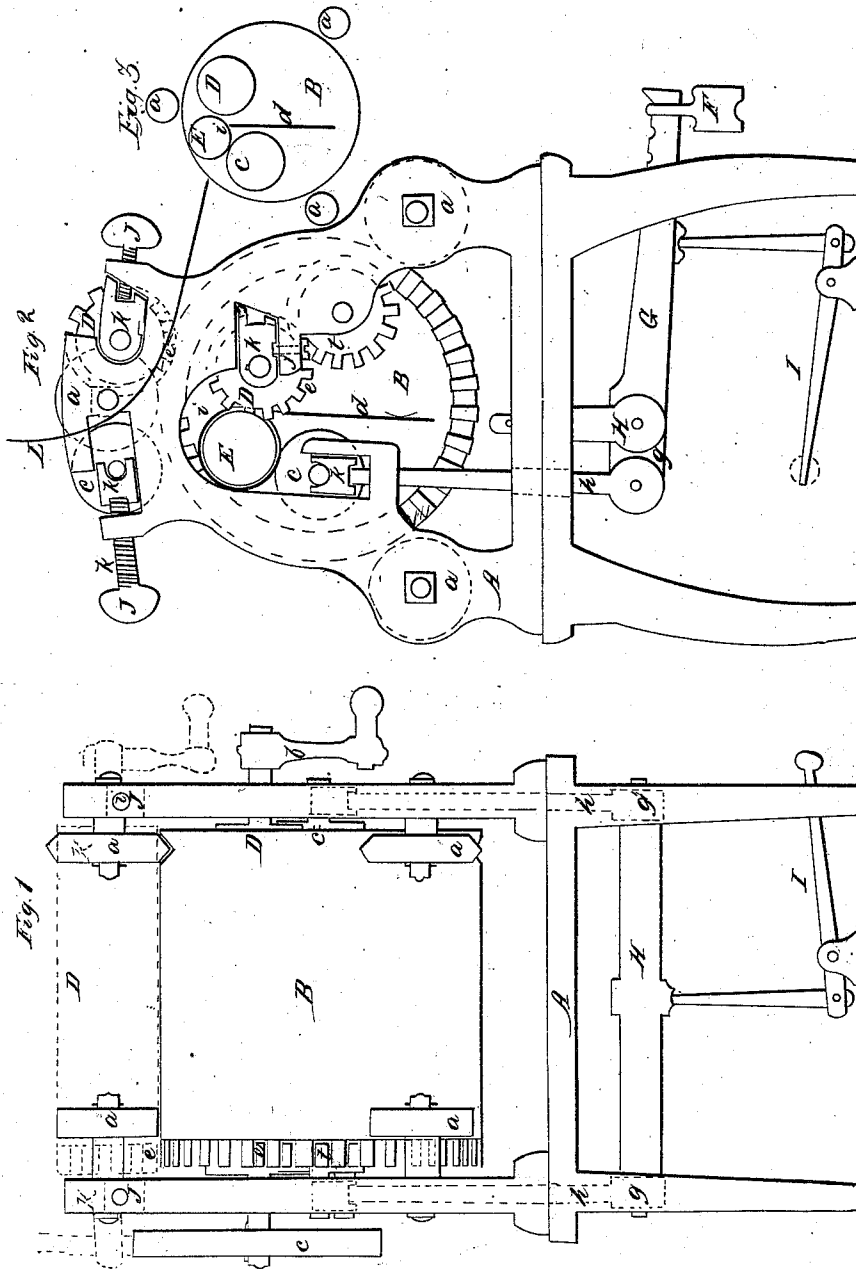


W. Webster,

Bending Sheet-Metal.

N^o 10,713.

Patented Mar. 28, 1854.



UNITED STATES PATENT OFFICE.

WILLIAM WEBSTER, OF MORRISANIA, NEW YORK.

IMPROVEMENT IN MACHINES FOR BENDING SHEET METAL.

Specification forming part of Letters Patent No. 10,713, dated March 28, 1854.

To all whom it may concern:

Be it known that I, WM. WEBSTER, of Morrisania, in the county of Westchester and State of New York, have invented a new and useful Machine for Rolling up or Making Sheet-Metal Tubing, &c.; and I do hereby declare that the following is a clear and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front view of the machine. Figs. 2 and 3 are end views of a hollow cylinder, two rollers, and mandrel.

The same letters indicate like parts in all the figures.

The nature of my invention consists in the construction and operation of a non-axled cylinder, with one or more shafts or rollers passing through it, (said cylinder resting and working on friction-rollers,) by which I am enabled more accurately to form sheet-metal tubes upon a mandrel, said mandrel and the metal that is to be bent receiving a greater amount of friction in consequence of the cylinder being curved to the mandrel. The inside rollers may be used on the outside of the cylinder for the purpose of making large tubes.

The following is a full description of the machine and mandrel.

A is the frame.

B is a hollow and non-axled cylinder having cogs on the end, and resting and revolving on friction-rollers *a a*.

C and D are two rollers working in boxes and passing through the cylinder. The roller D may have a crank, *b*, or pulley *c* attached. The boxes in which the axles of C and D work are secured by set-screws or their equivalent.

E is a mandrel, which is covered with metal, with the edge left so that the sheet *d* can be pressed under it a little.

e and *f* are two cog-wheels combining the roller and cylinder.

F is the weight bearing down the lever G, which is attached to the cross-bar H. (Shown in Fig. 1.) H in Fig. 2 represents the fulcrum of lever G, which works in the two rods *h h* at *g g*, Fig. 1, and *g*, Fig. 2.

I is a treadle, which raises and lowers the roller *e*.

J J are set-screws, which secure the boxes K K K, as shown in Fig. 2. The groove or cut on the outside of the cylinder, (may be round instead of a sharp cut,) into which some of the friction-rollers work, is also used for the reception of wire to be rolled in edging metal.

The following is the operation of the machine and mandrel: When motion is given to the roller D and cylinder, the sheet is drawn in between the roller D and mandrel, then between the cylinder and mandrel, which will cause the sheet to be smoothly formed to the mandrel, as shown in Figs. 2 and 3. The mandrel is extricated by bearing the foot upon the treadle, which raises the weight and lowers the roller C, which is required to be but a very little, as the mandrel is drawn out of the cylinder lengthwise. The tube is then slipped off and another sheet pressed into the opening *i*. The mandrel is again replaced, the foot taken off the treadle, and the roller C will again be brought against the mandrel, &c.

In making large tubing I propose removing the rollers C and D from the inside of the cylinder and use them on the outside, in which case the top friction-rollers, *a a*, must be taken off. The boxes of the roller D (the cog-wheel *e* working the cylinder) are made beveling, so that by turning back the screws J J the boxes in which the roller works can be adjusted and the tube slipped off. The size of tubes are varied by the roller C being brought against the sheet L by turning up the screws K K in Fig. 1, and as shown by one screw K in Fig. 2.

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

The non-axled cylinder as arranged in relation to the rollers and mandrel, whereby I am enabled readily to adapt it to rolling and bending sheet metal, as described.

WM. WEBSTER.

Witnesses:

JOHN JOHNSON,
JOHN COX.