

(No Model.)

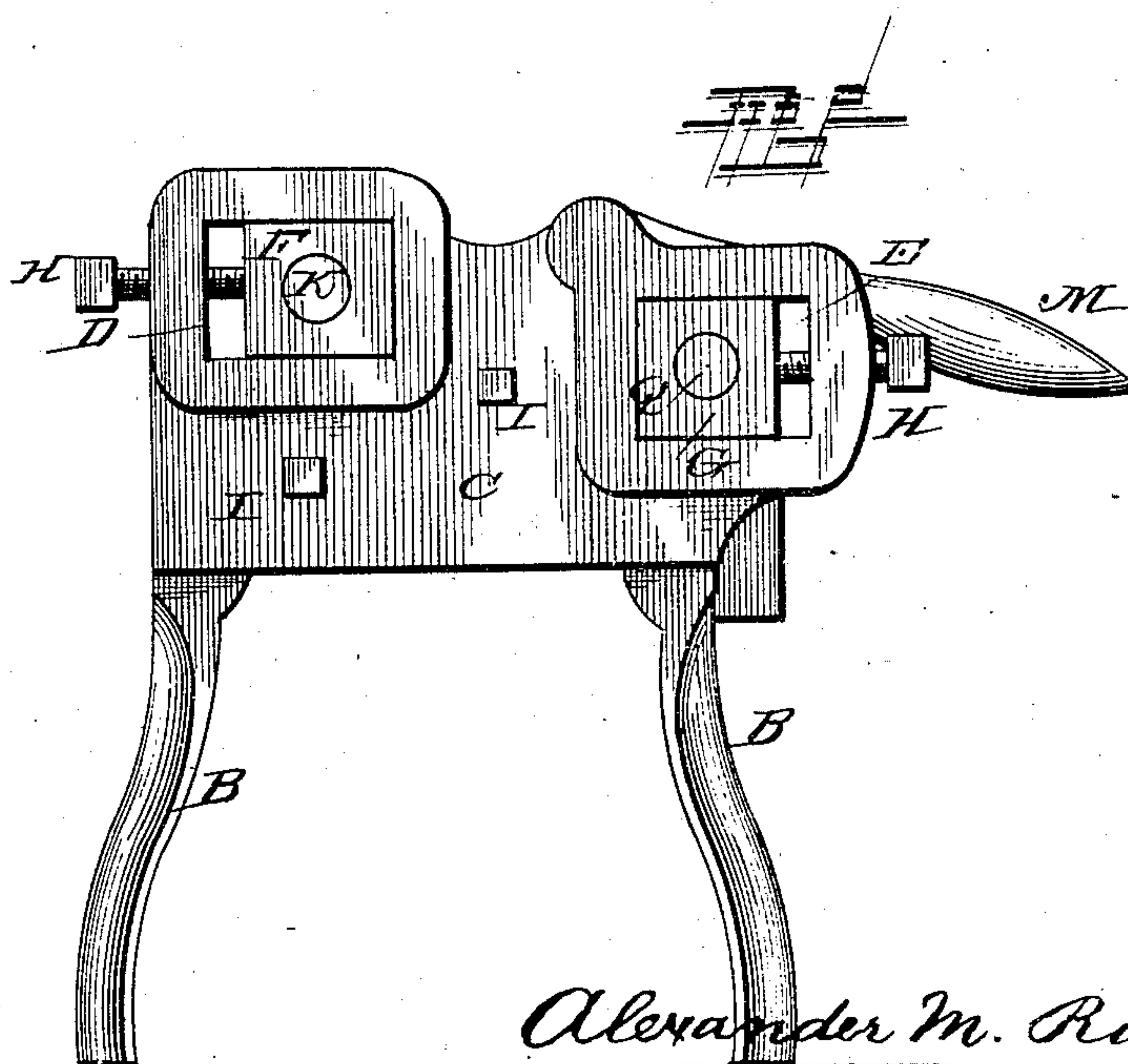
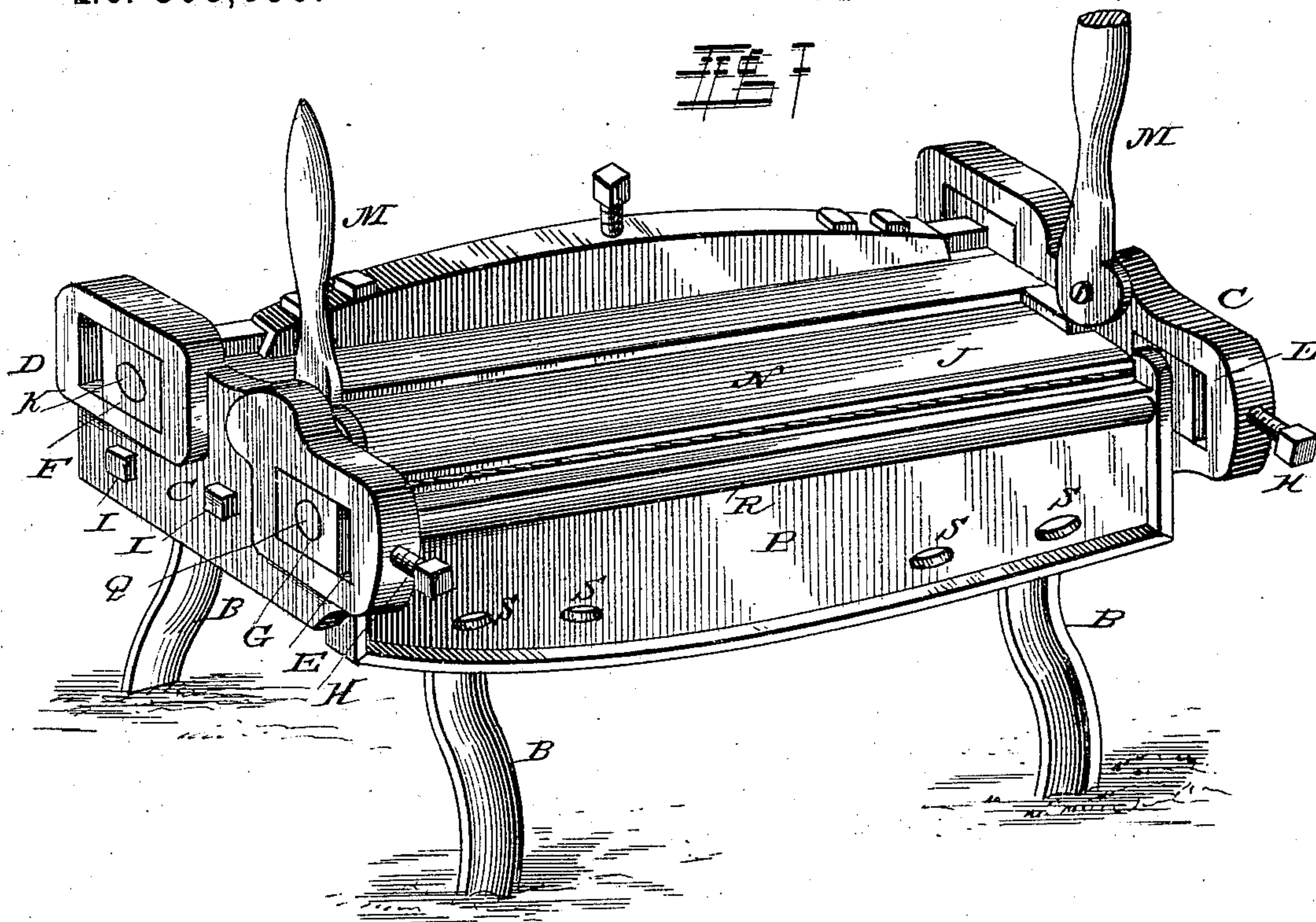
A. M. RUSLAND.

2 Sheets—Sheet 1.

MACHINE FOR SHAPING SHEET METAL.

No. 308,856.

Patented Dec. 2, 1884.



WITNESSES:

Ad. S. Duetrich
Wm. Baggett

Alexander M. Rusland
INVENTOR.

by: *Louis Baggett & Co.*
ATTORNEYS.

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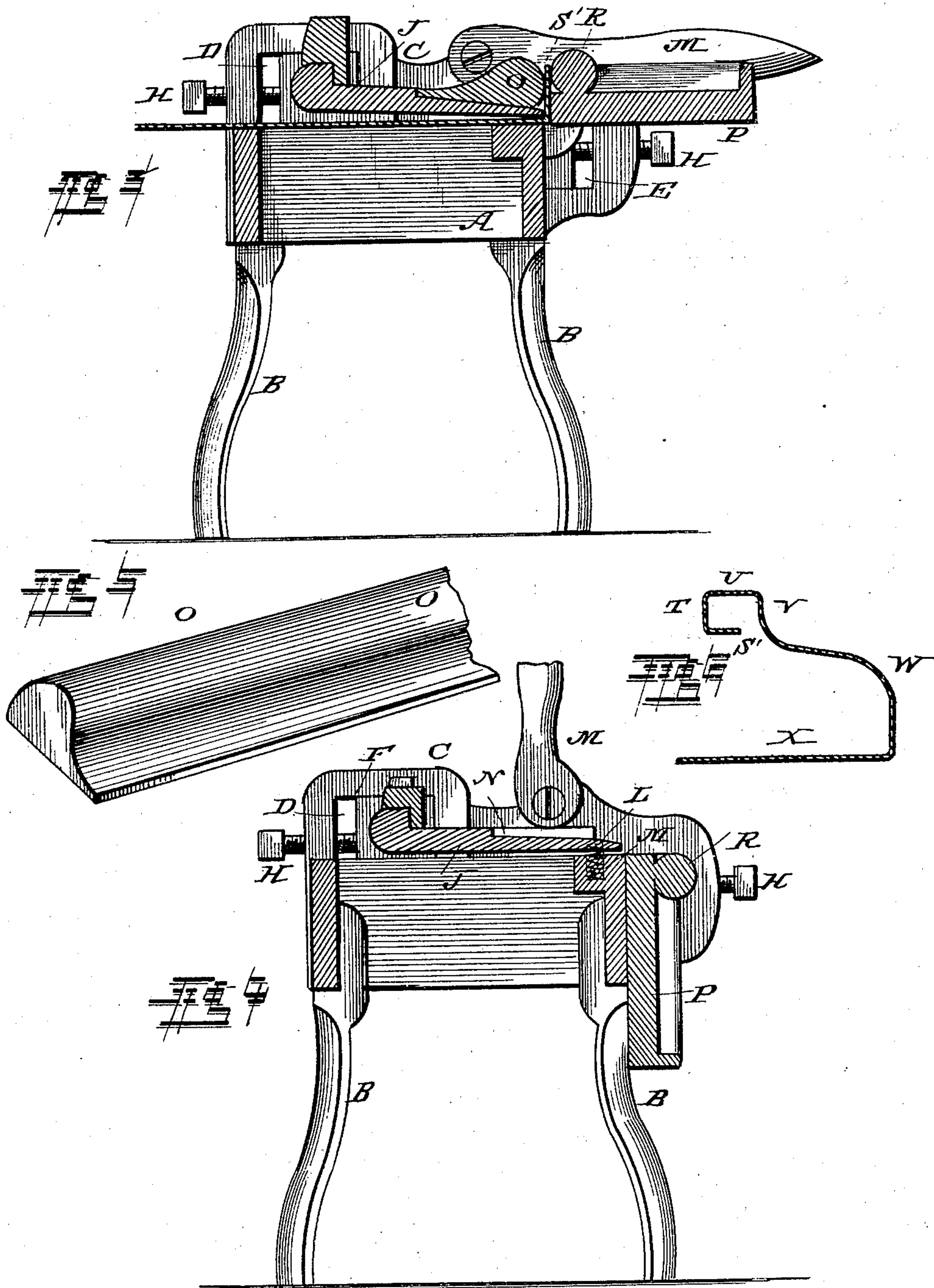
A. M. RUSLAND.

2 Sheets—Sheet 2.

MACHINE FOR SHAPING SHEET METAL.

No. 308,856.

Patented Dec. 2, 1884.



WITNESSES:

Ad. G. Dietrich
Wm. Bagger

Alexander M. Rusland,
INVENTOR.

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

ALEXANDER MILLER RUSLAND, OF LITTLE BRITAIN, ONTARIO, CANADA.

MACHINE FOR SHAPING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 308,856, dated December 2, 1884.

Application filed June 6, 1884. (No model.) Patented in Canada November 14, 1883, No. 18,073.

To all whom it may concern:

Be it known that I, ALEXANDER M. RUSLAND, a subject of the Queen of Great Britain, and a resident of Little Britain, in the county of Victoria, and Province of Ontario, Canada, have invented certain new and useful Improvements in Machines for Shaping Sheet Metal, (for which I have obtained Letters Patent in the Dominion of Canada, No. 18,073, dated November 14, 1883;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved machine for bending and forming sheet metal. Fig. 2 is an end view of the same. Fig. 3 is a transverse sectional view showing the lever-plate raised and in the act of operating upon a plate of sheet metal. Fig. 4 is a transverse sectional view taken near one of the ends of the machine and showing one of the springs for supporting the jaw-plate. Fig. 5 is a detail view of the templet or former, detached; and Fig. 6 is a cross-section of a molding or eaves-trough formed upon my improved machine.

The same letters refer to the same parts in all the figures.

A in the drawings designates a bench or table which forms the base of my improved machine. The said bench, which is supported upon legs B B, may be made of wood, but it is provided with ends or heads C C, which are to be made of cast-iron or other suitable material, and which are provided with slots D E, located, respectively, near the rear and front ends, and accommodating sliding journal-boxes F G, which are adjustable by means of set-screws H, working in suitable threaded perforations in the ends of heads. The latter may be attached to the main body of the bench by means of bolts I, or in any suitable manner.

J is a jaw-plate or clamping-plate, which is provided at its rear end or edge with trunnions K K, that are pivoted or mounted in the journal-boxes F, at the rear end of the frame.

The front corners of the latter are provided with seats L, for coiled springs M, that serve to support the front end or edge of the jaw-plate, and tend to force it in an upward direction. The jaw-plate may be forced downward against the tension of the springs by means of cam-levers M M, pivoted to the inner sides of the ends of the frame and adapted to bear against the upper side of the said jaw-plate, as will be clearly seen by reference to the drawings hereto annexed. The upper side of the jaw-plate J is provided at its front end or edge with a recess, N, in which may be seated a templet or former, O, (shown in detail in Fig. 5 of the drawings,) and the purpose of which will be hereinafter described. This former of course is removable and interchangeable with others of a different shape.

P is a lever-plate, which is hinged at the front edge of the bench by means of trunnions Q Q, mounted or journaled in the boxes G. This lever-plate normally hangs down in front of the machine or bench, but it may be raised to the position shown in Fig. 3 of the drawings, for the purpose of bending the sheet metal, as will be presently described. The inner or upper edge of the said lever-plate is provided with a bead, R. Its sides and lower edge may be flanged, as shown, and it is provided with hand-holes S S, by which it may be conveniently grasped for the purpose of raising it in operation.

The operation of this invention is as follows: The sheet of metal to be operated upon having been cut to the required width, it is inserted from the rear side of the machine between the bench and the jaw-plate, which latter is meanwhile released from the cam-lever, so that its front end shall be held in a raised position by the action of the springs hereinbefore mentioned. When the edge of the plate projects the desired distance in front of the front edge of the jaw-plate, the latter is depressed by means of the cam-levers, thus clamping the sheet-metal plate and holding it securely. The lever-plate is now raised to the position shown in Fig. 3 of the drawings, thus crimping or creasing the metal plate, or forming a flange, S', at right angles to the body thereof. The jaw-plate is now released, (the lever-plate being meanwhile dropped,) and

the metal plate fed forward a sufficient distance for the second turn, when the operation is repeated, forming the angle T. Once more the same operation is repeated, forming the angle U, after which, the lever-plate being held in a raised position, the plate is bent forward over the bead R upon the latter, thus forming the curve V. The curve W is next formed by bending the plate back over the templet or former O, which has now been placed in its appropriate recess, and the final angle, X, is then formed by means of the lever-plate in the manner already described. This description applies to the eaves-trough or molding shown in cross-section in Fig. 6 of the drawings; but it is obvious that many other shapes may be made by substituting templets or formers of a different shape or curvature, or by providing the lever-plate with a bead of a different shape, or by altering the order of procedure. The jaw-plate and lever-plate being adjustable, the machine may be adapted to sheet metal of various thicknesses, and the sharpness or acuteness of the angles bent may also be thereby regulated. The length of the sheets operated upon is of course only limited by the distance between the springs that support the jaw-plate.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a machine for bending and forming sheet metal, the combination, with a bench or frame having slotted ends, of journal-boxes mounted adjustably in the same, a jaw-plate or clamping-plate mounted pivotally in the said boxes, springs supporting the front end of the said jaw-plate, and cam-levers adapted to force it in a downward direction, substantially as and for the purpose set forth.

2. In a machine for bending and forming sheet metal, the combination, with a bench or frame having slotted ends, of journal-boxes

mounted adjustably in the same, and a beaded lever-plate mounted pivotally in the said boxes, substantially as and for the purpose set forth.

3. In a machine for bending and forming sheet metal, the combination of a bench or frame, an adjustable pivoted jaw-plate having its front end supported upon springs, cam-levers arranged to force the same in a downward direction, and an adjustable beaded lever-plate, substantially as and for the purpose set forth.

4. In a machine for bending and forming sheet metal, the herein-described pivoted jaw-plate having a recess in its upper side at its front end, in combination with removable and interchangeable templets or formers, substantially as and for the purpose herein set forth.

5. The herein-described machine for bending and forming sheet metal, comprising a bench, ends or heads having slots at their front and rear ends, journal-boxes seated in the said slots, set-screws for adjusting the said journal-boxes, a pivoted jaw-plate mounted in the rear journal-boxes and having a recess in its upper side at its front end adapted to receive a removable and interchangeable templet or former, springs seated in recesses at the front corners of the frame and supporting the front end of the jaw-plate, cam-levers pivoted to the inner sides of the ends of the frame, and adapted to force the jaw-plate downward, and a beaded lever-plate mounted pivotally in the front sliding journal-boxes, all constructed and arranged to operate substantially as and for the purposes shown and specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ALEXANDER MILLER RUSLAND.

Witnesses:

JOSEPH MAUNDER,
JOHN KELLEY.