T. F. STEVENSON.

MACHINE FOR MAKING LEAD TRAPS AND BENDS.

No. 182,611. Patented Sept. 26, 1876.

Fig. 1.

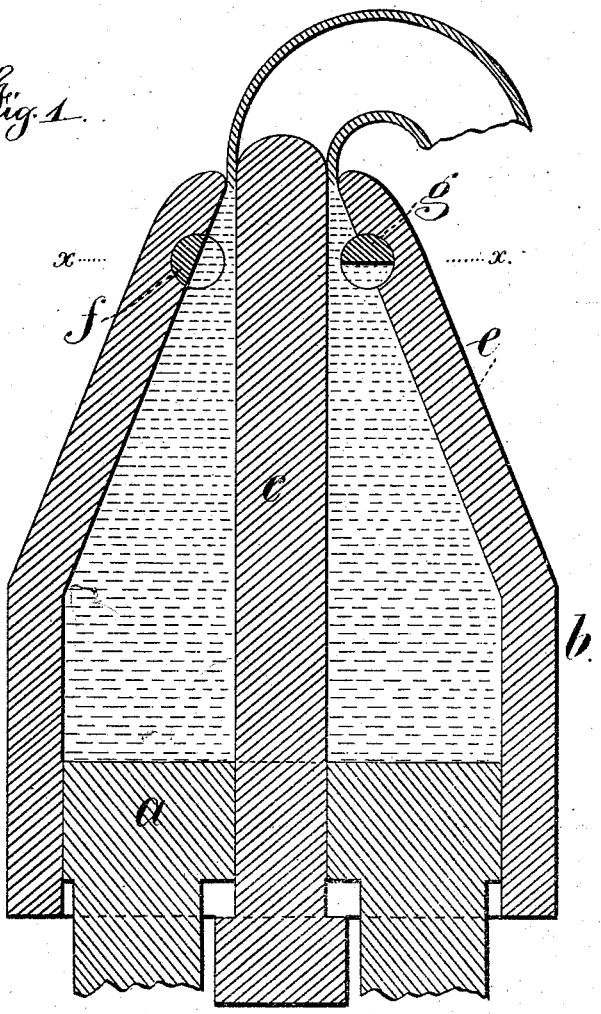
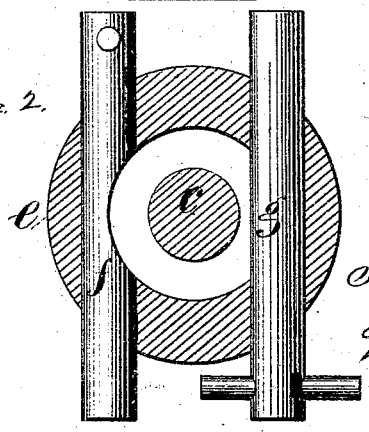


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

THOMAS F. STEVENSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING LEAD TRAPS AND BENDS.

Specification forming part of Letters Patent No. **182,611**, dated September 26, 1876; application filed May 22, 1876.

To all whom it may concern:

Be it known that I, THOMAS F. STEVENSON, of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Means for Making Lead Traps and Bends, of which the following is a specification:

Means have heretofore been devised for making lead traps and bends by hydraulic pressure, so that the lead issues with greater speed on one side than the other, and bends the pipe as it issues into the curved or **S** form. A device having this object in view is represented in Letters Patent No. 175,387, granted to me; and in Letters Patent No. 139,946 a die is shown with a plate that is to be positioned laterally to influence the discharge of the pipe, and cause it to assume a curved form.

My present invention consists in the combination, with the hydraulic pipe-press, of two movable pressure-receivers that are brought into action to prevent the pipe being made as rapidly at one side of the mandrel as at the other, by receiving the pressure of the lead in such a manner as to lessen the pressure at that side of the pipe, and hence cause the pipe to assume a curved form as it issues, in consequence of issuing faster at one side of the die than at the other.

In the drawing, Figure 1 is a vertical section of my improved press, and Fig. 2 is a horizontal section at the line *x x*.

The plunger *a*, within the cylinder *b*, and the mandrel *c*, are of ordinary construction, and the die *e* tapers from the inner surface of the cylinder to the annular opening through which the pipe issues.

The pressure-receivers *f* and *g* are made as cylindrical or slightly-tapering plugs, running across the tapering die in a plane at right angles to the mandrel, and each plug, if it was of full size, would partially close the lead space at opposite sides of the mandrel. Each plug, however, is cut away to the contour of the interior tapering surface of the die, so that in the normal position such pressure-receivers exert no influence in the manufacture of the pipe, and the lead issues in the form of a straight pipe, as usual.

Each of these pressure-receivers is provided with a suitable lever-handle, or similar means, by which it is partially revolved or turned to bring the concave or recessed side into an angular position, and cause the plug to fill more or less of the space between the inside of the die and the mandrel, and thereby intercept the pressure and flow of lead to the pipe-making point, the result being that the flow at the other side not being intercepted, the pipe will be made faster at that side, and assume a curved form as it issues from the press. The outer surfaces of the die beyond the pipe-making point may be curved, so that the bend is made around such surfaces as a guide, as mentioned in my aforesaid patent.

The operator turns one of the pressure-relieving plugs, more or less, according to the curvature required in the bend, then turns that plug back to a normal position when the pipe is to be made straight, and then turns the other pressure-relieving plug to produce the reverse bend in the pipe, and in this way single or compound bends to form **S** or **P** traps, and the intervening portions of straight pipe, can be made as required.

The plugs may be segments of cylinders, attached near one end, and swinging at the other ends toward and from the mandrel, if so desired. The end of the mandrel should be hemispherical, or sufficiently rounded not to scratch the inside of the pipe, and the greatest diameter of the mandrel is at or near the pipe-making point.

I claim as my invention—

The combination, with the mandrel *c* and die *e* of a pipe-press, of two pressure-relieving plugs, *f* and *g*, at opposite sides of the mandrel, recessed to conform to the taper of the die, and provided with means for moving such plugs, substantially as and for the purposes set forth.

Signed by me this 11th day of May, A. D. 1876.

THOS. F. STEVENSON.

Witnesses:
GEO. T. PINCKNEY,
CHAS. H. SMITH.