C. C. Hare,

Bending Sheet Metal,

No. 102,001. Patented Apr. 19, 1870.

Fig: 1

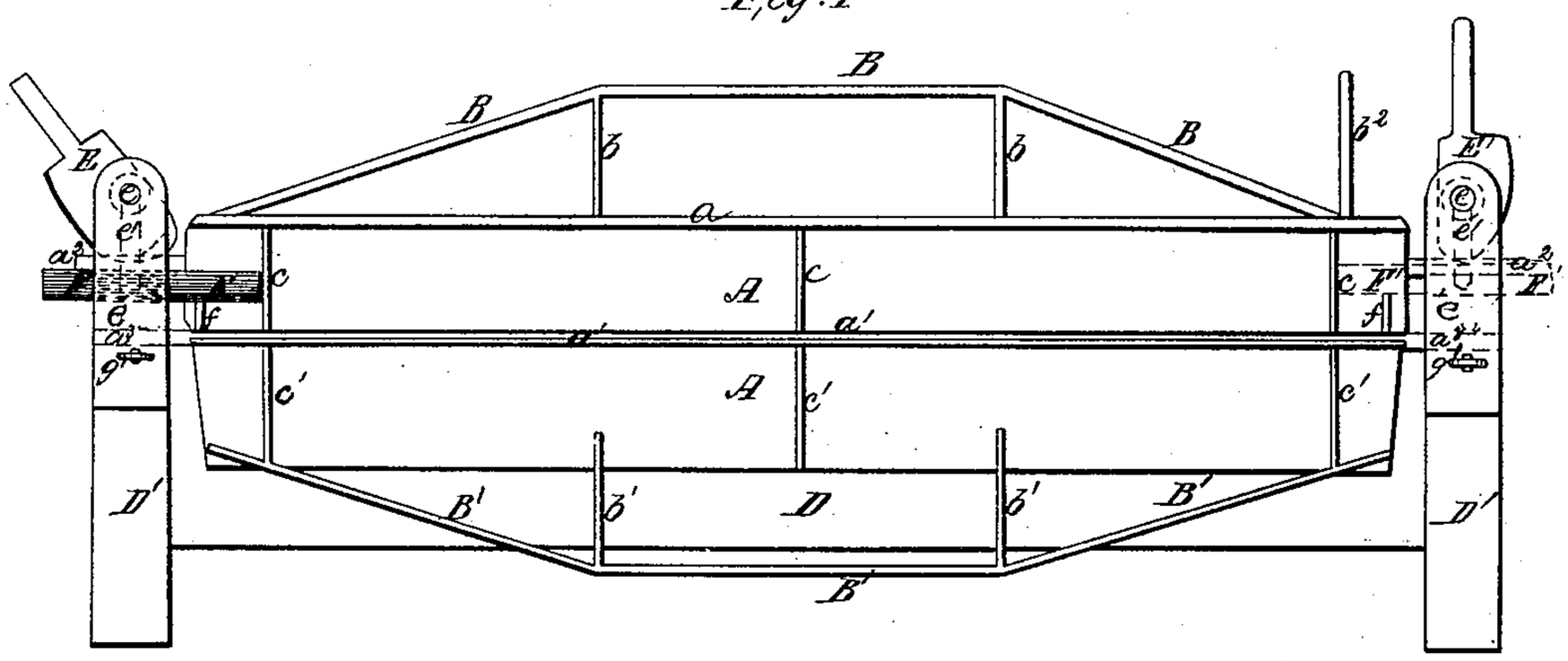


Fig: 2.

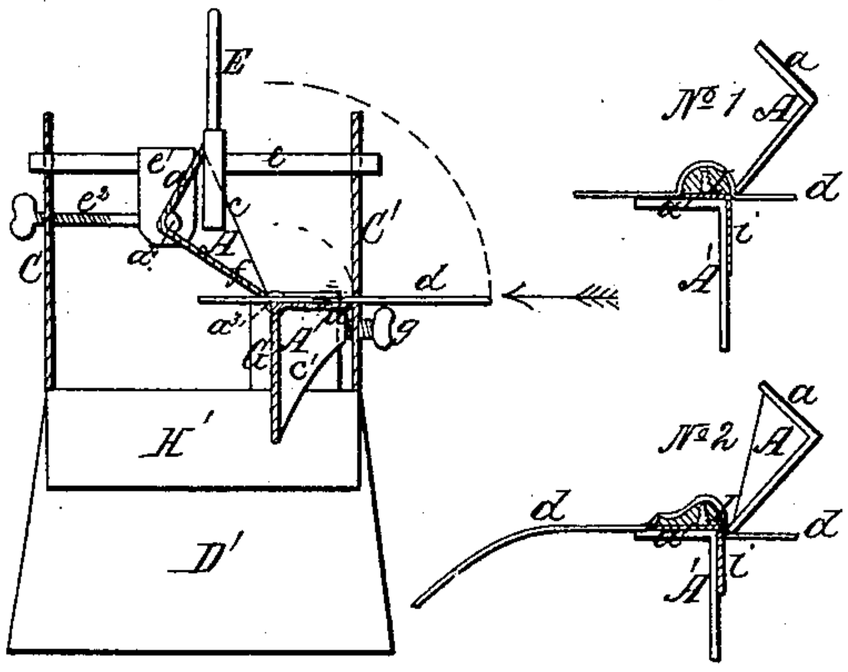
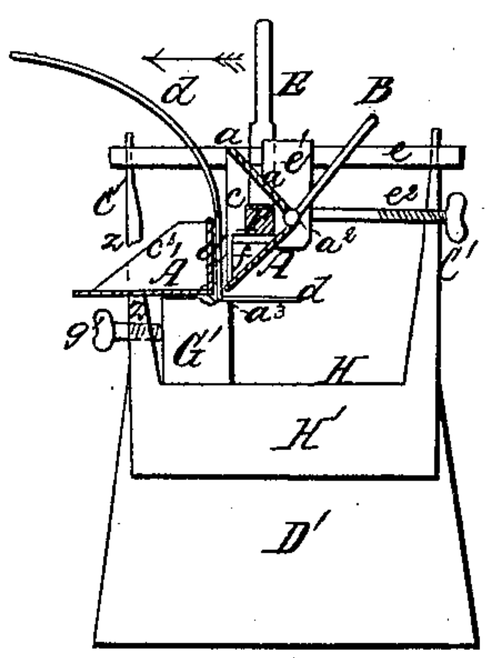


Fig: 4.

Fig: 3.



Witnesses:

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C. C. HARE, OF KANSAS CITY, MISSOURI.

Letters Patent No. 102,001, *dated April* 19, 1870; *antedated April* 8, 1870.

IMPROVEMENT IN SHEET-METAL-BENDING MACHINE.

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, C. C. HARE, of Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Sheet-metal-bending Machine; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in the construction of a machine with which sheet metal can be bent into the various forms required for cornices of buildings and other similar work or structures, and doing this with much more accuracy, regularity, quickness, and facility than it can be done by hand, or by any other machines heretofore known or used.

To enable others skilled in the art to make and use my invention, I will proceed to describe the construction and operation of the same.

In the drawings—

Figure 1 represents an elevation of the machine.

Figure 2, an end elevation, partly in section.

Figure 3, a transverse section, and in part an elevation.

Figure 4, details of the machine.

No. 1, of fig. 4, shows the method of bending the sheet over on the curved "former;"

No. 2, shows another form of mold; and

No. 3, the plan of the ends of the machine, showing the journals and bearings of the angle flanches, and the adjusting-screws.

A is the upper-flanched matrix, and

A′, the lower or bed-flanched matrix.

B B′, the brace-rods or hog-chains for trussing the flanched matrices.

C C, the side pieces at the ends supporting the shaft E and the bearing G, and through which the set-screws e^2 and *g* are worked.

D D, the wooden frame, in which the machine is supported.

E E′, the cam-levers.

F F′, the wedge-blocks, to keep down the flanched matrix A when operating.

G G′, the journal-boxes, supporting the journals of matrix A.

H H, the metal-bearing and frame at the ends.

I, the wooden part of the "mold-former," on which the bended metal sheet *i* is fastened.

a′ a′, the flanches of the matrices, at right angles to the webs A A′.

a^2 a^3, the journals of the matrices.

b b, struts or braces to support the hog-chains.

B B′ b^2, the handle.

c c′, the brackets, to stiffen the flanches of the matrices.

d, the sheet metal to be operated on.

e, shaft or rod, to support the flanched matrix A.

e^1, the pendent bearing for matrix A.

e^2, set-screw for adjusting the same.

f f are brackets on the matrix A, to support the wedges F F′.

g g′, the set-screw for adjusting the bed-matrix A.

The operation of the described machine is as follows:

The sheet of metal, represented by the red line *d* in fig. 2, is inserted between the matrices A and A′.

The matrix A′, by the hog-chain B′ as a handle, is then raised to the position shown in fig. 3, and bends the sheet into the form shown by the red line *d*.

Then, if it be desired to bend the sheet into another and a curved form, the "mold-former" is placed upon the flanch of matrix A′, with its metal plate between the matrices, and then the sheet is bent down over the "curve-former" I, by hand.

Formers of any other desired shape may be substituted for the former I, to form such shapes of molding as may be desired.

By the peculiar construction and arrangement of these devices, a small amount of force, applied by hand, becomes very efficient.

The matrix A is held firmly upon the sheet metal by the cam-levers E E′, formed as shown in fig. 1, and which operate on the blocks F and F′, resting upon the metal frame H H and brackets *f f*.

It is raised and lowered by means of lever handle b^2.

The matrices A and A′ are hung and arranged in an adjustable manner, so that both square and circular-formed moldings may be formed of any sizes that may be desired.

This is accomplished thus:

The journal-boxes G G′ slide on the bottom of the frame H and H′, and, by means of set-screws *g* and *g′*, may be moved back and forth at will.

The matrix A is hung on the rods *e e* by the bearings e^1 e^1, which are moved back and forth by means of set-screws e^2 e^2.

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

1. The pendent bearings e^1 e^1, set-screws e^2 e^2, side pieces C C and C′ C′, bars *e e*, and matrix A, when constructed and arranged as described.

2. The described mold-former I, with the matrices A and A′, and their adjustable bearings, respectively, and their other parts with the cam-levers E E′, and the metal bearings H H, when combined and arranged as described.

3. The described matrices A and A′, with their respective journals, hog-chains, struts, and brackets, the cam-levers E and E′, with the pendent bearings e^1 e^1, set-screws e^2 e^2, side pieces C C and C′ C′, and bars *e e*, when constructed and arranged as described.

C. C. HARE.

Witnesses:

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