S. Pennock,

Edging Sheet-Metal.

No. 46,261. Patented Feb. 7, 1865.

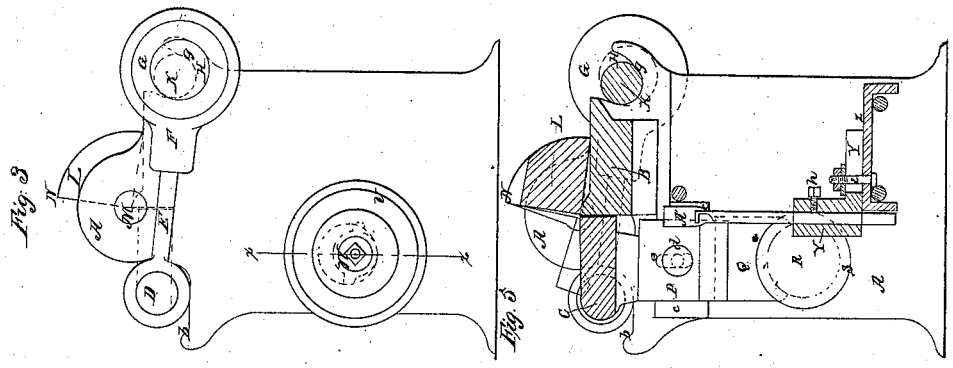

Fig. 3

Fig. 5

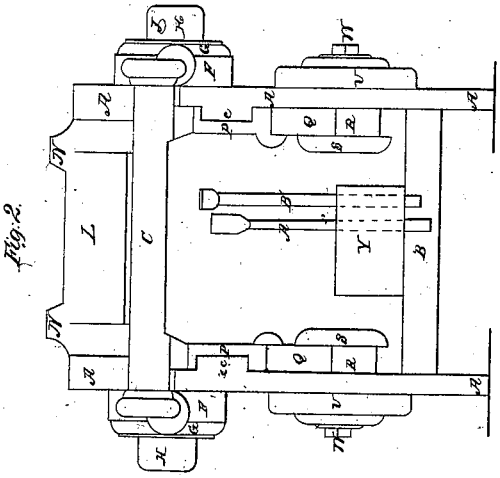

Fig. 2.

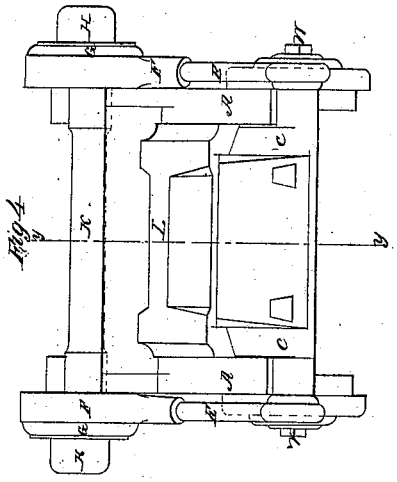

Fig. 4

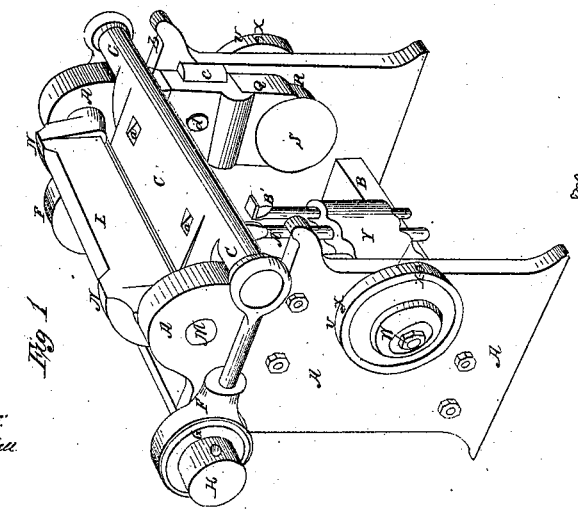

Fig. 1

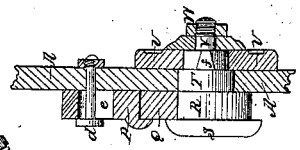

Fig. 6

Witnesses:
R. F. Campbell

Inventor
Samuel Pennock
by his attorney
Chas. F. Stansbury

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UNITED STATES PATENT OFFICE.

SAMUEL PENNOCK, OF KENNETT SQUARE, PENNSYLVANIA.

MACHINE FOR BENDING SHEET METAL.

Specification forming part of Letters Patent No. **46,261**, dated February 7, 1865.

To all whom it may concern:

Be it known that I, SAMUEL PENNOCK, of Kennett Square, in the county of Chester and State of Pennsylvania, have invented a Machine for Bending Metal; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the machine complete. Fig. 2 is a front elevation of the same. Fig. 3 is a side elevation. Fig. 4 is a plan or top view. Fig. 5 is a central longitudinal section on line *y y* of Fig. 4, and Fig. 6 is a transverse vertical section of a part of the machine on line *x x* of Fig. 3.

The same part is marked by the same letter of reference wherever it occurs.

The nature of my invention consists in the peculiar construction and arrangement of the machine, hereinafter described, for bending sheet or bar metal, and more particularly in the devices or their equivalents for giving the vertical and horizontal adjustments to the movable bed of the machine, the whole constituting a substantial, convenient, efficient, and economical apparatus for the purpose intended.

To enable others to make and use my bending-machine, I will proceed to describe its construction and operation, referring to the drawings, whereon A marks the end framing of the machine, and B the cross-framing, both made of iron, and of a strength and size proportioned to the work to be done.

C is a horizontal adjustable bed or anvil on which the metal is bent. The ends D of this bed project beyond the side frame, and are received in collars on the adjustable screw-connecting rod E. These collars turn freely on the ends D. The rear ends of rods E screw into stout collars F, which encircle the eccentrics G. These eccentrics are attached at either end of shaft K. The projecting ends H of this shaft are provided with sockets J, for the insertion of handspikes, by which the shaft and eccentrics are turned, to adjust horizontally the position of the bed C. The first adjustment is made by the screw-rods E, the final one by the turning of the eccentric G.

L marks the hammer or bending-jaw, which turns on heavy journals M, supported in the end framing. Sockets for the reception of handspikes are made in this jaw at the points N N, and the jaw is worked by means of handspikes or levers inserted in them. When in the position represented in Fig. 5, the lower edge of jaw L rests upon a solid piece, B′, of the cross-framing, the front edge of said piece being vertical, and serving as a support for the sheet or bar of metal that is being operated upon. This piece B′ stands in the same relation to the bed C that the fixed jaw of a vise occupies to the movable jaw, the bed C being moved toward or from it by the operation of the eccentric G. The bed C rests at either end upon the slotted pieces P. These pieces slide vertically between guides *c* on the bolts *d*, which pass through the slots *e* and side frame, A, and are secured by nuts on the outside, as clearly shown in Fig. 6. The slotted pieces P overlap and rest upon the straddle-pieces Q, which in their turn are supported by the eccentrics R, which turn freely in their concave under surfaces. The eccentric R has on its inner side the cap S, which serves to confine the lower edge of the pieces Q. The shaft T of the eccentric R (see Fig. 6) turns in the end frame, A. It is prolonged so as to receive the fixed wheel U, which is attached to it by means of a washer controlled by nut W. The wheel U has sockets in its periphery for the reception of levers or handspikes, by means of which the eccentric R is turned to adjust vertically the position of the bed C.

Y marks a gage-stock, which is attached to a part, Z, of the frame by means of the bolt *i* and its nut and washer passing up through a slot in the horizontal part of the gage-stock. In this stock are held the gage-rods A′ B′, any required number of which may be employed. These are adjusted vertically by means of the set-screws *h*. Their office is to support the lower edge of the sheet or bar of metal which is being operated on.

The operation of the machine is as follows: The piece of metal to be bent is placed in the machine between the piece B′ and the bed C, its lower edge resting on one or more of the supporting-gages A′ B′, which are so adjusted that the line at which the metal is to be bent shall coincide with the upper and rear margin of the bed C, which is brought into close contact with the metal sheet by the operation of the eccentrics G. The bed C, by means of the eccentrics R, is lowered till its upper surface is below the lower and forward margin of the

hammer-jaw L a distance equal to the thickness of the sheet to be bent. By means of levers inserted at the points N N the jaw L is closed down until the metal sheet is brought into contact with the upper face of the bed C. The bending is then complete. The hammer-jaw is again raised, the grasp of the bed C upon the sheet is relaxed by a partial turn of eccentric G, and the bent metal is removed from the machine preparatory to the repetition of the operation. In the case here described the metal is bent at a right angle; but by means of supplemental pieces placed on the upper surface of bed C and held there by toes inserted in the recesses *a a* the angle may be varied at pleasure.

It will be observed that the adjustable connecting-rods E are outside the end framing, and can readily be removed from the ends at the journals D when an adjustment is to be made, and then slipped on again, for which purpose sufficient play is given to the strap or collar F. It will also be noticed that the bed C, being confined only by the collars on the ends of its journals D, can be turned up at any desired angle on its journals or removed entirely from the machine, if desired, by slipping off the collars just alluded it. This gives the machine the capability of bending more angles in the same piece of iron than it would have if these facilities for the removal of the bent pieces did not exist. I believe they have never before been provided in a machine for this purpose.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The hinged removable and adjustable bed-plate C, constructed and operating as described.

2. In combination with the above, the mode described of adjusting the bed-plate C horizontally by means of the eccentric G, arranged and operating as shown, or in an equivalent manner, for producing the same result.

3. In a machine for bending metal, constructed as described, adjusting the bed-plate C vertically by the employment of the eccentric R, arranged and operated as shown, or its equivalent, substantially in the manner specified.

The above specification of my said invention signed and witnessed at Philadelphia this 18th day of October, A. D. 1864.

SAMUEL PENNOCK.

Witnesses:

CHAS. F. STANSBURY,

E. B. PALMER.