

W. A. BUTLER.

Devices for Forming Water-Traps.

No. 144,057.

Patented Oct. 28, 1873.

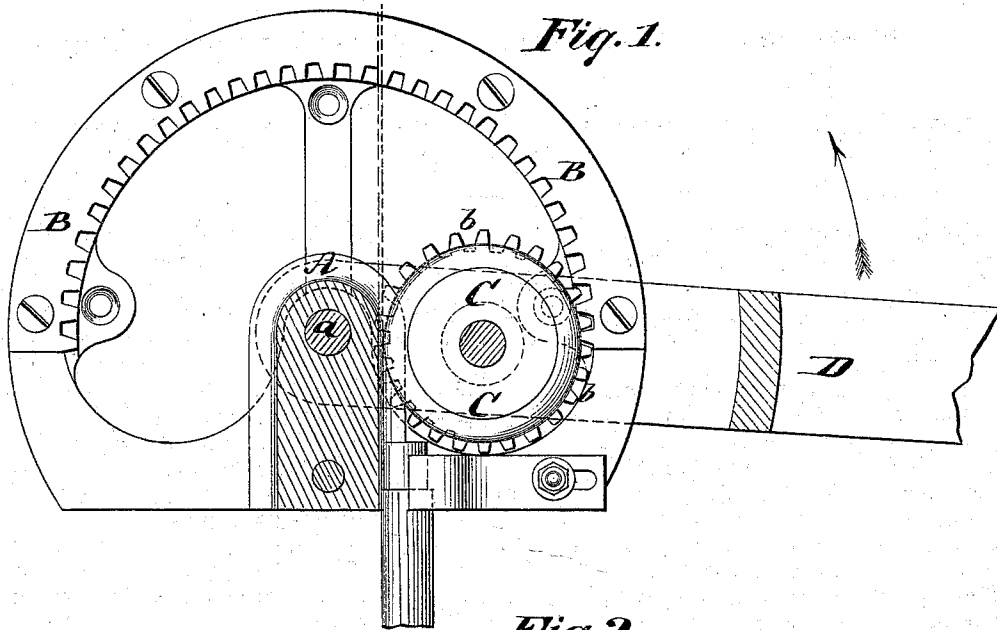


Fig. 2.

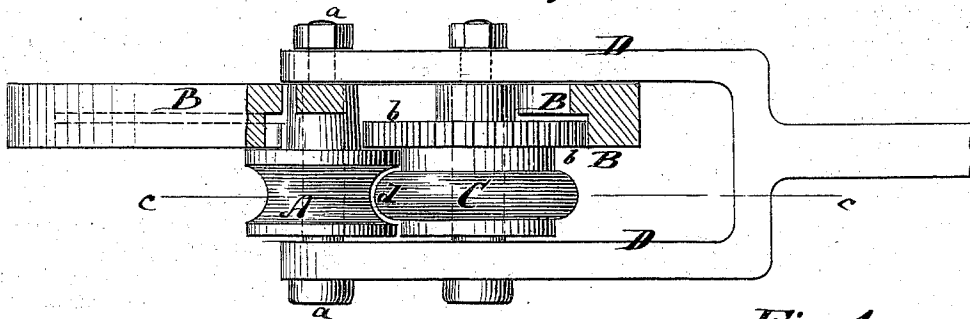
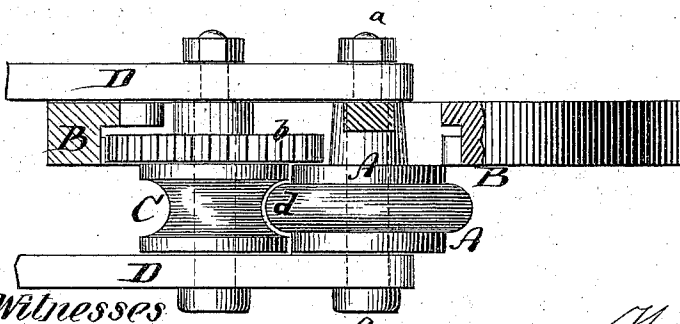
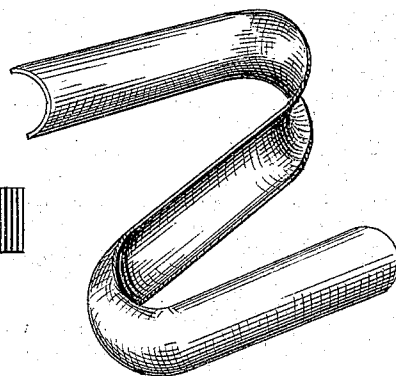


Fig. 3.



Witnesses
John Becker
Fred Harnes

Fig. 4.



Wm. A. Butler
by his Attorneys
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UNITED STATES PATENT OFFICE.

WILLIAM A. BUTLER, OF NEW YORK, N. Y.

IMPROVEMENT IN DEVICES FOR FORMING WATER-TRAPS.

Specification forming part of Letters Patent No. **144,057**, dated October 28, 1873; application filed October 7, 1873.

To all whom it may concern:

Be it known that I, WILLIAM A. BUTLER, of the city, county, and State of New York, have invented an Improved Machine for Forming Water-Traps, &c., of which the following is a specification:

Figure 1 is a longitudinal vertical section of my improved machine for forming water-traps, the line *c c*, Fig. 2, indicating the plane of section. Fig. 2 is a top view, partly in section, of the same. Fig. 3 is a top view, partly in section, of a modification of the same; and Fig. 4, a perspective view of the half-trap formed on my new machine.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a new machine for forming water-traps or S-shaped pipes, which, in many respects, is similar to a machine for the same purpose for which I applied for a patent a few weeks previous to making this application, the present invention having for its object to form, by means of a traveling roller and around a stationary block, a plate or semi-tubular piece of metal into a half water-trap, so that when the two halves have been made on the machine, they may be soldered together, or otherwise united into a complete trap.

In the drawing, Fig. 4 represents the half-trap as I intend to form the same on my machine, it being semicircular at any part of its cross-section, and of equal thickness throughout, and so bent that, when two pieces like the one shown in Fig. 4 are placed together and united by soldering or otherwise, they will constitute and form a complete water-trap.

The machine consists, like the machine first invented by me for substantially the same purpose, of a stationary semicircular block, A, concentric with a surrounding stationary gearing, B, and of a roller, C, which is hung in a fork or lever, D, whose pivot, *a*, is in line with the axis of the block A. The roller C carries, or is connected with, a toothed wheel, *b*, which meshes into the gearing B, as shown.

The difference between this invention and my former machine is only in the relative outlines of the block A and roller C, which in the former case were such that a circular opening was formed between them, while in the present case they are such that a semi-annular space, *d*, is formed between them, as shown in Figs. 2 and 3—that is to say, either the block A is concave at its edge and the roller C convex, as in Fig. 2, or else the block A is convex and the roller concave, as in Fig. 3, the effect being substantially alike in either case.

The lead or other metal to be bent into shape is first formed into straight pieces of semi-annular cross-section, which corresponds with the space *d* between A and C. The end of such half-tube is inserted between A and C, while the lever D is in the position shown in Fig. 1, and the lever then swung over in the direction of the arrow, so as to bend the half-tube around the block A into semicircular form, the two ends of the same piece of half-tubing being, by consecutive operations, bent in opposite directions to form the S-shaped half-trap shown in Fig. 4.

An advantage of this mode of forming the trap over that of hammering the half-traps out of sheet-lead is, that it may be made of uniform thickness throughout, besides being made in one-twentieth or less of the time.

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

The machine for bending semi-tubes into shape for water-traps, &c., and consisting of the semicircular block A, toothed roller C, stationary gearing B, and fork or lever D, the edges of the block A and roller C being of such form that a semi-annular space, *d*, is formed between them, all operating substantially as described.

WM. A. BUTLER.

Witnesses:

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