against an anvil-block by an eccentric lever.

The invention also consists in the various elements of construction hereinafter more fully pointed out.

In the accompanying sheets of drawings, Figure 1 is a front elevation of my improved spring-setting machine. Fig. 2 is a vertical transverse section on the line *x x*, Fig. 1; Fig. 3, a horizontal section on the line *y y*, Fig. 1; Fig. 4, a vertical transverse section on the line *z z*, Fig. 3. Figs. 5, 6, 7, and 8 are detail views of the adjustable fingers and their attachments.

The letters A A represent the two uprights of the machine, connected by suitable cross-pieces. These uprights are grooved on their inner faces to form vertical ways for the bed or former, Fig. 3. This former consists, essentially, of an anvil-block, *a*, fitting with its two ends into said grooves and made preferably with a smooth, front, flat top and enlarged base, as shown in Fig. 4.

b is the piston of a hydraulic or other engine or other motor, which is connected to the anvil-block and serves to raise and lower the same.

c c are a series of fingers placed side by side and constituting the former proper. These fingers are L-shaped, with the horizontal bar on top and overlapping the top of the anvil-block *a*. The shanks of the fingers rest against the front of the anvil-block, as seen in Fig. 1.

In order to raise each of the fingers *c* and clamp it in its raised position, and to thus obtain any desired outline of the working-bed of the machine, I have devised the following construction: The shank of each finger *c* is slotted longitudinally, and through this slot pass two screw-bolts, *d e*, tapped into the anvil-block *a*. The bolt *d* is provided at its front with a head, *f*, while the bolt *e* is provided with an eye to receive a pin that connects the bolt with an eccentric lever, *g*, Figs. 4 and 5. The rear end of the bolt *e* is encircled by a jam-nut.

In order to adjust a finger *c*, the bolt *d* is first loosened and the lever *g* swung up. This releases the finger, and the same is moved up or down the desired distance. Then the lever *g* is swung down, and the finger is thus rapidly locked into position. Finally the bolt *d* is tightened up.

Washers (shown in Fig. 4) may be interposed between the front of the fingers *c* and the heads *f* and lever *g*.

h, Figs. 7 and 8, represents a shoe with a concave or other top, and with a bottom corresponding to the top of fingers *c*. This shoe is provided with a downwardly-extending pin fitting into a hole in the top of finger *c*, so as to hold it in place. The purport of shoe *h* is to alter the working-face of either of the fingers.

i i i are a number of independent weights or hammers arranged in the upper part of the frame directly over the former. These hammers are adapted to be raised by the former or the work placed thereon, and to fall down as the former is lowered.

It will be observed that with the machine as thus far described, the weights will first come into contact with the raised portions of the work, and then with the lower portions or valleys. This would be apt to take too much metal out of the valleys. To avoid this I have devised the following means by which those weights or hammers which are situated above the raised ends of the work may be made to

come into contact with the work later than the weights which are located above the valleys.

j j are lugs projecting forward from the machine and supporting one or more horizontal bars, *i*. Upon the bars slide two or more crabs or hooks, *l*, the lower biting ends of which project inwardly, and are of sufficient width preferably to grasp three or more hammers, *i*. The hammers *i* have a shoulder in front, which is engaged by the crabs *l*. In use a small filling-piece is placed upon the right and left side of the former, beneath the end hammers. As the work is raised the end hammers will be held by the crabs in a slightly-raised position. Next, the former is lowered and the filling-pieces are removed. As the machine is now put into active operation the end hammers will come into contact with the work subsequent to the hammers above the valleys.

m is a stationary upright gage-plate, affixed to the frame of the machine between the former and the hammers.

The machine is operated as follows: A templet is first placed upon the bed, and the fingers *c* are then adjusted vertically one after the other, so that their upper or working faces receive the requisite elevation. After each of the fingers is placed it is locked by the eccentric lever *g*, and finally by the bolt *d*, as already described. The work is placed upon the former, resting with its rear edge against the gage-plate *m*. As the former is raised the work is compressed between it and the weights *i*, and thus it is properly set.

I claim as my invention—

1. The combination, in a spring-setting machine, of a series of weights, *i*, with the block *a*, and with L-shaped fingers *c*, the working ends of which project above said block, substantially as specified.

2. The combination of block *a* with fingers *c*, and with mechanism for clamping said fingers separately against such block, substantially as specified.

3. The combination of block *a* with fingers *c*, bolts *e*, and eccentric levers *g*, adapted to clamp the fingers against the block, substantially as specified.

4. The combination of block *a* with fingers *c*, slotted longitudinally, and with bolts *d e* and eccentric *g*, substantially as specified.

5. The combination of block *a* with L-shaped fingers *c*, adapted to be clamped to the same, and with the shoes *h*, having downwardly-extending pins which fit into holes in the working-faces of the fingers, substantially as specified.

6. The combination of hammers *i* with laterally-adjustable crabs *l*, adapted to engage shoulders on said hammers, substantially as specified.

7. The combination, in a spring-setting machine, of the following elements: block *a*, fingers *c*, eccentric *g*, gage-plate *m*, hammers *i*, and crabs *l*, substantially as specified.

JOHN S. PESSENGER.

Witnesses:
F. v. BRIESEN,
R. H. ROY.