3 Sheets--Sheet 1.

W. MALICK.

Improvement in Machines for Bending Hooks.

No. 131,289. Patented Sep. 10, 1872.

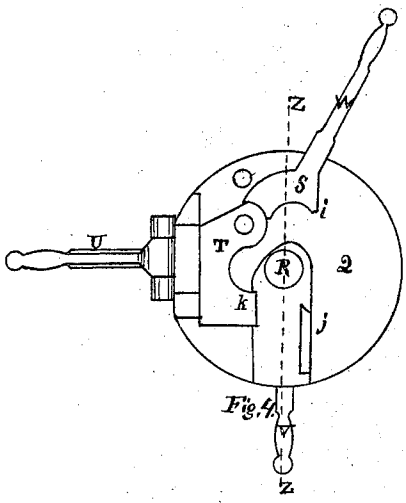

Fig. 4.

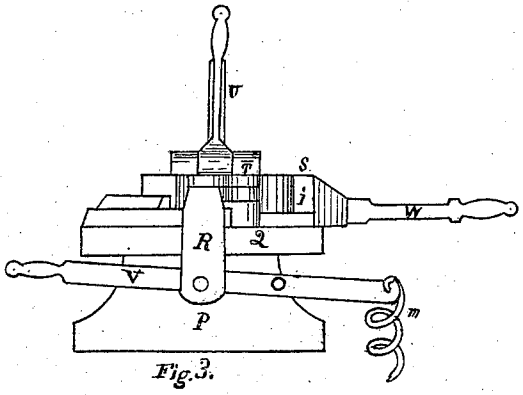

Fig. 3.

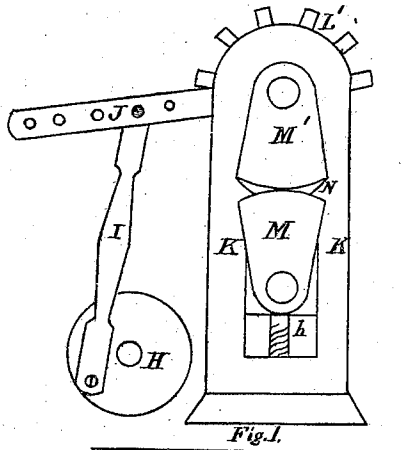

Fig. 1.

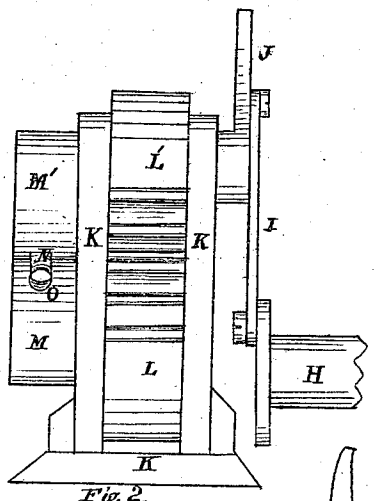

Fig. 2.

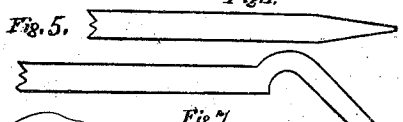
Fig. 5.

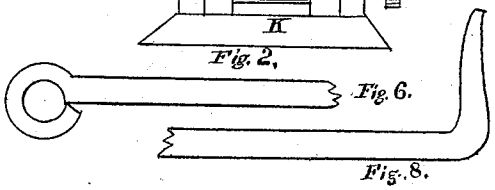
Fig. 6.


Fig. 7.

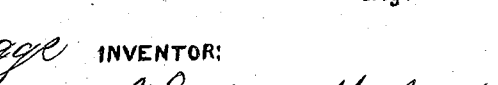
Fig. 8.

Witnesses. Geo. F. Mugge

Jno. T. Hallick

INVENTOR:

Wesley Malick

3 Sheets--Sheet 2.

W. MALICK.

Improvement in Machines for Bending Hooks.

No. 131,289. Patented Sep. 10, 1872.

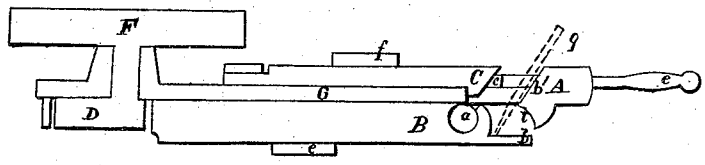

Fig. 9.

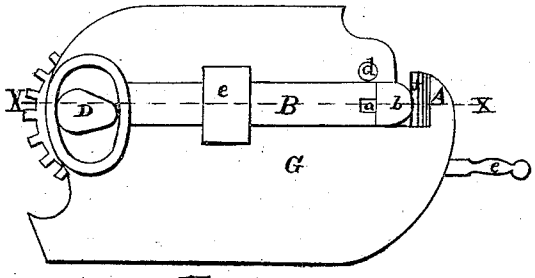

Fig. 10.

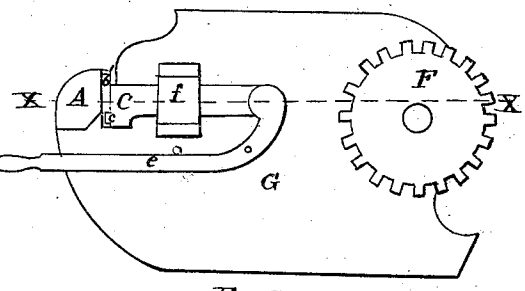

Fig. 11.

WITNESSES: Geo. F. Meigge

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INVENTOR: Wesley Malick

3 Sheets--Sheet 3.

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Improvement in Machines for Bending Hooks.

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Fig. 12.

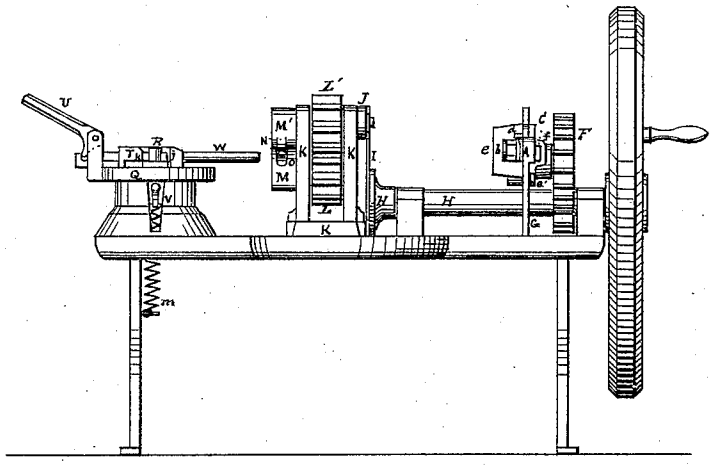
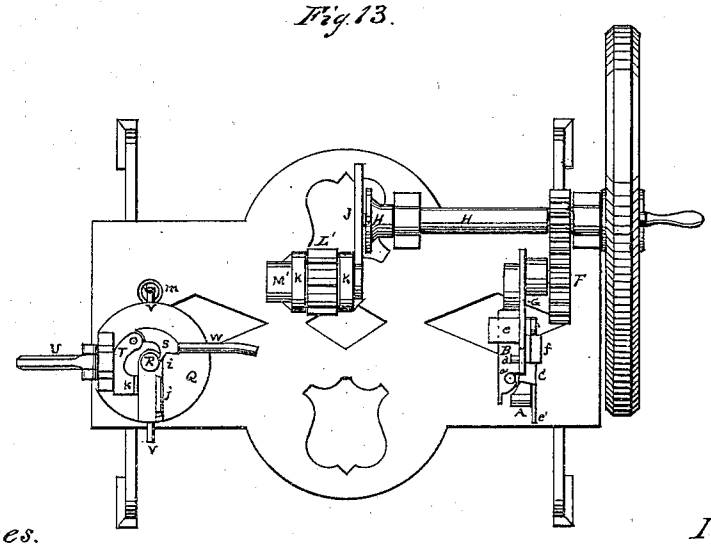


Fig. 13.



Witnesses.
E. W. Jayne
L. E. Leigh

Inventor.
Wesley Malick
per G. E. F. Helmcads
Attorneys

UNITED STATES PATENT OFFICE.

WESLEY MALICK, OF ERIE, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENT, TO NOVELTY IRON WORKS.

IMPROVEMENT IN MACHINES FOR BENDING HOOKS.

Specification forming part of Letters Patent No. **131,289**, dated September 10, 1872.

To all whom it may concern:

Be it known that I, WESLEY MALICK, of Erie, in the county of Erie and State of Pennsylvania, have invented a new and Improved Machine for Making Hooks; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and the letters of reference marked thereon, the same forming a part of this specification.

The machine consists of three parts, namely: The forger or pointer, the eye-bender, and the snout-bender; and on these three parts of my machine are performed the three operations necessary to make a hook, namely: drawing the ends of the blank, bending the eye, and bending the snout or right-angle bend of the hook.

My machine is shown in the accompanying drawing, which consists of Sheets No. 1, No. 2, and No. 3, as follows:

Figures 1 and 2 are respectively side and front views of the forging or pointing device. 3 and 4 are respectively vertical sectional and plan views of the eye-bending device, and Figs. 9, 10, and 11 are views of the snout-bender, as follows: Fig. 9 is a horizontal sectional view, the dotted line *x x* seen in Figs. 10 and 11 being the line of section. Fig. 10 is a side view of one side, and Fig. 11 of the other side of the snout-bending device; while on Sheet 3 the complete machine is illustrated—Fig. 12 being a front view of the same, and Fig. 13 a plan view, in which the distinctive features and their general arrangement are shown.

The following description will enable those skilled in the construction of machinery to build and operate my devices: and first, of that part of the machine on which the first operation is performed—viz., the forger or point-drawing device. This is shown in Figs. 1 and 2, and consists of a frame, K, in which are journaled oscillating gears L and L′, which are operated by the shaft and crank H, pitman I, and lever J. On the opposite side of the frame from the operating devices just named, and hung on the shafts of the gears L and L′, are oscillating swages M′ and M. These swages are of cast metal, and are quadrant-formed, their circular faces meeting and pressing together, and in these are set male and female dies N and O, respectively. The position of these dies and their forms can be more fully seen in Fig. 2, where it will be seen that a circular space is formed between the dies. Both figures, 1 and 2, show the swages M and M′ in a perpendicular position. Now the form of the dies is such that when the swages, by the operating machinery, are thrown out of the perpendicular the circular space between the dies is made smaller. So, when the end of a blank is heated sufficiently and inserted between the dies, when at the position shown in Fig. 2, and kept there by the operator during one or more operations of the machine, the blank will be drawn to a point, as shown in Fig. 5. This part of the machine is used to draw out both ends of the blank, and the form to which it is drawn may be regulated by the operator after practice. And now comes the second operation—viz., bending the eye, and the device by which it is accomplished. Figs. 3 and 4 illustrate that portion of my invention. Of this P is the stand and Q is the top plate. R is the mandrel around which the eye is bent, and is stationed in the center of the top plate Q. It is movable—that is, it may be drawn out of the eye, when formed, by the operator placing his foot on the lever V—the spring *m* again throwing it back in place when the pressure is removed from the lever. The blank is bent around the mandrel R by clamps T and S, which are operated by levers U and W. The manner of bending the eye is as follows: The operator stands on the side of the device from which the lever V is seen to protrude. He grasps a heated blank and shoves the pointed end in between the mandrel R and the clamp T until the end reaches the point *i* on the clamp S. He then depresses the lever U; this throws the blank up against the flange *j* and partially around the mandrel R, bending the blank into the form shown in Fig. 7. He then grasps the lever W, and this brings the clamp S to bear and this finishes the bending of the eye. The lever V is depressed and the clamps T and S are thrown open and the blank appears, as shown in Fig. 6. Next comes the third part of my machine—viz., the snout-bender. This gives the right-angle crook to the hooked

part of the hook. Figs. 9, 10, and 11, on Sheet No. 2, show this part of my device. All the parts of this device are attached to the frame-plate G, and they consist of a plunger, B, clamp C, forming-head A, operating eccentric D, and propelling pinion F, and other minor parts. The operation of this part of my device is as follows: The blank *q*, shown by dotted lines in Fig. 9, is fed in in the position shown. The operator then depresses the lever *c* with his foot; this brings to bear the clamp C, holding the blank *q* tight against the face *b'* of the forming-head A. The point of the blank rests against the gage *b* of the plunger B. As soon as the blank is in position the eccentric D is ready to shove down the plunger B. The plunger is provided on its end with a friction-roller, *a*. As the plunger advances the friction-roller begins to bear upon the blank, and when the plunger has reached its furthest point of advance the blank is bent and set close up against the face *t* of the forming-head A. The face *t* is so fashioned that it gives to the snout a perfect shape, as seen in Fig. 8. With this operation the hook is completely fashioned.

What I claim as my invention is as follows—

1. The snout-bending device, consisting of the plunger B, clamp C, and forming-head A.

2. The plunger B, with friction-roller *a*, and gage *b*, in combination with the forming-head A.

3. The pinion F, eccentric D, and plunger B, in combination with the forming-head A.

WESLEY MALICK.

Attest:

JOHN K. HALLOCK,
GEO. F. MEIGGS.