

(No Model.)

C. WIRT.  
INSULATOR.

No. 488,046.

Patented Dec. 13, 1892.

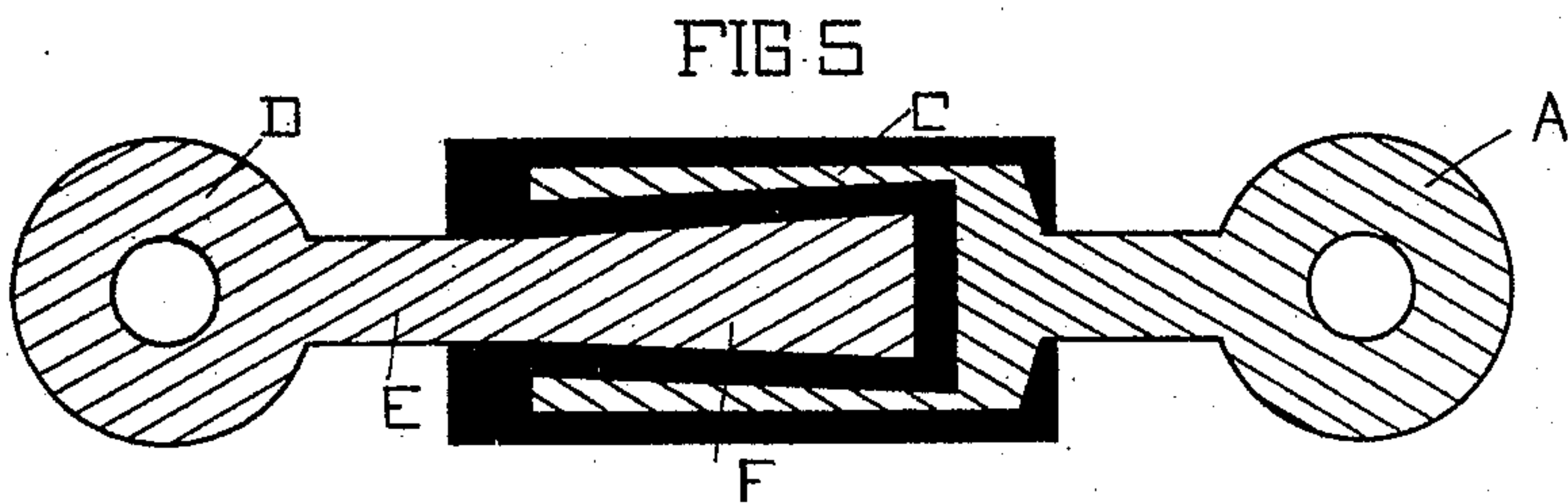
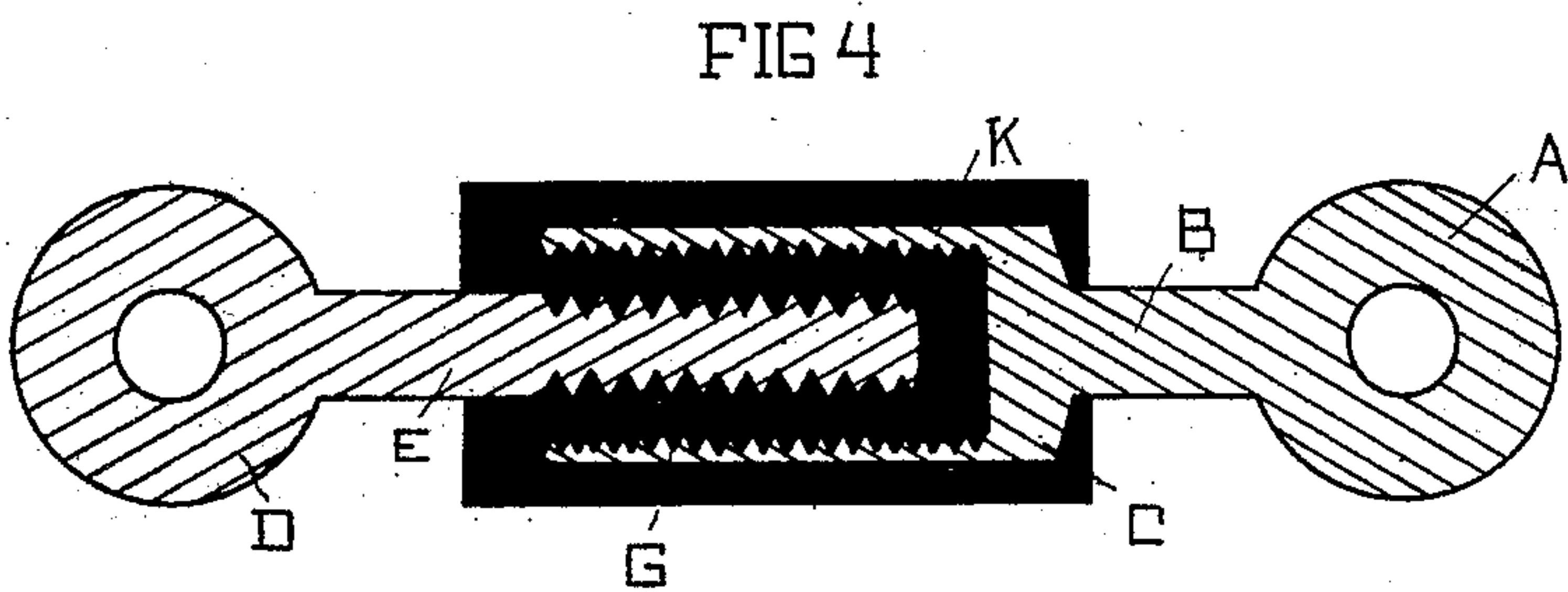
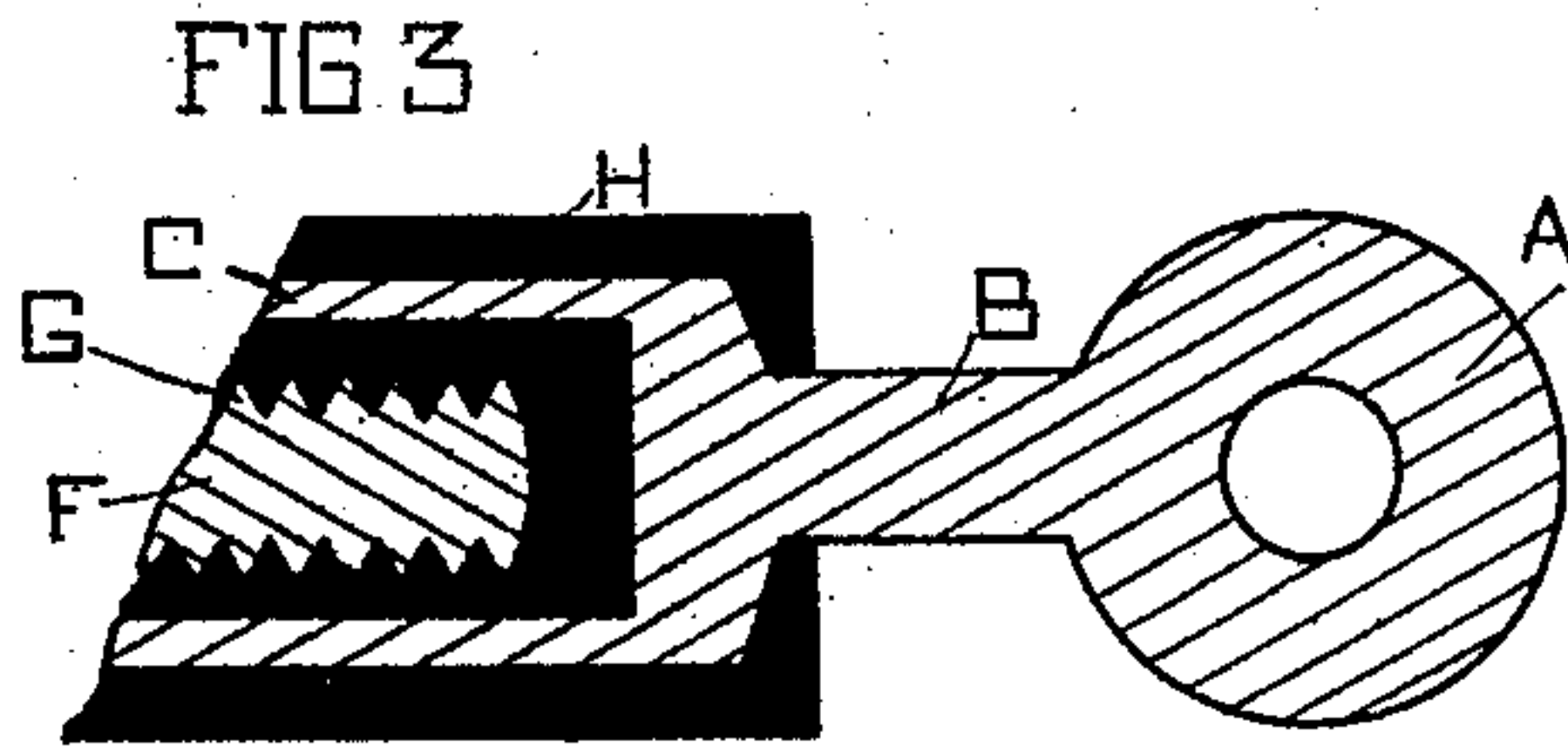
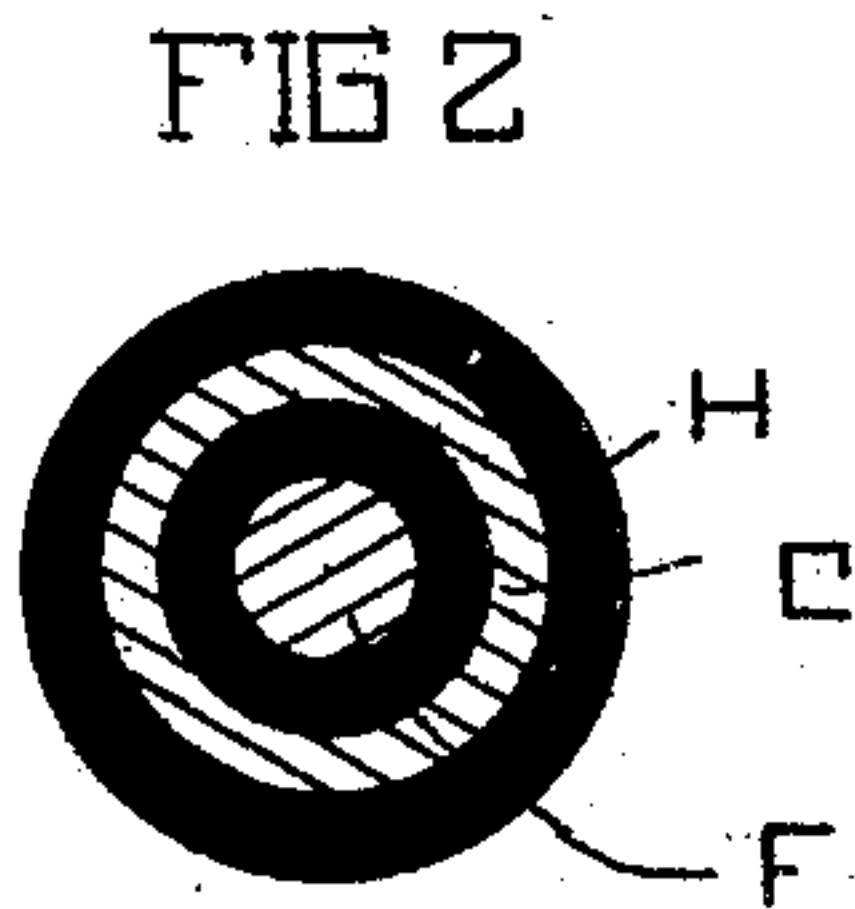
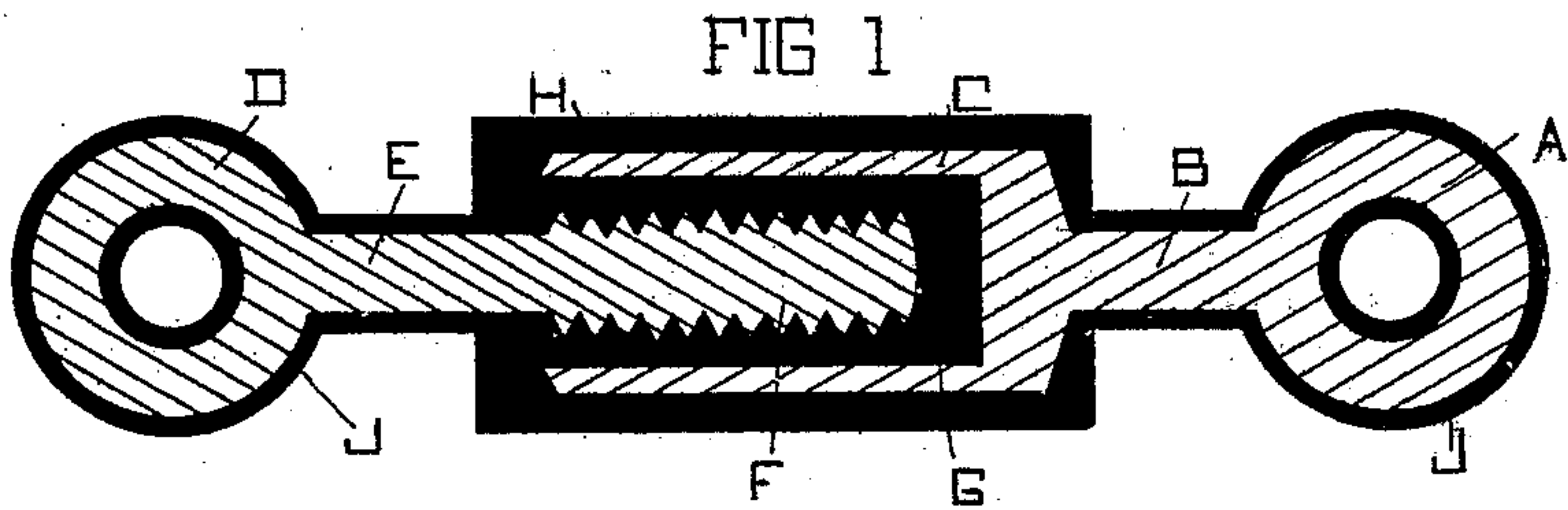
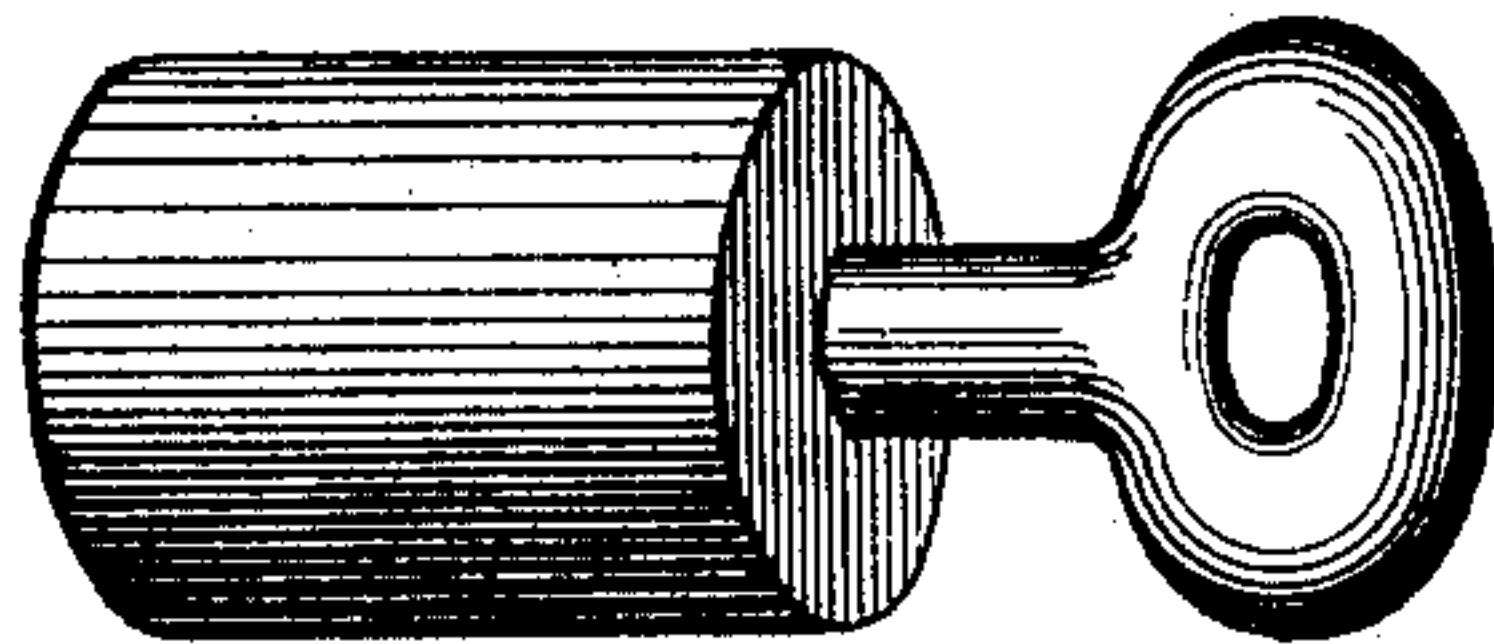


FIG 6



WITNESSES

*Emil Charles*

*Walter J. Gunthorp*

INVENTOR

*Charles Wirt*

*By Francis W. Park*  
ATTORNEY



# UNITED STATES PATENT OFFICE.

CHARLES WIRT, OF CHICAGO, ILLINOIS.

## INSULATOR.

SPECIFICATION forming part of Letters Patent No. 488,046, dated December 13, 1892.

Application filed January 4, 1892. Serial No. 417,041. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES WIRT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Insulators, of which the following is a full, clear, and exact specification.

My invention relates to insulators, and particularly such as are adapted to receive and sustain a strain and such as might be called "strain-insulators," and has for its object to provide a cheap and simple insulator for such purpose and in which the supporting parts are connected by means of the insulation and without interlocking parts. It is illustrated in the accompanying drawings, wherein—

Figure 1 shows a longitudinal section; Fig. 2, a cross-section of the device. Fig. 3 is a longitudinal section of a modification; Fig. 4, a longitudinal section showing opposed corrugations; Fig. 5, a longitudinal section showing opposed inclined faces. Fig. 6 is a perspective view.

Like parts are indicated by the same letters in all the figures.

A is a metallic eye having the shank B, secured to the middle of the end or bottom of the metallic cup C. D is a similar eye with the shank E, from which projects the body F, which may be grooved or corrugated, as at G.

H is a mass of insulation surrounding and separating the cup C and body F, and J is a similar insulation-coating for the eyes A D. The cup is or may be of less inner diameter at its outer end than near the bottom, and the body F is or may be of slightly-greater diameter at its outer extremity than near the shank; but this construction is not considered imperatively necessary.

K is an interior corrugation on the inner surface of the cup C.

The use and operation of my invention are as follows: The metallic parts, shaped substantially as shown without the corrugations on the body and with or without the variation in diameter referred to, are suitably supported in a mold, when insulating material is forced into such mold and about the several parts into substantially the form indicated. This insulating material is then vulcanized in position. It is found that by thus vulcan-

izing insulation upon metallic surfaces an exceedingly-firm connection is made between the metallic surface and the insulation, so that if the insulation receives a severe strain it will be far more likely to break within its mass than at the point of union with the metal. It is then necessary only to associate two parts which are to be connected by insulating material in order to secure a firm connection in such manner that the mass of insulation to which the strain is applied shall be small and so that it shall be supported in such manner as not to be easily liable to fracture from bending. These several conditions are met in my device, and thus a strain-insulator capable of supporting or sustaining a great strain is constructed. The trolley-wire of an electric street-railway may be secured to one end of this device or one eye, while the supporting-wire or side wire is secured to the other eye. The long parallel walls of the cup and body furnish such a rigid support to the interposed insulation that the latter is not liable to fracture from any lateral strain or bending. On the other hand, the distance between the opposed walls of such cup and body is at all points so short that the interposed body of insulation is exceedingly thin and therefore not liable to crush or shear. By making the outer end of the body of greater diameter than its other end and the outer end of the cup of less diameter there is a tendency of the parts to crowd the insulation, and thus to make it more compact and less liable to break under strain. The corrugation on the body also gives additional grip upon the insulation; but these devices are not found absolutely essential to a successful operation of the insulator. Of course the insulation need not surround and cover the eyes or loops at the end unless so desired. The insulating material employed may be of any satisfactory and convenient character and may be introduced between the parts and applied about them when in the form of fluid, paint, paste, powder, or otherwise and should be hardened in position after being so applied. The best results are obtained where the inner surface of the cup and the outer surface of the body F are both corrugated and where the cup is slightly contracted to-



ward its mouth and the body slightly enlarged toward its end. Very satisfactory results are obtained by simply corrugating the opposed surfaces.

5 I claim—

1. In a strain-insulator, the combination of two parts, each provided with an eye and hook at one end and one with a cup, the other with a body adapted to be received within the cup, the opposed surfaces of both cup and body being grooved or corrugated, and a mass of insulation between the opposed surfaces and entirely surrounding both cup and body.

2. In a strain-insulator, the combination of two pieces, each provided with an eye or hook at one end and one with a cup, the other with a body adapted to be received within the cup, and insulating material interposed between such body and cup and entirely covering all the surface of both parts.

3. In a strain-insulator, the combination of two parts, each provided with an eye and hook at each end, the one with a cup, the other with a body adapted to be received within the cup,

the body increasing in diameter toward its end and the cup decreasing in diameter toward its end, and a mass of insulation interposed between the cup and body.

4. In a strain-insulator, the combination of two parts, each provided with an eye and hook at each end, the one with a cup, the other with a body adapted to be received within the cup, the body increasing in diameter toward its end and the cup decreasing in diameter toward its end, and a mass of insulation interposed between the cup and body and entirely surrounding both cup and body.

5. In a strain-insulator, the combination of two parts, one having a cup-shaped portion, the other a portion adapted to be received within the same, the opposed surfaces shaped so as not to interlock but to present faces at an angle to the line of strain, and interposed insulation hardened in place.

CHARLES WIRT.

Witnesses:

FRANCIS W. PARKER,  
VIRGINIA WILLEY.