

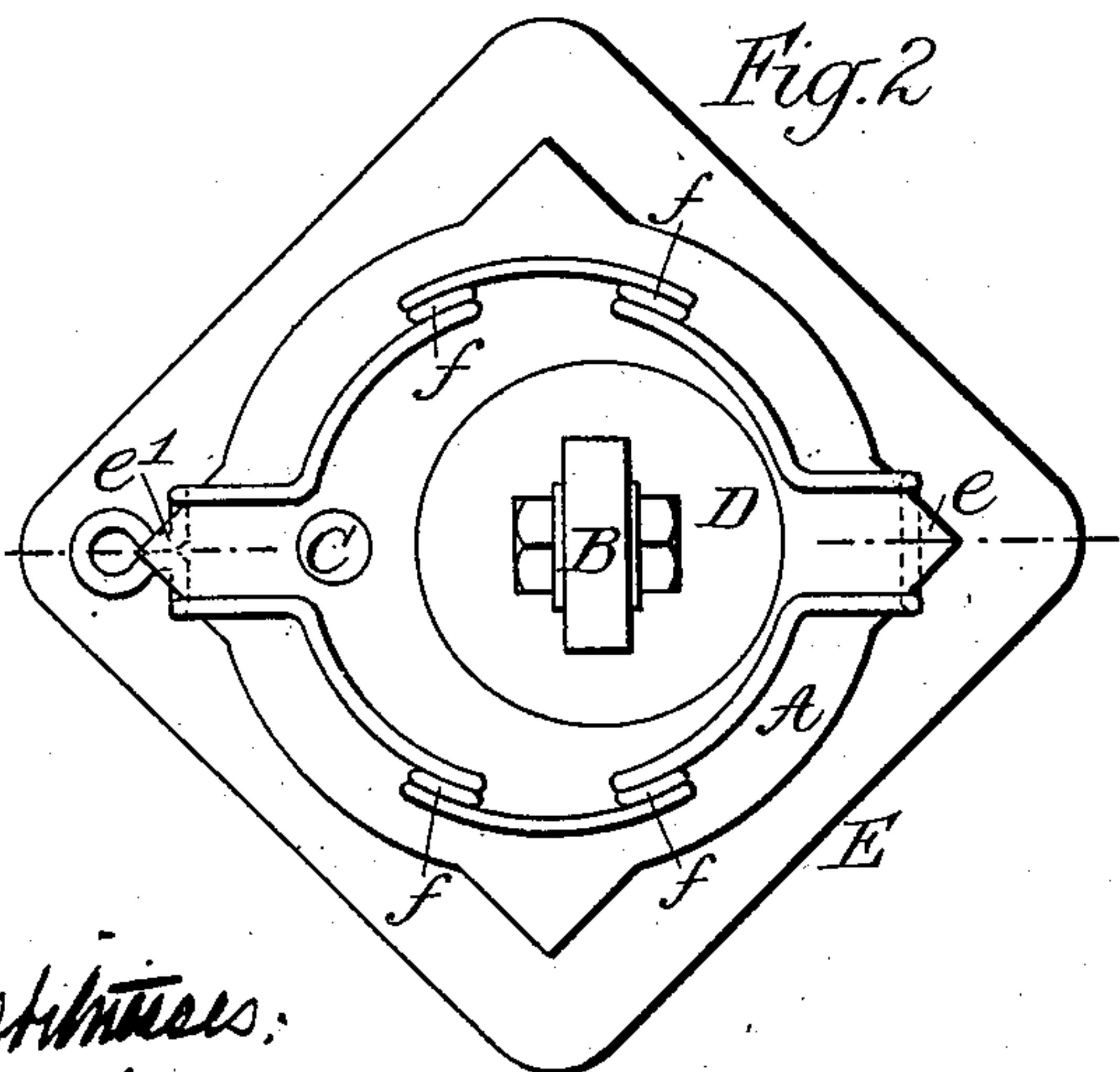
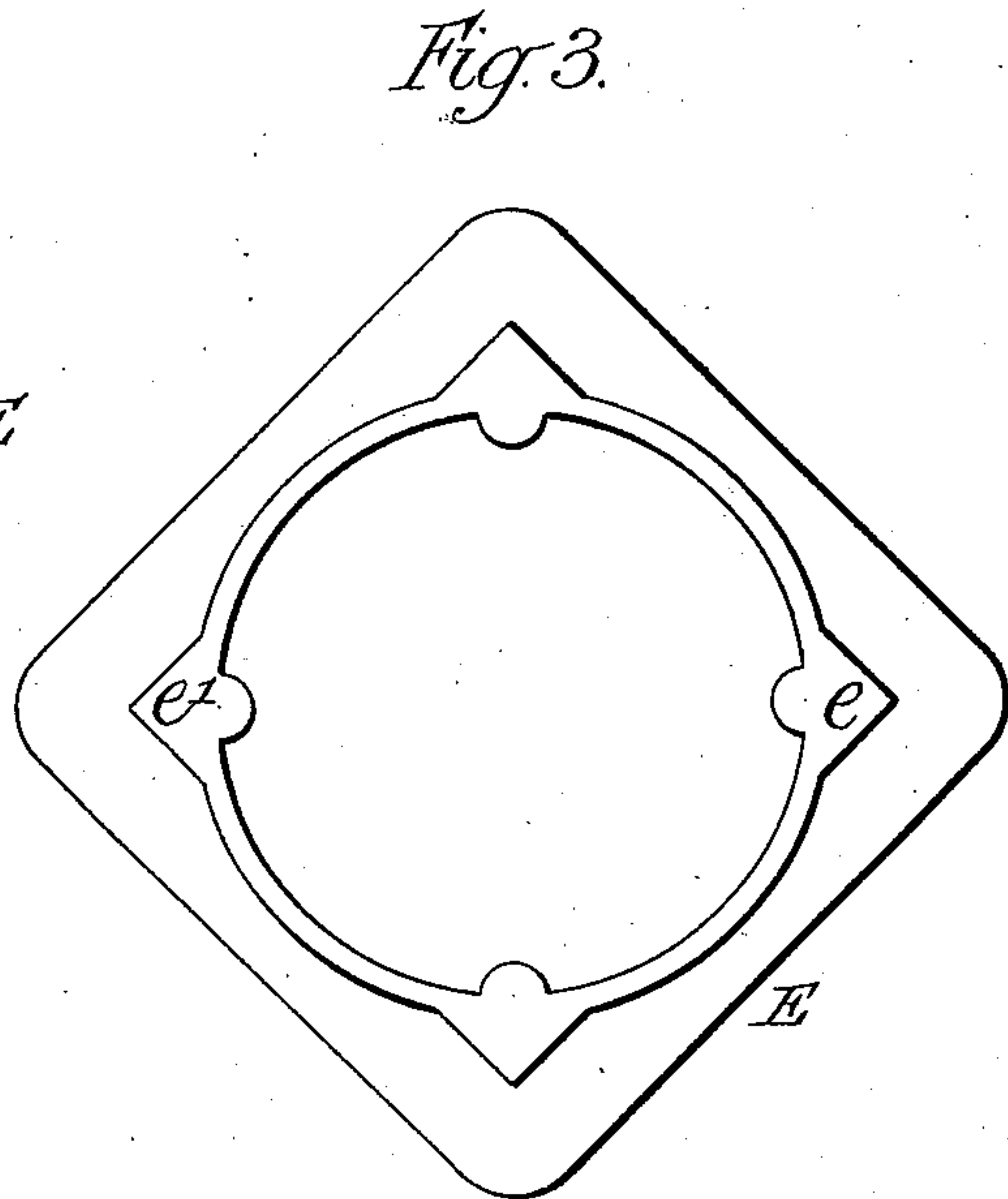
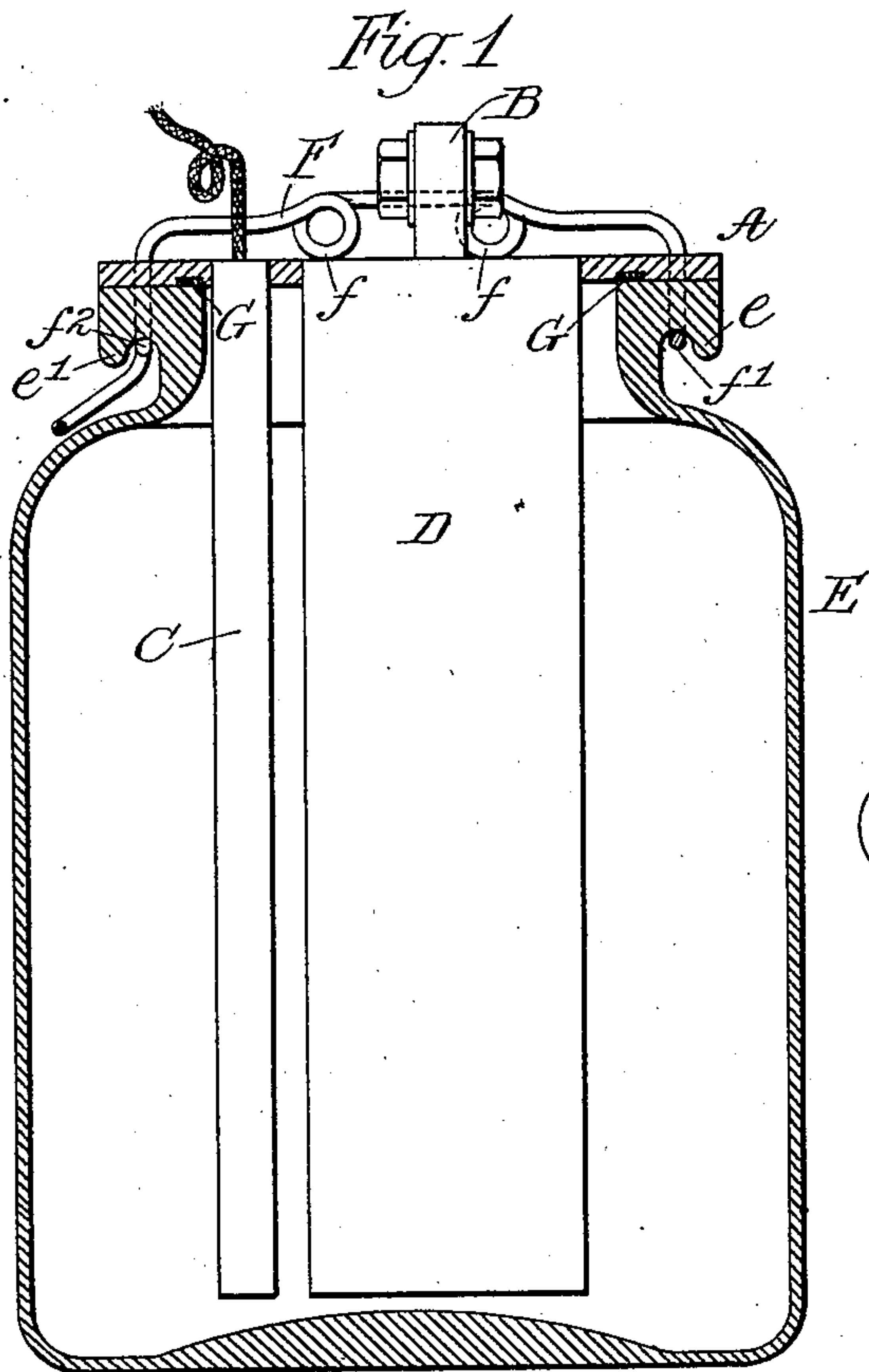
No. 722,662.

PATENTED MAR. 17, 1903.

M. M. BAIR.  
GALVANIC BATTERY.  
APPLICATION FILED MAR. 21, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
Katherine E. Manning  
Harry A. Knight

Inventor:  
Michael Martin Bair  
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Attorneys.

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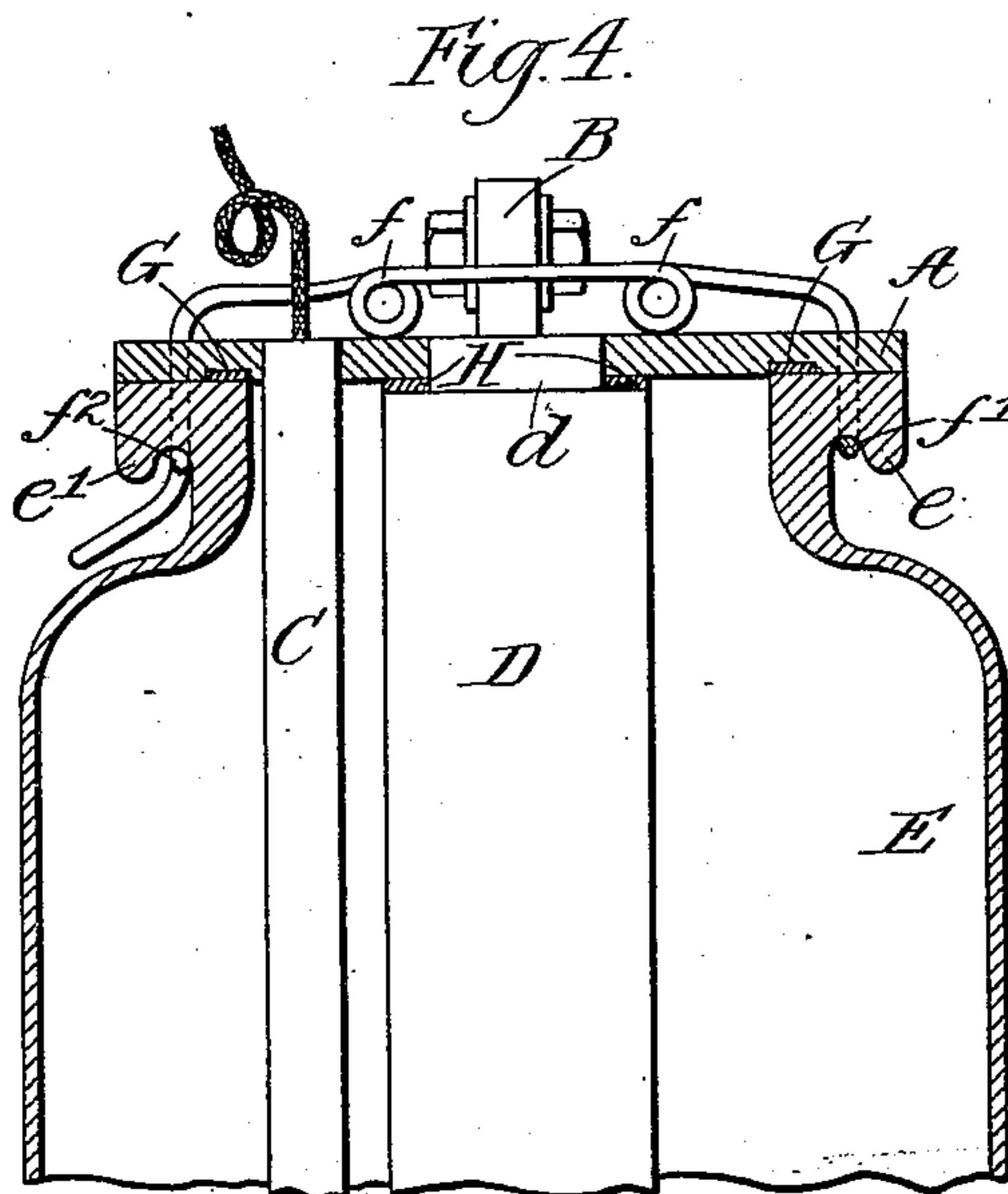
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Attorneys



# UNITED STATES PATENT OFFICE.

MICHAEL MARTIN BAIR, OF LEVALLOIS-PERRET, FRANCE, ASSIGNOR TO  
SOCIÉTÉ ANONYME LE CARBONE, OF LEVALLOIS-PERRET, FRANCE.

## GALVANIC BATTERY.

SPECIFICATION forming part of Letters Patent No. 722,662, dated March 17, 1903.

Application filed March 21, 1901. Serial No. 52,200. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL MARTIN BAIR, carbon-manufacturer, a subject of the German Emperor, residing at 33 Rue de Lorraine, Levallois-Perret, near Paris, in the Republic of France, have invented certain new and useful Improvements Relating to Galvanic Cells or Batteries, of which the following is a specification.

10 This invention relates to galvanic cells or batteries of the kind that are hermetically sealed and intended for use with motor-vehicles.

15 In my application for United States patent filed concurrently herewith I set forth a cell so constructed that it could be readily opened and the constituent elements taken apart and after recharging could be equally readily put together and closed again.

20 It is the chief object of my present invention to devise improved means whereby the aforesaid object can be attained, the said means being particularly applicable to cells of the Leclanché kind.

25 According to my invention I provide the cell with a detachable lid or cover to which the electrodes and the porous chamber may or may not be attached, the said lid or cover being so arranged that it can be secured to 30 the outer vessel or to the outer vessel and the porous chamber by means of resilient clamping-frames, so as to maintain the lid hermetically in place, and yet permit of its ready detachment.

35 In order that my said invention may be clearly understood and readily carried into effect, I will proceed to describe the same more fully with reference to the accompanying drawings, in which—

40 Figure 1 is a sectional elevation, and Fig. 2 is a plan, of a Leclanché cell constructed according to my invention. Fig. 3 is a plan of the outer vessel. Fig. 4 is an elevation, partly in section, of a modified construction.

45 In all the figures like letters of reference indicate similar parts.

A is the lid. B and C are the electrodes. D is the porous chamber. E, the outer vessel, and F the resilient frame or clamp.

50 Referring more particularly to Figs. 1 to 3, in which the electrodes and the porous cham-

ber are shown connected to the lid or cover, the frame F is formed of stout wire coiled upon itself at  $f f$ , so as to render said frame resilient. The said frame is formed with 55 loops  $f' f^2$ , adapted to engage with projections  $e e'$  on the outer vessel.

The lid or cover A is placed upon the outer vessel of the cell and secured in position by passing the loop  $f'$  over the projection  $e$ , and 60 thereafter passing the loop  $f^2$  over the projection  $e'$ .

The extremities or loop portions of the frame tend to rise by reason of the elasticity or resiliency of the frame, but are held down by 65 their engagement with the said projections. They thus tend to produce on the lid or cover A at its various points of contact with the frame a considerable pressure, which insures a tight joint between the cell and the cover. 70 The said joint is rendered further secure by means of the rubber or other washer G.

The arrangement of fastening illustrated in Fig. 4 is similar to that above described, but the porous chamber is not in this instance 75 attached to the lid or cover. The said cover is provided with an opening into which the upper part of the porous chamber or the electrode therein fits. Between a shoulder  $d$  on the upper part of said porous chamber and 80 the said cover is placed a packing-ring or washer H.

The herein-described method of hermetically closing galvanic cells is applicable to all kinds or types of cells, and I do not desire to 85 confine myself to the Leclanché forms above described nor to the dimensions and accessory arrangements set forth, as obviously these may be altered and modified to suit different constructions of cells. 90

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a galvanic cell, the combination with the cover therefor having a central aperture for the carbon electrode, a resilient wire frame 95 for holding down said cover and connections on the cell for said frame to engage with, of a number of coils on said frame disposed about said aperture and adapted to distribute the pressure of the frame evenly over the 100 cover, substantially as described.

2. In a galvanic cell, the combination with

a hermetic lid provided with electrodes passing through its central portion, of a resilient wire frame having loops on its opposite ends adapted to engage with projections on the  
5 cell so as to serve as hinge and clasp respectively, and having moreover a number of coils disposed around the said central portion of the lid, said coils being adapted to distribute the pressure of the frame over the  
10 surface of the lid without interfering with the electrodes, substantially as described.

3. In a closed galvanic cell, the combination with a resilient wire frame adapted to cooperate with connections on the cell so as to  
15 maintain hermetic closure, of a lid having its

central portion free from the aforesaid frame for the passage of the electrodes, and a number of coils on said frame disposed about said central portion of the lid and adapted to distribute the spring-pressure of the frame over  
20 the surface of the lid, substantially as described.

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 11th day of March, 1901.

MICHAEL MARTIN BAIR.

Witnesses:

EDWARD P. MACLEAN,  
ENRIQUE BAER.