

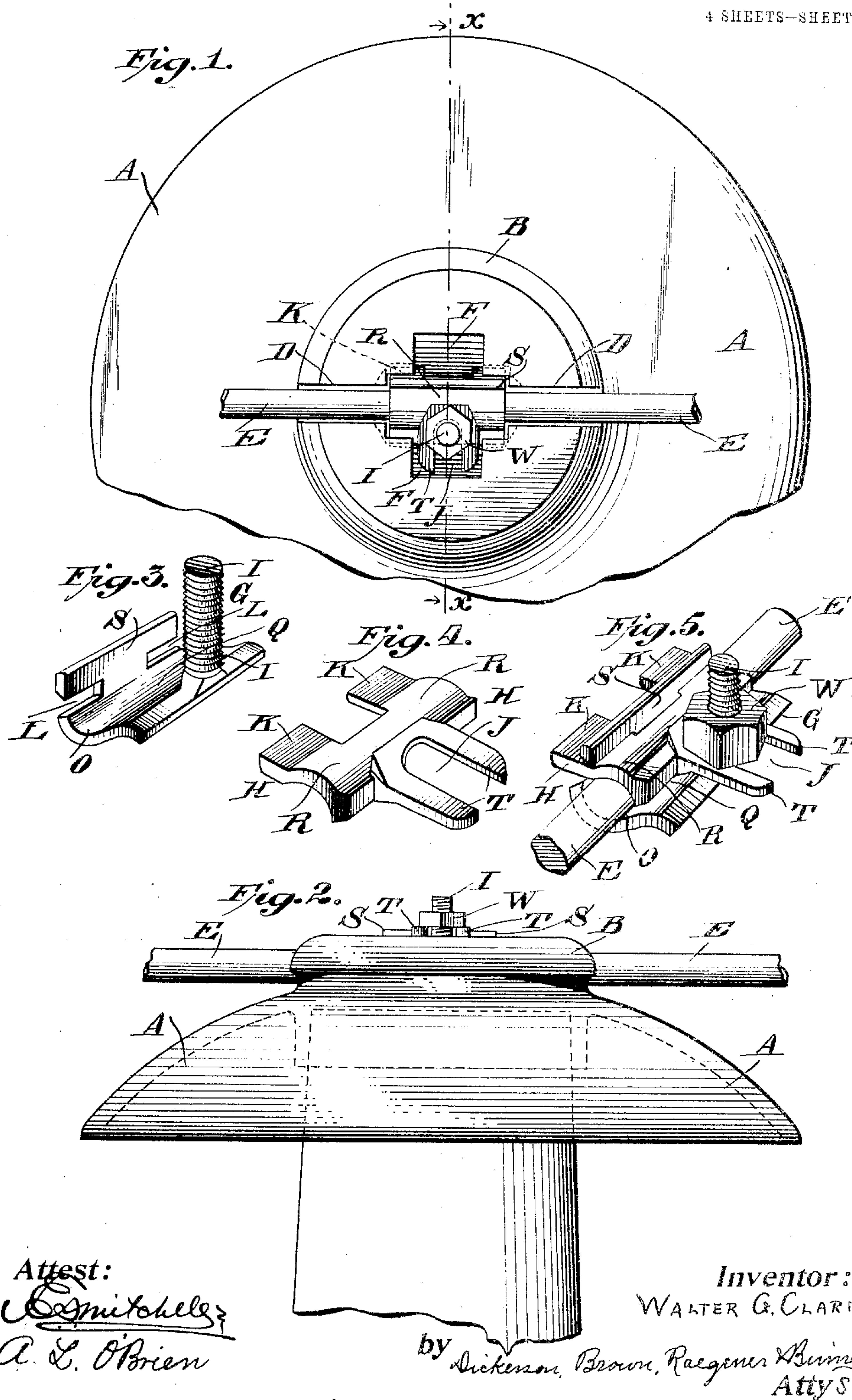
No. 843,259.

PATENTED FEB. 5, 1907.

W. G. CLARK.  
INSULATOR.

APPLICATION FILED JULY 20, 1905.

4 SHEETS—SHEET 1.



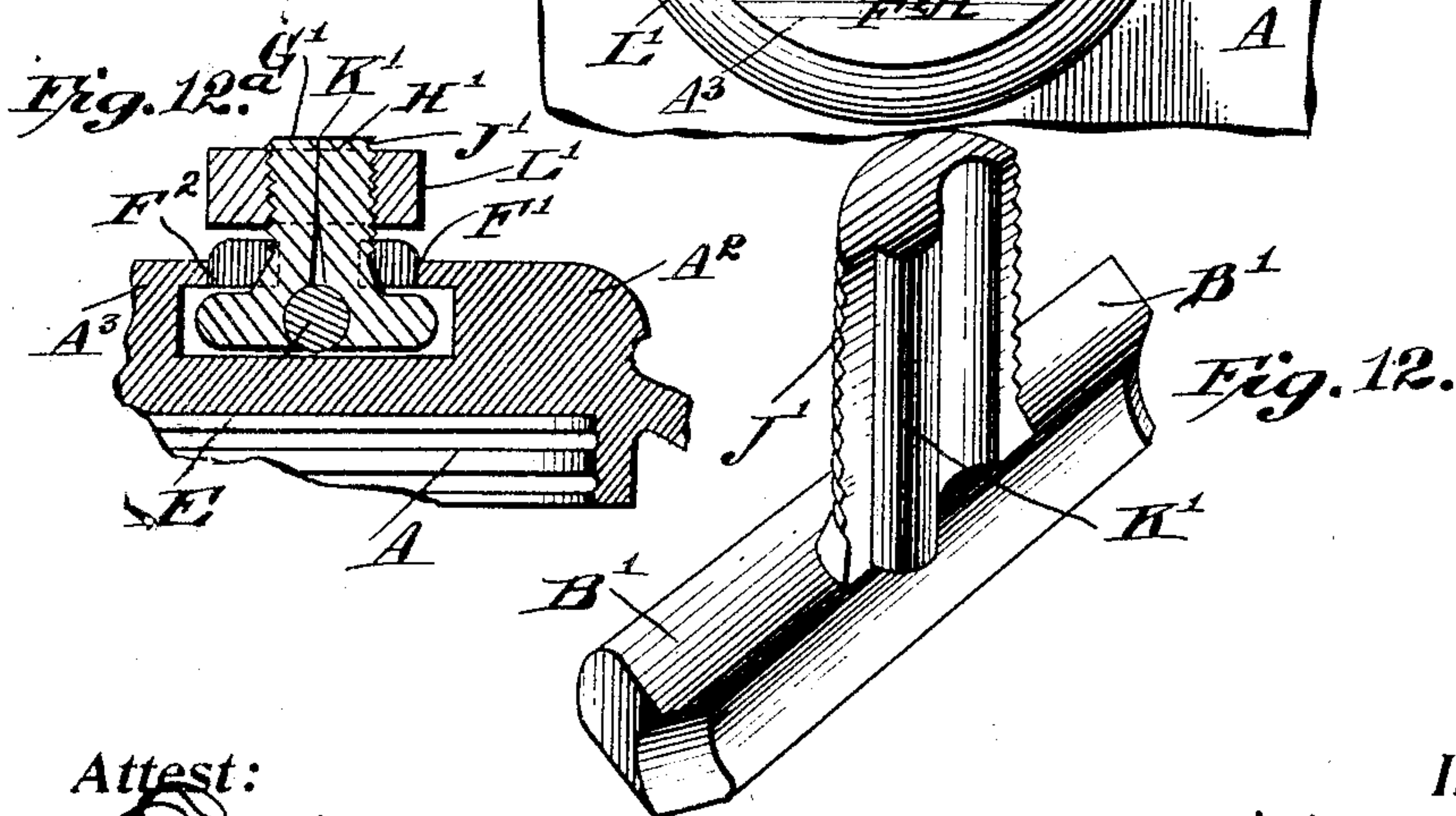
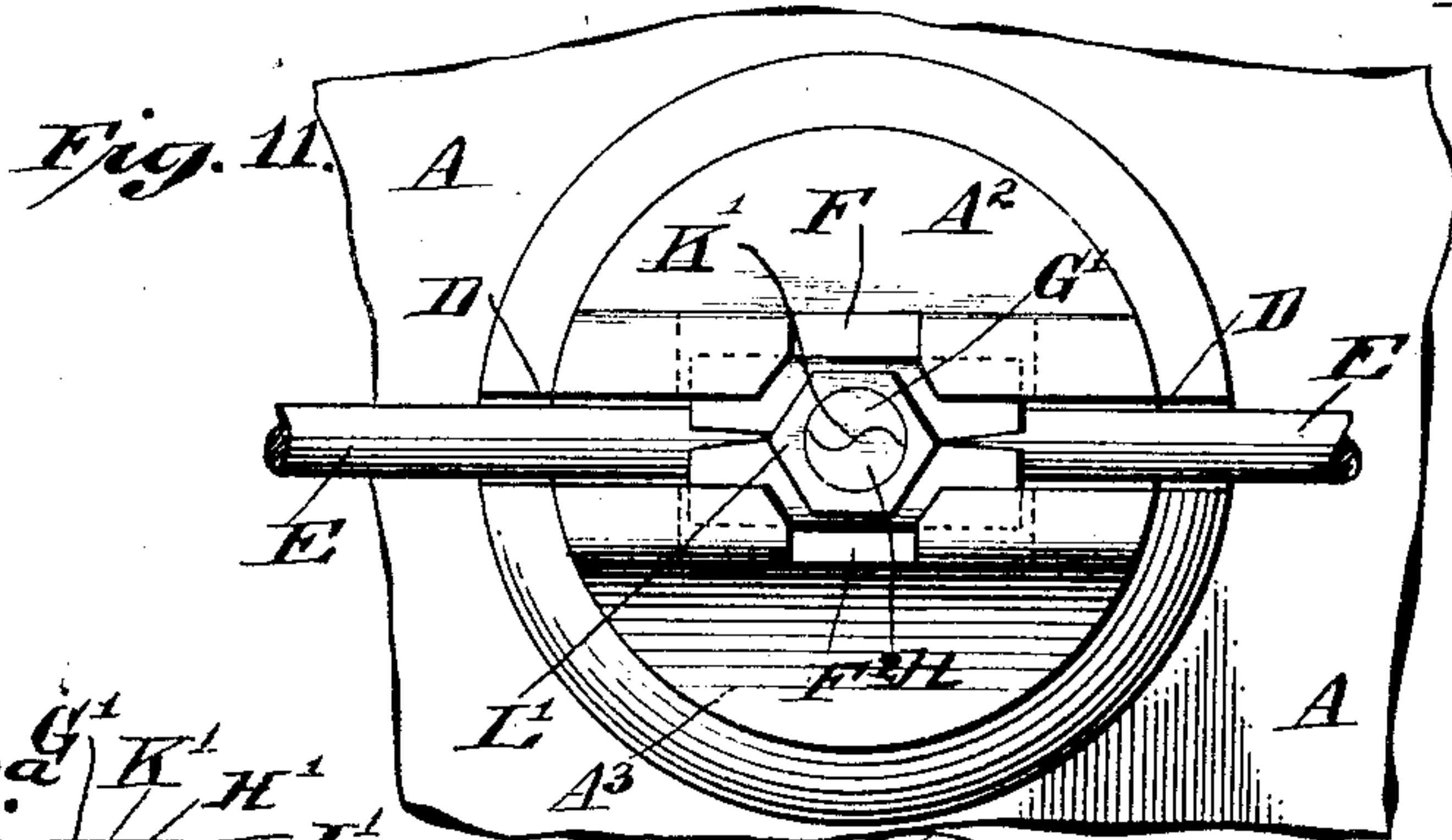
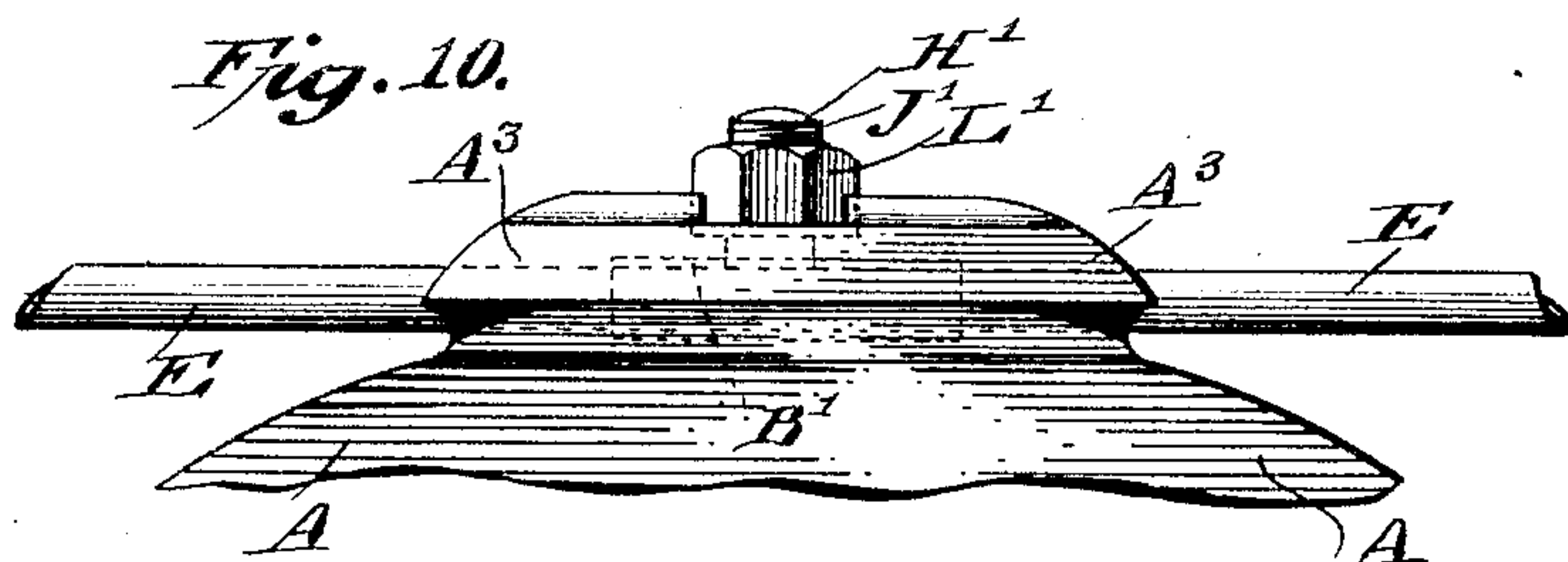
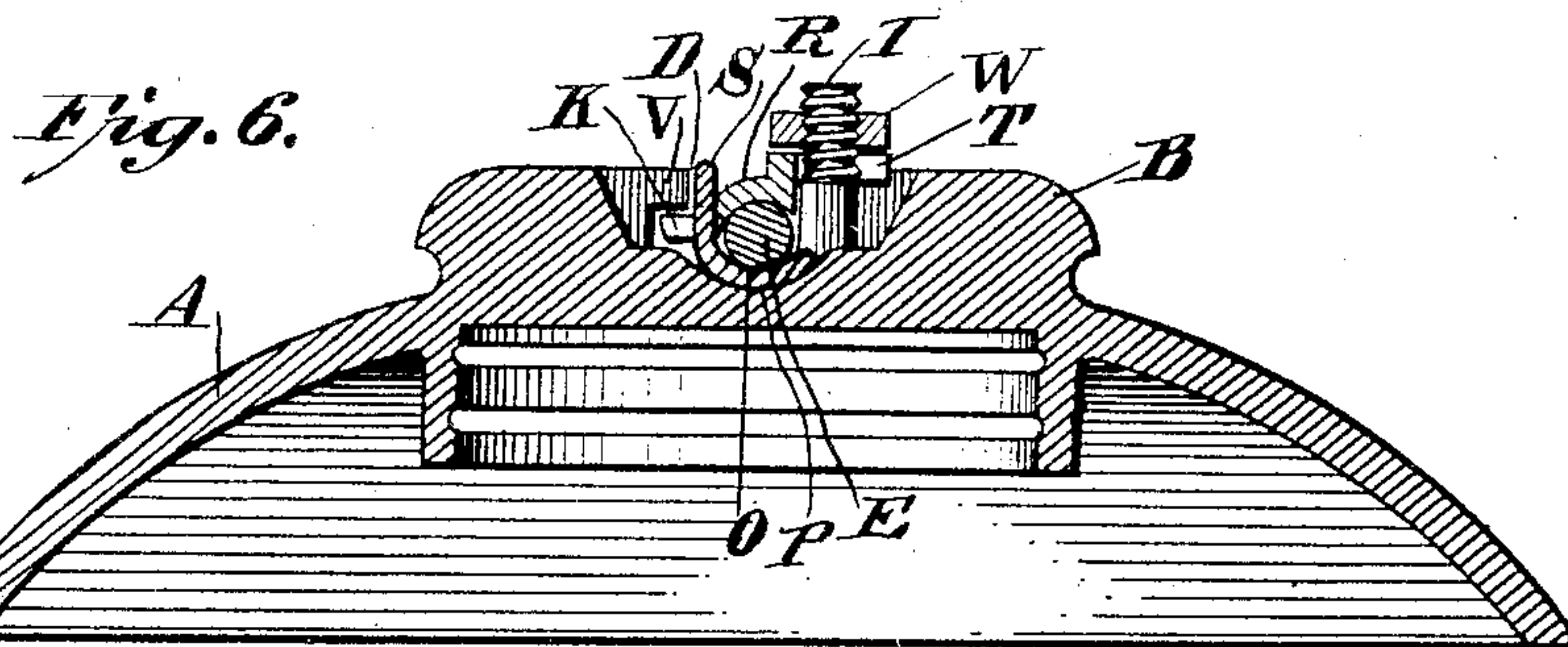
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 7.

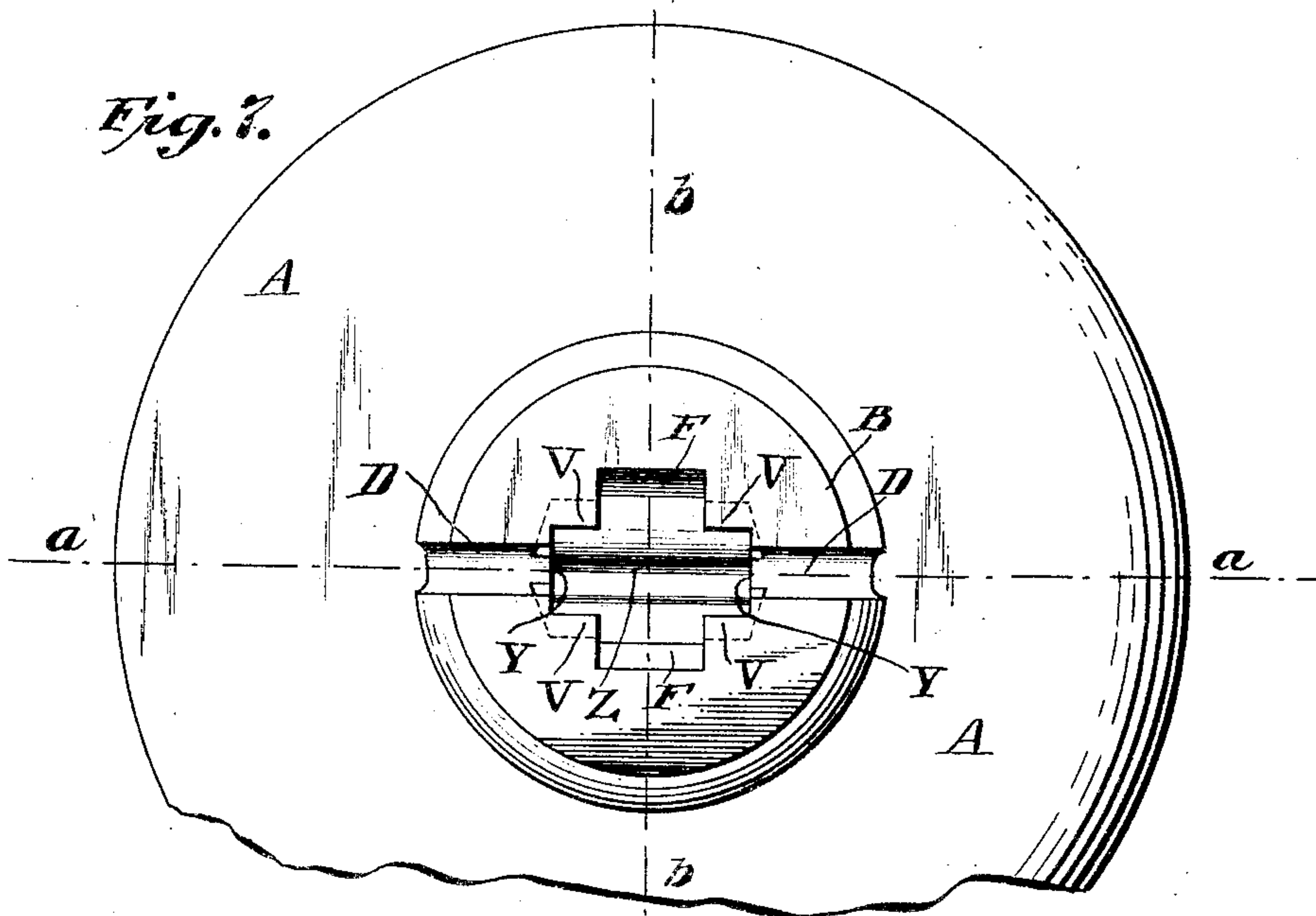


Fig. 8.

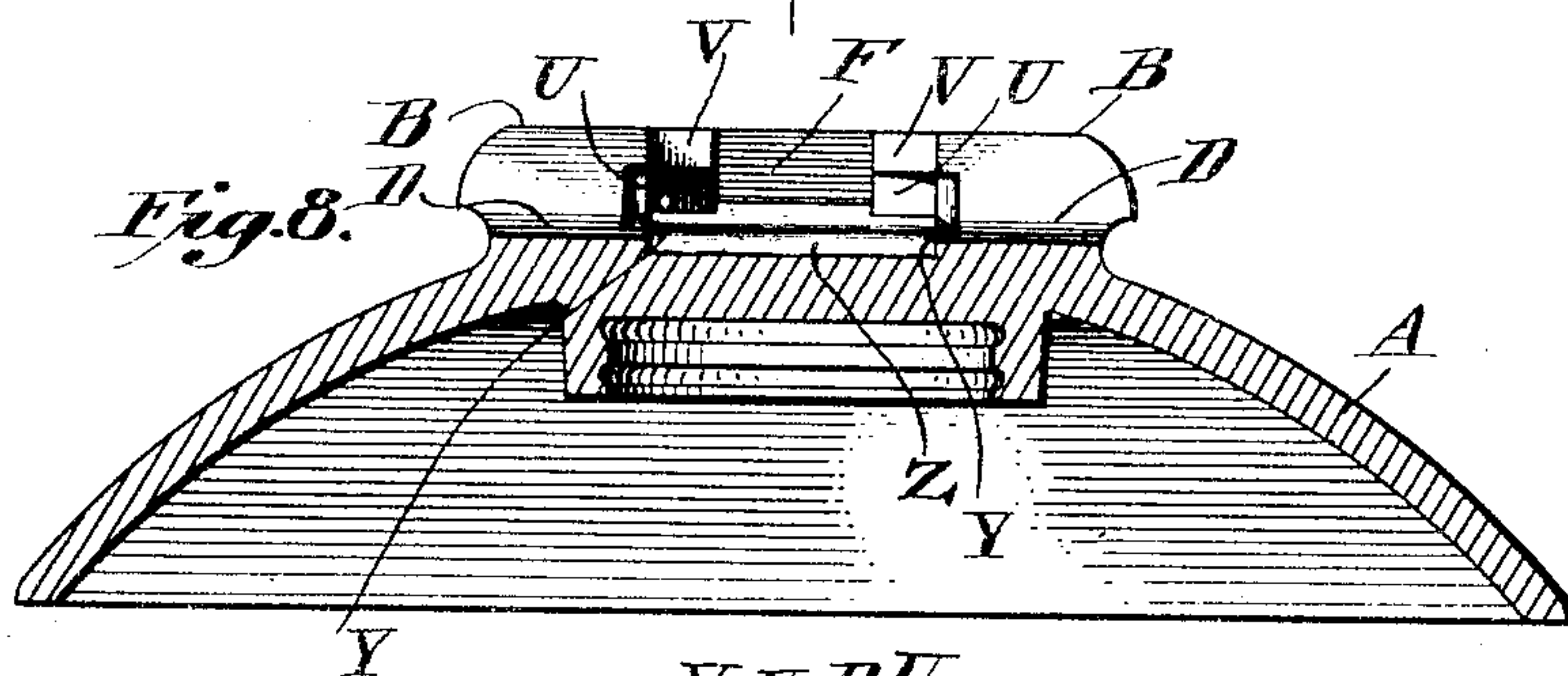
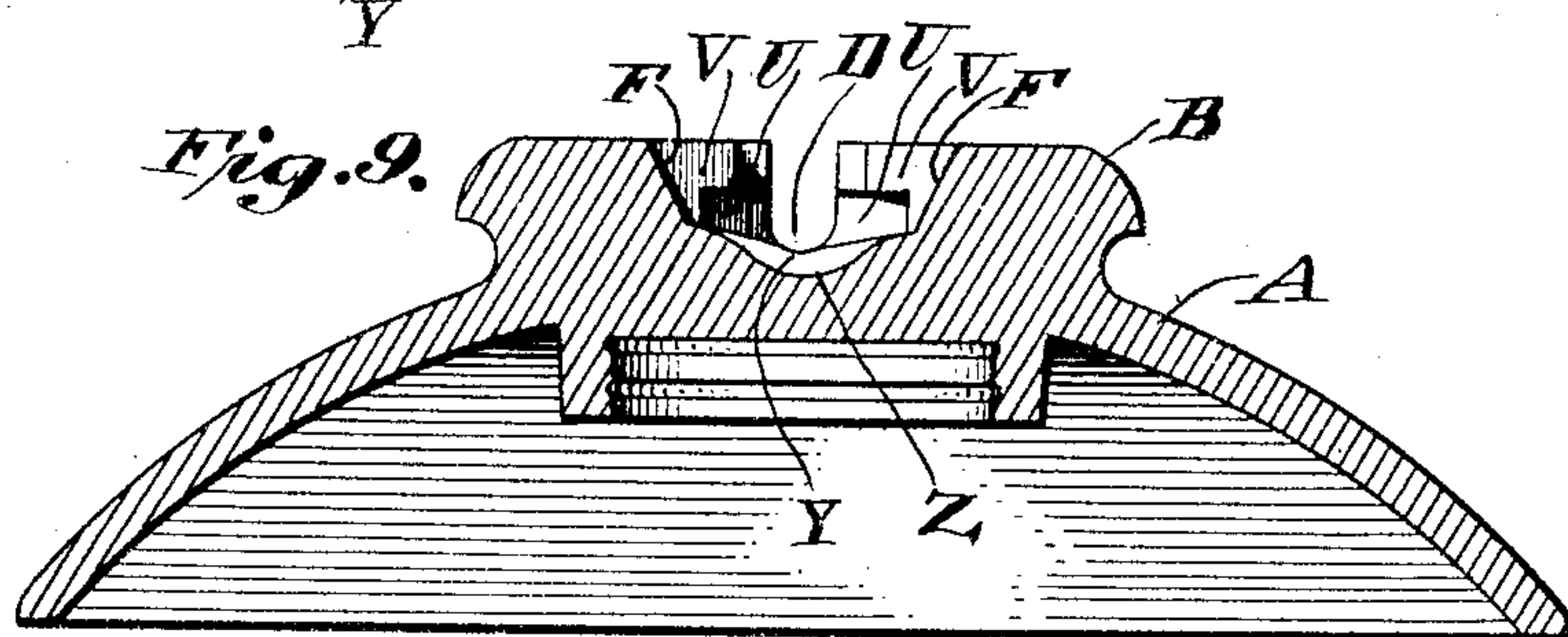


Fig. 9.



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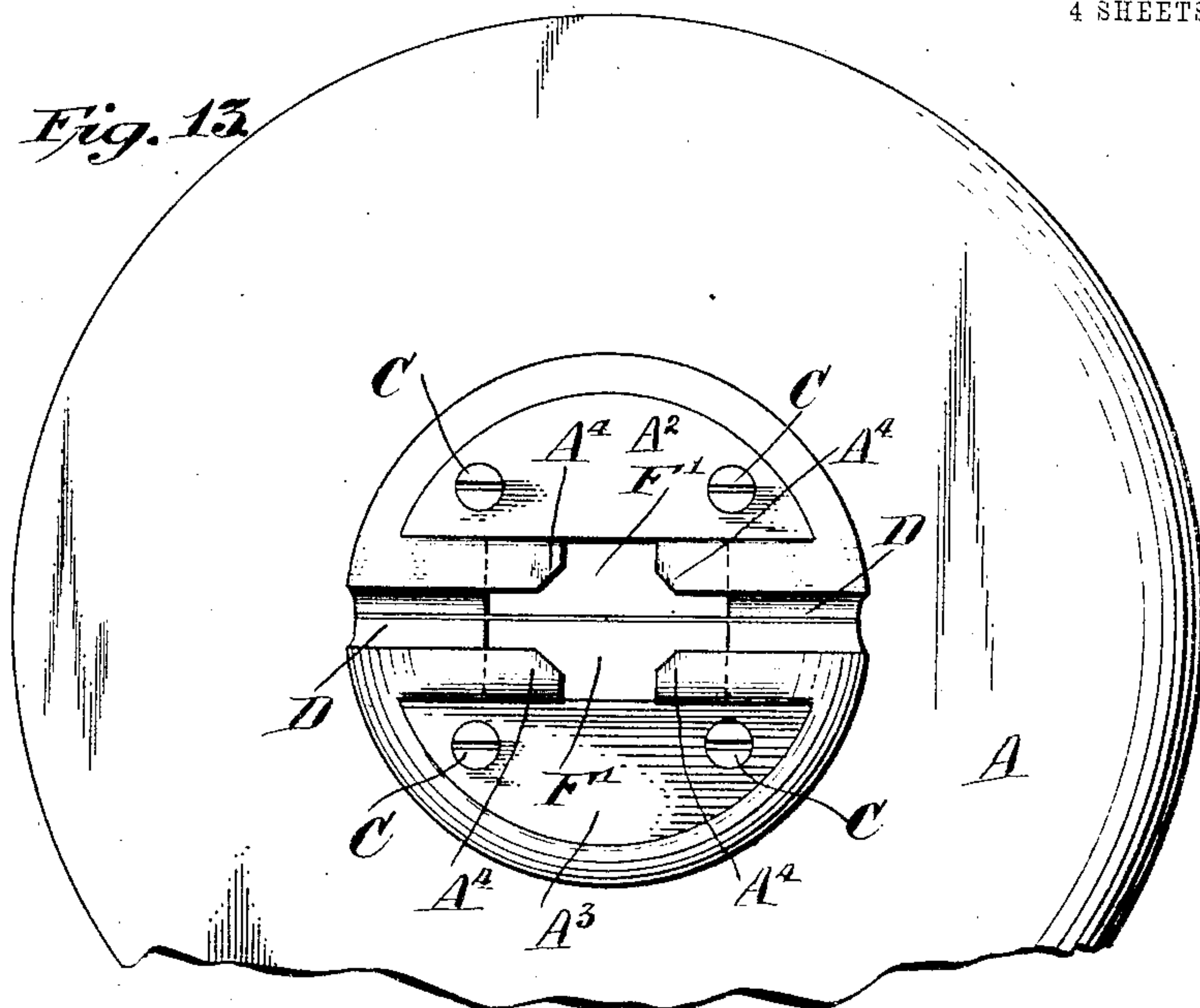
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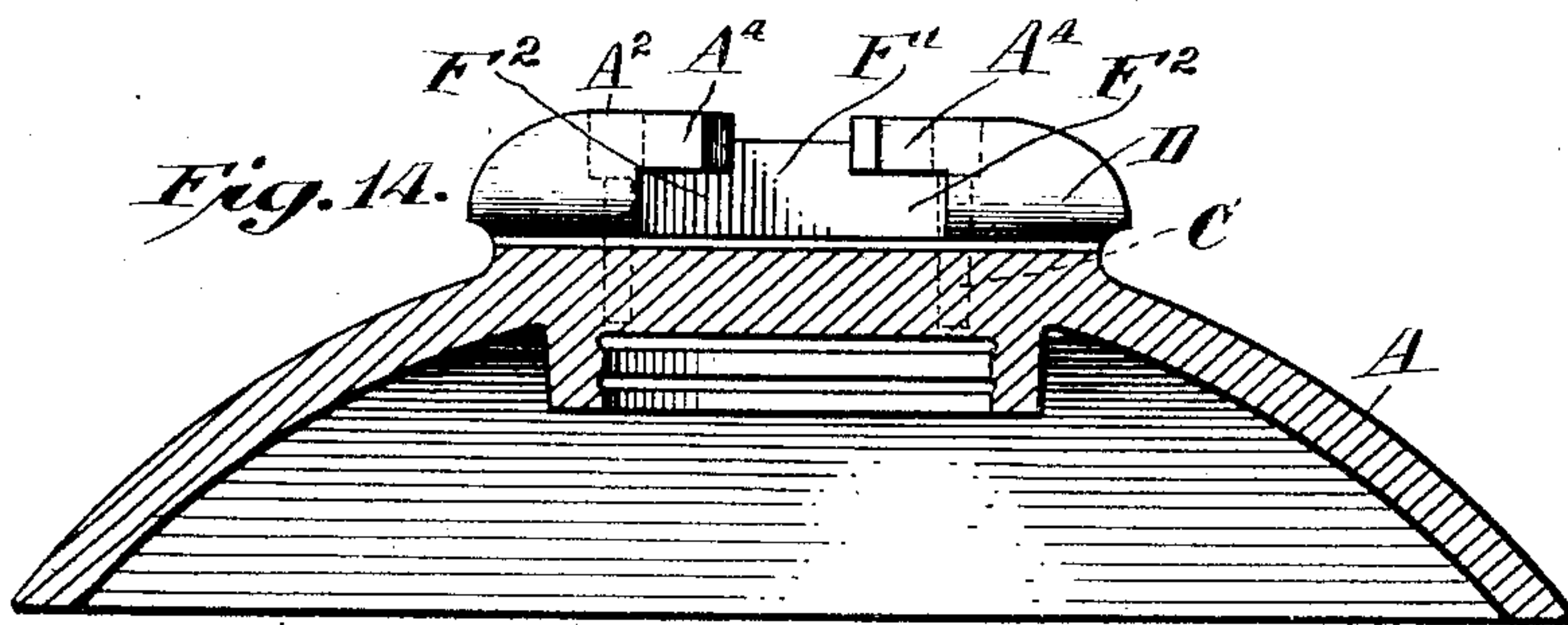
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4 SHEETS—SHEET 4.

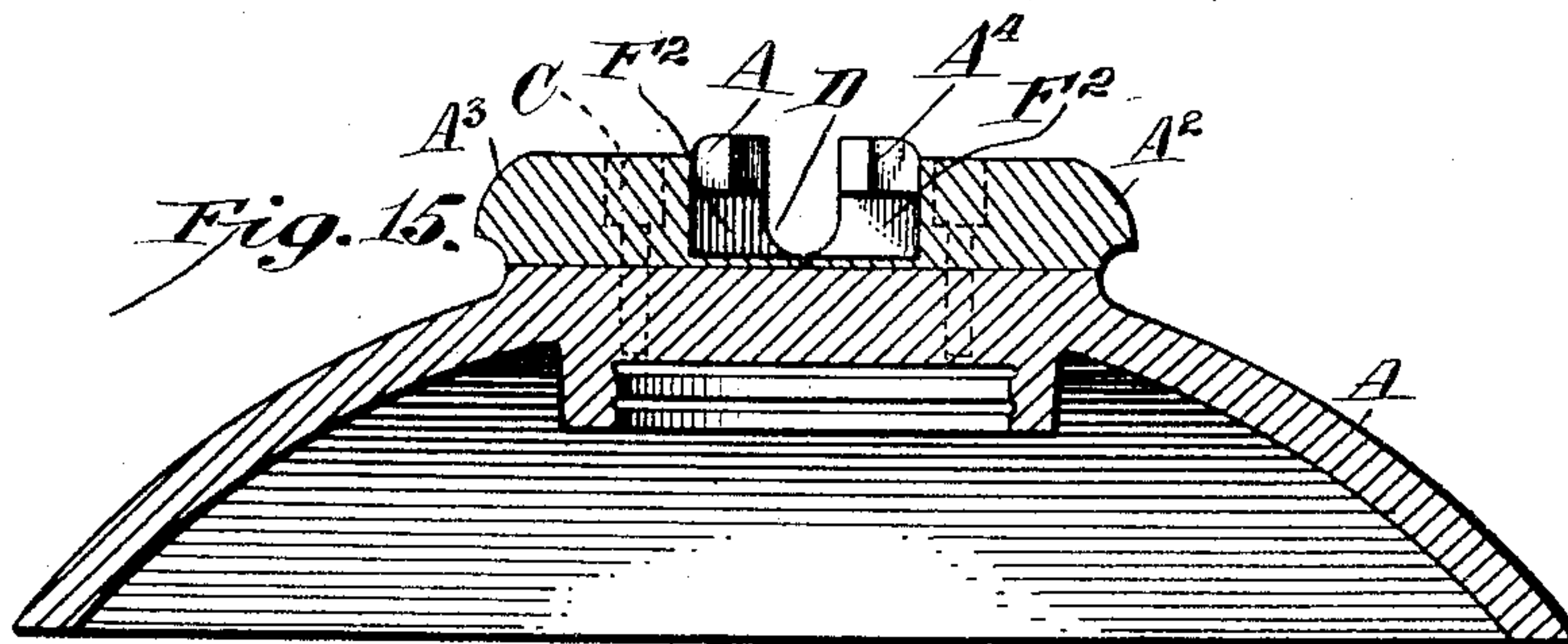
*Fig. 13.*



*Fig. 14.*



*Fig. 15.*



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# UNITED STATES PATENT OFFICE.

WALTER G. CLARK, OF SEATTLE, WASHINGTON, ASSIGNOR TO THE CLARK ELECTRIC AND MANUFACTURING COMPANY, A CORPORATION OF NEW YORK.

## INSULATOR.

No. 843,259.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed July 20, 1905. Serial No. 270,463.

*To all whom it may concern:*

Be it known that I, WALTER G. CLARK, a citizen of the United States, and a resident of Seattle, county of Kings, State of Washington, have invented certain new and useful Improvements in Insulators, of which the following is a specification, accompanied by drawings.

This invention relates to insulators for electric wires, more particularly high-tension cables, having insulator-clamps; and the objects of the invention are to improve upon the construction and efficiency of such devices, increase their strength and lessen the chances of breakage, and prevent the strain on the wire from being thrown entirely upon the clamp.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of an insulator for carrying out the above objects embodying the features of construction, combinations of elements, and arrangement of parts, having the general mode of operation substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a top plan view of an insulator and clamp embodying the invention. Fig. 2 is a side elevation of the same. Fig. 3 is a perspective view of one portion of the clamp. Fig. 4 is a perspective view of the cooperating portion thereof. Fig. 5 is a perspective view of the two portions of the clamp arranged to clamp the wire, illustrating in what manner the two portions cooperate and interlock. Fig. 6 is a transverse sectional elevation of the insulator and clamp on the line *xx* of Fig. 1, showing the clamp in position in the insulator. Fig. 7 is a top plan view of the insulator without the clamp. Fig. 8 is a longitudinal sectional view on line *aa* of Fig. 7. Fig. 9 is a transverse sectional view on line *bb* of Fig. 7. Fig. 10 is a side elevation of a modified form of insulator-clamp. Fig. 11 is a top plan view of the same. Fig. 12 is a perspective view of one of the duplicate cooperating portions of the clamp. Fig. 12<sup>a</sup> is a detail sectional view. Fig. 13 is a top plan view of the modified form of insulator without the clamp. Fig. 14 is a longitudinal

sectional view of the same, and Fig. 15 is a transverse sectional view of the same.

Referring to the drawings, A represents an insulator constructed in accordance with this invention and provided with a cap B, which may be in one or more portions, in this instance the two parts, the body and cap, being preferably made all in one solid piece. The cap is provided with a groove D to receive the wire E, and suitable means are provided for clamping the wire tightly and for preventing it from moving either vertically or horizontally in the insulator-cap.

According to this invention the insulator-cap is constructed to receive and hold a clamp which may be tightened up as desired and after being tightened cannot be removed from the insulator until untightened to release the wire.

According to the preferred form of the invention shown in Figs. 1 to 9, inclusive, both portions of the clamp can be applied to the insulator-cap from the outside, because the groove D is widened at each side at the center, which enables the two members G and H of the clamp to be applied to the wire directly. The widened passage-way or cavity at the central portion of the insulator has lateral cavities F to receive the members of the clamp.

The two members G and H of the clamp are adapted to interlock, and thus cooperate to clasp the wire. One member, as the member G, is provided with a screw-threaded tongue or projection I, with which an aperture or slot J on the other member H cooperates. One member, as the member H, is provided with one or more tongues or lugs K, which enter and interlock with the slots or apertures L in the member G. Preferably, but not necessarily, the member G has a curved base or bottom O, which substantially fits the curved bottom Z of the insulator passage-way or cavity F, which is also recessed deeply enough at V to receive the member G and bring the inner surface Q of said member substantially flush with the bottom of the groove D, so that the wire E will lie in the groove and in the curved bottom portion of the clamping member G.

The clamping member H is provided with



a curved body R, which is concaved to receive the wire E and coöperate with the member G. In this instance the member G is provided with an upwardly-extending portion S  
5 opposite the screw-threaded projection I to provide the slots L for the lugs K on the member H.

In Fig. 5 a perspective view is shown, illustrating in what manner the clamping members G and H interlock, from which it will be seen that the lugs K are of sufficient length to project beyond the slots L, thus affording means for locking the entire clamp in the insulator. The projections T of the member H  
15 also extend beyond the upright I and afford means for securing the clamp in position in the insulator.

In order to clamp the wire in position, the member G is first placed in the widened central cavity or passage-way in the cap of the insulator, the wire is then inserted in the groove D and placed upon the curved portion Q of the member G, and the clamping member H is then placed over the wire and on the member G, as indicated in Fig. 6, in which case the lugs K extend into the recesses or undercut portions or cavities U beneath the projecting shoulders V of the insulator-cap, and thus prevent the clamp and wire from being  
30 withdrawn upwardly. A nut W is screwed down upon the screw-threaded projection I to secure the two clamping members together, and it will be seen that the projections T are seated below the top of the cap, and thus aid in securely holding the wire in position. The widened cavity or passage-way in the insulator-cap is similarly constructed on both sides of the center, so that the clamp may be inserted in either position—that is to say, it  
40 may be inserted in the position shown in Fig. 6 or else the screw-threaded upright and nut may be on the left-hand side as Fig. 6 is viewed instead of on the right-hand side. The clamp and coöperating recessed portion  
45 of the cap are preferably so constructed that the projections K bear against the projections V on the cap when the clamp is tightened, thereby holding the wire firmly in position.

In the modified form of insulator and clamp shown in Figs. 10 to 15 the insulator and cap are illustrated in the same general relation as before. The groove D is widened at each side at the center of the cap and is undercut at F<sup>2</sup> at the sides and ends to receive the body portions B' of the clamping members G', which are substantial duplicates of each other and adapted to coöperate one with the other, as indicated in plan view  
50 of Fig. 11. The widened passage-way or cavity has lateral cavities F' for the clamp. In this instance the clamping members are so constructed that the clamp to contain the wire is first placed in position in the widened

central portion of the cap, and the shoulders A' project over the body portions of the clamping members, thereby preventing the wire from being removed until the clamp is separated. The insulator is recessed sufficiently far to allow the two sections of the clamp to separate sufficiently to allow the wire to be inserted and removed. In this instance the clamps G' and H' comprise the hollowed or grooved body portions having the projections B' and provided with the screw-threaded necks J', which are provided with interlocking faces K', in this instance the faces being shown formed with compound curves. The nut L' suitably locks the two coöperating members G' and H' together.  
65 70 75 80 85 90 95 100

Obviously some features of this invention may be used without others, and the invention may be embodied in widely-varying forms. Therefore, without limiting the invention to the devices shown and described and without enumerating equivalents, I claim, and desire to obtain by Letters Patent, the following:

1. As a new article of manufacture, an insulator for wires formed with a groove in its top for the wire, a widened cavity or passage-way at the central portion of the insulator extending to the top of the insulator for the insertion of a wire-holding clamp, and recesses or undercut portions at each side of said widened cavity, with projecting shoulders above said recesses for receiving and retaining lugs on the clamp to hold it in place.

2. As a new article of manufacture, an insulator for wires formed with a groove in its top for the wire, a widened cavity or passage-way at the central portion of the top of the insulator, having lateral cavities extending to the top of the insulator for the insertion of the members of a wire-holding clamp, and recesses or undercut portions at each side of said lateral cavities, with projecting shoulders above said recesses for receiving and retaining projections on the clamping members to hold them in position.

3. As a new article of manufacture, an insulator for wires formed with a groove in its top for the wire, a widened cavity or passage-way at the central portion of the top of the insulator having a curved, and recessed bot-  
115 120 125

tom and lateral cavities extending to the  
top of the insulator for the insertion of the  
members of a suitable wire-holding clamp,  
and recesses or undercut portions at each  
5 side of the lateral cavities and on opposite  
sides of the central groove for receiving the  
clamping members to hold them in position.

In testimony whereof I have signed this  
specification in the presence of two subscrib-  
ing witnesses.

WALTER G. CLARK.

Witnesses:

HARRY A. WILSON

THOS. J. CONRY.