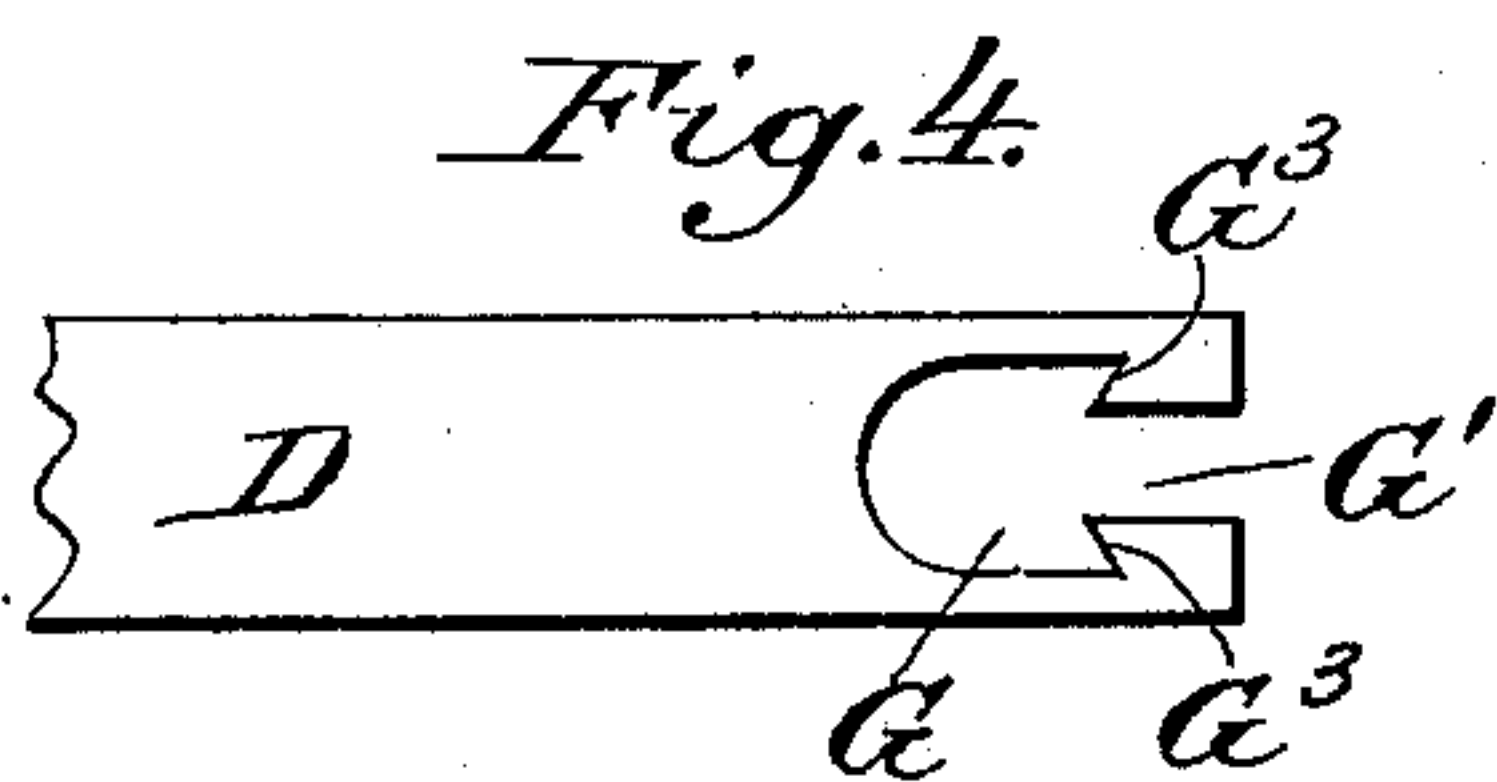
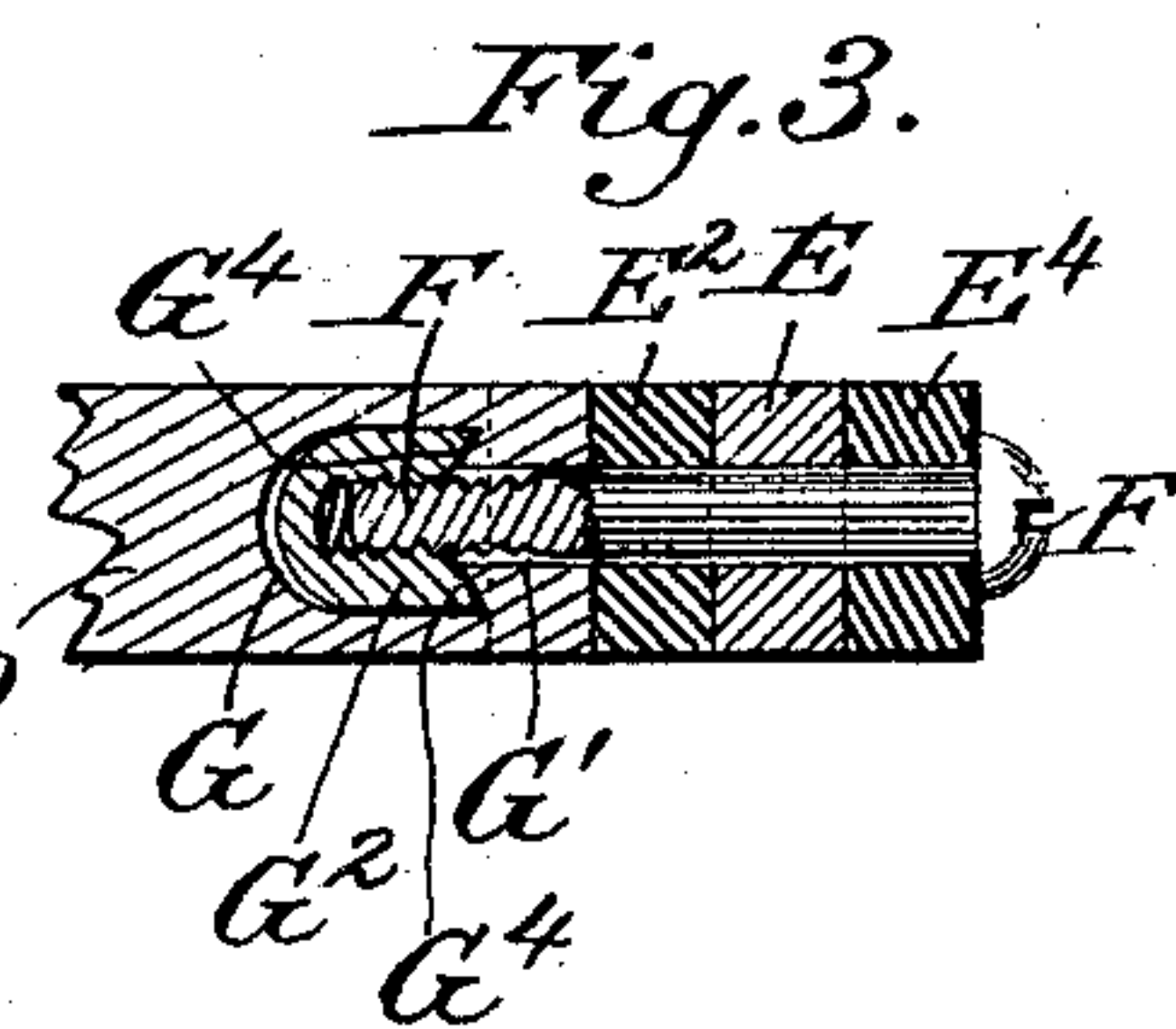
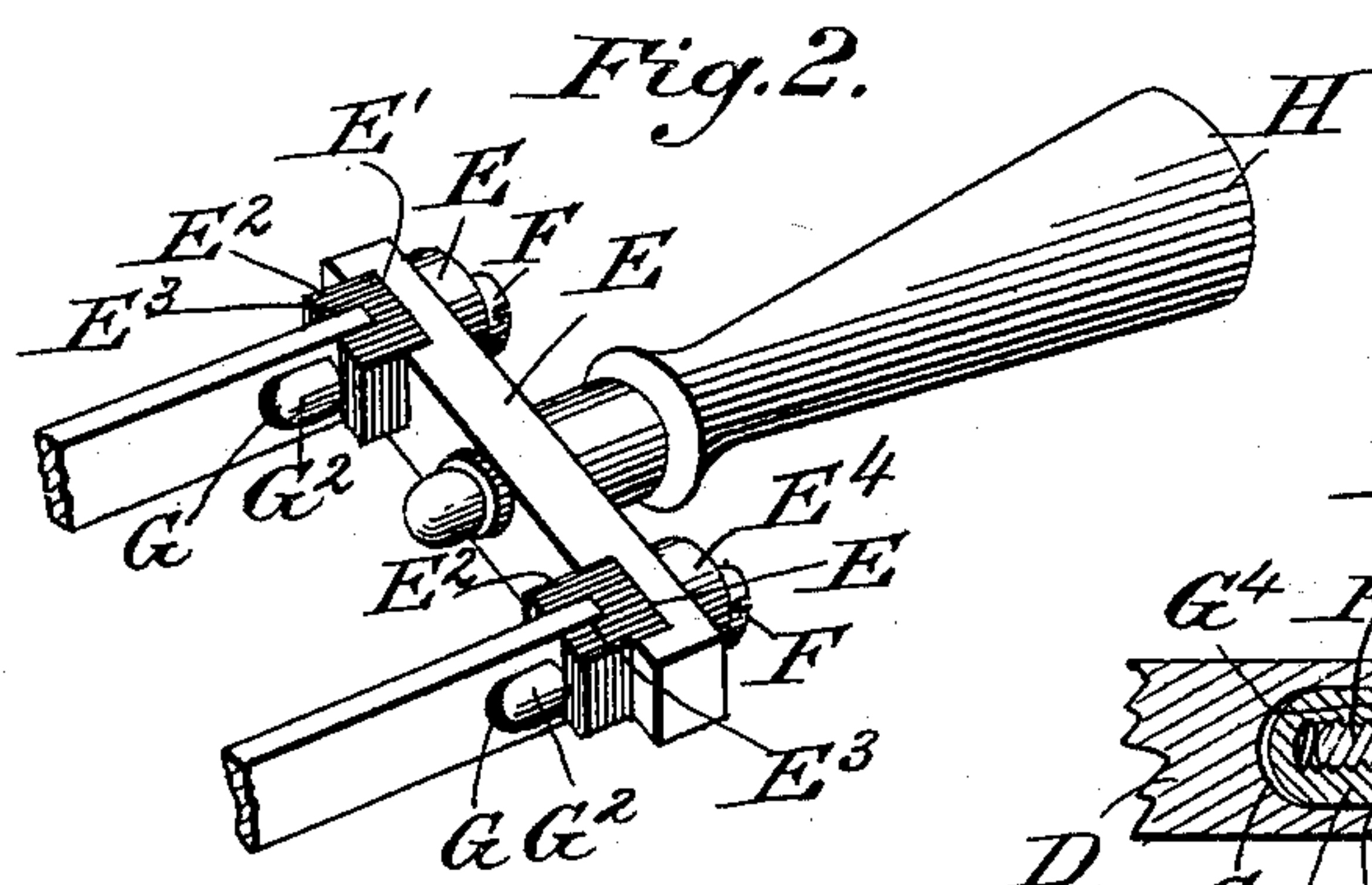
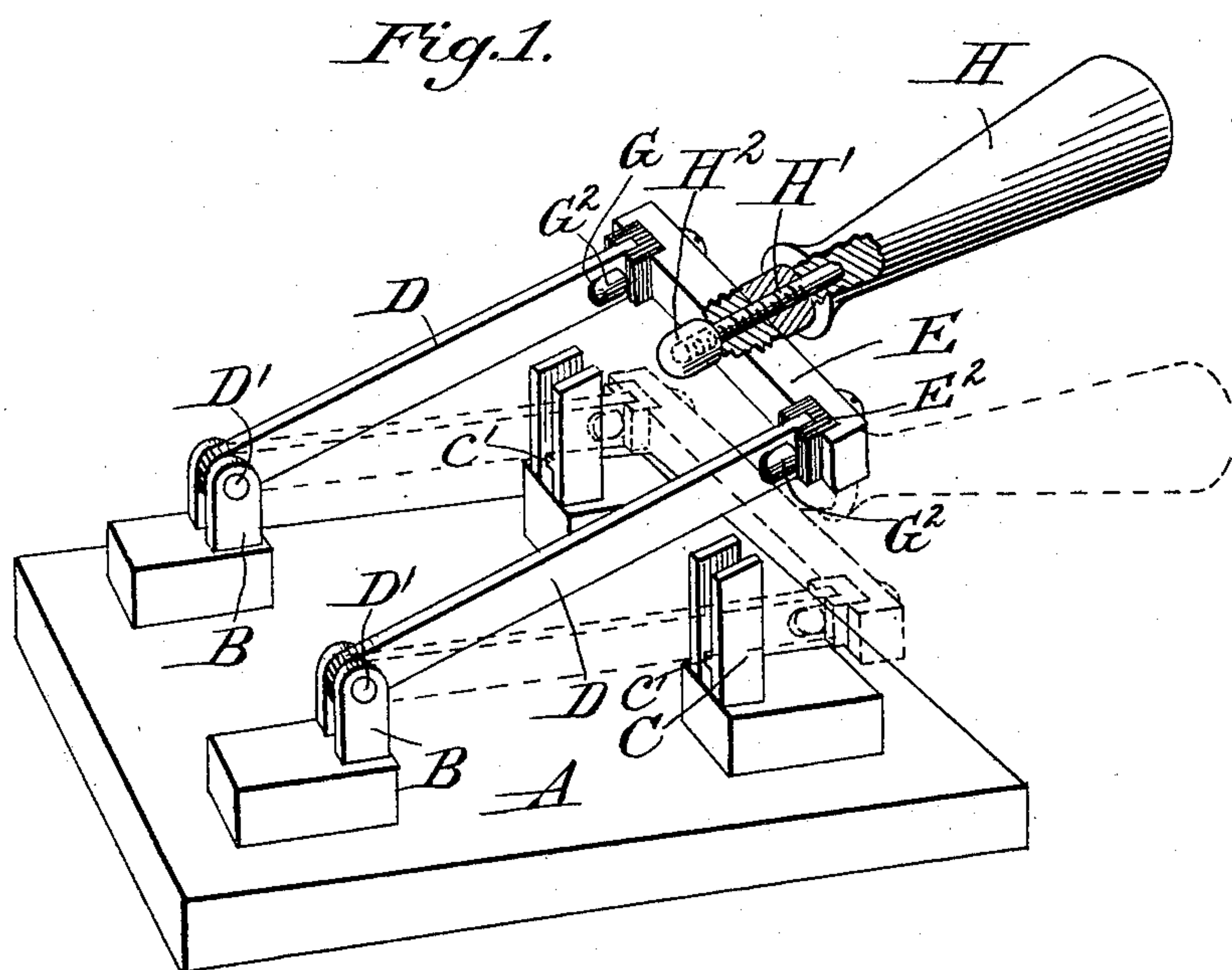


(No Model.)

W. S. HILL.
ELECTRIC SWITCH.

No. 596,506.

Patented Jan. 4, 1898.



Witnesses

F. H. Schott
Grant Burroughs.

Inventor
Wm. S. Hill
By *J. S. Ruck*
Attorney

UNITED STATES PATENT OFFICE.

WARREN S. HILL, OF HYDE PARK, MASSACHUSETTS, ASSIGNOR TO THE W. S. HILL ELECTRIC COMPANY, OF BOSTON, MASSACHUSETTS.

ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 596,506, dated January 4, 1898.

Application filed May 1, 1896. Serial No. 589,918. (No model.)

To all whom it may concern:

Be it known that I, WARREN S. HILL, of Hyde Park, county of Norfolk, and State of Massachusetts, have invented new and useful
5 Improvements in Electric Switches; and I hereby declare that the following is a full, clear, and exact description of the invention, which will enable those skilled in the art to which it appertains to make and use the same.

10 My invention relates to improvements in electric switches, in which blades of wrought-copper are used instead of cast blades; and my invention consists of certain novel features hereinafter described, and particularly
15 pointed out in the claims.

In electric switches where cast blades are used it is easy to construct the end of the blade to receive the yoke and the insulation between the blade and the yoke; but where
20 blades of wrought-copper are used some difficulty is found in accomplishing the connection of the yoke, blades, and intermediate insulation, and it is difficult to seat in a degree of neatness, which is desired.

25 The object of this invention is to provide means for securing the blades of wrought-copper, yoke, and intermediate insulation, or where only one blade is used the handle and insulation to the end of the blade.

30 In constructing the blade wrought-copper drawn to the proper size and shape in long rods or bars is cut to the length required and the end which is to be pivoted to the stand is rounded, if desired, while the other end, which
35 is connected to the yoke, is provided with a recess adapted to receive a nut, which may be of any suitable shape, and an opening is provided which extends from the recess through the end of the blade. In attaching
40 the yoke, intermediate insulation, and blade the insulation is placed in a recess formed in the yoke for its reception, and in a groove formed in the outer face of the insulation the recessed end of the blade is inserted and a
45 nut is placed in the said recess at the end of the blade, and a screw which passes through the yoke and intermediate insulation extends through said opening in the blade into the nut, and by tightening up said screw the

yoke, intermediate insulation, and blade are 50 securely fastened together.

In the accompanying drawings, Figure 1 is a perspective view, partly in section, of an electric switch embodying the invention. Fig. 2 is an enlarged detail perspective view showing the connection between the blades and the yoke. Fig. 3 is a detail sectional view showing the connection between one of the blades and the yoke. Fig. 4 is a side elevation of the recessed end of one of the switch- 60 blades.

Like letters of reference designate like parts throughout the several views.

A represents a switchboard of the usual construction, and upon it are secured standards B and contact-pieces C. The blades D 65 are independently pivoted to the standards B by the pivots D', and each blade is secured at the other end to the yoke E.

In the inner face of the yoke E and near 70 the ends are formed recesses E', in which blocks E², of insulating material, are placed. In the outer faces of these insulating-blocks grooves E³ are cut, and into these grooves the ends of the switch-blades are placed. At the 75 ends of the switch-blades, which are inserted in the grooves E³, a recess G is cut, and an opening G' is cut from said recess out through the end of the blade.

In securing the yoke to the switch-blades 80 and the intermediate insulations the insulating-blocks are placed in the recess E', and the free ends of the blades are placed in the grooves E³ of the said blocks, and a nut G² is placed in the recess G. A screw F is then 85 passed through the yoke E, the insulating-block E², and the opening G' into the nut G², located in said recess G, and by screwing up said screw into the nut the end of the blade, the intermediate insulation, and the yoke are 90 firmly secured together, as it is obvious that the more the screw is tightened up the more rigid will be the connection, because the threads on the screw engage with the threads on the nut and draw the nut toward the end 95 of the blade. The screw F is insulated from the yoke by the block of insulating material E⁴.

In practice the best construction is to provide the recess G with the edges G³ inclined and to concave the top of the nut, as shown at G⁴, to match said inclined edges G³, so that
 5 as the screw is tightened up there is provided a dovetailed joint between the end of the switch-blade and the nut G².

The handle H is connected to the yoke E by a screw H' on the end of the handle, passing through the yoke E and engaging with a
 10 nut H² on the opposite side of the yoke, and by screwing up said nut the handle has a firm connection with the yoke.

Where only one blade is used, the handle
 15 could be attached by the screw H' passing through the intermediate insulation and engaging with the nut located in the recess in the end of the blade.

Although I have described the means for
 20 connecting the yoke, intermediate insulations, and blades as being especially advantageous where wrought-copper is used for blades, yet it will be understood that if desired such connecting means could be used between the
 25 yoke and cast blades or blades of any other material suitable in the premises.

It is deemed advisable when the switch-blades are moved into contact with the contact-pieces and the circuit is closed to have
 30 switch-blades raised a little above the switchboard or in a position horizontal therewith, and it has been the practice to provide a metallic or fiber stop, located between the lower ends of the contact-pieces, with which the under
 35 side of the blades would contact when said blades were in engagement with said contact-pieces. The provision of a fiber stop between the lower ends of the contact-pieces is found to interfere more or less with the spring
 40 of the contact-pieces against the sides of the switch-blade, and to overcome this objection to the present arrangement I have punched on one side or both of the contact-pieces a lug c', with which the under side of the switch-

blades will come in contact and be arrested
 45 thereby, so that the blades will be about horizontal with the switchboard.

By the arrangement shown and described the contact-pieces are left perfectly free, so
 50 as to give the full benefit of their spring contact against the side of the switch-blades.

Having thus ascertained the nature and set forth the construction of my invention, what I claim as new, and desire to secure by
 55 Letters Patent of the United States, is—

1. In an electric switch, the combination of the blade having a recess formed in the same near an end thereof and having an opening leading from said recess through the end of the blade to the exterior of the same, a yoke,
 60 an insulating-block placed intermediate of said blade and yoke, a nut seated in the recess formed in said blade, and a screw passing through said yoke, insulating-block and the opening in the end of said blade and engaging with said nut. 65

2. In an electric switch, the combination of a blade having a recess formed in the same near an end thereof and having an opening leading from said recess through the end of the blade to the exterior of the same, a yoke having a recess formed therein, an insulating-block seated in the recess formed in the yoke and having a groove engaging with the
 70 recessed end of the blade, a nut seated in the recess formed in the blade, and a screw passing through said yoke, the insulating-block and the opening in the end of the blade and engaging with said nut. 75

In testimony whereof I have signed my
 80 name to this specification, in the presence of two subscribing witnesses, on this 15th day of April, A. D. 1896.

WARREN S. HILL.

Witnesses:

E. L. HARLOW,
 S. H. TROW.