

(No Model.)

H. F. STRUCK.

VAULT LIGHT.

No. 336,171.

Patented Feb. 16, 1886.

FIG. 1.

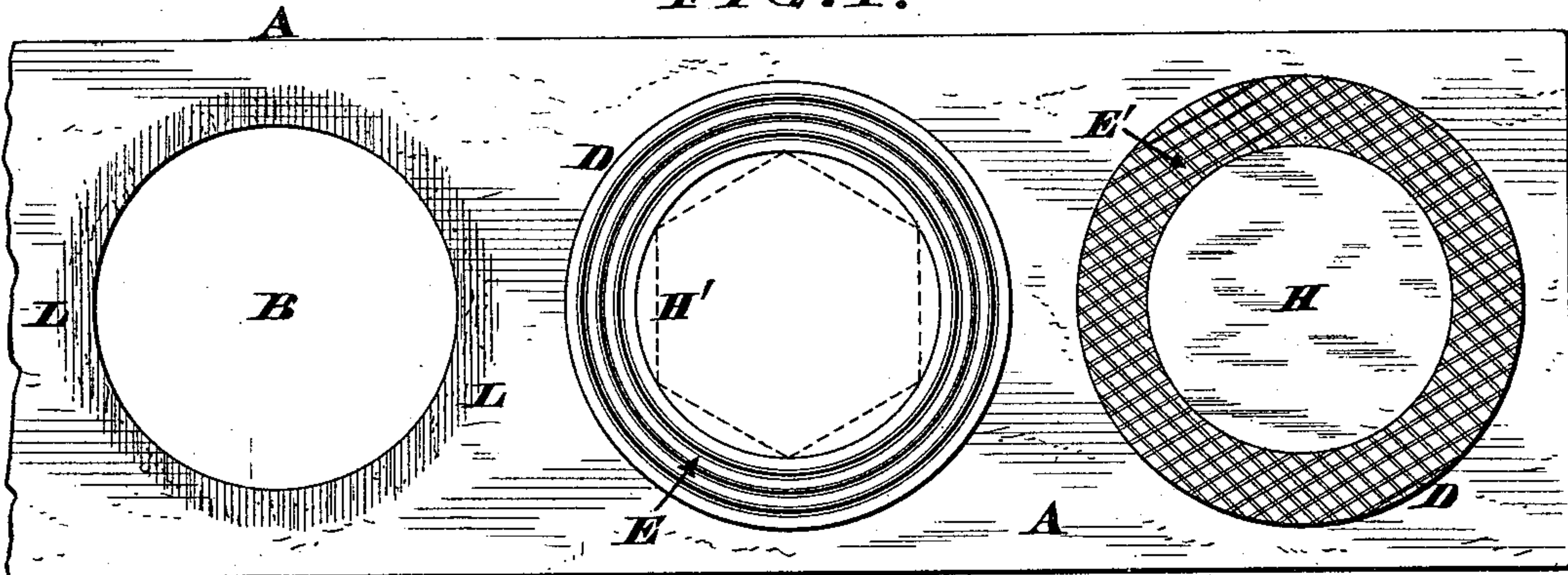


FIG. 2.

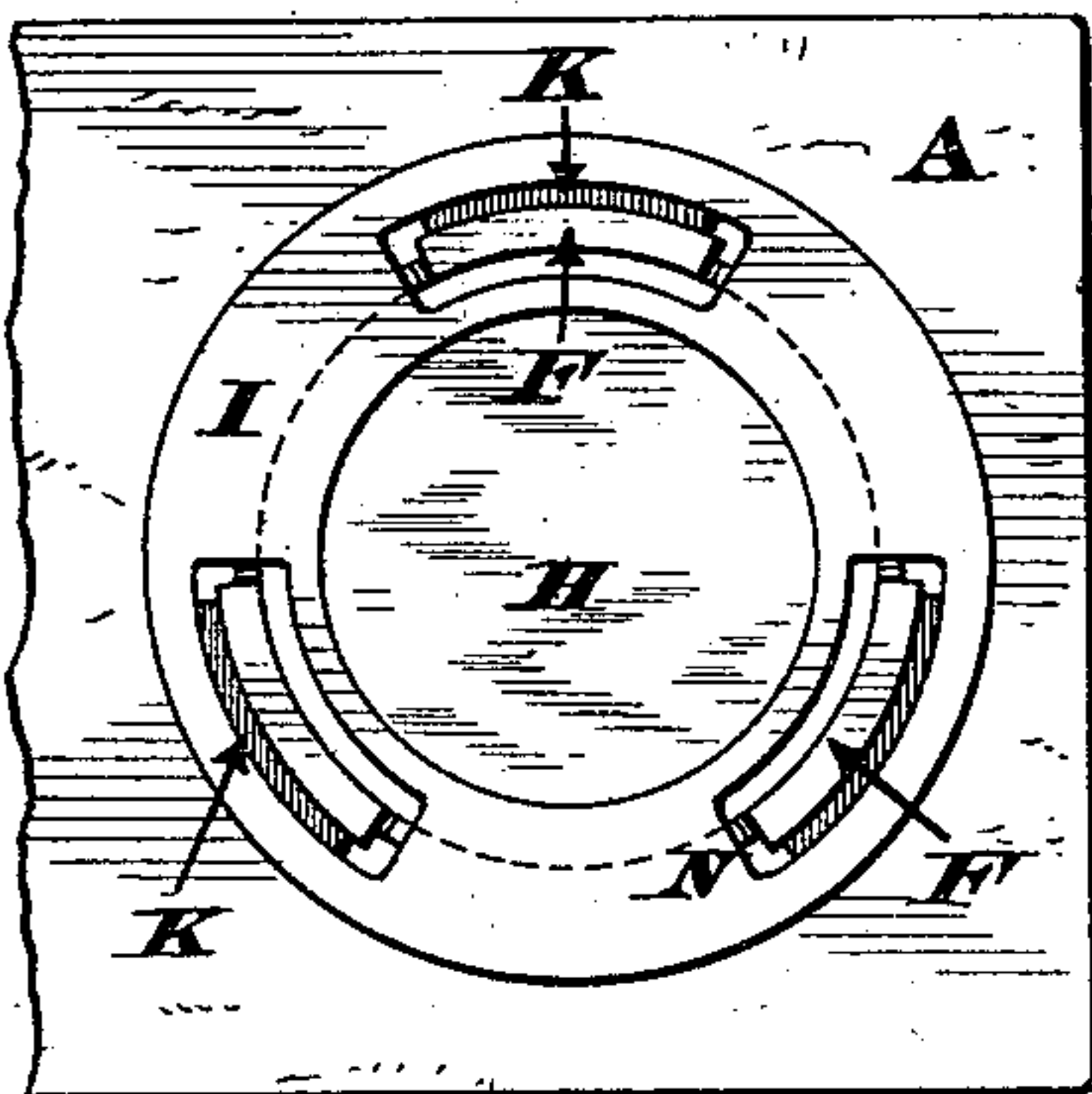


FIG. 3.

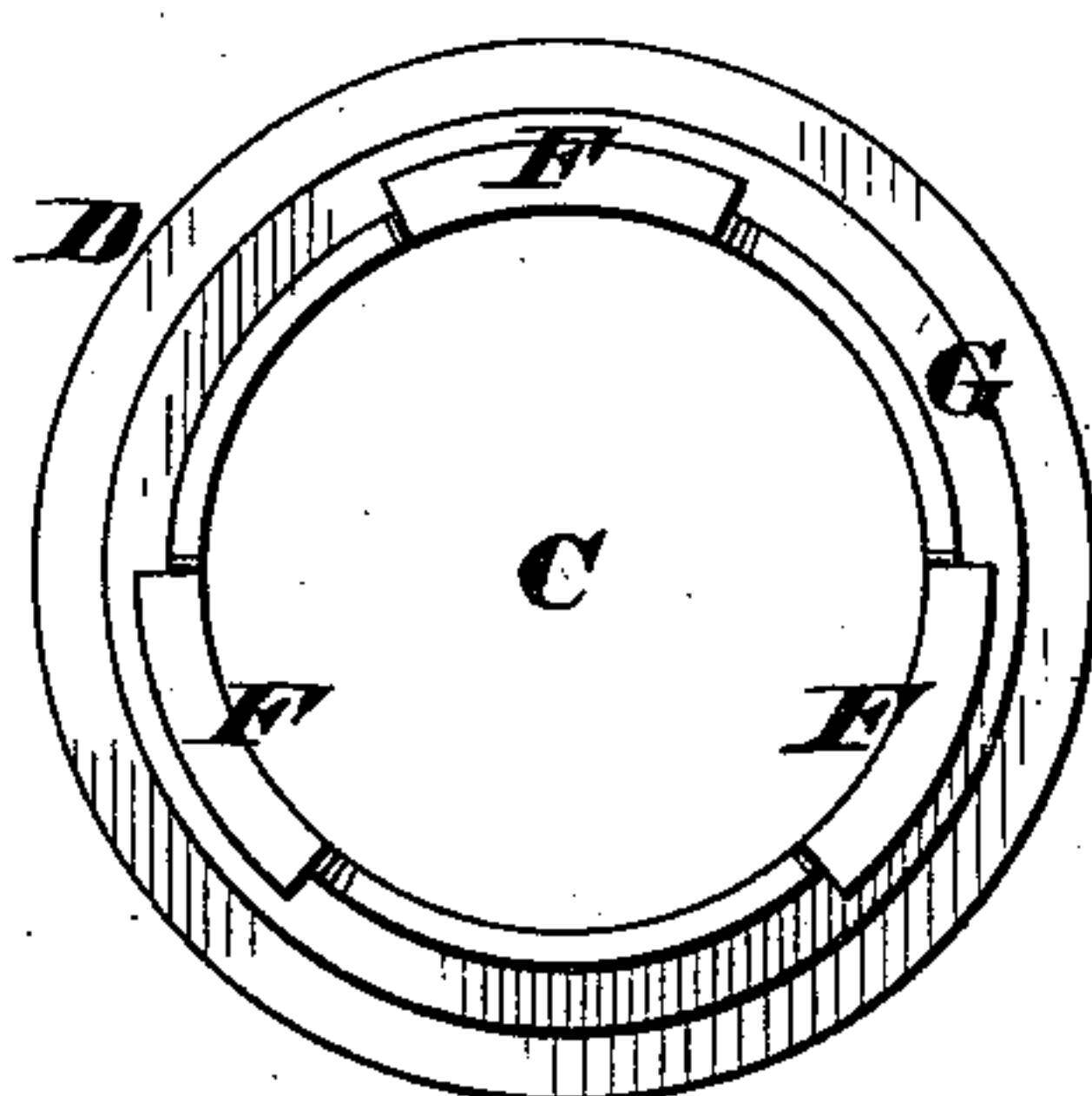


FIG. 4.

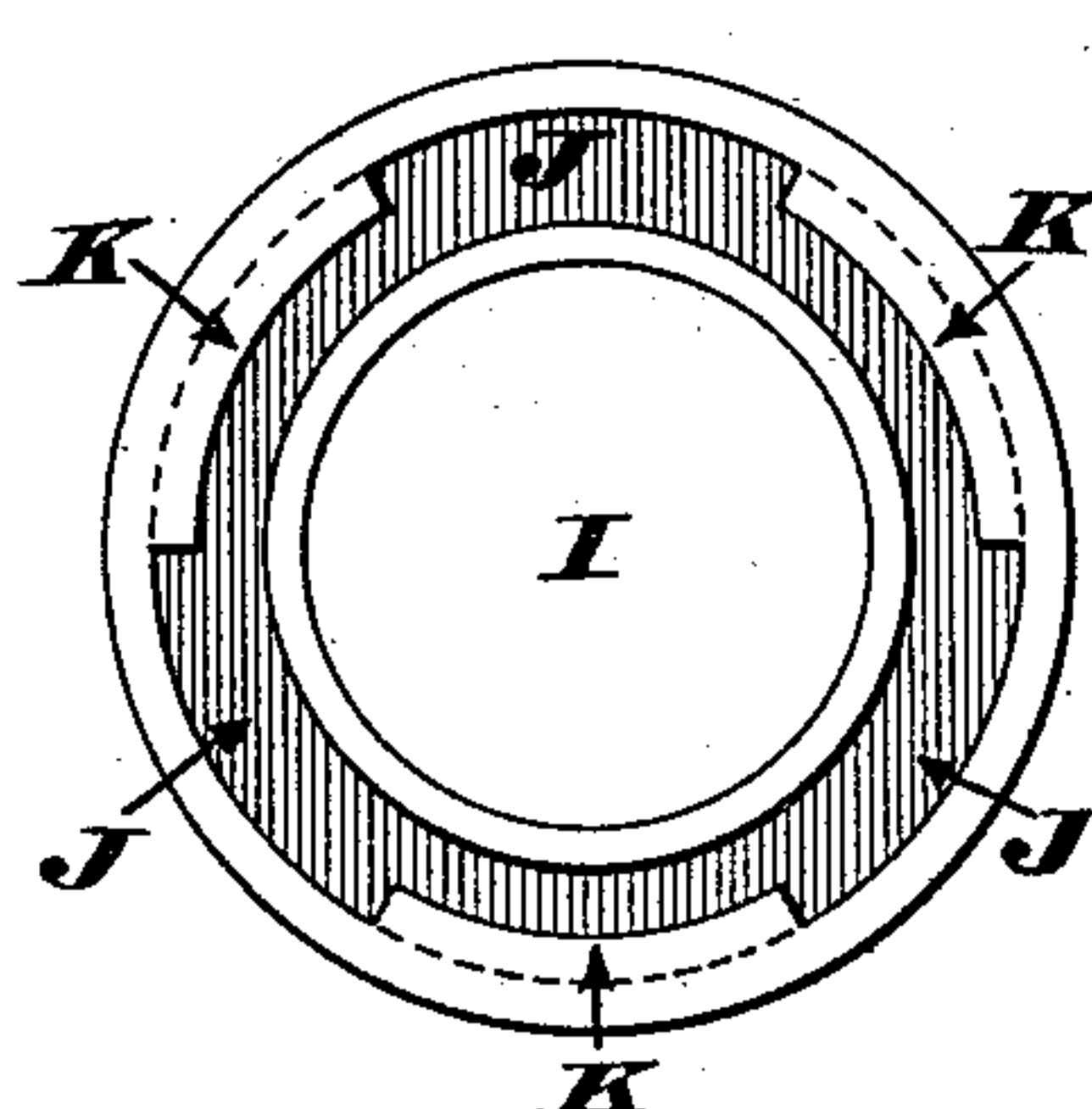


FIG. 6.

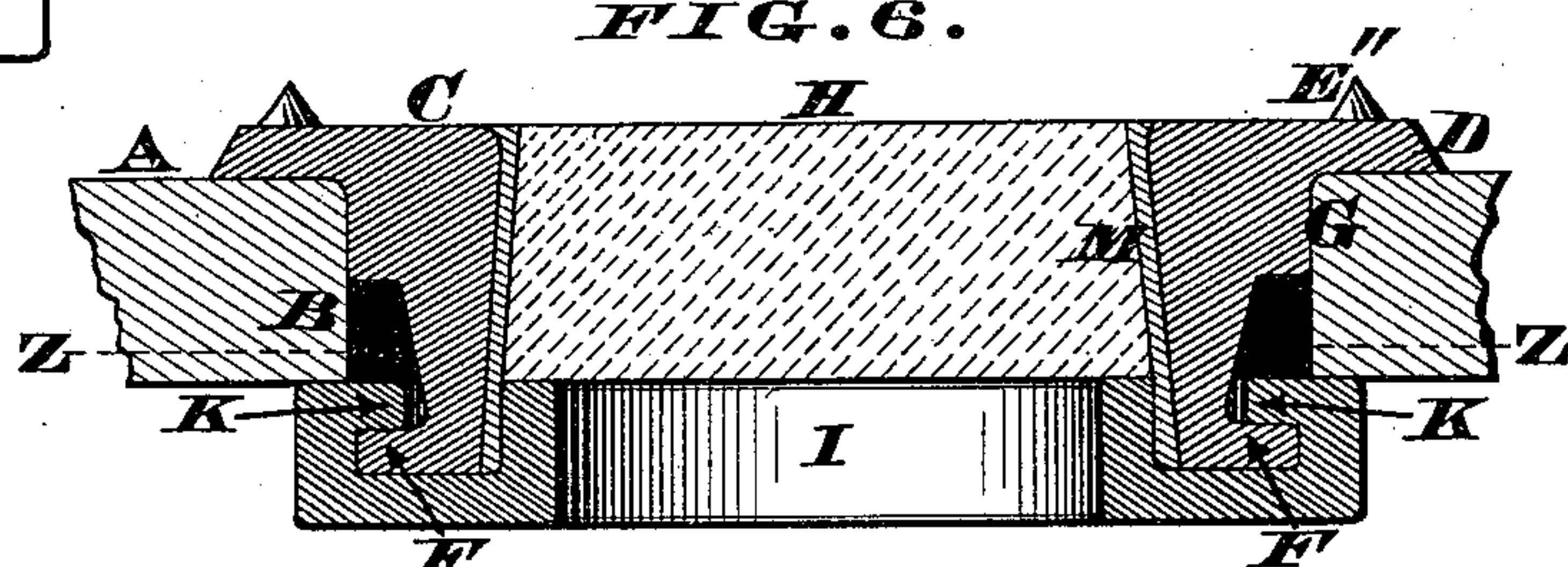


FIG. 5.

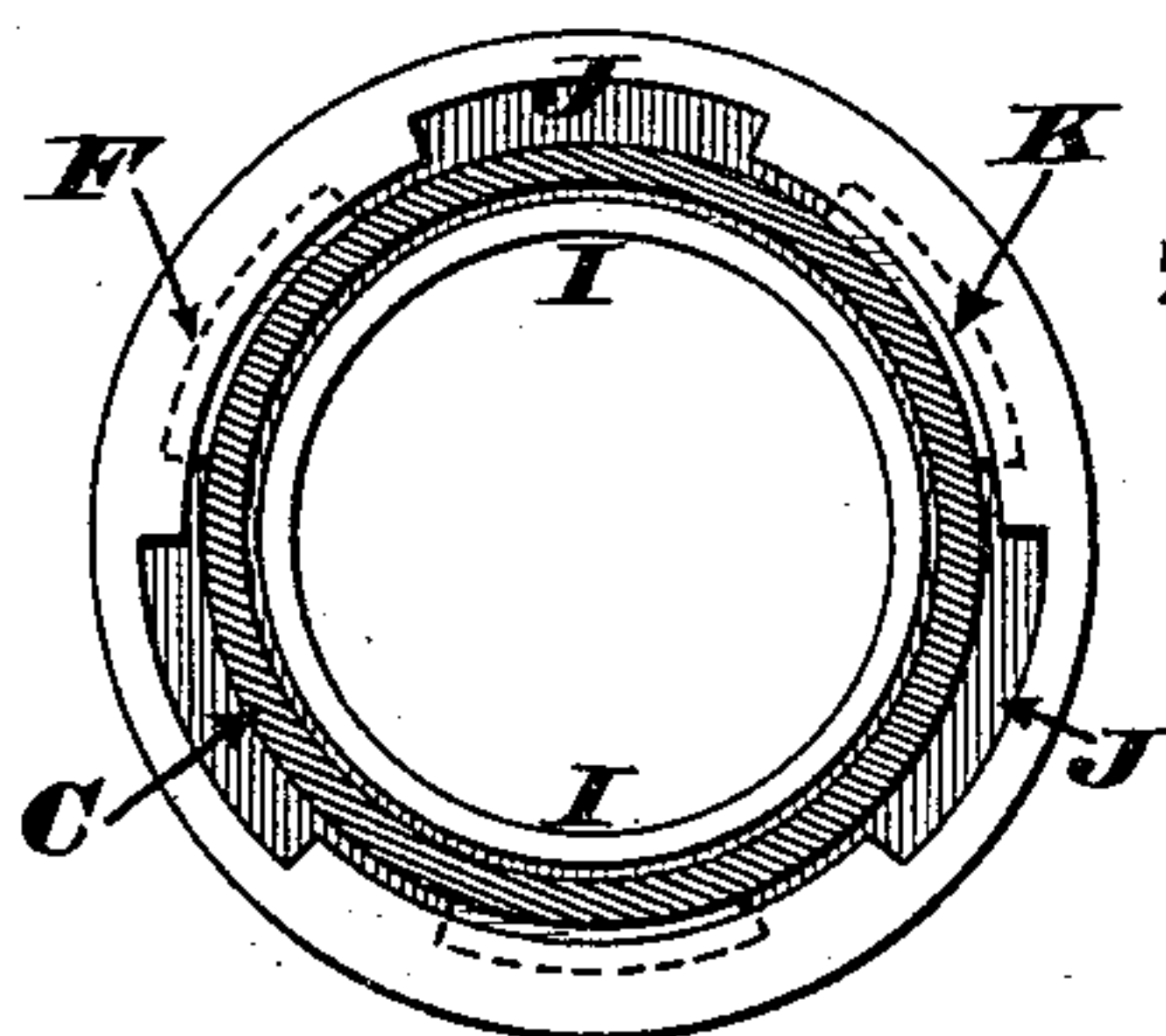


FIG. 8.

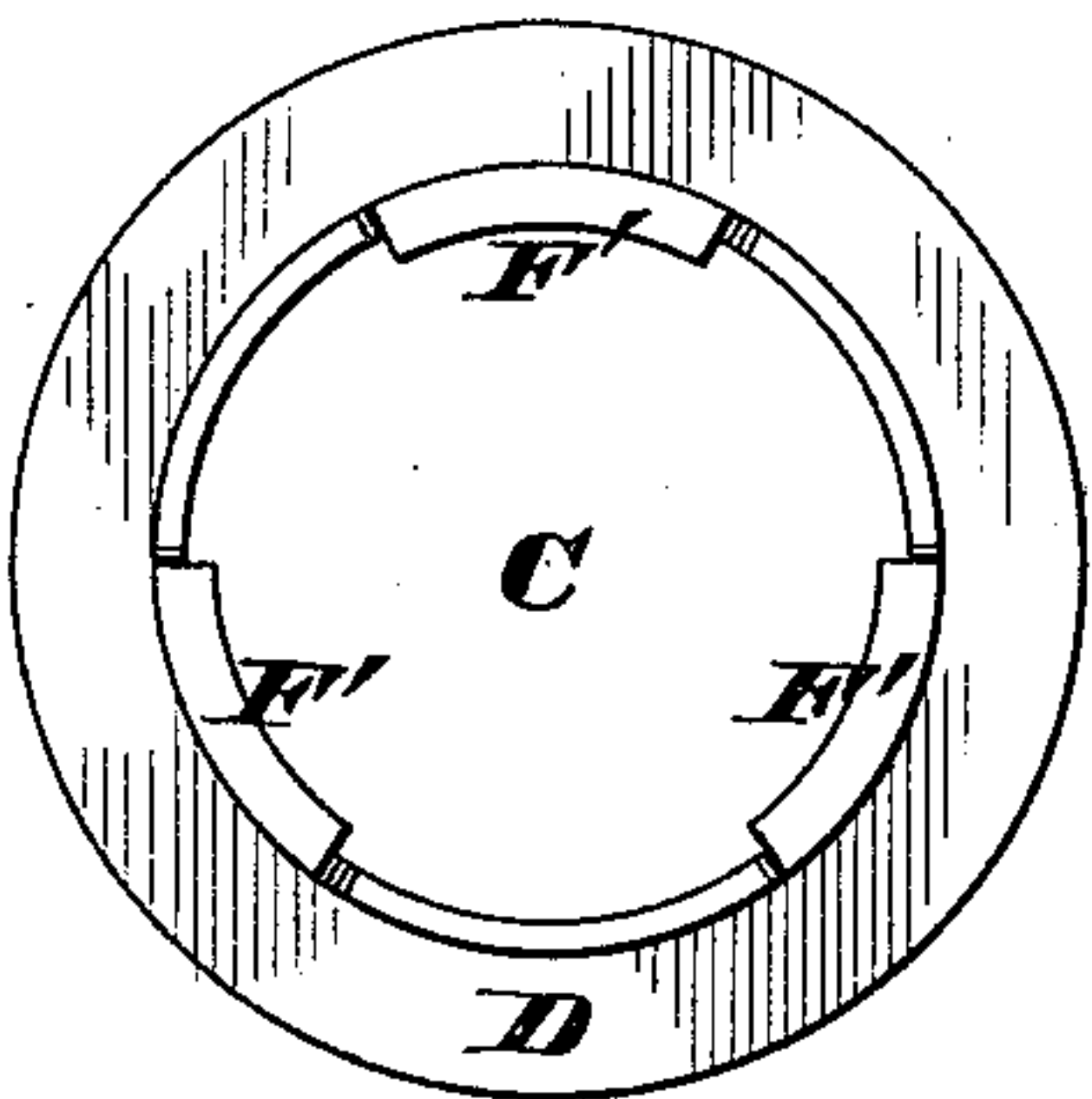


FIG. 9.

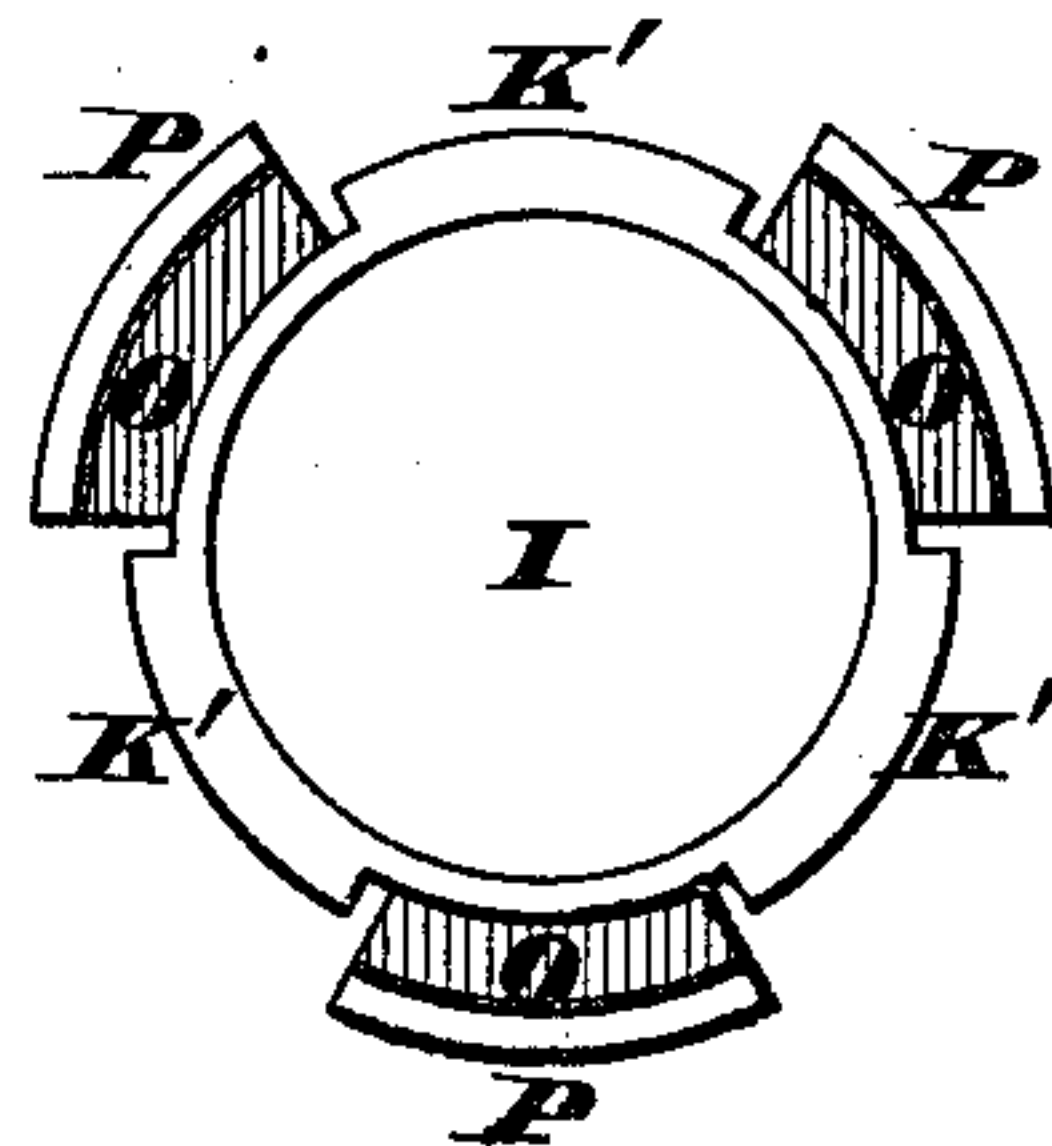


FIG. 10.

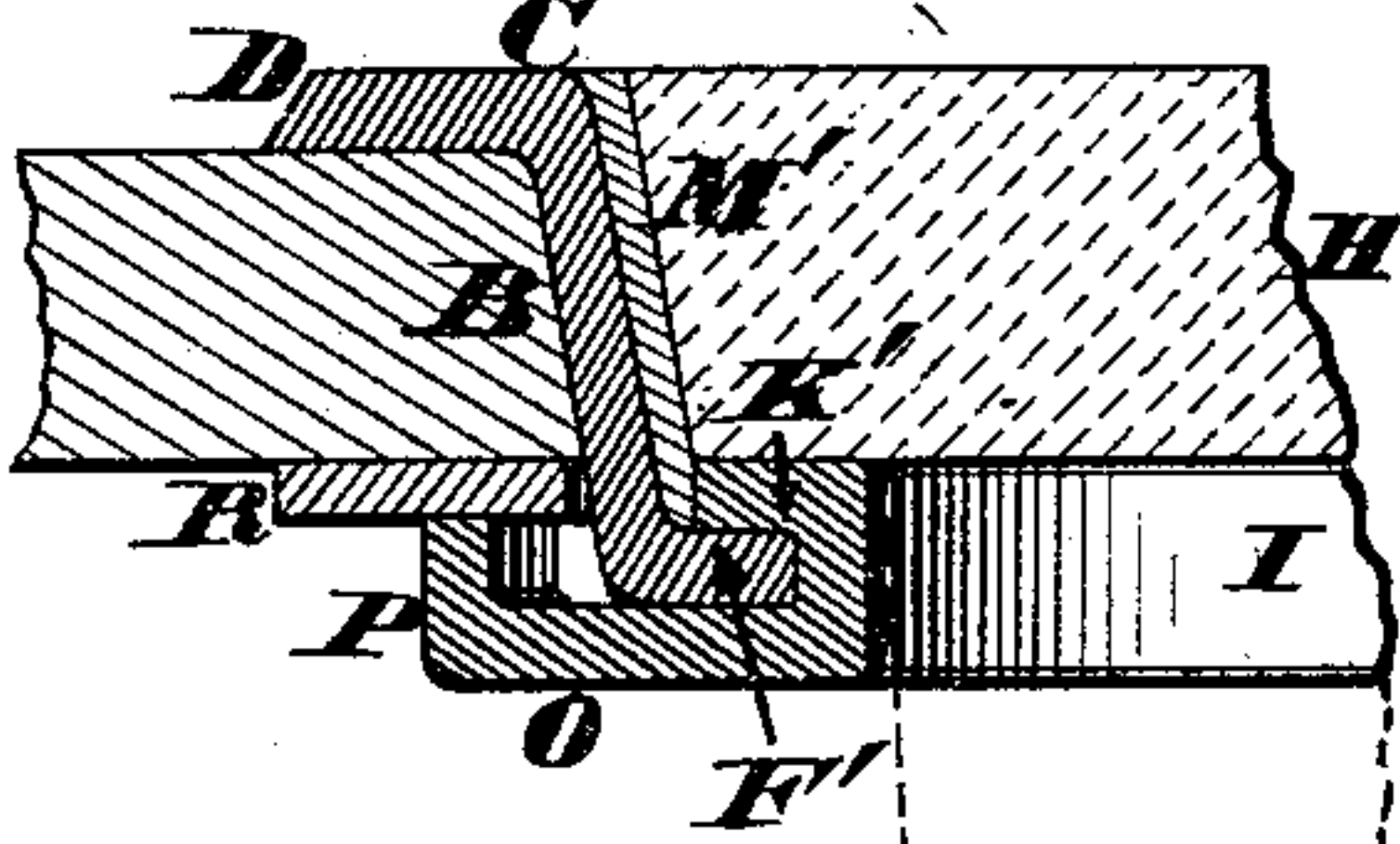


FIG. 7.



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HENRY F. STRUCK, OF CINCINNATI, OHIO.

VAULT-LIGHT.

SPECIFICATION forming part of Letters Patent No. 336,171, dated February 16, 1886.

Application filed November 16, 1885. Serial No. 182,943. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. STRUCK, a citizen of the United States, residing at Cincinnati, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Vault-Lights, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention comprises a novel holder for retaining those prisms, bull's-eyes, and other glasses which are inserted in plates or coverings for cellars and similar areas, said holder being composed of two distinct and separable members—to wit, a cup and locking-piece. The cup, which is the member that receives the glass, is adapted to be inserted in an opening made in the plate, girder, or other cover, and its lower or inner end is provided with circumferential flanges having suitable intervals or spaces between them. The locking-piece also is provided with similar circumferential flanges and interdental spaces, and when said piece is applied to the lower end of the cup and properly turned the flanges of the latter interlock with those of the former, and thereby unite these two members very securely, the inner portion of said locking-piece serving as an annular bearing upon which rests the margin of the prism or other light. Furthermore, the flanges, either of the cup or locking-piece, or of each of these members, are suitably inclined, in order that this turning of said piece will cause it to have a slight screwing motion, so as to clamp it very firmly against the under side of the plate or cover, as hereinafter more fully described.

My invention further consists in making the cup of greater diameter at bottom than at top, and fitting therein an upwardly-tapering glass or prism, which is retained securely in place by the engagement of the locking-piece with said cup, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a plan of a sidewalk-plate or other cover, showing the successive operations employed for attaching the preferred form of my holder thereto. Fig. 2 is a plan of the under side of a portion of said plate. Fig. 3 is a plan of the under side of the cup detached from said plate. Fig. 4 is a plan of the upper side of the locking-

piece of said cup. Fig. 5 is a horizontal section of the coupled locking-piece and cup, said section being taken at the line $z z$ of Fig. 6, and the glass being omitted. Fig. 6 is an enlarged axial section of the prism, cup, and locking-piece attached to the plate or other cover. Fig. 7 is an elevation of one of the inclined or screw flanges of the locking-piece. Fig. 8 is a plan of the under side of a modified form of the cup. Fig. 9 is a plan of the upper side of the locking-piece thereof. Fig. 10 is a section showing the manner of engaging this holder with the plate or other cover.

A represents a plate, girder, siding, or similar cover, which may be composed either of metal, wood, concrete, or any appropriate material, said plate being pierced at B to admit the prism-holders. These openings may be of any appropriate shape, but in the present case they are shown circular, so as to receive the cylindrical cups C, each cup being provided at top with an annular rim or collar, D, that rests upon the plate or other support A, and said collars are preferably corrugated at E to prevent pedestrians slipping on the same. These cups are of such a length as to project a slight distance below the under or inner side of plate A, and their lower ends are provided with two or more outwardly-projecting circumferential flanges, F, as more clearly seen in Fig. 3. Each cup has an annular swell or enlargement, G, that joins the body of said cup to the rim D thereof, the object of said swell being to secure a snug fit of the holder within the opening B, which latter must be sufficiently large in diameter to allow the flanges F to pass through. Adapted to fit in the cup is a tapering or conical light, bull's eye, prism, or other glass, H, the upper surface of which is about flush with the top of rim D, said glass being held in place by the inner annular portion of the locking-piece I. This locking-piece is practically a ring, and is provided with as many sockets or recesses J as there are flanges F of the cup C, said sockets being connected by annular flanges K, that slope gradually, as seen in Fig. 7, in order that said flanges may have a screwing or wedging motion when said locking-piece is engaged with said cup.

Preparatory to fitting one of these holders

within the plate or other cover or wall A a suitable cement is applied around the margin of the appropriate hole in said plate, as seen at L in Fig. 1, after which act the cup C is fitted in said opening, thereby causing the collar D to bed itself in the plastic coating just referred to. A thin coating of red-lead is then applied to the inner surface of the cup, as seen at M in Fig. 6, and the prism H is at once inserted in said cup, being of course introduced from the bottom of the same. The locking-piece I is now applied to the cup in such a manner as to cause the flanges F of the latter to enter the sockets J of the former, and said piece I being then turned in the proper direction the inclined flanges K of the locking-piece engage with the aforesaid flanges F. Now, as the upper surface of the locking-piece bears directly against the under side of the plate A, it is evident this turning of said piece causes its inclined flanges K to have a screwing or wedge action against the flanges F of the cup. Consequently this application of the locking-piece forces the prism H tightly into the cup C and clamps the latter immovably to the plate A, said piece I serving to strengthen the latter around the margin of the hole B.

The above is a description of the preferred construction of my prism-holder; but it is evident the details of the same may be varied—as, for example, the corrugations of the rim D, instead of being concentric, as seen at E in Fig. 1, may be arranged to cross said rim, as represented at E' in the same illustration; but the corrugations may be omitted, and upwardly-projecting spurs be substituted therefor, as seen at E' in Fig. 6. Again, in Fig. 2 the metal directly under the flanges K of the locking-piece has been removed at N for the purpose of reducing weight, but in Figs. 4, 5, 6, and 7 said piece is shown solid.

Fig. 8 shows another modification of my invention, in which the flanges F' of the cup project inwardly instead of outwardly, and

are adapted to engage with the flanges K' of the locking-piece I. (Seen in Fig. 9.) In addition to these outwardly-projecting flanges K', said locking-piece has wings O, terminating with vertical extensions P, adapted to bear either against the under side of plate A or against a washer, R, interposed between said plate and extensions, as seen in Fig. 10. This form of holder necessitates the prism H being inserted from the top of the cup C and being retained in place by a suitable cement, M'. Furthermore, the dotted lines seen in this illustration indicate that the prism H may be prolonged so as to project down through the opening of the ring-shaped locking-piece. Finally, the prism may be polygonal, as indicated by the dotted lines H' in Fig. 1.

I claim as my invention—

1. A holder for prisms, bull's-eyes, and other lights, which holder consists of a cup and a detachable locking-piece united by a set of interlocking flanges, which locking-piece serves as a bearing for the lower margin of the prism, substantially as described.

2. The combination, in a holder for prisms, &c., of the cup C, having flanges F, and the detachable locking-piece I, having sockets J and inclined flanges K, whereby the said holder is clamped to the vault-cover and a bearing afforded for the margin of the prism, as herein described.

3. The cup C, having a rim, D, outwardly-projecting flanges F, and an annular enlargement, G, the bore or opening of said cup being of greater diameter at bottom than at top for the twofold purpose of clamping the holder in place and securing the prism within said holder, as herein described.

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

HENRY F. STRUCK.

Witnesses:

JAMES H. LAYMAN,
S. S. CARPENTER.