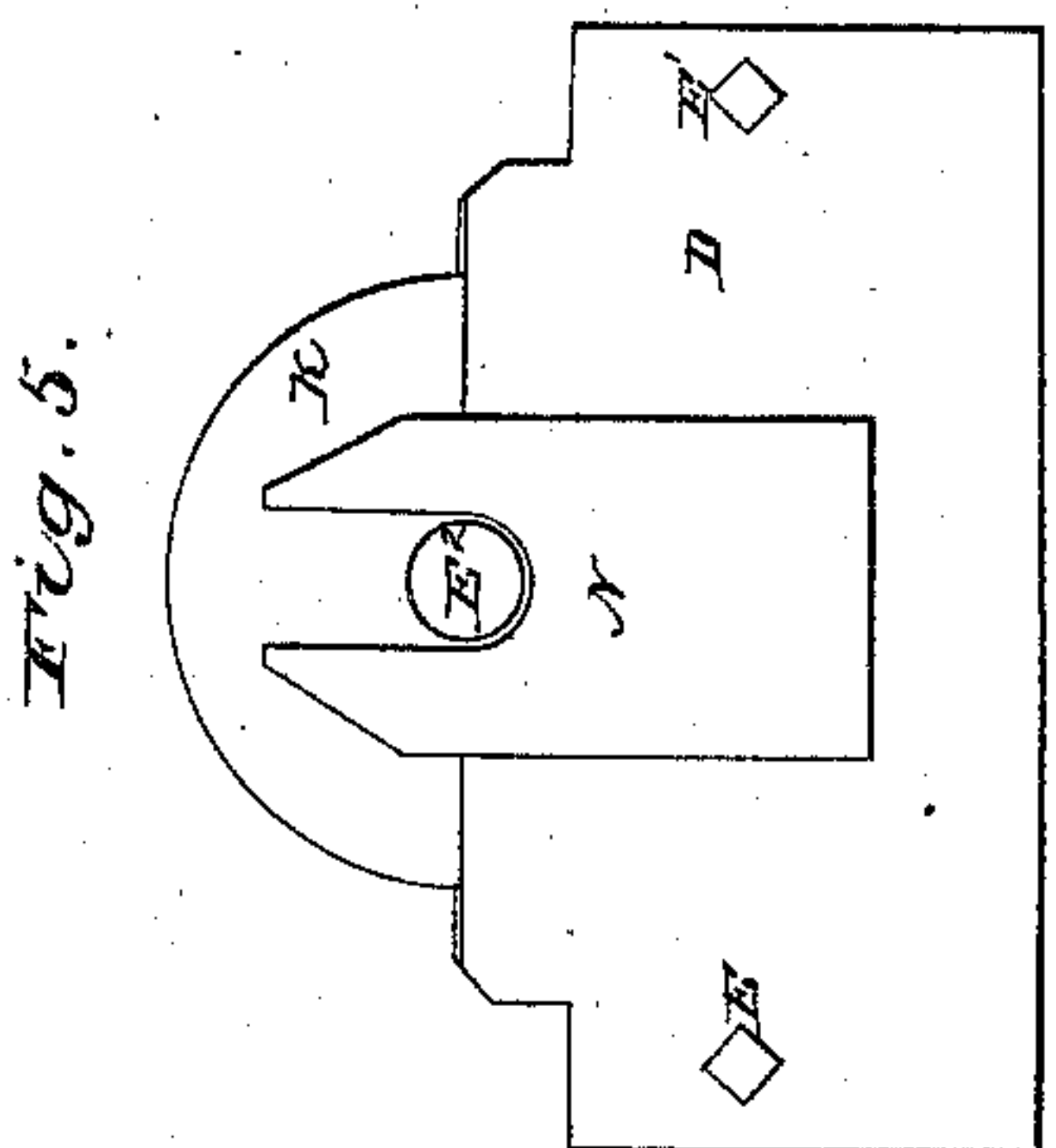
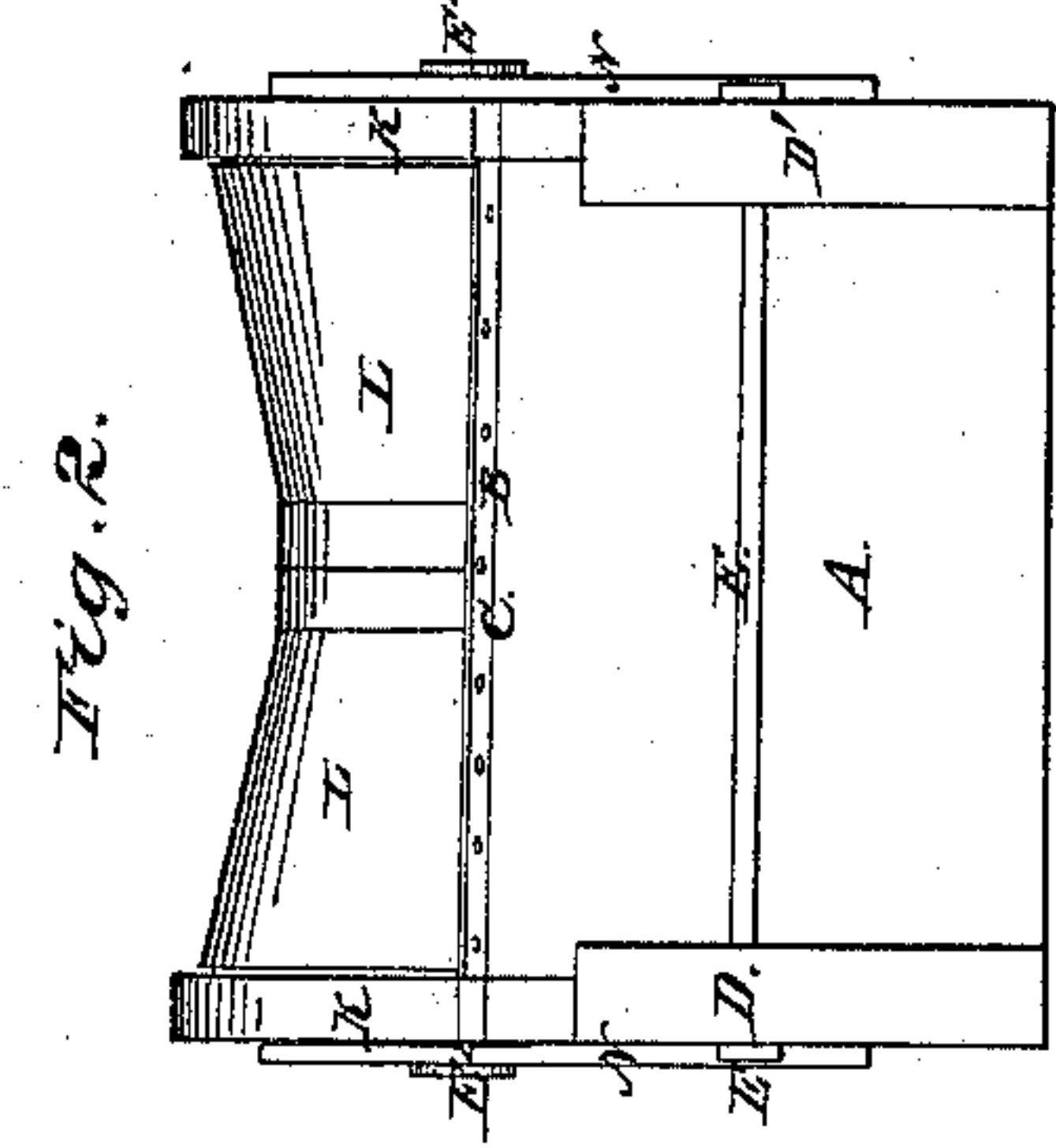
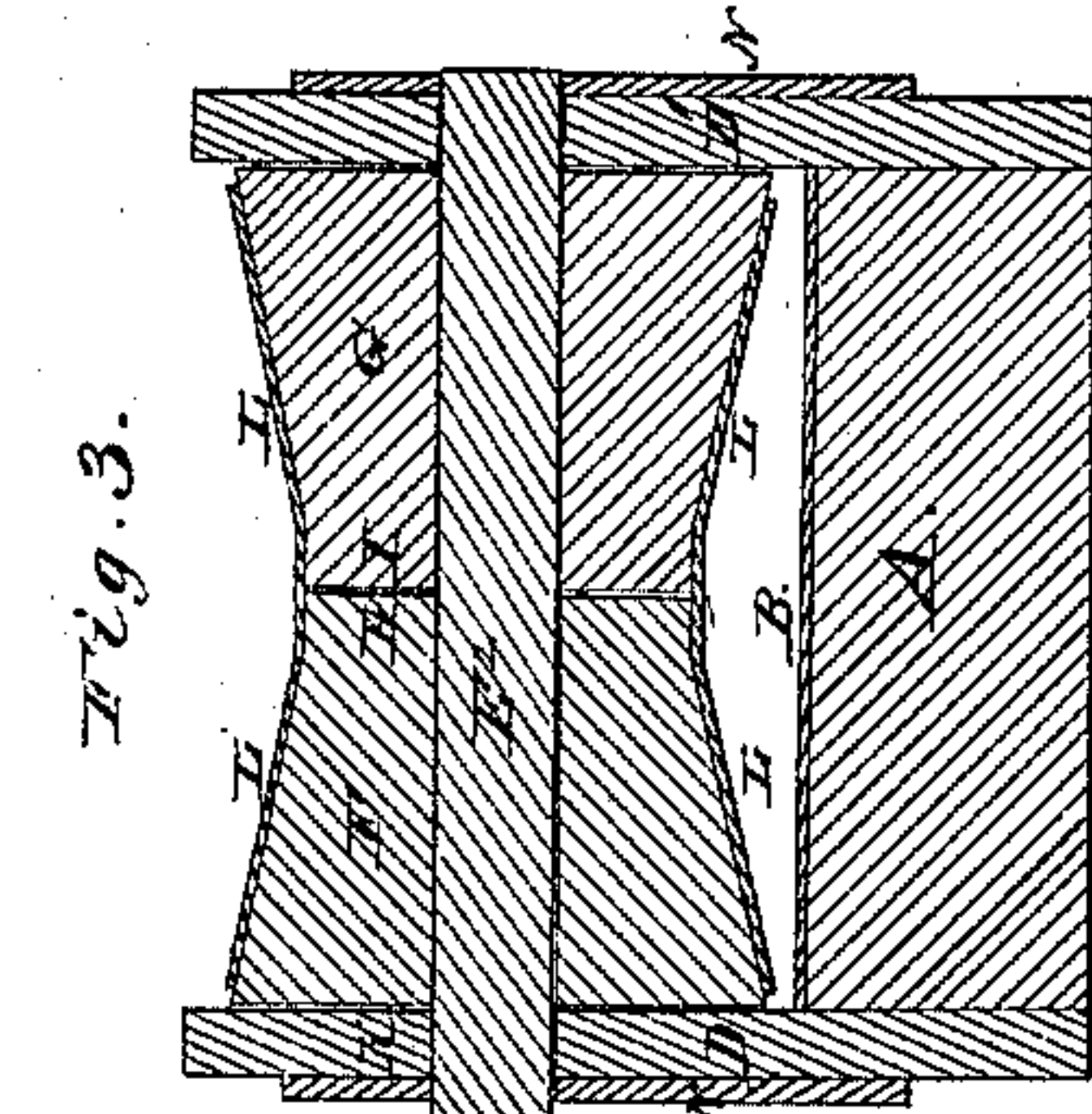
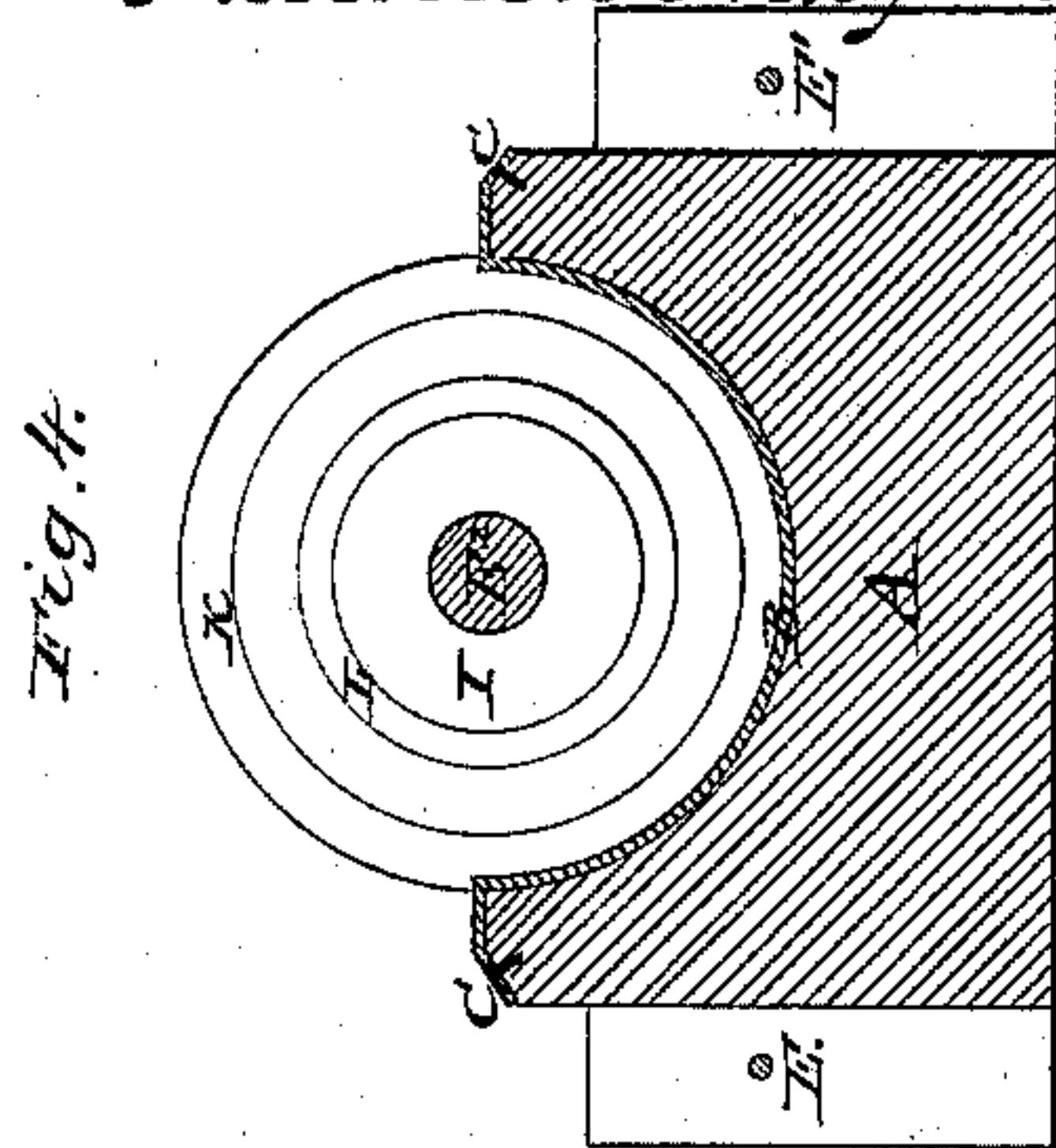
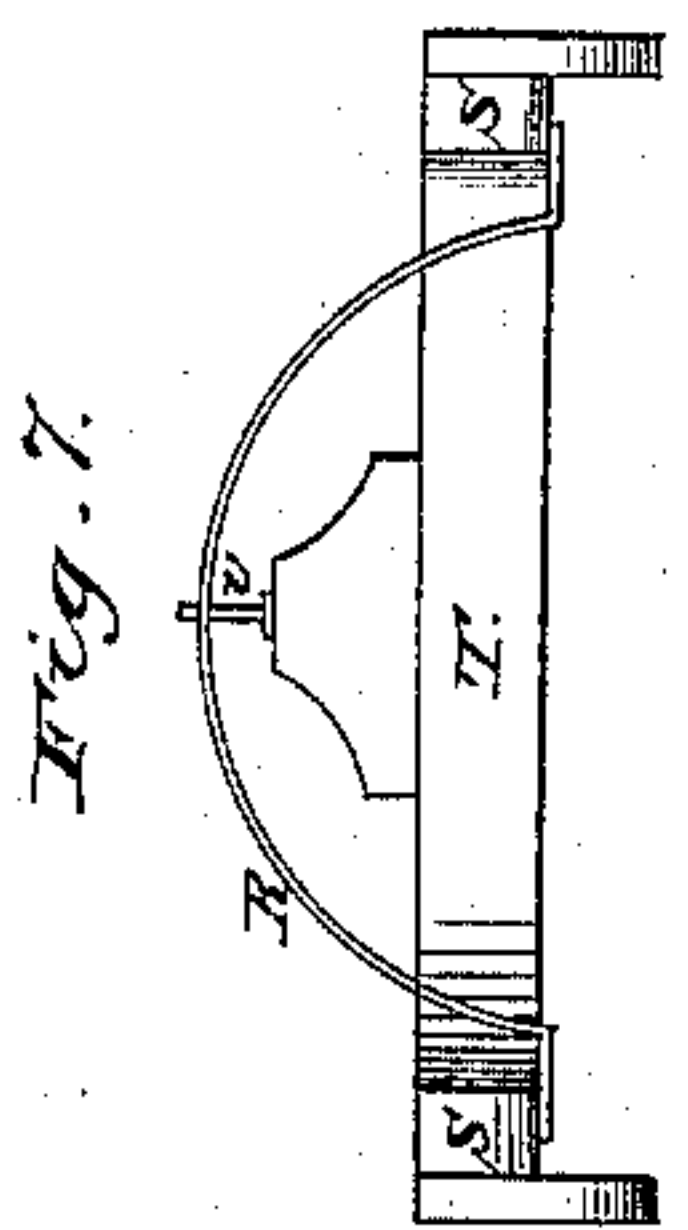
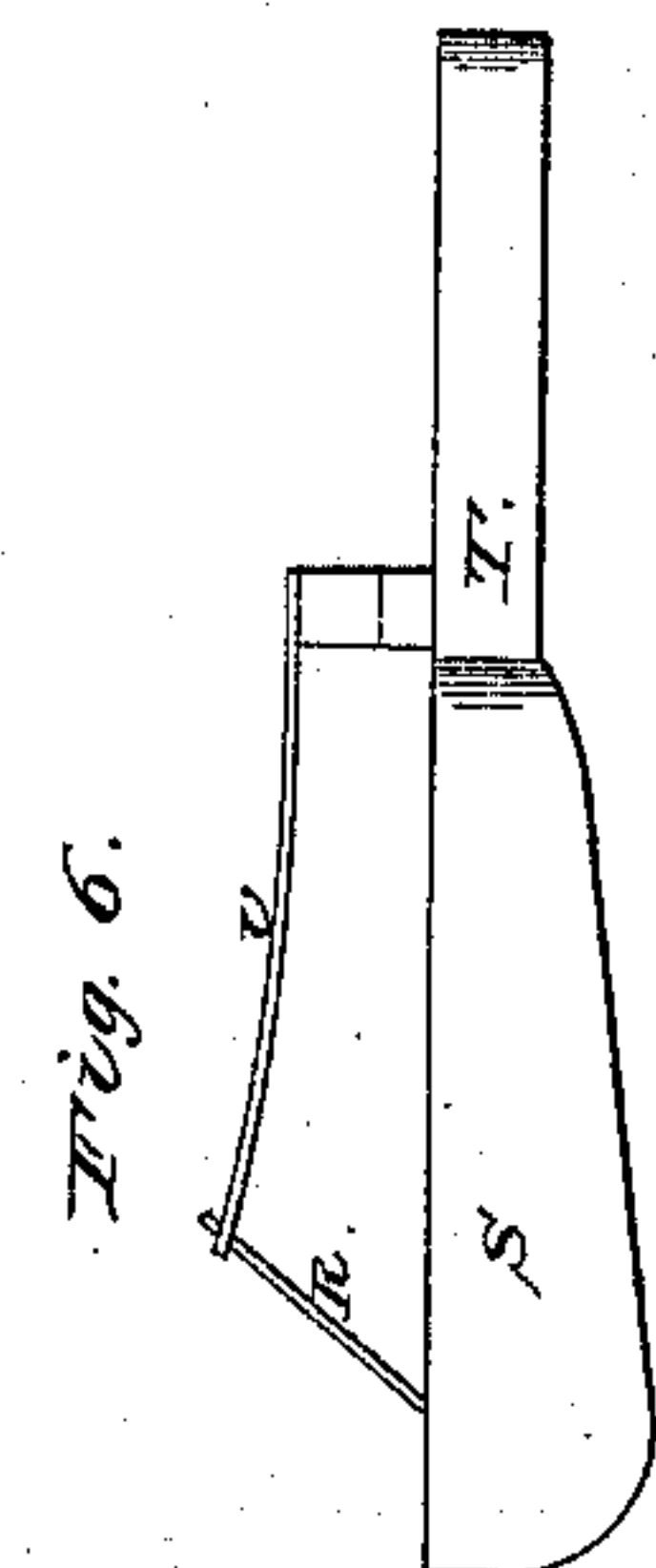
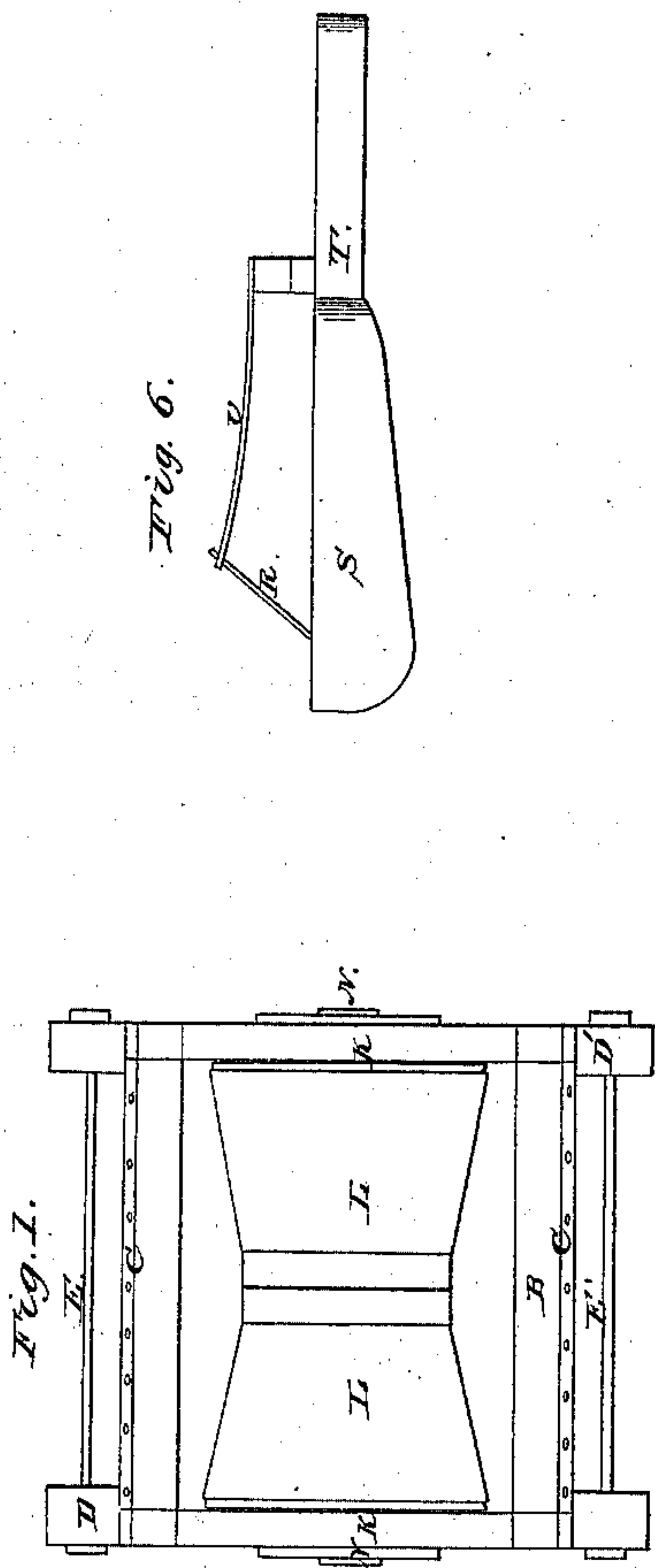


J. Putnam, Tile Machine.

N^o 10,911.

Patented May 16, 1854.



UNITED STATES PATENT OFFICE.

JOSEPH PUTNAM, OF SALEM, MASSACHUSETTS.

MOLDING CLAY-PIPE COUPLINGS.

Specification of Letters Patent No. 10,911, dated May 16, 1854.

To all whom it may concern:

Be it known that I, JOSEPH PUTNAM, of Salem, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Couplings for Water-Pipes made of Clay or any other Plastic Equivalent; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

On the seventeenth day of January, A. D. 1827, a patent was granted to me, by the Government of the United States, for a new and useful improvement in making pipes, tubes, and gutters, from clay or agillaceous earth, and on the thirtieth day of September, A. D. 1851, another patent was so granted to me for an improvement in the manufacture of clay pipes.

The main principles of making pipes, on which my present invention is founded, are set forth and illustrated in the specifications of such patents to which reference may be had—the nature of my present invention being especially applicable to the manufacture of couplings for such pipes.

In order that the couplings may be properly molded, so that they may not have theoretically injurious cracks or fissures in them while or after being baked and burned, I have adopted a means and process of accomplishing the same, which I shall now proceed to specify.

In Figure 1 of the said drawings, I have represented a top view of my improved coupling mold. Fig. 2 is a side view of it. Fig. 3 is a central, vertical, and longitudinal section, and Fig. 4 is a central, vertical, and transverse section of it. Fig. 5 is an end view of it. Fig. 6 denotes a side view, and Fig. 7 an end view of my wire former to be hereinafter described.

The lower part A of the mold consists of a block A of wood or other suitable material grooved or hollowed out in a semi-cylindrical form and lined with cloth B, whose edges only are secured to the top of the mold as seen at C, C, in Fig. 1. To the ends of such part A plain boards or ends D, D', are applied and confined by screw bolts E, E', such ends D, D', being made to extend up flush with the top of the part A. Extending across from the board D to the board D' and through the core F G, is a spindle or rod E², whose outer surface is arranged concentri-

cally with the curved cylindric concave surface of the block A. This spindle is made to support the core, which is composed of two conical frustra F, G, that extend in opposite directions from two short cylinders H, I, that are made to abut against one another. The diameter of each of these cylinders is made to agree with or be a little less than that of the external diameter of a clay tube for which the coupling is intended. The greater base of each of the frustra is to be about one inch larger in diameter than that of the greatest diameter of the clay pipe to be inserted in the coupling formed on such frustra.

Against the larger base of each frustrum is placed a semicircular head piece or board K, whose radius is made equal to that of the external circle of section of the coupling. An elastic or stocking net cloth cover L is drawn over each of the frustra, the same being not only for the purpose of preventing adhesion of the frustrum to the clay, but of enabling the frustrum to be readily withdrawn from it after it has been molded.

The head pieces are sustained in place against the frustra by being made each with a semicircular notch to straddle the spindle. They are also held up by means of forked pieces N, N, fastened to the end boards D, D', in the positions as seen in the drawings. These head pieces not only serve to form the boundaries of the ends of the upper part or half of the coupling, but they serve as guides to enable the molder to form the outside surface of the upper part of the coupling, for when the clay is plastered on the frustra he has only to take a rule or a straight knife or bar and apply it on the curved surfaces of the guides and move it entirely over such top surface. By so doing he can remove the surplus clay and without leaving on that which is left or the molded clay, any indentation or scores such as would be left by the employment of a wire gage frame, such as is described in my said patent of September, 1851.

In making the coupling, the plastic material is spread over the inner concave part of the block A and to a sufficient extent. The core is next pressed down upon the plastic material until it becomes concentric with the curved concave surface of the block A. This having been done, more of the plastic material is plastered over the entire upper surface of the core, and between the

cheeks or head pieces, and above the same. The surplus is next to be removed by a rule or knife laid and moved on the cheeks as hereinbefore specified. When this is done,
 5 the mold is taken apart and separated from the molded article, the core being removed by drawing its parts out of it in opposite directions. The stocking net covers of the core remaining attached to the coupling
 10 are to be subsequently removed from it.

In order to form the outer surface of the coupling, we may make use of an instrument such as is represented in Figs. 6 and 7. It consists of a thin wire or blade R, curved
 15 to a semicircle or thereabout, and attached at its two ends to the extremities of the prongs S, S, of a forked block or handle T, and made to stand about perpendicularly, or at an angle to the same. To the top or
 20 middle of the curved wire or thin blade as the case may be, a tension wire or blade U is fastened and carried back and secured to the handle. This latter wire or blade not
 25 only serves as a stay to prevent the other wire from being bent out of place while being used, but it serves to cut and divide the surplus clay into two portions, so as to enable it to be readily removed from the
 30 molded article.

In the use of this instrument it is placed on and made to straddle the clay, when on the core, and is drawn lengthwise over the mold so as to cause the wires or blades R and U to pass through the clay and not only
 35 separate the surplus portion of it from the rest, but divide it into two parts so as to enable it to be easily removed. Those parts of the molded coupling which are formed by the conic frustra are for the reception
 40 of the ends of the consecutive pipes and the

packing and cement or molten lead that is usually filled in the joints of a coupling.

I claim—

1. The manner of making the mold, viz., of a combination of the two conic frustra, 45 and their separation cylinder or cylinders together and with the concave cylindrical block, and the end boards as specified, the two parts of the core being supported on a spindle, that rests on a concave block and 50 concentric with its curved surface as specified.

2. I do not claim the mere use of cloth or an inelastic fabric to prevent adhesion of the clay to the molding surface, but I claim the 55 employment of stocking net or an equivalent elastic material for the cover or covers on the two parts or frustra of the core, the elastic properties of such cover or covers enabling them to fit closely to the curved 60 surface of the core without the formation of injurious seams or indentations on the inside surface of the coupling, and besides this the elasticity of the cover or covers facilitates the removal of the same from the 65 molded article.

3. I also claim the wire former made substantially as specified, viz., of a curved wire or blade R, the tension stay, and cutter or wire U, and the forked stock or handle, the 70 whole being used in the manner and for the purpose as specified.

In testimony whereof I have hereto set my signature this nineteenth day of August A. D. 1853.

JOSEPH PUTNAM.

Witnesses:

DAN WEED,
 J. F. KIMBALL.