

No. 696,603.

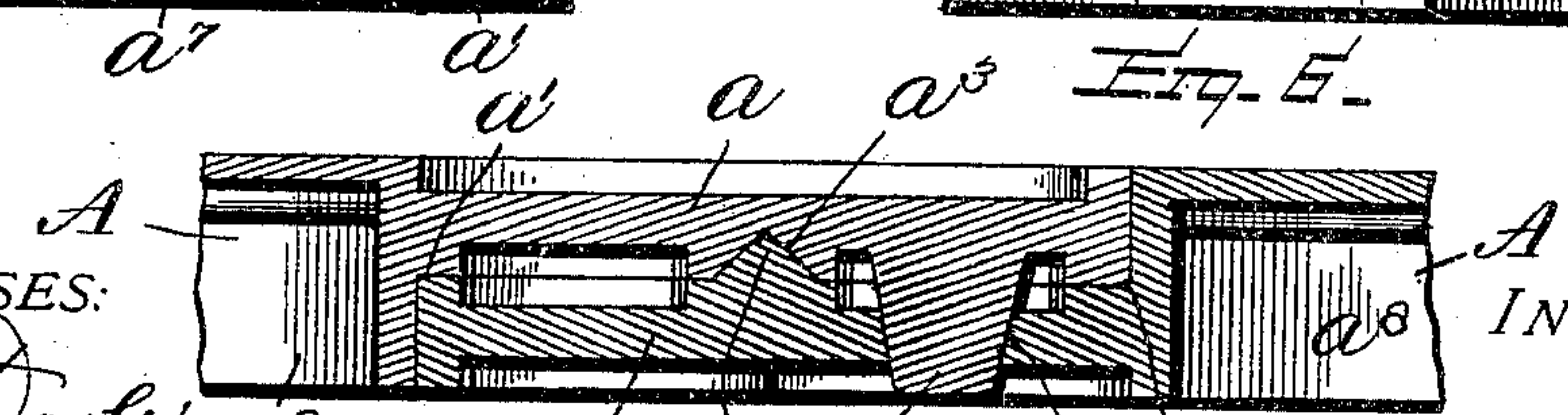
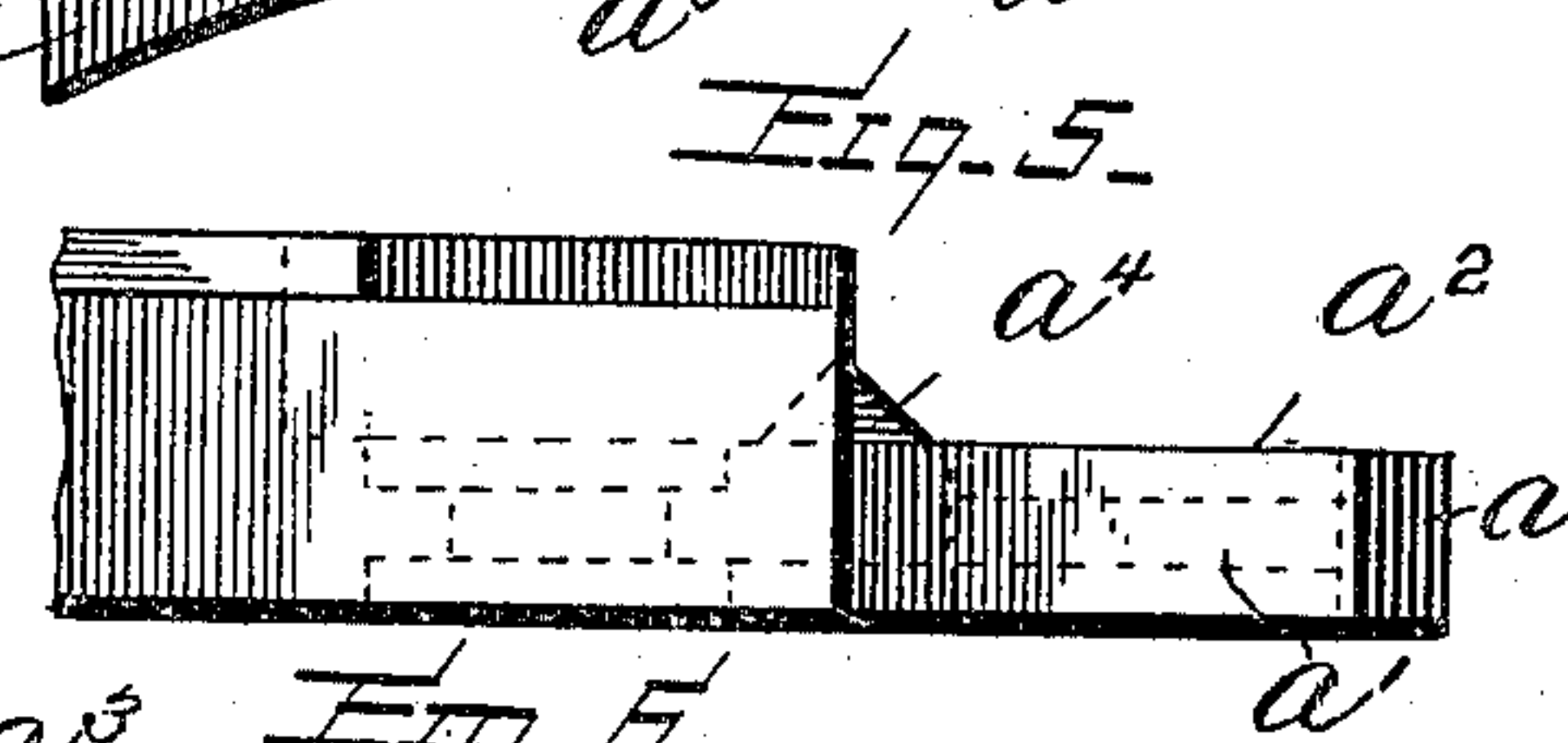
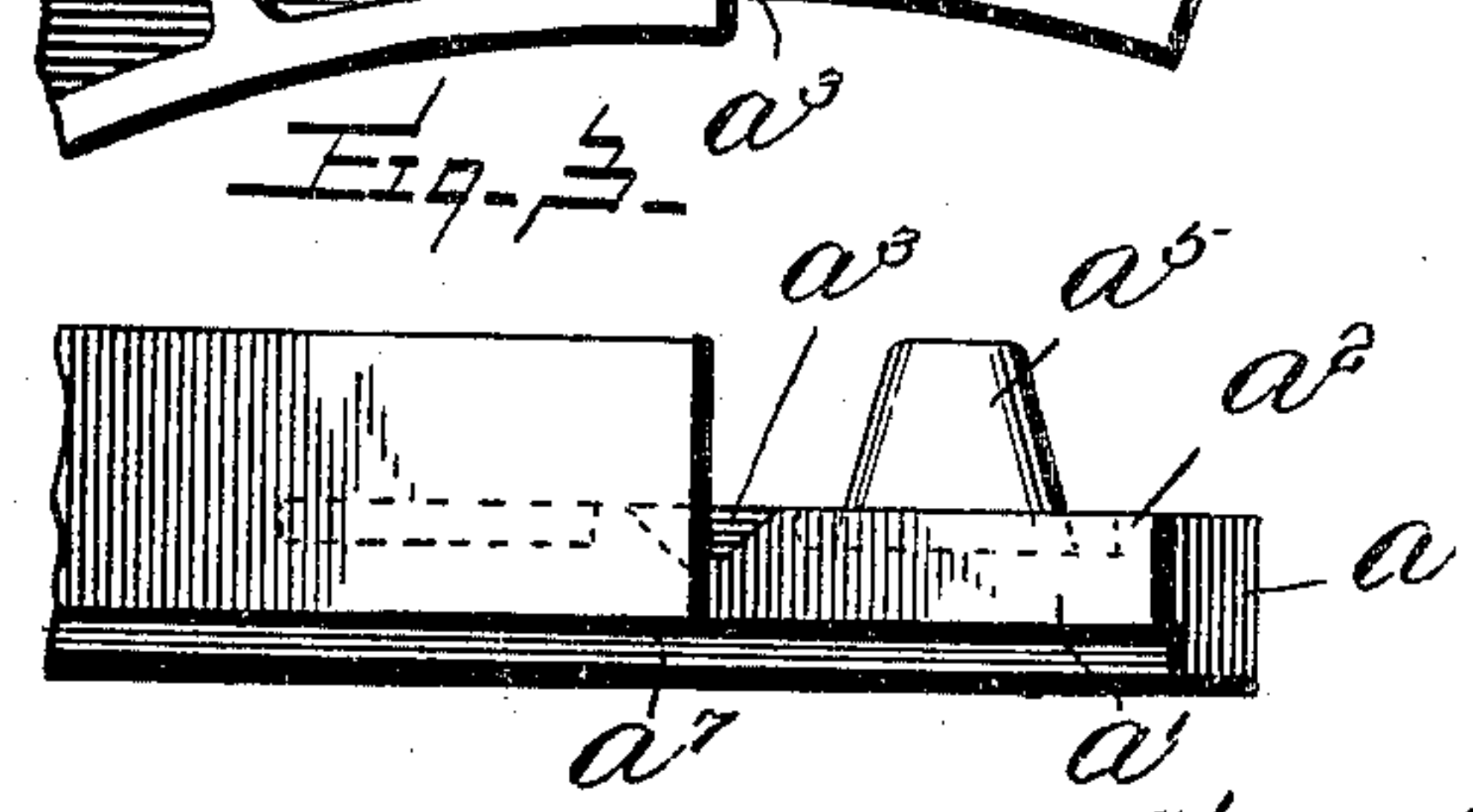
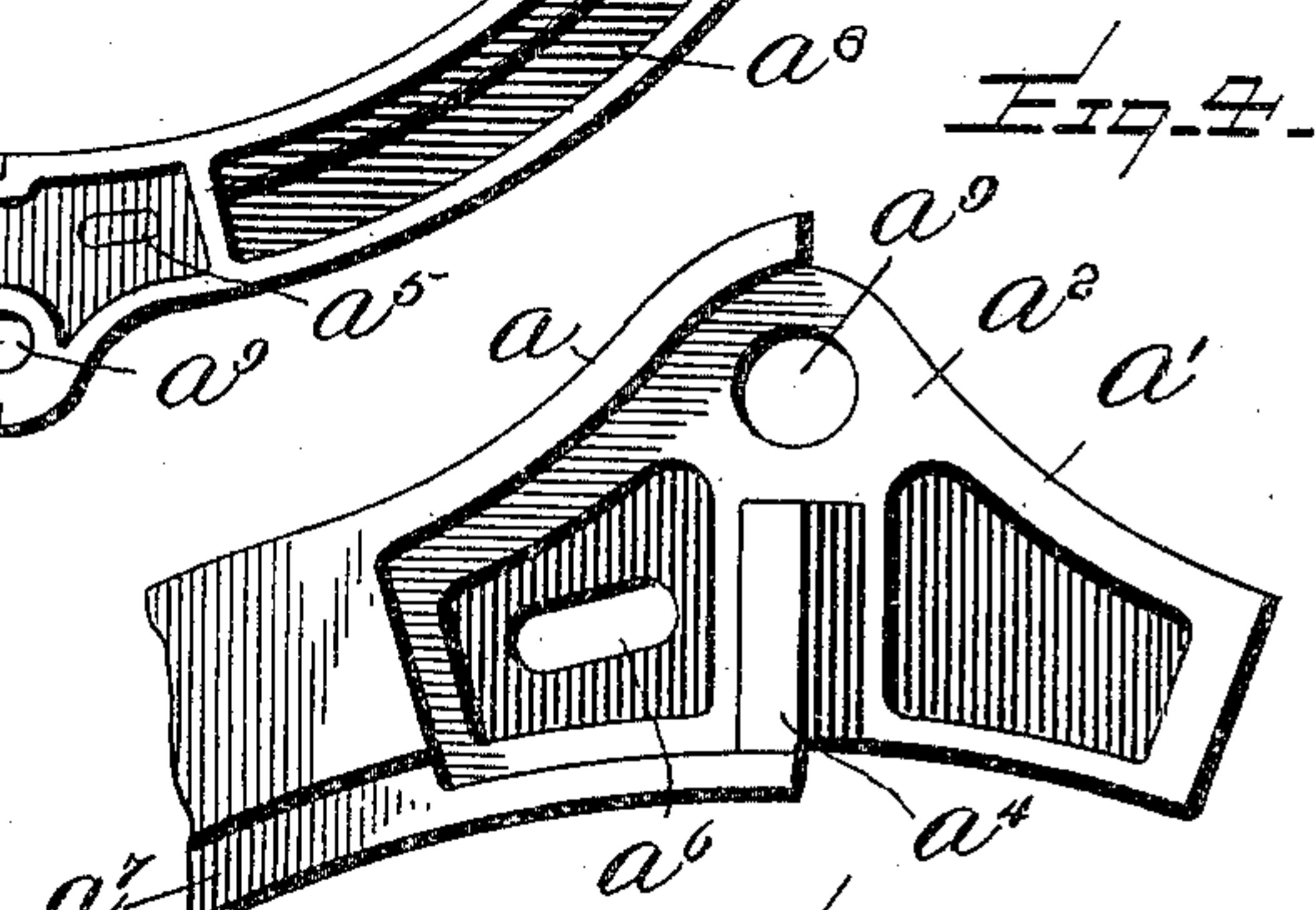
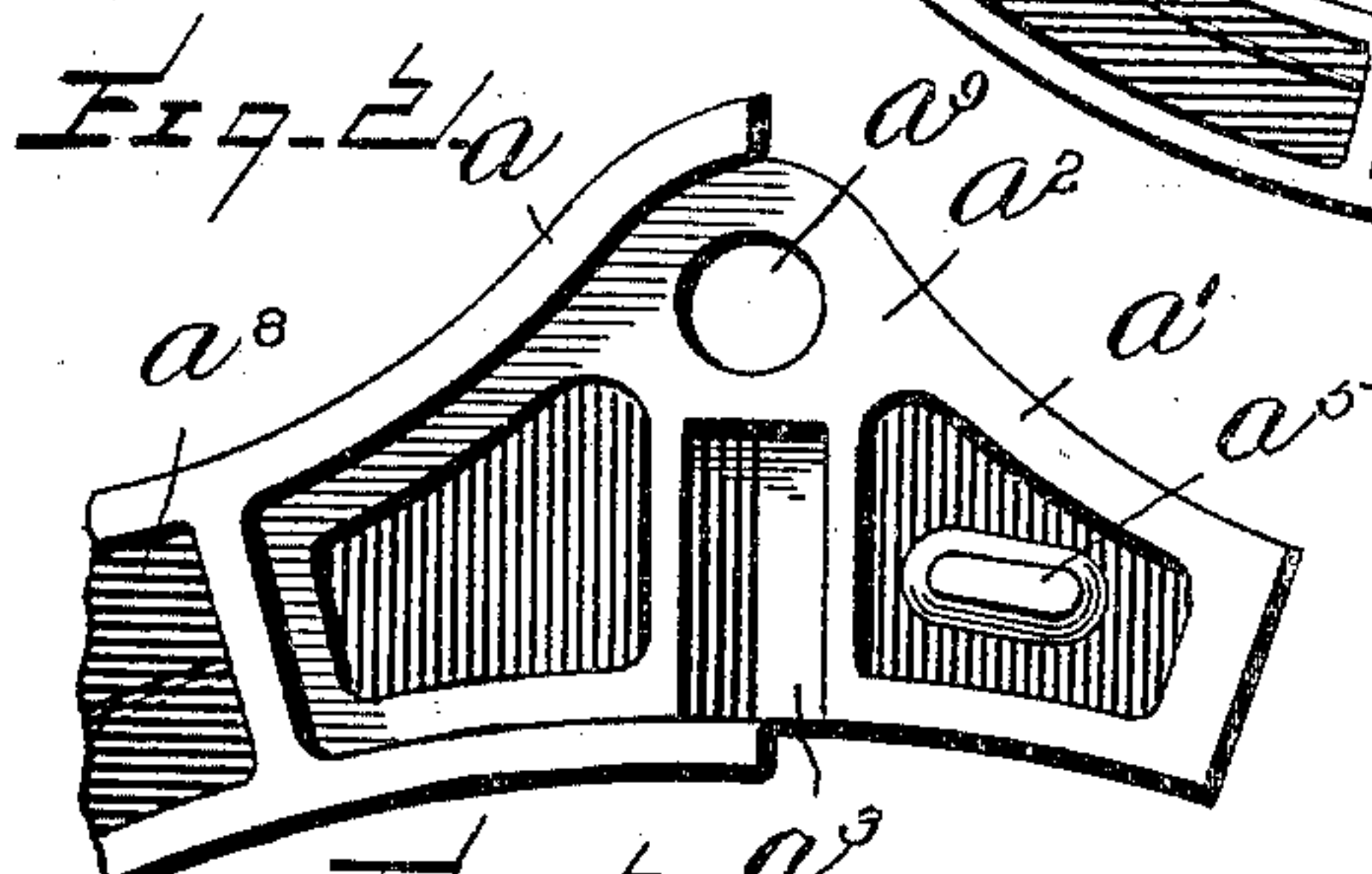
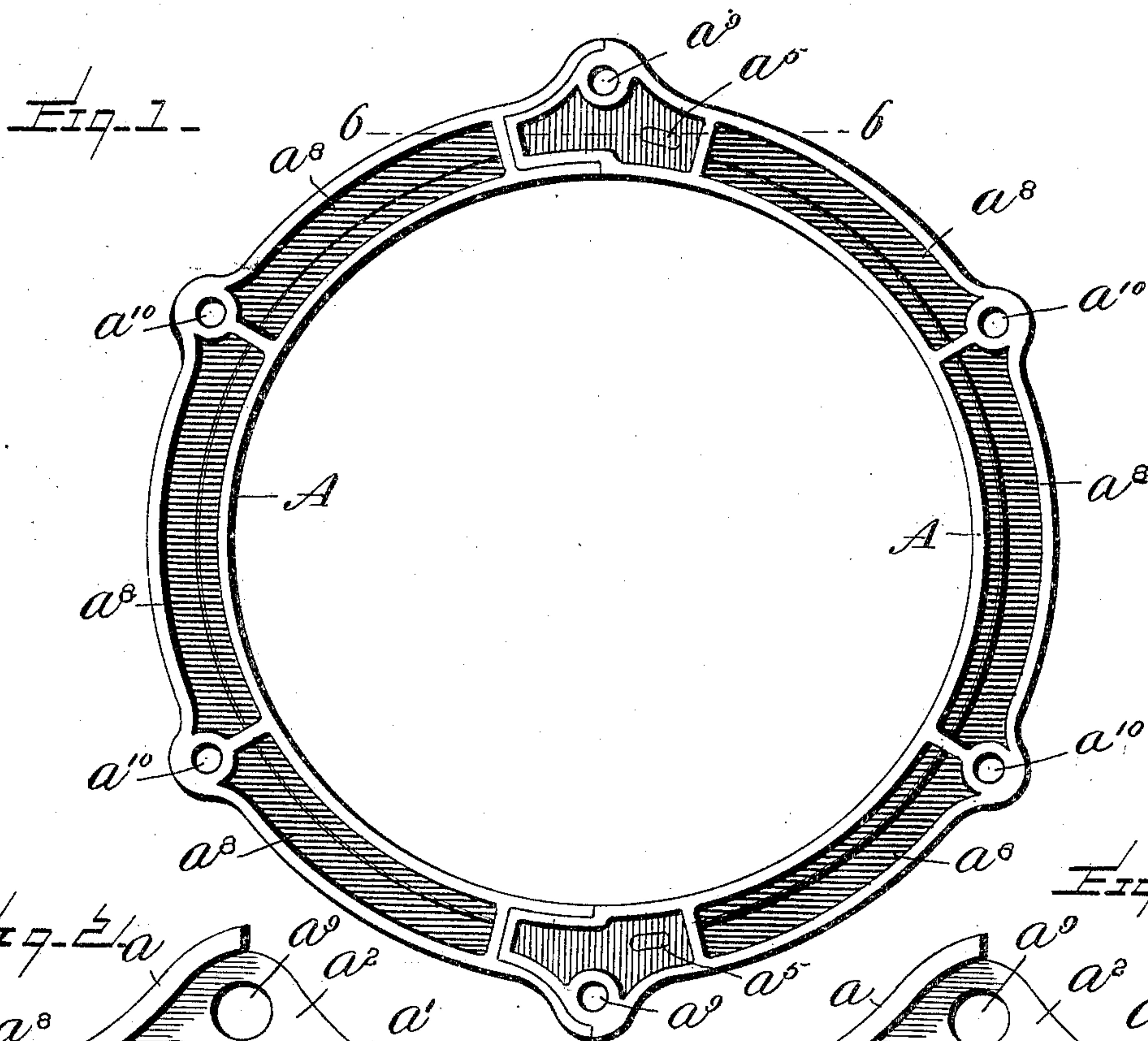
Patented Apr. 1, 1902.

F. N. SMITH.
CLAMPING RING FOR PIPE COUPLINGS.

(Application filed Nov. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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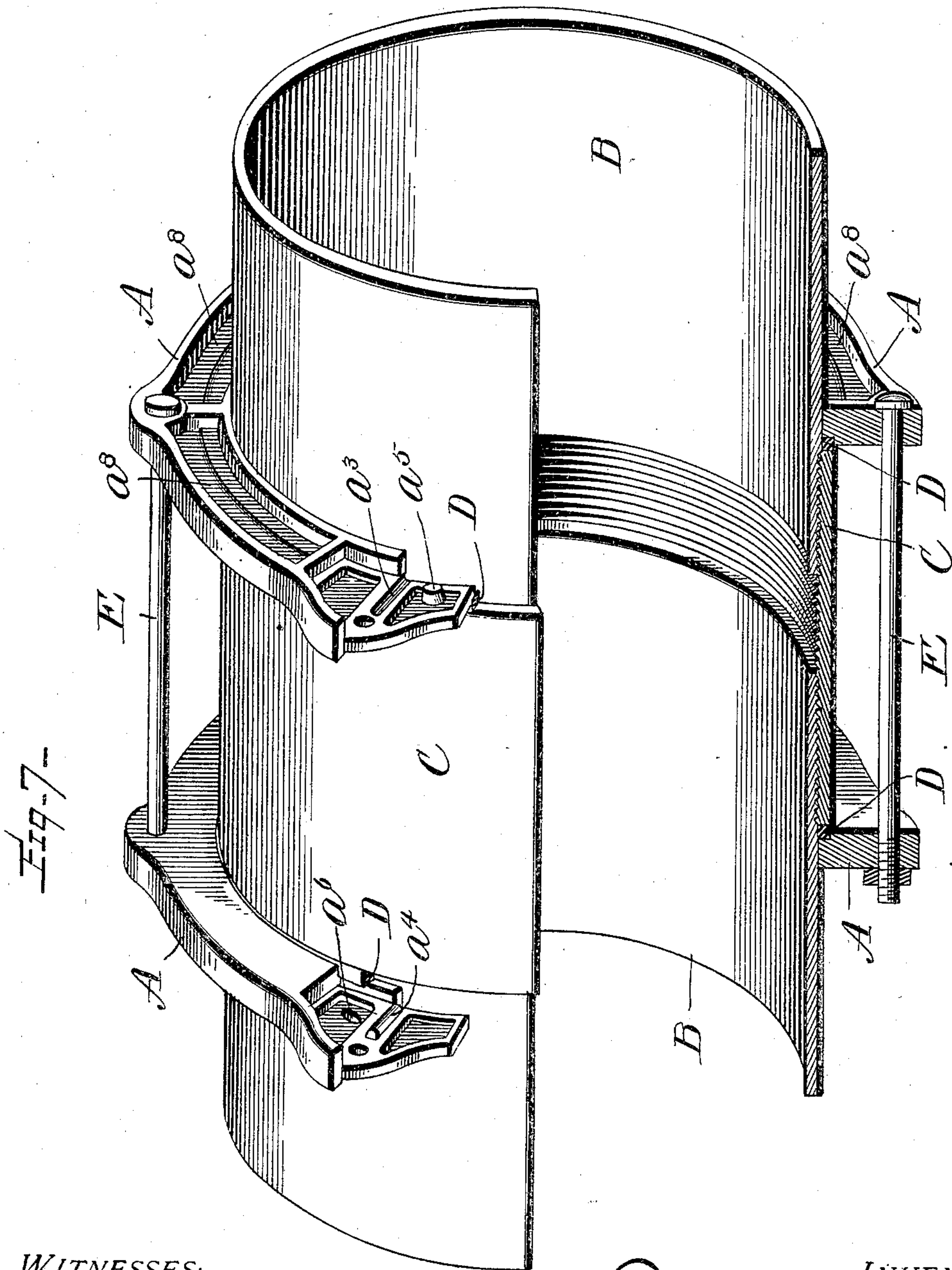
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

FRANK N. SMITH, OF BRADFORD, PENNSYLVANIA, ASSIGNOR TO SOLOMON R. DRESSER, OF BRADFORD, PENNSYLVANIA.

CLAMPING-RING FOR PIPE-COUPPLINGS.

SPECIFICATION forming part of Letters Patent No. 696,603, dated April 1, 1902.

Application filed November 11, 1901. Serial No. 81,865. (No model.)

To all whom it may concern:

Be it known that I, FRANK N. SMITH, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Clamping-Rings for Pipe-Couplings; and I do hereby 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 appertains to make and use the same.

My invention relates particularly to that class of pipe-coupling in which the clamping-rings are designed to be placed in position after the pipe is in place, although I do not limit myself to its use in such connection. In such a coupling it is necessary that the clamping-rings be made in two or more sections which are placed around the pipe, and the clamping-rings after being provided with suitable packing are drawn toward each other by suitable bolts. The tendency of the packing is to press the sections of the rings apart and to thereby increase their diameter, making it possible in some cases for the packing to slip partially out of its recess in the ring and wedge between the ring and the pipe, which is very undesirable. This tendency, which is assisted by any inaccuracy in the casting, is likely to cut the packing, produce a leaky joint, and to subject the ring-sections to risk of breaking.

The object of my invention is to provide the ring-sections with devices for securing their proper alinement and relation, so that the said sections will in all cases be drawn to their correct and proper positions when the bolts are tightened.

To this end my invention consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a view of a clamping-ring formed in two sections and embodying my said invention. Fig. 2 is a detail view of one end of one of said sections. Fig. 3 is an inner edge view

of the same. Fig. 4 is a view similar to Fig. 2 of the end of the other section adapted to engage the part shown in Fig. 2. Fig. 5 is an inner edge view of the same. Fig. 6 is a sectional view of the ring, taken on line 6 6 of Fig. 1. Fig. 7 is a perspective view, partly in section, of two of my coupling-rings applied to an ordinary pipe-joint formed by a union as they are used in stopping a leaky joint.

A A' represent the two sections of the clamping-ring, the end portions $a a$ of each section being reduced in thickness, as indicated at a' , to overlap the end portions of the other section. The inner faces a^2 of said overlapping portions of the two sections are provided with interlocking alining devices, preferably having inclined or cam faces, so that when the two parts are drawn together the projecting part will seat itself in a corresponding recess and positively draw the two ring-sections into the proper relative positions. In this instance I have shown the face of one part provided with a groove or recess a^3 , preferably V-shaped in cross-section and disposed radially with respect to the center of the ring, the opposing part of the other section being provided with a rib or projection a^4 of exactly the same size and shape as the recess a^3 and adapted to fit accurately therein when the two parts are drawn together, said rib a^4 being also preferably arranged radially with respect to the center of the ring.

In order to assist in assembling the sections of the ring, which are frequently of great weight, I also provide one of the overlapping portions of each joint with a retaining-stud a^5 , adapted to pass loosely into a hole or recess a^6 in the other part and retain the two parts together around the pipe until the clamping-bolts are inserted in place. These devices are, however, not essential to my invention. Each ring is also provided with a packing-recess a^7 of the usual or any preferred form, and the sections are preferably cored out, as indicated at a^8 , to decrease the weight of the same where this can be done without loss of strength.

In assembling the sections of one of my improved rings the sections are placed around a

pipe and the retaining projections a^5 are placed in engagement with the retaining-apertures a^6 , so as to keep the sections together while the bolts are inserted. The overlapping parts of the sections may be drawn together by means of short bolts passing through the bolt-holes a^9 a^9 and provided with nuts or by bolts extending from one of the clamping-rings to the other and forming part of the clamping-bolts of a pipe-coupling in the usual manner. When the said overlapping parts are drawn together by the bolts, the projection or rib a^4 will be forced into the recess a^3 and the inclined or cam faces of said projection or recess will positively draw the sections of the ring into the proper relative positions, as shown in Fig. 6. The ring may also be provided between its joints with additional bolt-holes a^{10} , as shown, for the reception of clamping-bolts adapted to extend to the other ring of the coupling in the usual manner.

In Fig. 7 I have shown two pipe-sections B B, connected by a union C, to which a pair of my improved rings are applied to stop a leak in the joint, the parts being shown partly in perspective and partly in section. In using the rings for this purpose the two halves or sections of a ring are placed around the pipe on each side of the union C, with the packing-recess a^7 toward the end of the union, the sections of each ring being locked together by the projections a^5 and apertures a^6 , so that they will be supported by the pipes and leave the operator's hands free to insert the packing. The packing D is then inserted in each packing-recess. The bolts E are passed through corresponding holes of both rings and drawn up, thus holding the ring-sections firmly together and simultaneously forcing the packings against the opposite ends of the union C, so as to stop the leak.

I do not desire to limit myself to a construction in which the overlapping ends of the sections are provided with a single alining rib or projection and recess, nor do I limit myself to a rib and recess formed in a straight line or disposed radially to the center of the ring, as variations may be made in these details without departing from my invention. For example, I may employ alining ribs and recesses of curved form and ribs and recesses rounded in cross-section, and where I employ two or more of such ribs and recesses part of each may be on one of the opposing faces and part on the other, all of which is obviously within the scope of my

invention and need not be herein particularly shown or described.

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

1. A sectional clamping-ring having its sections provided with overlapping portions, the adjacent faces of which are provided with interlocking alining devices having cam-faces, adapted to draw the sections into proper relative positions when forced together, substantially as described.

2. A sectional clamping-ring having its sections provided with overlapping portions, the inner faces of which are provided the one with an alining-recess and the other with an alining projection, said recess and projection having meeting faces inclined to the plane of the ring, and adapted to draw the sections of the ring into proper relative positions when forced together, substantially as described.

3. A sectional clamping-ring having its sections provided with overlapping portions, the inner faces of which are provided with a projecting rib and recess respectively, formed V-shaped in cross-section, and adapted to draw the sections into proper relative positions when forced together, substantially as described.

4. A sectional clamping-ring having its sections provided with overlapping portions, the inner faces of which are provided with a radially-disposed rib, and a radially-disposed recess respectively, having faces inclined to the plane of the ring and adapted to draw the sections of the ring into proper relative positions when forced together, substantially as described.

5. A sectional clamping-ring having its sections provided with overlapping portions, the inner faces of which are provided the one with an alining-rib and the other with an alining-recess, said rib and recess have faces inclined to the plane of the ring and adapted to draw the sections into proper relative position when forced together, said overlapping portions being also provided the one with a retaining-stud and the other with a recess for loosely engaging the same to retain the sections of the ring together temporarily, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

FRANK N. SMITH.

Witnesses:

SOLOMON R. DRESSER,
JOHN C. PEARSON.