

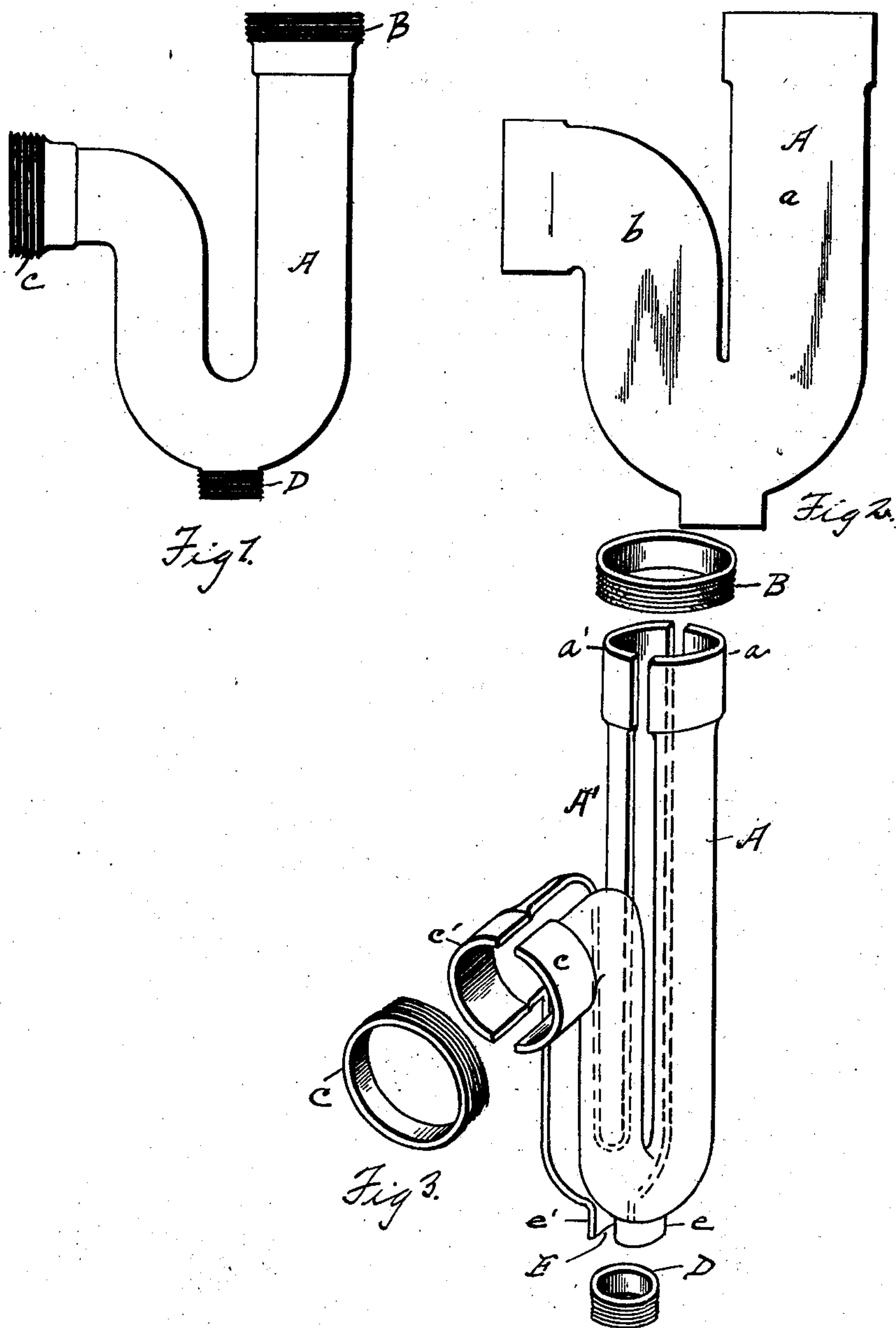
No. 702,125.

Patented June 10, 1902.

J. P. BUCKLEY.
MANUFACTURE OF BENT TUBING.

(Application filed Jan. 4, 1901.)

(No Model.)



WITNESSES

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JAMES P. BUCKLEY, OF DETROIT, MICHIGAN.

MANUFACTURE OF BENT TUBING.

SPECIFICATION forming part of Letters Patent No. 702,125, dated June 10, 1902.

Application filed January 4, 1901. Serial No. 42,094. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. BUCKLEY, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in the Manufacture of Bent Tubing; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to the manufacture of bent pipes or bent tubing adapted to be used as parts of the piping in water distribution or steam distribution; and it has for its object an improved construction of bent piping easily and cheaply made, requiring less material in construction, and less labor in construction than the cast pipes or tubes heretofore in common use for the same purpose.

The structure shown in the drawings, illustrative of this invention and which forms part of this application, is a trap; but the invention may be applied to any analogous bent pipe or bent tube.

In the drawings, Figure 1 is a side elevation of the completed trap. Fig. 2 shows the form of the blank from which one side of the trap is made. Fig. 3 shows the several parts of a completed trap as they appear before they are finally assembled and fastened together.

A indicates the blank, which is cut from thin sheet metal, such as thin sheet-steel, to a shape and size proper for the structure to be made from it. In length it corresponds with the length of the tube to be made, across each branch *a* or *b* it corresponds to about the length of the semicircumference of the tube to be made, and where there are bends it corresponds to the semicircumference in the tube around the bend as near as it may be. In the subsequent operation the blank is drawn some and eventually is trimmed, so that the blank need not be cut with accuracy, but only approximate accuracy.

The blank A is placed between a matrix-die and a punching-die and shaped to the form of a half of the bent tube which is to be constructed. If the tube is one that is not sym-

metrical, such as is the one shown in the drawings, two parts are made, a right and a left, each of which requires its own independent matrix-die and its own independent punching-die. The two parts A and A' are trimmed along those edges which are to meet, so that the edges are on radial lines or on a diameter of the completed structure. There are also formed binding-rings for the ends of the tube and a binding-ring or binding-rings for any mouth of the tube other than those at the ends. For example, a ring B is formed of a size to engage snugly over the assembled ends *a* and *a'* of the two halves A and A', and a similar ring C is formed to engage over the ends *c c'*. A ring of similar character D is arranged to engage over the opening E at the bottom of the trap over the neck parts *e* and *e'*. These rings may be plain or threaded. Preferably in the first instance they are plain and threaded after the subsequent operation. The parts of the bent tube having been constructed, brought by the proper workmanship to the desired shape, or put together and held together by forcing the rings B on the neck *a a'*, the ring C on the neck *c c'*, and the ring D on the neck *e e'*, these rings will hold the parts together, but not securely, and the joint is not yet either water, or air, or gas tight. The next process consists in brazing the joint running lengthwise the tube and brazing the rings to place. This brazing is done in any approved way. The most rapid and most desirable way used is what is known at the present time as the "dipping" process of brazing, in which the article to be brazed is dipped in a brazing fluid, the upper part of which is the flux and the lower part of which is the brazing compound, at a high temperature. The brazing process fills the seam and fills all the cavities between the rings and the neck with the brazing compound, and as soon as the article is removed and is cool it is a perfect closed bent tube, of which the seams are closed by brazing and of which the ends and any openings are held by hoops or rings.

If the brazing has been properly done, the entire surface of the article, inside and out, has been covered with a thin coating of the brazing compound, which effectually protects the metal from the corrosive action to which it would ordinarily be liable—such, for in-

stance, as the action of water on corroding iron or steel articles.

For purposes of ornamentation the article thus produced is preferably polished and
5 coated with a plating of nickel or some similar ornamental metal.,

What I claim is—

1. A bent tube made in two symmetrical parts joined together edge to edge, bound by
10 hoops at their ends and united along their long meeting edges by brazing, substantially as described.

2. A tube constructed of symmetrical parts

shaped to produce when assembled the complete tube, and having the ends bound by 15 rings, said tube having the various parts united together and the surface covered with brazing material by being dipped in the molten brazing material, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses. 20

JAMES P. BUCKLEY.

Witnesses:

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