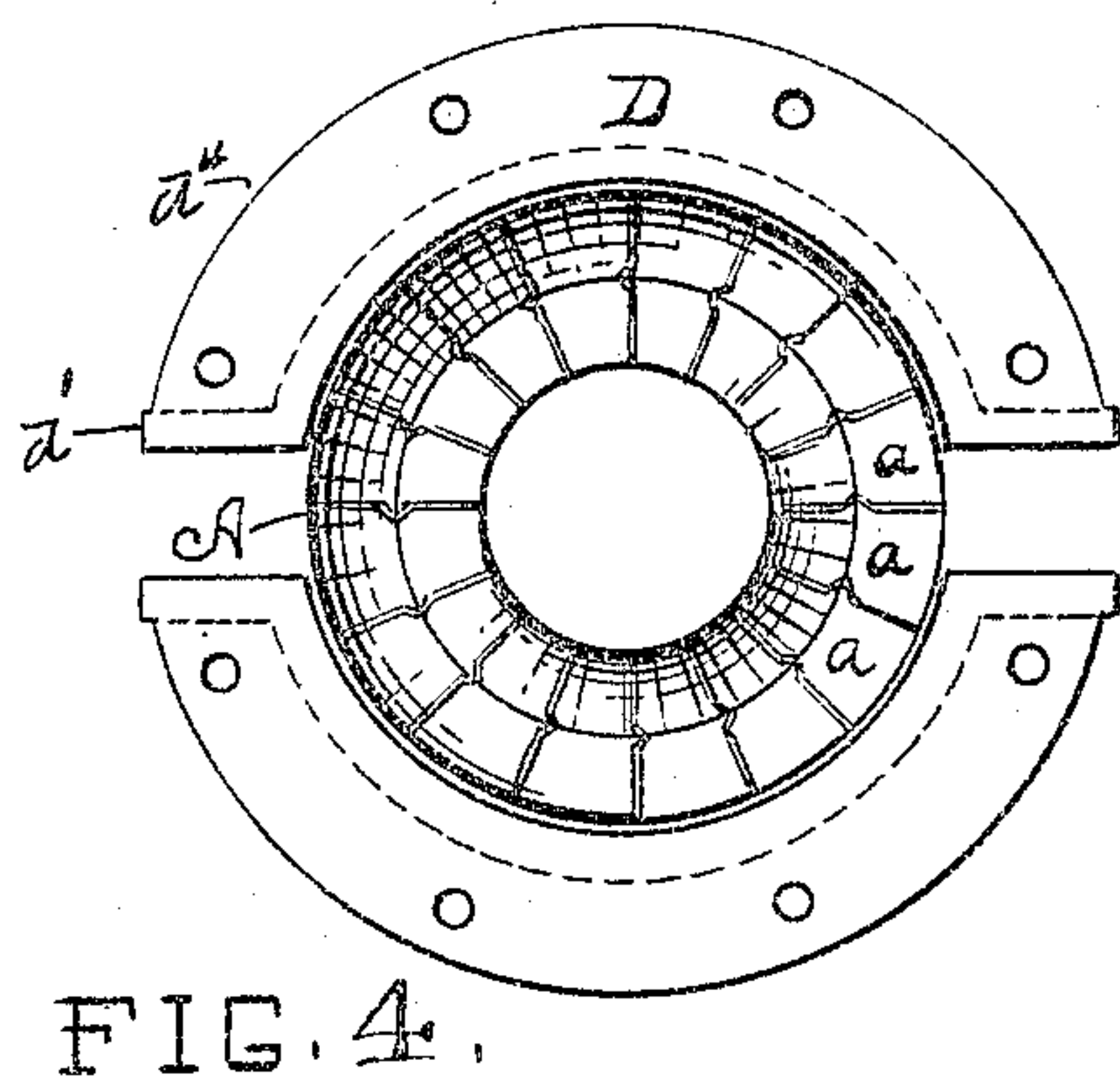
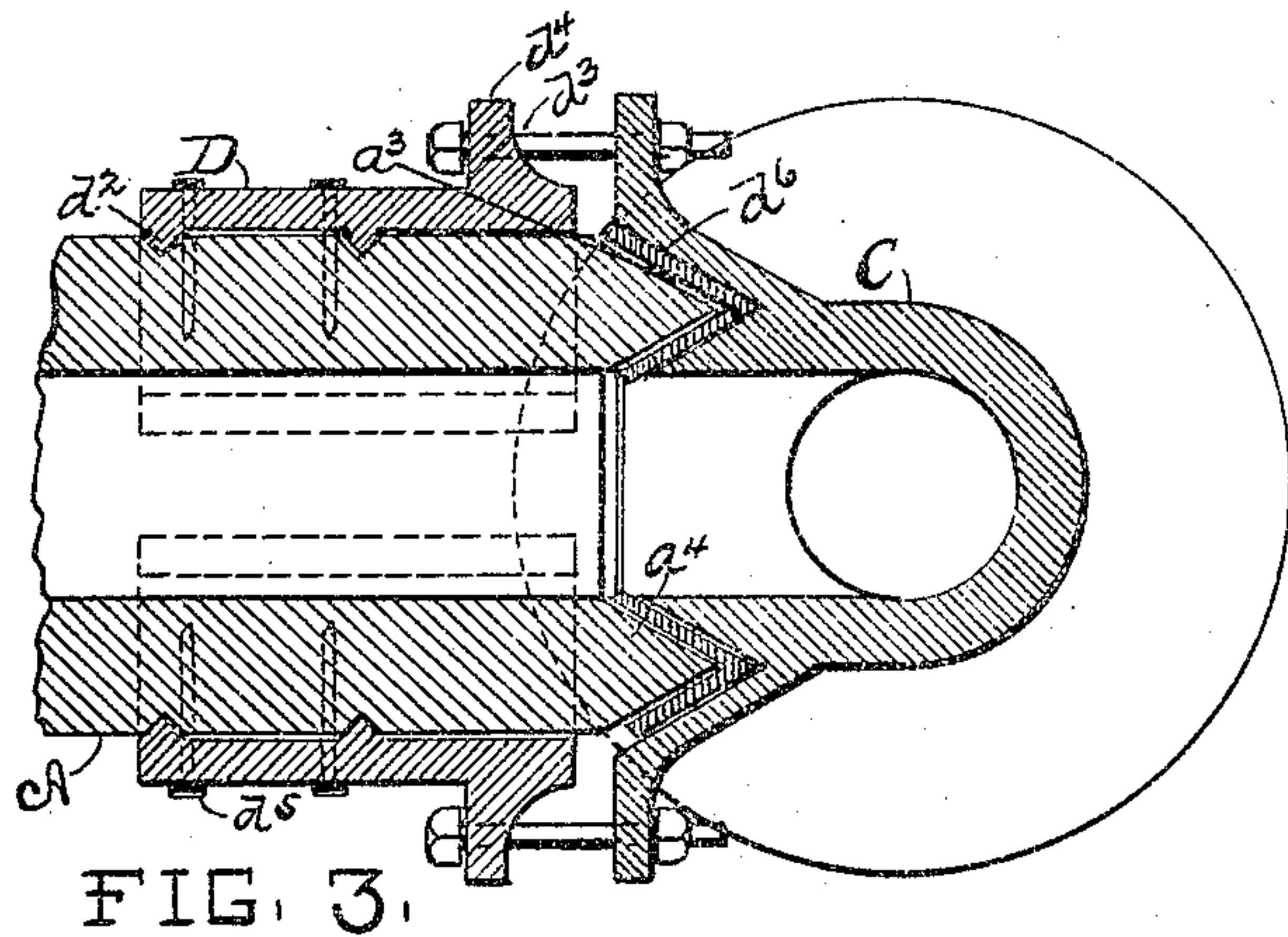
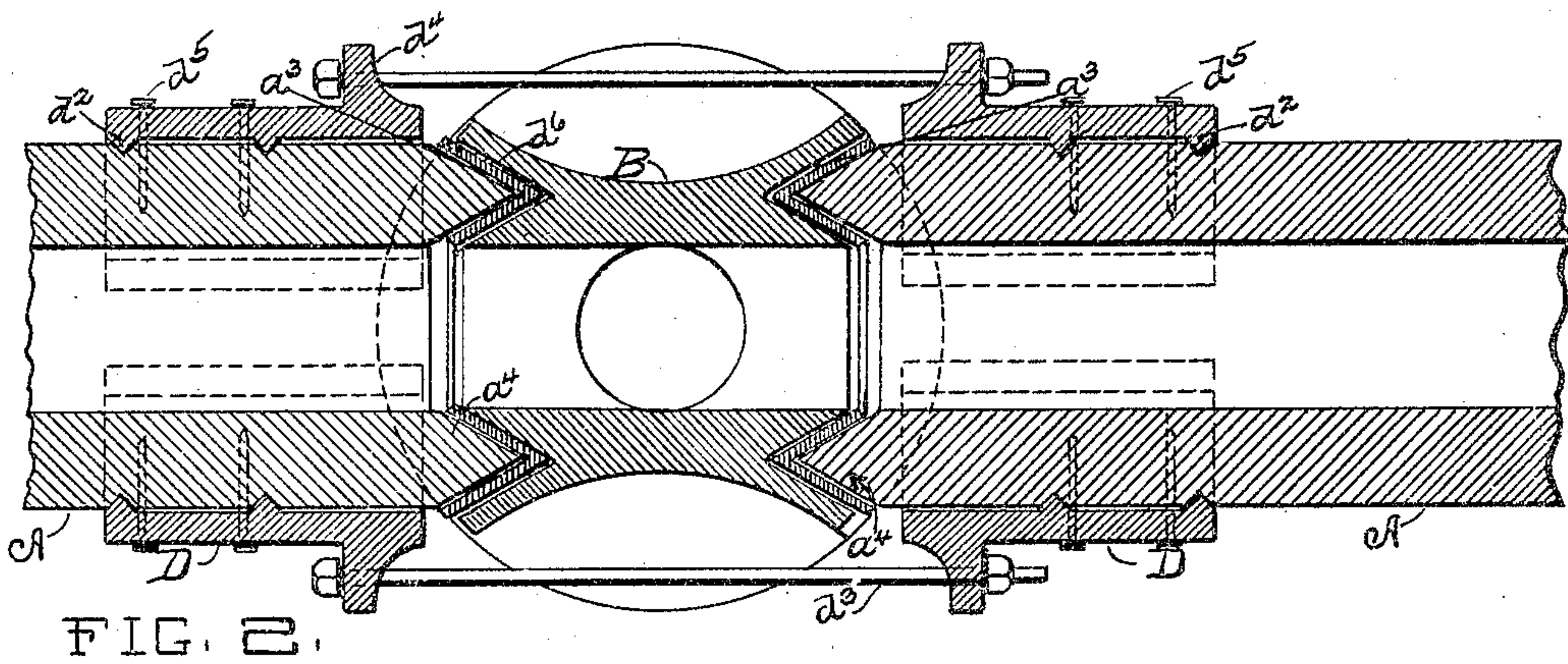
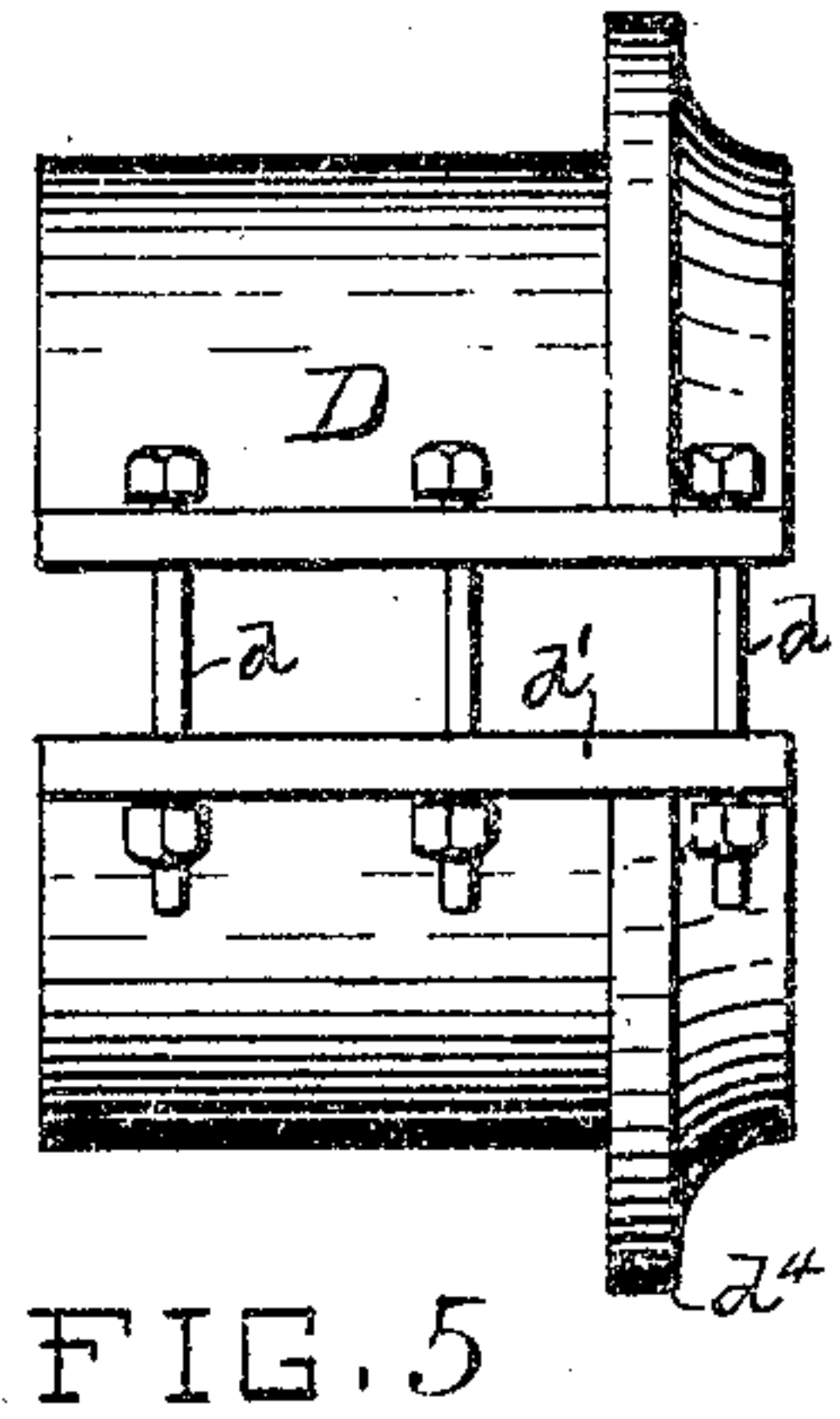
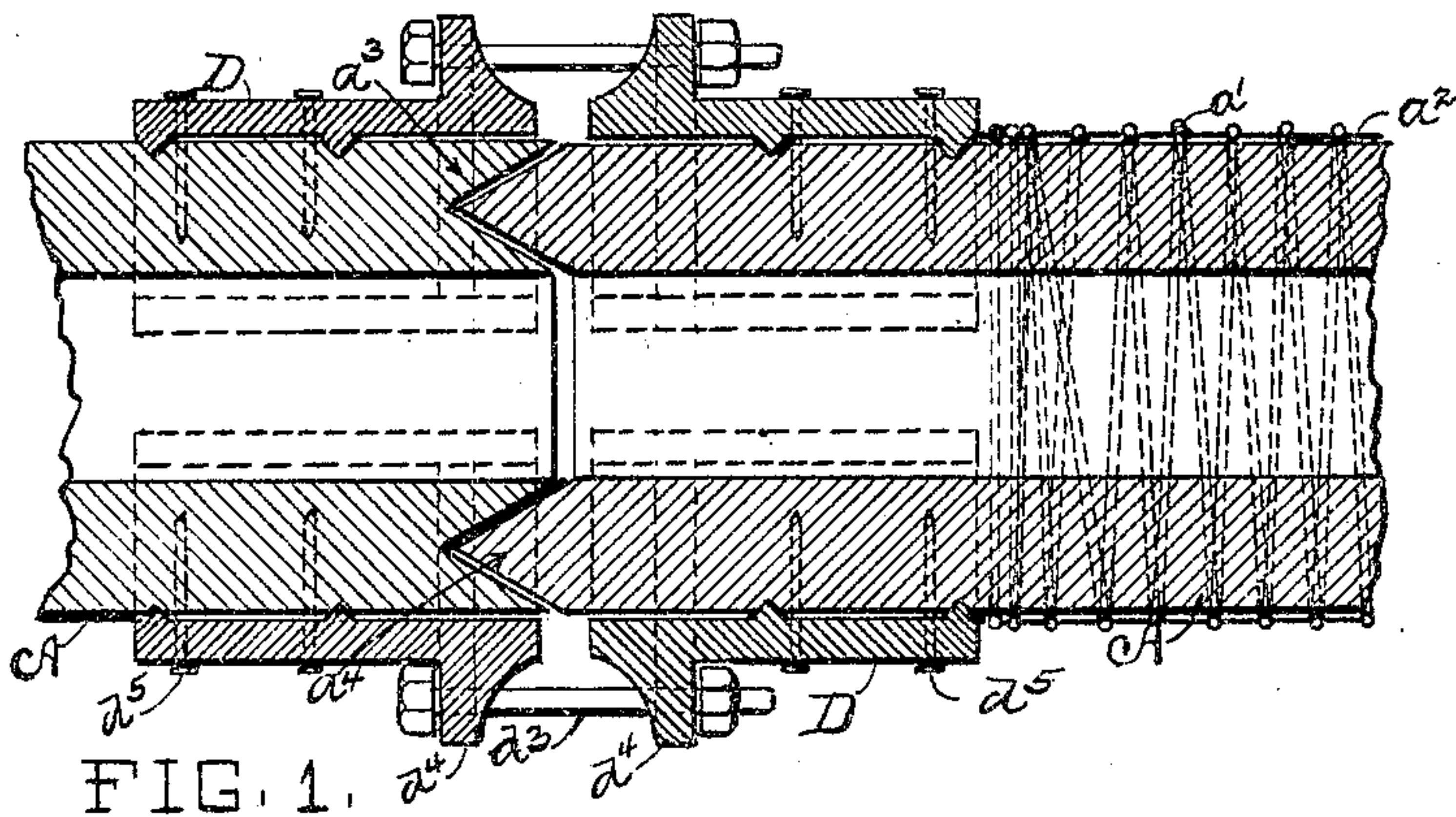


No. 790,978.

PATENTED MAY 30, 1905.

C. C. PECK.
WOOD PIPE JOINT.
APPLICATION FILED JULY 13, 1904.



WITNESSES:

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CASSIUS CARROLL PECK, OF ROCHESTER, NEW YORK.

WOOD-PIPE JOINT.

SPECIFICATION forming part of Letters Patent No. 790,978, dated May 30, 1905.

Application filed July 13, 1904. Serial No. 216,425.

To all whom it may concern:

Be it known that I, CASSIUS CARROLL PECK, residing at Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Wood-Pipe Joints, of which the following is a specification sufficient to enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of pipes which are made from wood, either by boring a hole through a considerable length of solid log or other piece of wood or by building up the pipe with staves so as to give both the interior and the exterior of the pipe a circular cross-section. The joint is suitable for use in joining the ends of pipes intended for conveying both gases and liquids, but is more especially designed for pipes devoted to carrying heated water under pressure, and particularly under ground, and in this connection the objects sought and attained are a tight, durable, and strong joint. While the use of pipes made of wood for conveying water at natural temperatures is as old as history, the practicable use of such pipes for carrying water under considerable pressure and at about the boiling temperature is only of very recent date, and it has been found quite difficult under these conditions to maintain permanently-tight joints. The leakage has been caused in great measure by admission of water to the end grain of the wood at the joints, causing the wood to soften more here than elsewhere and to give way under pressure. As heretofore made wood-pipe joints have been defective in means for drawing and holding the ends of the sections together, and strength to resist lateral strains, and in protection of the end grain of the wood from water contact. It is the object of my invention to remedy these deficiencies.

In the accompanying drawings like parts in the several figures are represented by the same letters.

Figure 1 is a central sectional elevation of a plain joint such as is used in connecting two lengths of wood pipe. Fig. 2 is a central sectional elevation which includes a cast-metal T for attachment to a branch pipe. Fig. 3 is a

plan view showing a cast-metal elbow attached to the wood pipe in like manner as shown in Fig. 2. Fig. 4 is an end elevation of the divided metal collar shown in Fig. 1 and of the wood pipe. Fig. 5 is a side elevation of the bolted halves of the collar shown in Figs. 1 and 4.

In the several figures, A is a pipe made, preferably, of staves a , of cypress, white pine, or other suitable wood, tongued and grooved and bound together by wire a' spirally and tightly wound by machinery around the outside of the pipe, the pipe and wire being protected from exterior moisture by a covering of asphaltum a'' . The end of one of the two lengths of pipe has a V-shaped groove or mortice a^3 turned in the wood, while the opposite end of the other length of pipe is formed in a corresponding tenon a^4 . The pitch of the sides of the V should be about thirty degrees (from the horizon) in order to best realize the wedge action of the tenon a^4 in tightly compressing the surfaces at the joint; but I do not confine myself to this degree of angularity. In case of the metal T B (shown in Fig. 2) and the elbow C (shown in Fig. 3) the groove a^3 is preferably cast in the metal, and the corresponding projection into which the end of pipe A is formed rests in the groove. The metal collar D is usually made up of two parts, as shown, but in case of large pipes may be divided into four parts. The parts are drawn together by bolts d passing through flange d' for compressing the collar on the pipe, and this forces the projection d^2 into the substance of the wood, so as to serve as an anchorage for resisting the lengthwise pull of bolts d^3 , which pass through flange d^4 , this resistance being further increased by wood screws or spikes d^5 , which aid in binding the collar D to pipe A.

In making up joints the end grain of wood in the separate lengths of pipe A is smeared with paint or a suitable mixture of pitch or other water-resisting substance, and the end which has the sides sloping to a sharp edge junction is then entered into the groove a^3 . Either before or after thus bringing two lengths of pipe together the collar D is put on the adjoining end of each length of pipe,

and the nuts on bolts d are screwed down to a considerable extent, so as to give the collar anchorage on the pipe, and wood-screws d^5 inserted, after which bolts d^3 are inserted
 5 through flange d^4 , so as to connect the collar on one length of pipe with the collar on the adjoining length of pipe, and the nuts on these bolts are turned up fairly tight, so as to draw
 10 the ends of the sections tightly together. The nuts of bolts d are then further screwed down, but more especially those on the collar which covers the grooved end of the pipe, so as to compress the wood around the groove onto the corresponding projection on the end of
 15 the connecting-pipe. If desired, a gasket d^6 , of suitable material, can be inserted in the V-groove, and in this way extra elasticity can be given to the joint; but in general the wedge form of joint, taken in connection with bolts
 20 d for drawing together the ends of sections, affords means of so tightly compressing together the ends of pipe-sections that a tight and durable joint results without other provision.

25 I do not confine myself to a single groove and projection in forming the joint, as two or more grooves may be employed; but greatest strength is obtained with one groove on account of greater depth obtainable, and a single
 30 groove is also better for centering and keeping lengths of pipes in perfect alinement.

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

1. In a wood-pipe joint, an annular V-shaped

groove cut in the end grain of one length of 35 wood pipe, and another length of wood pipe having its adjoining end formed to fit the aforesaid groove, in combination with a metallic collar secured to each of said ends and adapted for bolting the ends together, sub- 40 stantially as shown and described.

2. In a wood-pipe joint, the end of a wood pipe formed with a slope both from the outside toward the inside and from the inside toward the outside so that the apex of the slope 45 shall be at or near the center of thickness of the wood walls, in combination with an adjoining part of any material having a corresponding form in the solid portion of said part, a metal collar with means of clamping 50 it upon the wood pipe so as to securely anchor it, and means for bolting said adjoining part to said metal collar, essentially as shown and described.

3. In a pipe-joint, two pipes one having an 55 annular groove on its end separated from the bore of the pipe, and the other having an annular tongue fitting said groove, one of said ends being of wood, and one of said ends having means of putting the wooden end under 60 compression when the ends are forced together, metallic collars secured to each of said ends, and means for forcing said collars together, substantially as set forth.

CASSIUS CARROLL PECK.

Witnesses:

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