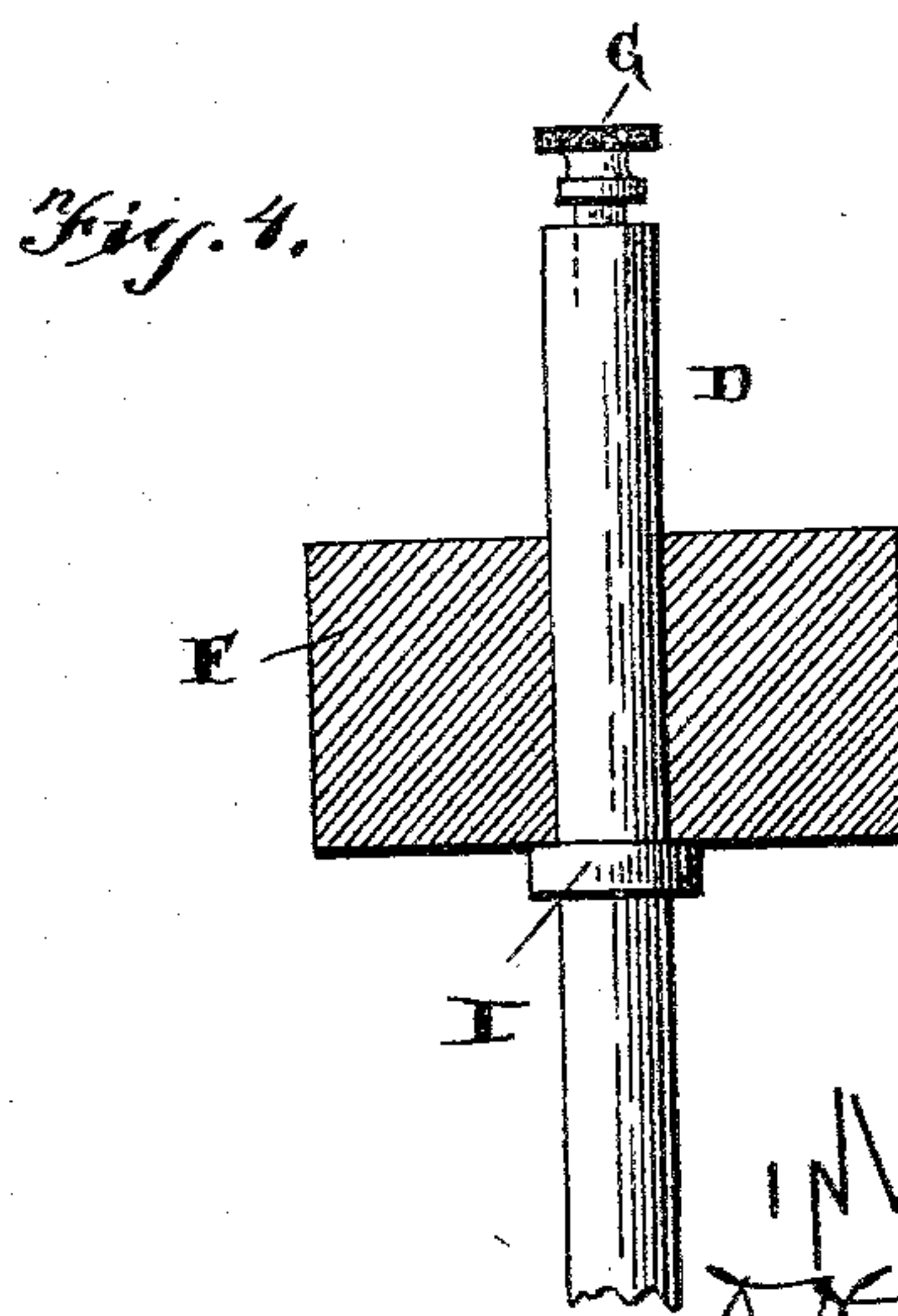
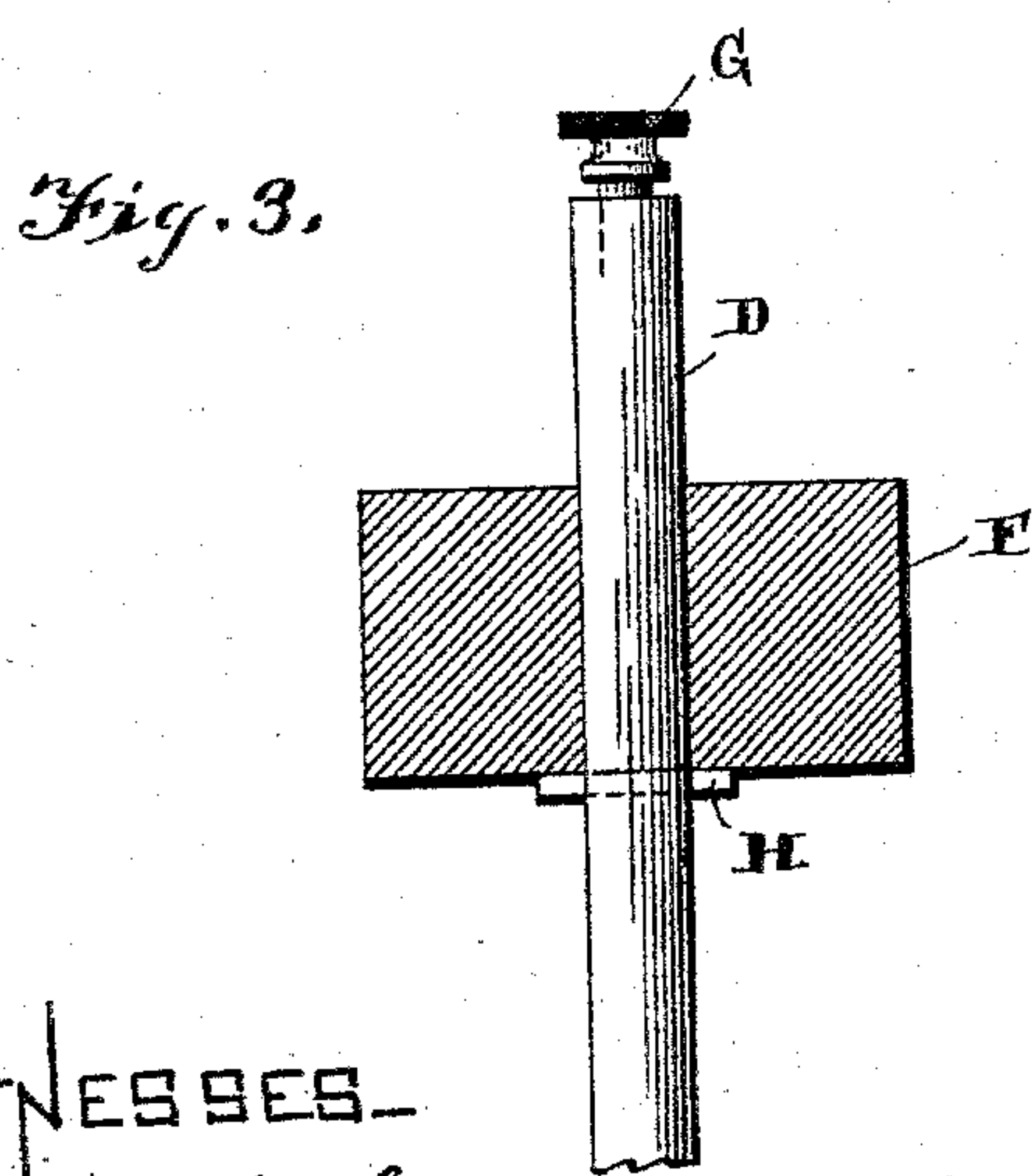
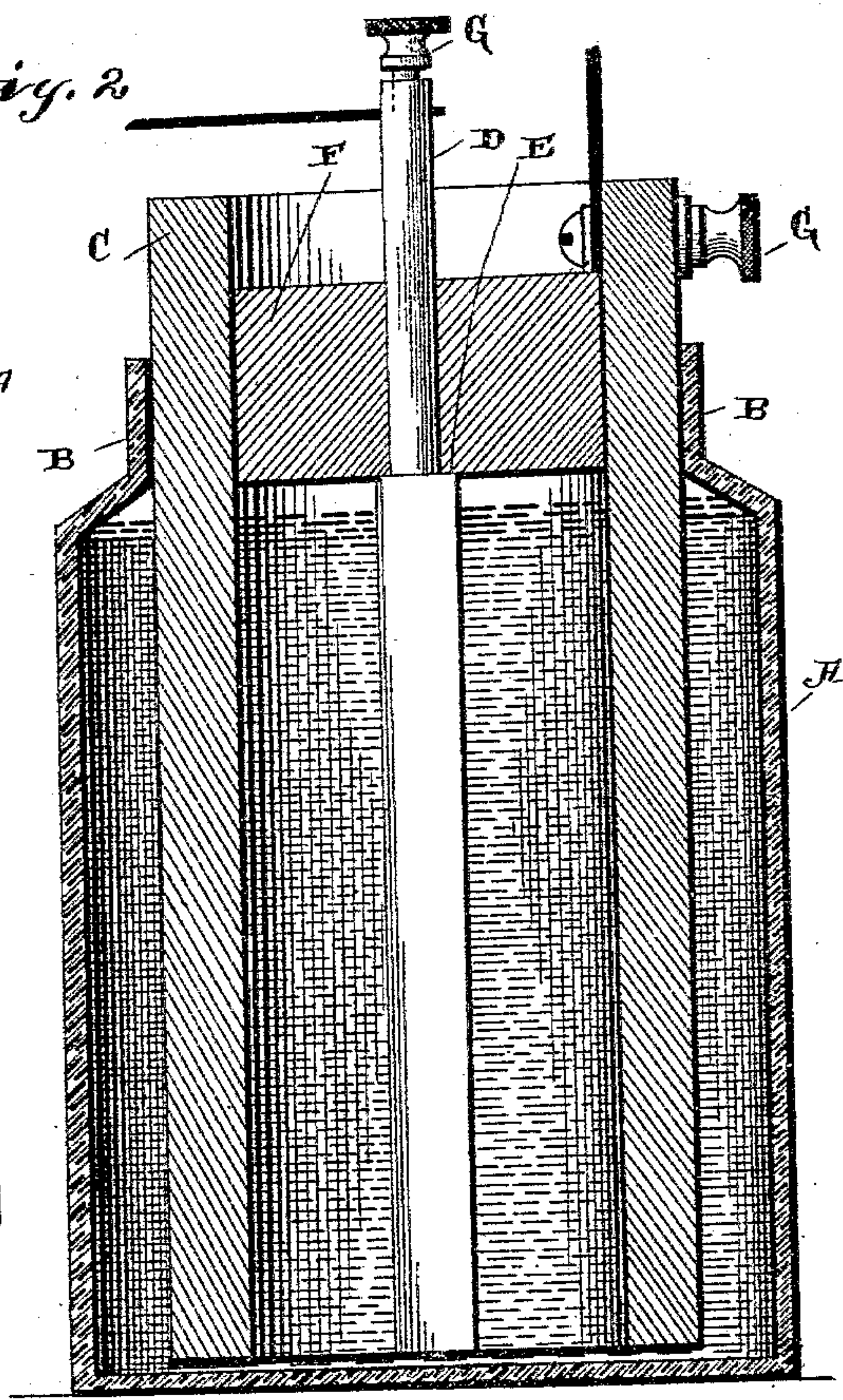
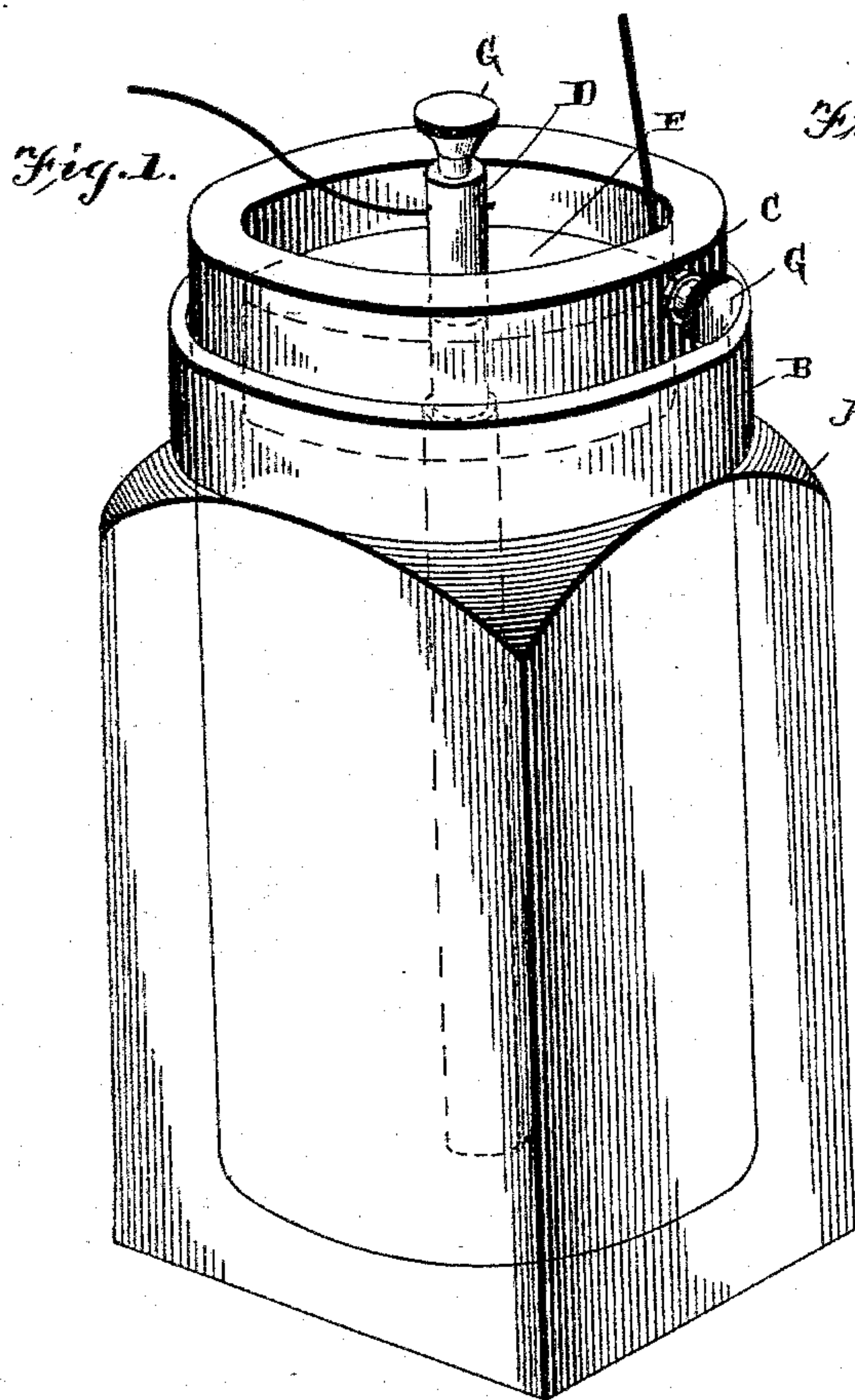


(No Model.)

D. H. FITCH.  
GALVANIC BATTERY.

No. 494,852.

Patented Apr. 4, 1893.



WITNESSES—

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# UNITED STATES PATENT OFFICE.

DERICK H. FITCH, OF CAZENOVIA, NEW YORK.

## GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 494,852, dated April 4, 1893.

Application filed November 22, 1892. Serial No. 452,793. (No model.)

*To all whom it may concern:*

Be it known that I, DERICK H. FITCH, of Cazenovia, in the county of Madison and State of New York, have invented certain new and useful Improvements in Galvanic Batteries; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in galvanic batteries, and it consists in the novel arrangement of the several parts as will be fully described hereinafter, and more particularly set forth in the claims at the end of this specification.

The object of my invention is to combine in an effective battery cheapness of manufacture and simplicity of construction.

Referring to the accompanying drawings,—Figure 1, is a perspective view of my improved battery. Fig. 2, is a vertical sectional view of the same. Figs. 3, and 4, illustrate slight modification in the construction of the zinc member.

A indicates the body of the jar which is formed with the contracted neck B the latter being preferably circular in form while the jar body may be any preferred form.

C represents the cylindrical carbon member the inner wall of which being straight and smooth its entire length and likewise preferably the outer surface. The carbon is of sufficient diameter to fit properly the neck B of the jar, as shown in Fig. 2.

D indicates the zinc member, of bar shape, which occupies a central position in the carbon C, and formed on this bar near its upper end is the shoulder E, and adapted to slip down over the upper end of the bar and rest on this shoulder is the cover F, which may be formed of porcelain, hard rubber or any other non-conducting material which will withstand the action of the liquid contained in the jar. This cover fits snugly within the carbon but not tightly, and is of sufficient vertical thickness to hold the bar D, in a certain and fixed position so that it is impossible for the lower end of the same to move laterally so as to come in contact with the carbon. The cover F holds apart the zinc and carbon members

and at the same time closes the upper end of the latter. Clamping screws G are placed adjacent the upper ends of the respective members for the ready attachment of circuit wires.

Instead of forming the bar D with a shoulder, as shown in Fig. 2, a support may be provided for the cover by inserting in said bar a transverse pin H, as illustrated in Fig. 3, while still another way of supporting the same may be by placing on the bar D a rubber band I, as shown in Fig. 4, upon which the cover rests. The outer and inner walls of the carbon are entirely free from flanges and shoulders which are usually present in batteries of this type for the purpose of either supporting the carbon on the upper end of the jar or for providing a support for the covers. By having a straight and smooth bore and equally straight outer surface the greatest possible cheapness is obtained while the block E constitutes a combined cover and insulator, thus reducing the requisite number of parts and completing a structure embodying great simplicity as well as cheapness of manufacture.

There are no overlapping flanges or tightly fitting parts to corrode and become fastened together from long standing and use. At all times the parts remain perfectly loose and may be moved and separated with ease.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A battery comprising a jar, a cylindrical carbon therein having smooth inner and outer walls its entire length, a zinc bar within the carbon, a cover supported by the bar, and a means for connecting wires with the carbon and zinc, substantially as shown and described.

2. A battery comprising a jar having a contracted neck, a vertically arranged carbon member adapted to fit properly within the neck and which is formed with a smooth, straight wall, a zinc member within the carbon, a cover for the carbon supported by the zinc member, and a means for connecting wires with the carbon and zinc, substantially as shown and described.

3. A battery comprising a jar, a cylindrical carbon member therein having open ends and straight and smooth inner and outer walls, a bar shaped zinc member within the carbon, a



cover wholly within the carbon and through which the zinc extends thus supporting the cover, the said cover being of sufficient vertical thickness to prevent lateral movement of the zinc bar, and a means for connecting wires to the carbon and zinc, substantially as shown and described.

4. A battery comprising a jar, a vertically arranged carbon member therein, a zinc member within the carbon member, a shoulder on the zinc member, a lid extending into the carbon and supported on said shoulder and a means for connecting wires to the said members, substantially as shown and described.

5. A battery comprising a jar having a con-

tracted neck, a cylindrical carbon member adapted to fit therein, the same having a bore of uniform diameter, a vertically arranged zinc member within the carbon, a circular lid of non-conducting material wholly within the carbon and supported by the zinc, and a means for connecting wires to the carbon and zinc members, substantially as shown and described.

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

DERICK H. FITCH.

Witnesses:

MICHAEL DRISCOLL,  
CARNELIOUS J. CALLINES.