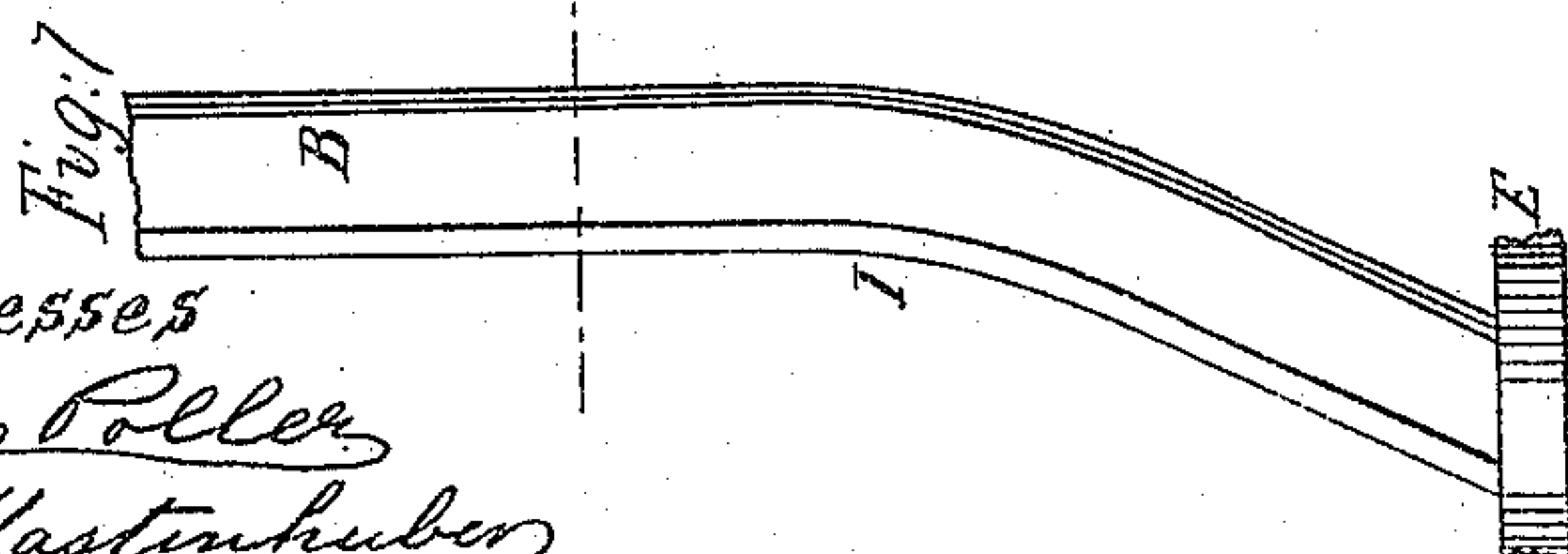
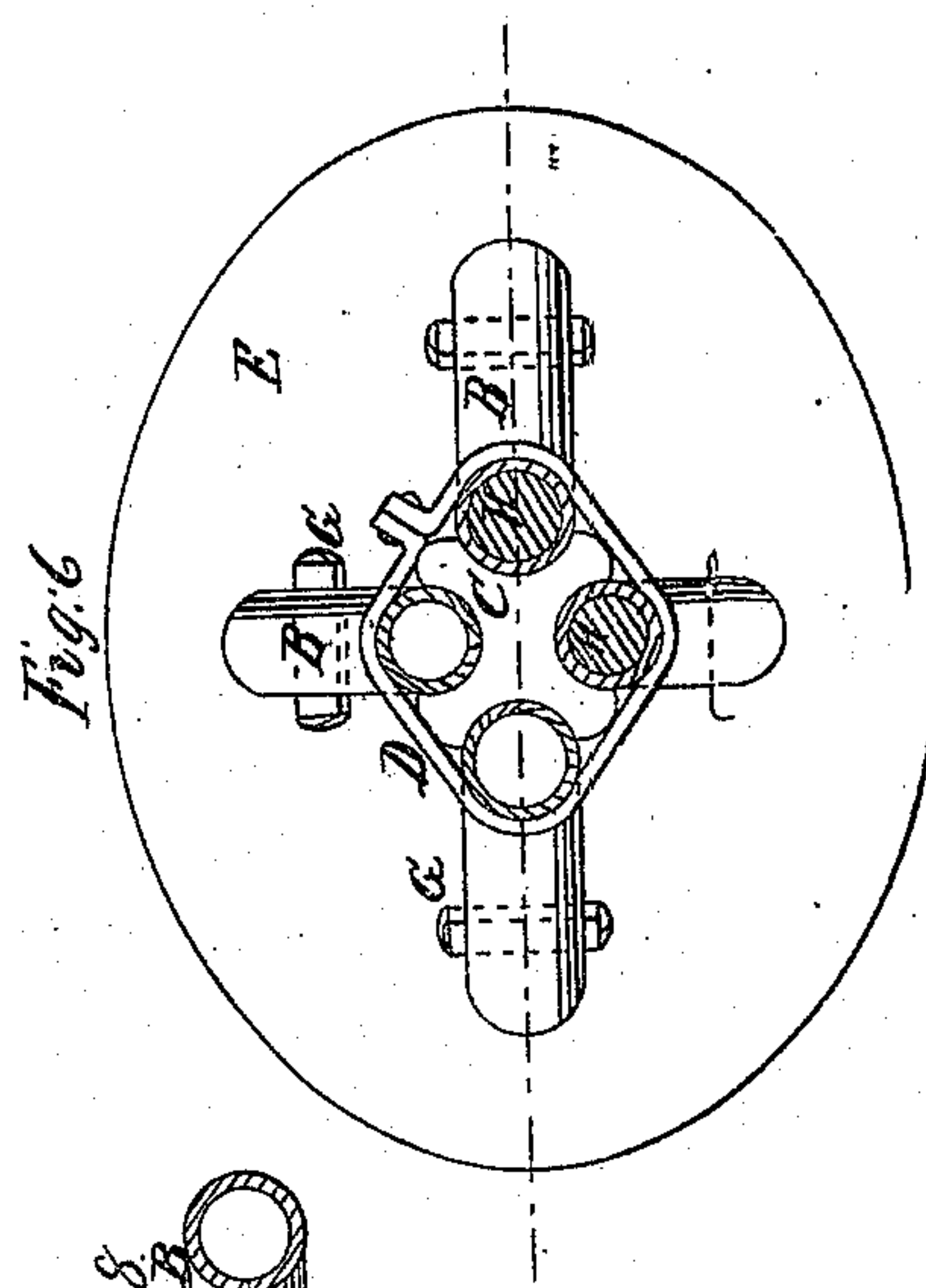
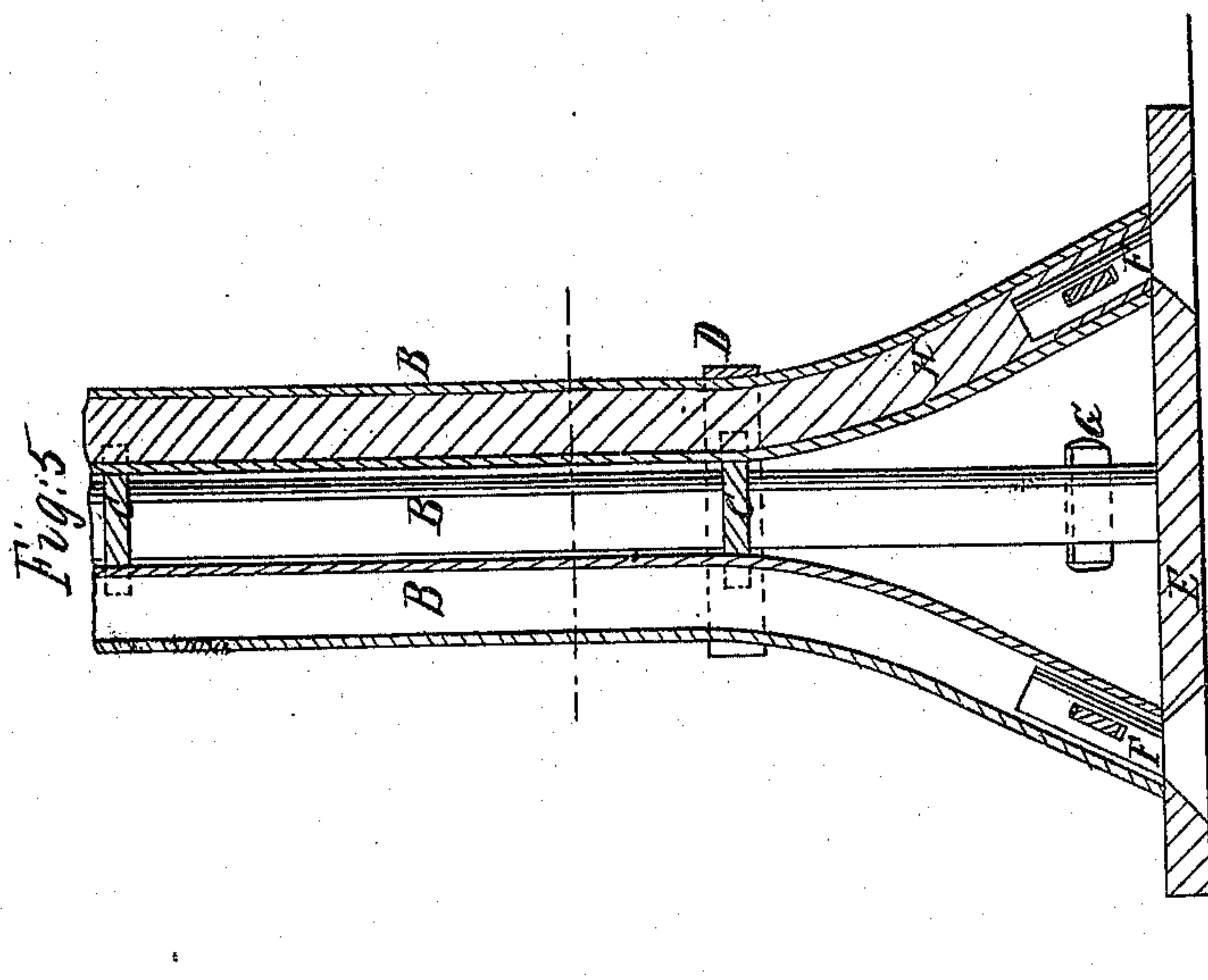
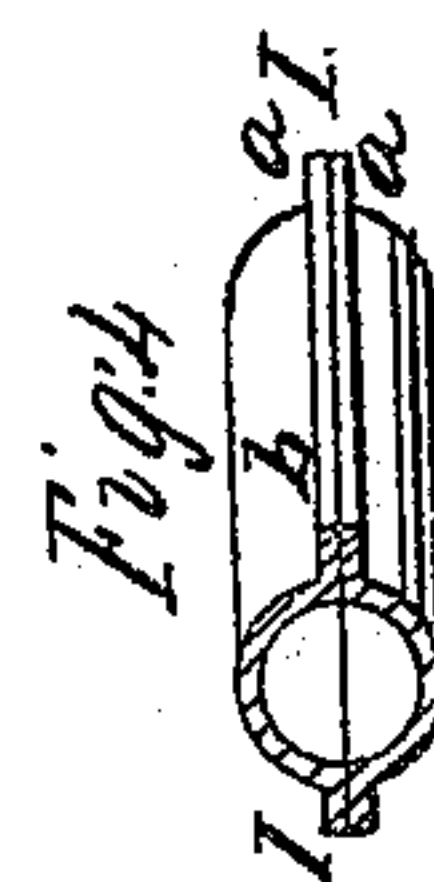
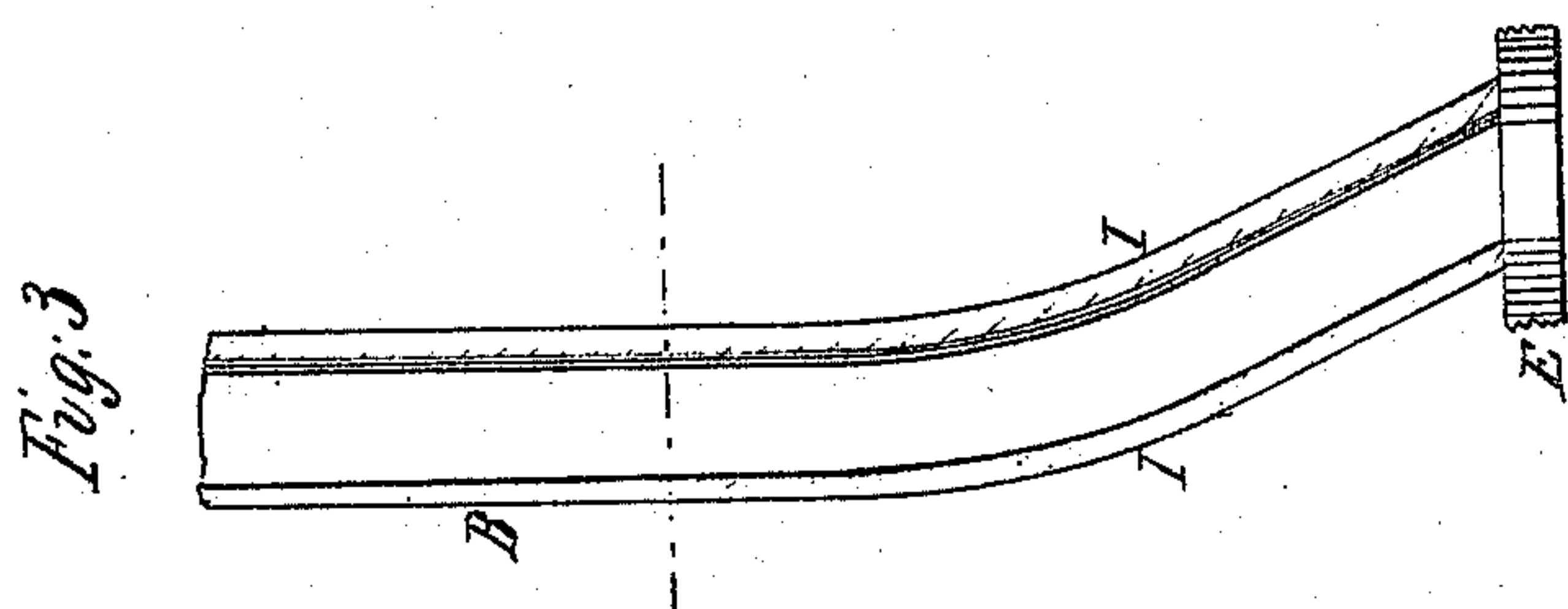
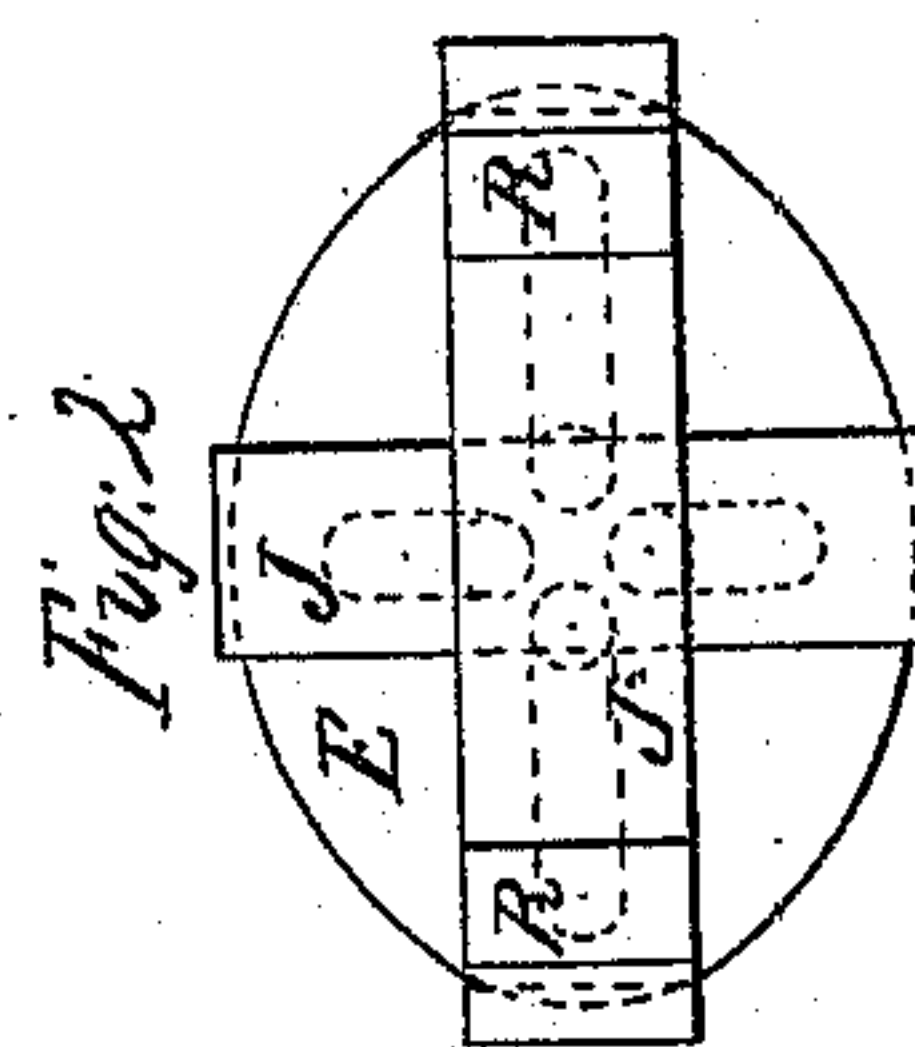
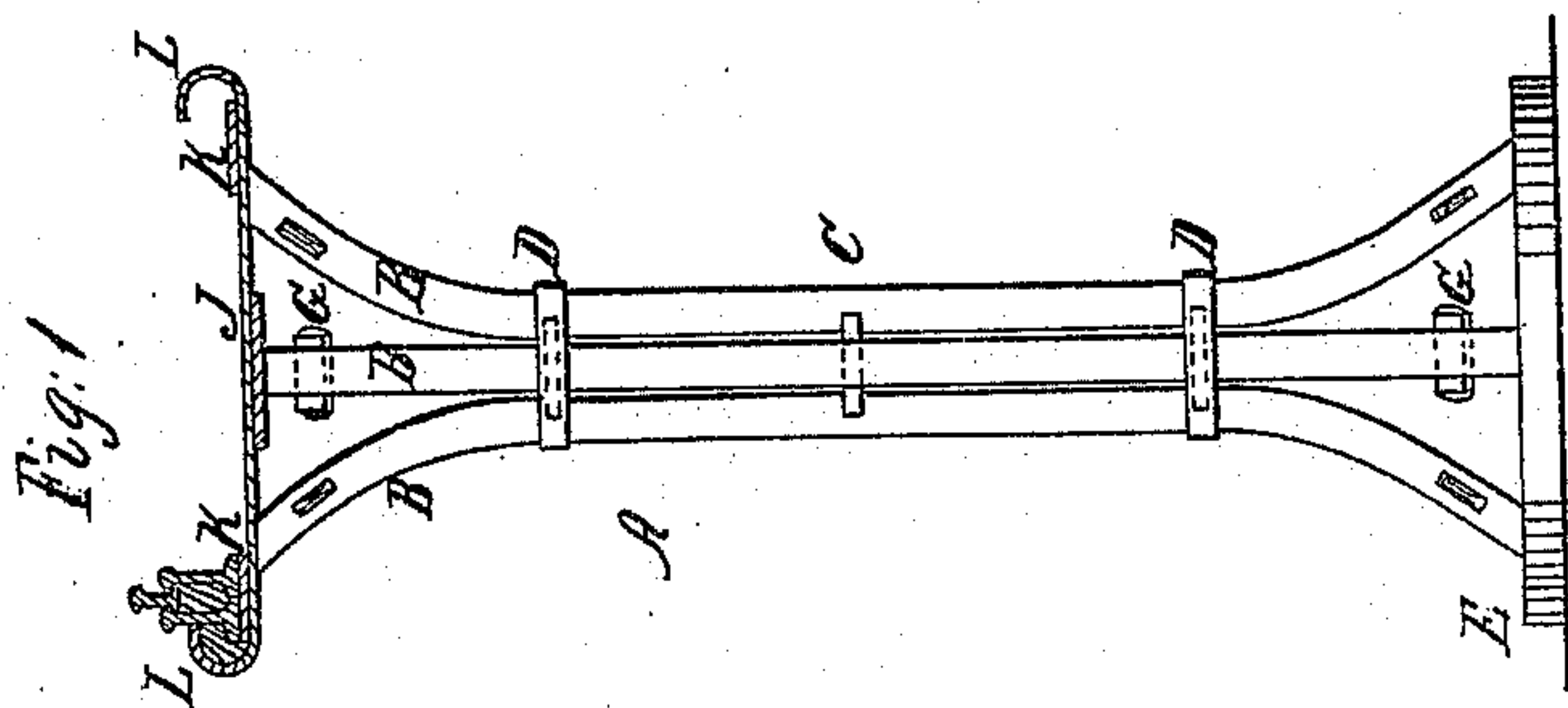


C. T. Harvey
Column.

No 49,453

Patented Jul. 7, 1868.



Witnesses
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United States Patent Office.

CHARLES T. HARVEY, OF TARRYTOWN, NEW YORK.

Letters Patent No. 79,753, dated July 7, 1868.

IMPROVEMENT IN ELEVATED RAILROADS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES T. HARVEY, of Tarrytown, in the county of Westchester, in the State of New York, have invented a new and useful Improvement in Elevated Railroads; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 is an elevation of a supporting column for an elevated railroad.

Figure 2 is a plan or top view thereof.

Figure 3 is an elevation of a modified form of a cylinder or tube for a supporting-column, detached, and

Figure 4 is a cross-section thereof.

Figure 5 is an elevation of a vertical section of the column, and

Figure 6 is a horizontal section thereof.

Figure 7 is an elevation of another modification of a cylinder or tube for a supporting-column, detached, and

Figure 8 is a cross-section thereof.

This invention relates to means for supporting the track of an elevated railroad, and it consists, among other things, in a novel construction of supporting-columns therefor.

The letter A designates the column complete, its bottom resting upon a base-plate, E, and its top supporting a frame, J, upon which the track rests.

The column is composed of two or more independent cylinders or tubes, B, of small diameter, which are connected to each other in a secure manner by means of interior chocks or brace-plates, C, interposed and fitted at all desirable places between the several cylinders, as shown in the drawing, which prevent the cylinders from being crushed or bent inwards, and also by encircling-bands, D, that prevent them from being forced asunder. The column here shown is composed of four such independent cylinders or tubes. Where the strain or force that bears on the column is about the same in all directions, the said cylinders or tubes may be of the same size, but where the strain or tendency to oscillation is greater transversely of the track, the cylinders or tubes B on the right and left-hand sides of the column are made of larger diameter and greater strength than those which are in line with the direction of the track.

The bottoms or lower ends of the said cylinders or tubes B are curved outwards, to form a broad supporting base for the combined column, and their tops are likewise curved outwards, to give the requisite breadth to the combined column at its top, in order to form a broad and suitable support for the track of the railroad. This curved shape is given to the cylinders or tubes B during the process of manufacture, or afterwards, as preferred, the cylinders or tubes being filled with a core of sand, to prevent the cracking or fracture of the metal in bending, and being heated to a proper temperature to allow them to be brought to the shape required.

The bottom of the combined column rests on a base-plate, E, to which the several cylinders or tubes are fastened by draw-bolts, F, that project upwards from plate E, and enter the bottoms of the cylinders or tubes, to which they are fastened by cross-keys, as shown in the drawing. The said draw-bolts are formed with heads, which fit in countersunk holes in the bottom of the base-plate, and are flush with the bottom of the plate.

The track is supported on the combined column in the manner illustrated in fig. 1, by means of a frame, J, which rests upon the top of the several cylinders or tubes B, to which it is fastened by draw-bolts and keys, in the same manner above described for fastening the cylinders or tubes to the base-plate E. The ends of the transverse portion of frame J are turned up, as is shown at L L, in order to clasp and hold the rails of the track in the manner of railroad-chairs, the bent ends, L, being arranged to approach the sides of the rails above the bottom flanges, to allow keys to be inserted between such flanges and the ends L. Blocks or strips of wood, K K, are laid on the frame J, beneath the rails, so as to form an elastic bed therefor, and prevent noise.

In arranging the cylinders or tubes B to form a column, they are set at the most advantageous distances apart to obtain the required stiffness and strength, and in making those columns, through which a propelling cable or chain for moving cars is to ascend or descend, the said cylinders or tubes are set apart far enough to

leave a central space between them of the required diameter for that purpose, the curvature at their tops and bottoms being drawn with a longer radius, so that the breadth of the combined column at its top and bottom shall not be increased.

The combined column is stiffened, and strengthened, and prepared to resist injury from cold and frost, by filling the cylinders or tubes B with wood, H, and a wooden filling can also be placed in the central space between the several cylinders or tubes.

The said cylinders or tubes B are round, or oval, or of any other shape, and said tubes can be made square or angular, if preferred, and are composed preferably of wrought or malleable iron. They can be made lap-welded, according to the usual mode of making gas-pipes, but I prefer to make them with exterior ribs, as shown in figs. 3, 4, 7, and 8, where the letter I designates such ribs. In the form shown in figs. 3 and 4 there are two such ribs I, and, in order to produce the same, I make the cylinder or tube of two semi-cylinders, *b b*, which have, along their edges, flanges *a a*, that are brought together and united by welding or riveting, so as to form a cylinder or cylindrical body from such semi-cylinders.

In welding their flanges together, I pass the semi-cylinders, while hot, between rollers of the proper form, and in that manner, or in any other suitable manner, unite them firmly to each other, the flanges *c c* being at once the welding-surfaces of the semi-cylindrical divisions *b b*, and forming, when united, ribs, which add greatly to the stiffness and strength of the cylinder. The semi-cylinders are made concave, if preferred.

Figs. 7 and 8 show another mode of forming the cylinder or tube B, in which I provide it with only one rib. In this method I form the cylinder or tube of a single piece of metal, whose edges are turned over to form flanges *a a*, and such piece of metal is then bent into a cylindrical form, so as to bring the flanges together, when they are welded between rollers or riveted together, to form a flange, I, on one side of the cylinder.

Columns combined and formed in the manner above set forth can be used for general purposes as well as for supporting an elevated railroad.

In fig. 1, I have shown how the ends L L of frame J are bent over towards the rails, so as to clasp their bottom flanges. In the space between the said bottom flanges and sides of the rails and the bent-over ends or hooks L, I interpose wooden keys, M, which tighten these parts of the structure, and prevent them from becoming displaced.

The keys M, being made of wood, will not become brittle from the effects of cold and frost, and they will tend to prevent noise and rattle, and they form elastic bearings at the joints. By means of this mode of constructing the ends of frame J, I am enabled to adjust the rails of the track with accuracy. I make the frame J wide enough to allow its ends L L, when turned up, to extend outwards beyond the rails, so as to afford ample room for adjusting the rails laterally on the said frame, in conjunction with the wooden keys M, to bring them to the required curve, or to make them perfectly parallel, or to make them level, and also to allow the insertion of the said wooden or elastic packing-blocks K beneath the rails, to prevent noise and jar.

The keys M and blocks K are made of whatever size is necessary, according to the adjustment which is required for each rail.

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

1. The construction and arrangement and adjustment of a supporting-column, composed of two or more independent cylinders or tubes, substantially as described.

2. The combination of the several cylinders or tubes of the combined column, the frame J, in which the track rests, and the bolts or keys that connect said tubes and frame together, substantially as described.

3. The method of connection of the cylinders or tubes of the combined column to the base-plate, by means of bolts or keys, substantially as described.

4. The construction and arrangement of the ends of the frame J upwards or over the flanges of the track, to serve as a guard to confine the latter in place, with or without the wooden keys M, substantially as described.

CHARLES T. HARVEY.

Witnesses:

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J. VAN SANTVOORD.