

G. LUPTON.
Sheet-Metal Elbow-Formers.

No. 150,171.

Patented April 28, 1874.

Fig. 1.

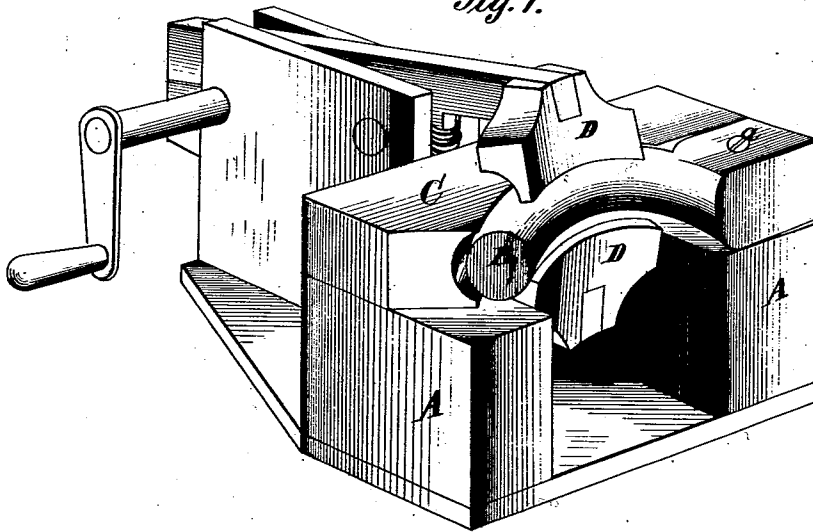


Fig. 2.

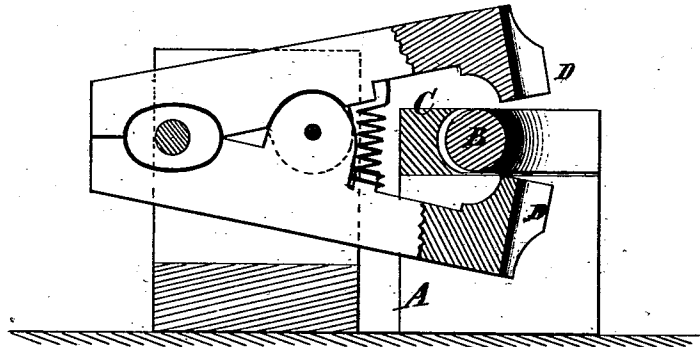


Fig. 3.

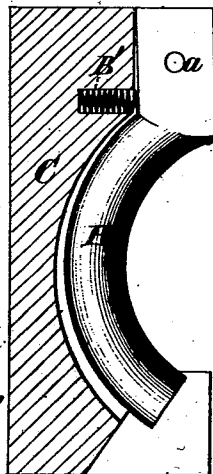


Fig. 4.



Witnesses.
A. Ruppert.
Edw. C. Co.

George Lupton.
Inventor.

UNITED STATES PATENT OFFICE.

GEORGE LUPTON, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN SHEET-METAL-ELBOW FORMERS.

Specification forming part of Letters Patent No. **150,171**, dated April 28, 1874; application filed February 16, 1874.

CASE B.

To all whom it may concern:

Be it known that I, GEORGE LUPTON, of Indianapolis, in the county of Marion and State of Indiana, have invented an Elbow-Former, of which the following is a specification:

The object of my invention is to form a smooth, curved pipe-elbow from a single sheet of metal which has previously been made into a curved trough.

Figure 1 is a perspective view of my improved machine for forming pipe-elbows. Fig. 2 is a vertical transverse section thereof. Fig. 3 is a horizontal sectional view of the fixed matrix and vibrating mandrel. Fig. 4 is a curved U-shaped blank ready to be bent into a pipe-elbow on the machine illustrated by the other figures.

The same letters of reference are used in all the figures in the designation of identical parts.

A represents the base or foundation of my machine, at the top of which is securely attached the table C, with a curved matrix corresponding exactly with the convex radius of the pipe-elbow that is to be formed. In this matrix the curved mandrel B rests, fitting closely when the curved trough E is placed upon the mandrel. The curved mandrel B may be made solid or hollow, and its diameter must exactly correspond with the inside diameter of the pipe-elbow that is to be made upon it, while its curve must correspond also

with the curve of the elbow. The mandrel is firmly pivoted at *a* to the top of base A in front of the matrix C, and in such a manner that it may have a slight vibration. A spring, B', concealed in a socket in the matrix C, holding it out and away from the matrix, as shown best in Fig. 3, until the action of the dies D force it, with the curved trough E, into the matrix, where they are firmly supported until the dies bring the edges of the trough together, thus forming a smooth, curved pipe-elbow. As soon as the dies D release their grasp upon the trough and mandrel, the concealed spring throws them away from the matrix, which facilitates the removal of the pipe-elbow from the mandrel. The dies D are curved to correspond with the inside radius of the curved pipe-elbow. They may be operated by levers and cam, as shown best in Fig. 2, or by any other equivalent mechanical device.

I claim as new—

1. The combination of the curved mandrel B and curved dies D, substantially as and for the purpose specified.
2. The combination of curved mandrel B with the supporting-matrix and curved dies D, as shown, and for the purposes described.

GEORGE LUPTON.

Witnesses:

ERASTUS T. BUSSELL,
WILLIAM J. McCULLOUGH.