# D. Pierce.

## Bending Machine.

No. 97,113. Patented Nov. 23, 1869.

Fig. 2.

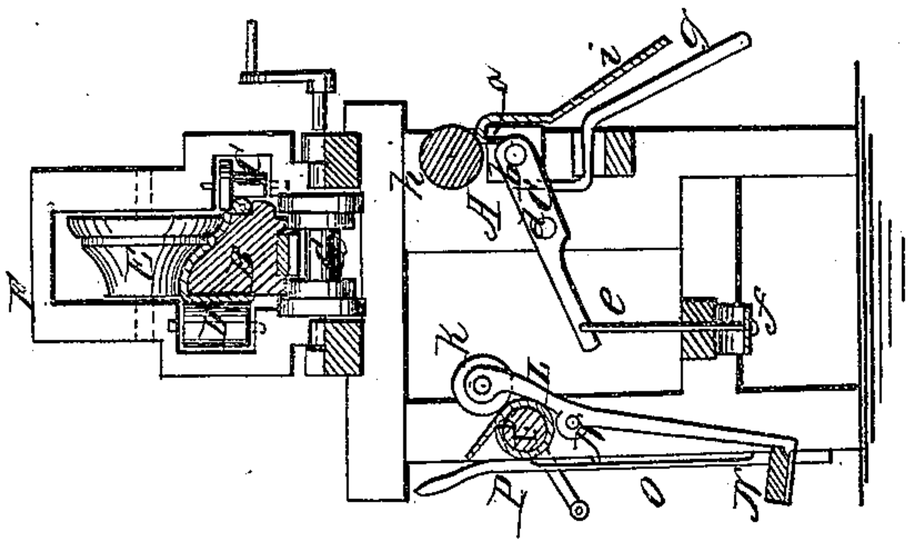
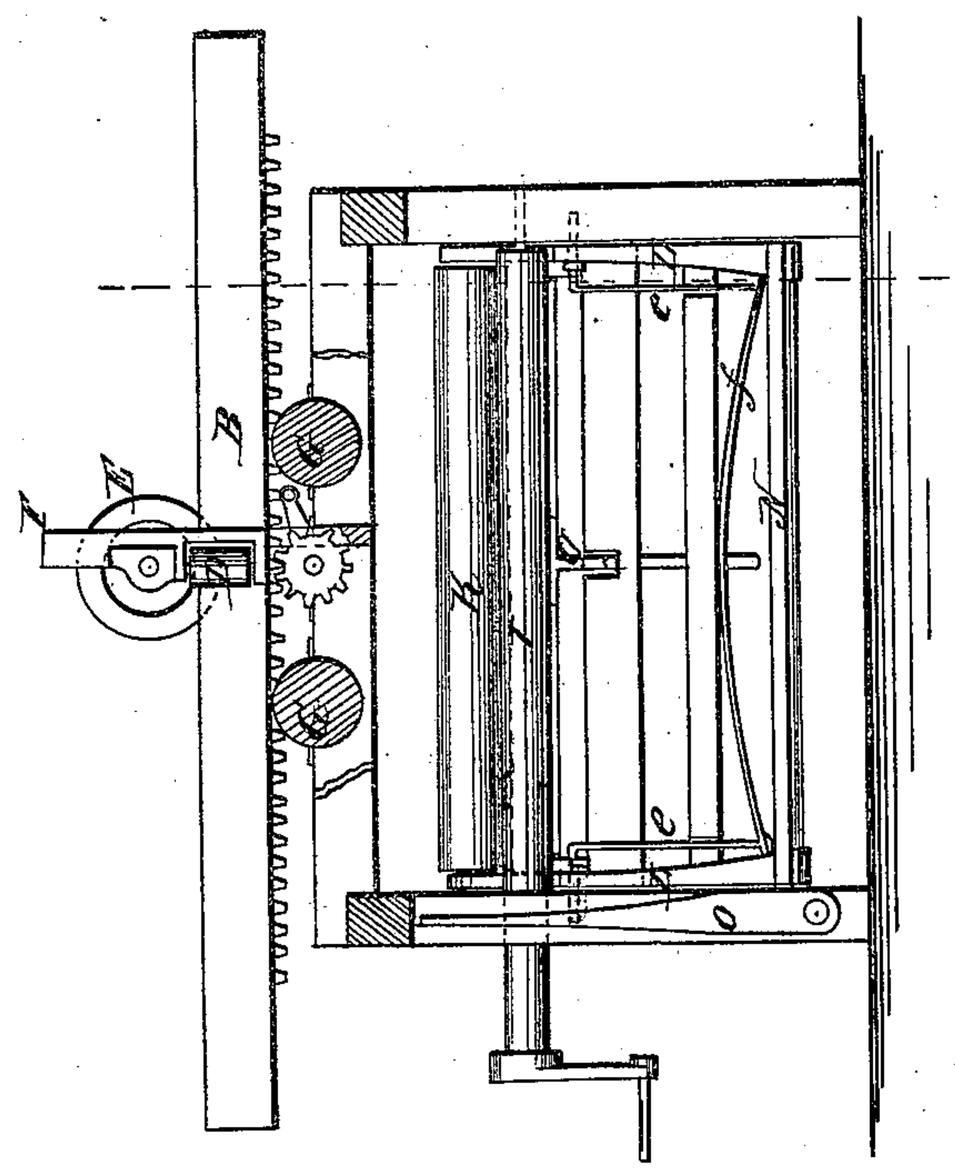



Fig. 1.




Witnesses

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*Letters Patent No.* 97,113, *dated November* 23, 1869.

## IMPROVEMENT IN BENDING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, DAVID PIERCE, of Almont, in the county of Lapeer, and State of Michigan, have invented a new and improved Bending-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in machines for bending sheet-metal for forming eaves-troughs and conductors, having for its object to provide a simple and effective machine for the said purpose.

The invention comprises an apparatus for first bending the edges of the strips of sheet-metal for eaves-troughs to receive the wire; also, an arrangement of apparatus for bending the sheet into the finished forms, and for wiring the edges; and also an apparatus for bending the sheets for the conductors, and for forming a part of the locks for uniting the edges.

Figure 1 represents a longitudinal sectional elevation of my improved machine, and

Figure 2 represents a transverse section of the same.

Similar letters of reference indicate corresponding parts.

A represents a rectangular former, having a longitudinal groove, *a*, near one corner of the upper face.

It is borne on journals *b*, in the ends of levers *c*, pivoted at *d*, and connected at the other ends by rods *e* to springs *f*.

*g* represents a handle for turning the said former.

*h* represents a roller, journalled in fixed bearings above the former, and against which the latter is snugly pressed by the springs *f*.

One edge of the sheets for the eaves-troughs is placed in the groove *a*, the said former being turned to admit the insertion of the sheets by pressing the handle downward.

The handle is then raised so as to turn the former and force the sheets under the roller, by which they are bent into the form represented in red, at *i*.

The sheets are then removed and placed on the reciprocating ogee-former B, with the bent edge against the vertical former C, having a collar at the upper end, and the other edge is placed against the opposite vertical former D, by which the back part of the trough is shaped.

The top roller E corresponds reversely with the ogee-face of the reciprocating former.

These roller-formers are suitably arranged in a frame, F, surrounding, or nearly so, the said reciprocating former, and the latter is borne on suitable guiding-rollers G, and is worked by a pinion, H, gearing with a rack on the bottom thereof.

The movement of this former draws the sheets between it and the revolving formers, imparting to them the required form, and wires the edges previously bent between the formers A *h*, the wire being plased in the groove formed for it when placed on the former B.

I represents a roller for shaping the sheets for the conductors. It is placed on journals in fixed bearings, and grooved for the reception of the edge of the sheet, to bend it to form a part of the lock for the seam.

K represents a bending-roller, journalled in levers L, pivoted at M, and connected to a foot-bar, N.

When the sheet is inserted in the groove of the roller I, motion is imparted to the said roller by a hand-crank, and at the same time the roller K is pressed snugly down upon the roller I, by pressing with the foot on the bar N, the top of the roller I is turned toward the roller K, carrying the sheet under it, whereby it is bent into cylindrical form, turning one edge to form the lock.

The roller I is then drawn through its bearings next the crank, which forces the bent sheet off.

A locking-spring, O, is provided with a lug, at P, for projecting through a mortise into a groove in this roller, to hold it in place while working. This spring is withdrawn to permit the withdrawal of said roller.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the grooved rectangular former A, yielding bearing-levers C, springs *f*, and roller *h*, when arranged substantially as specified.

2. The combination of the ogee reciprocating former B, and roller-formers C, D, and E, when arranged substantially as specified.

3. The combination of the grooved roller I, roller K, lever-bearings L, foot-piece N, and spring-lever O, when arranged substantially as specified.

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Witnesses:

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