

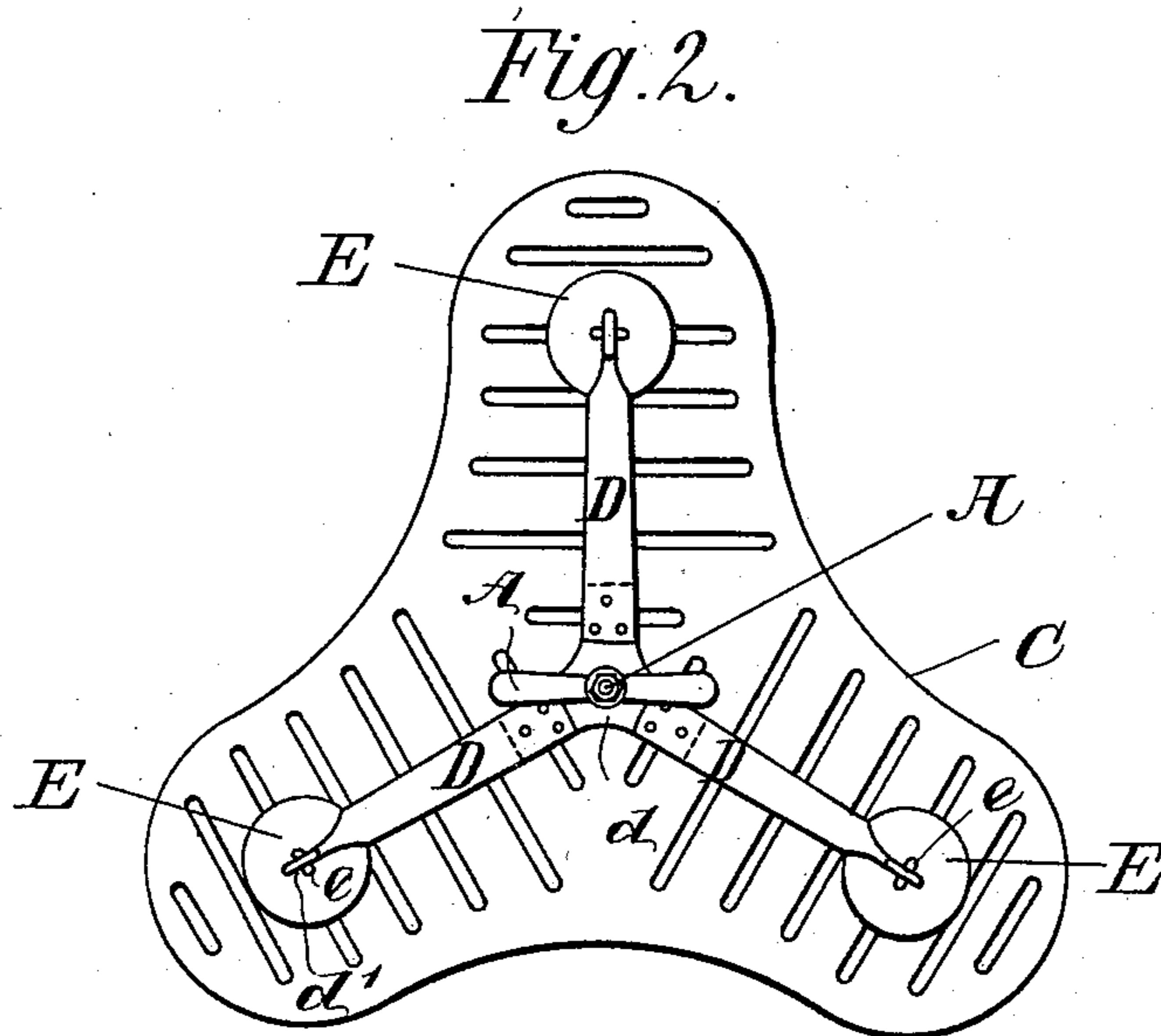
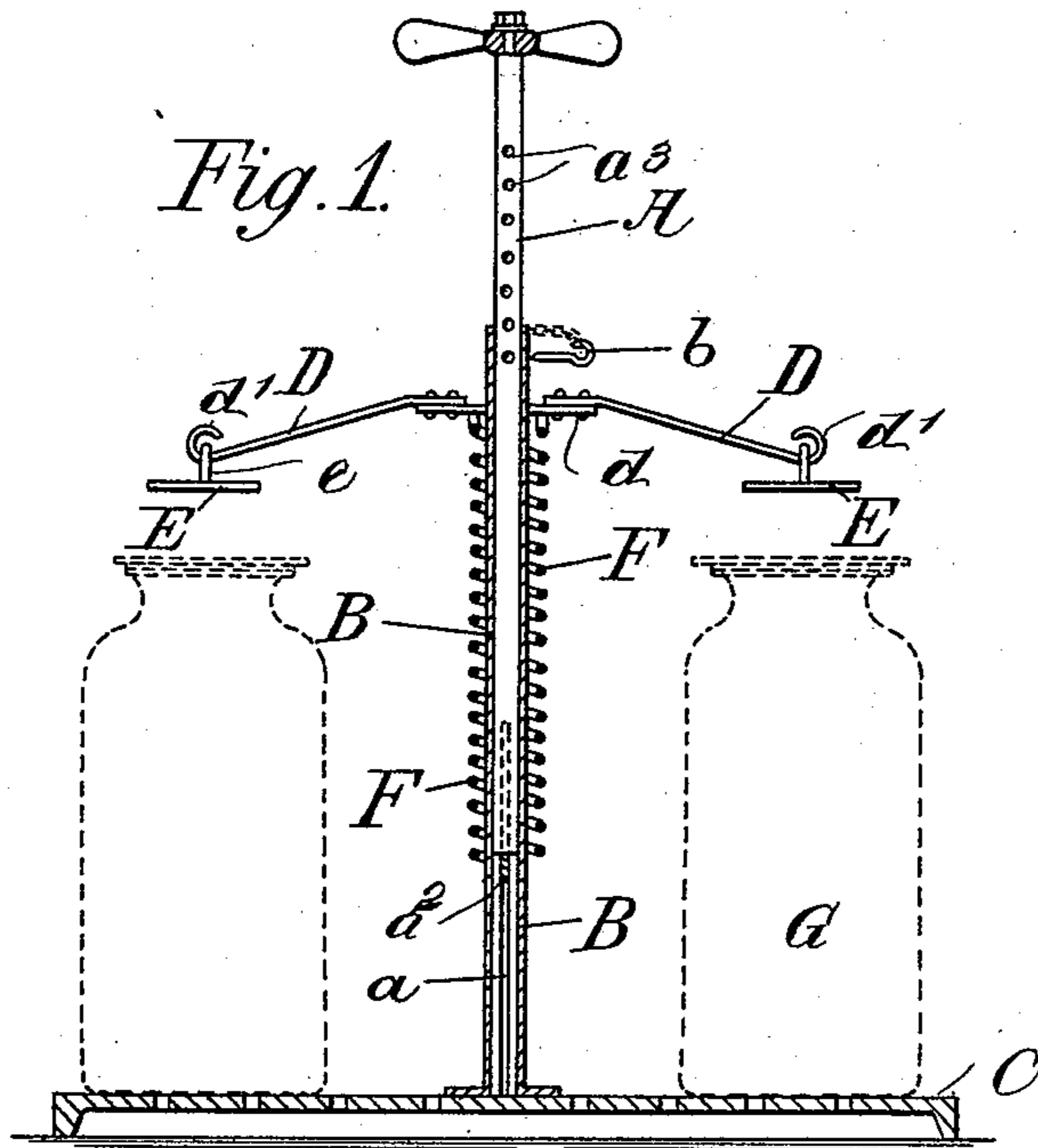
(No Model.)

4 Sheets—Sheet 1.

A. HÜSSENER.  
APPARATUS FOR USE IN STERILIZATION OF MATERIALS IN  
BOTTLES, JARS, &c.

No. 529,619.

Patented Nov. 20, 1894.



WITNESSES.

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*J. L. McLaughlin*

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*A. Hüssener*  
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Fig. 3.

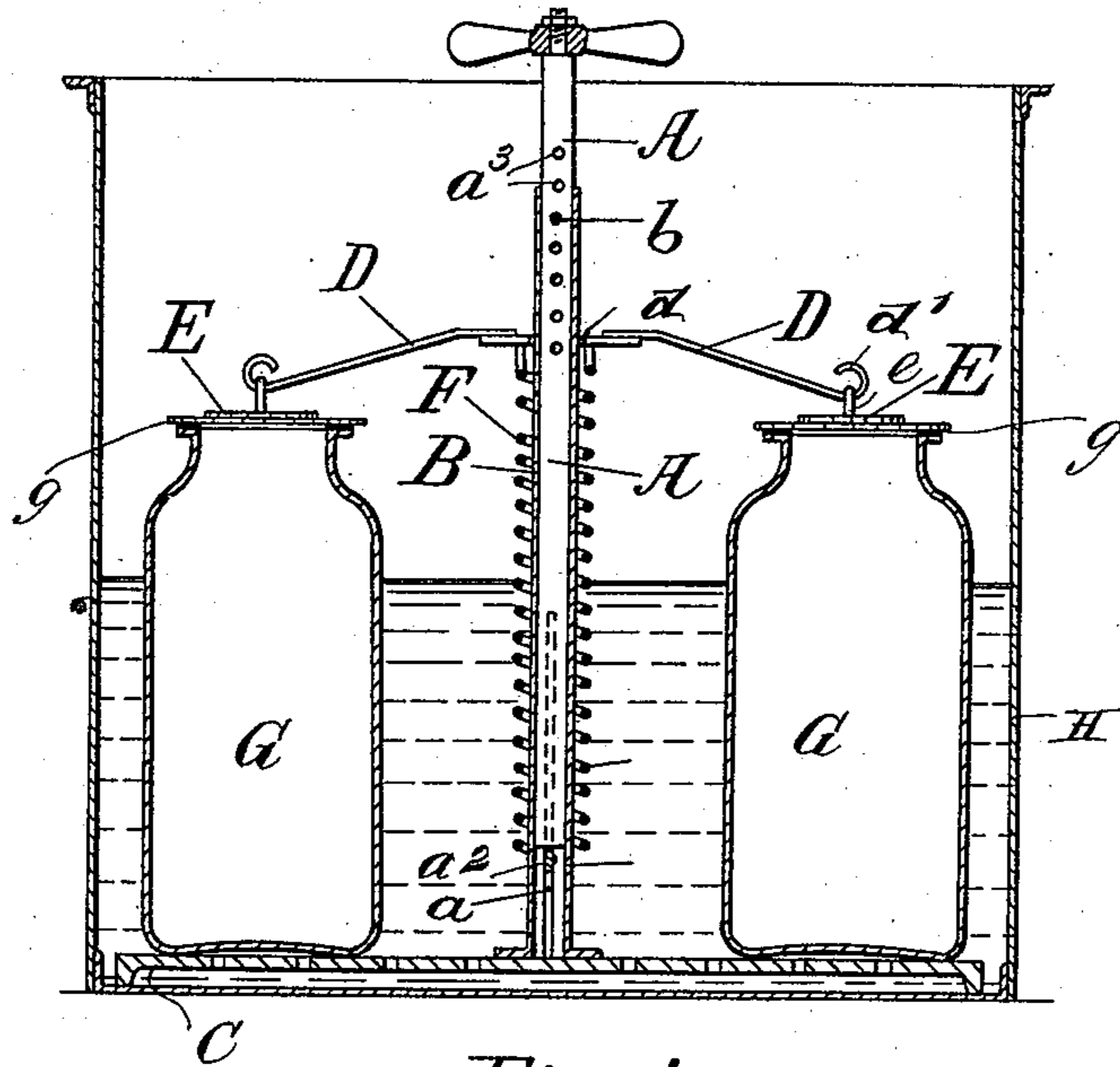
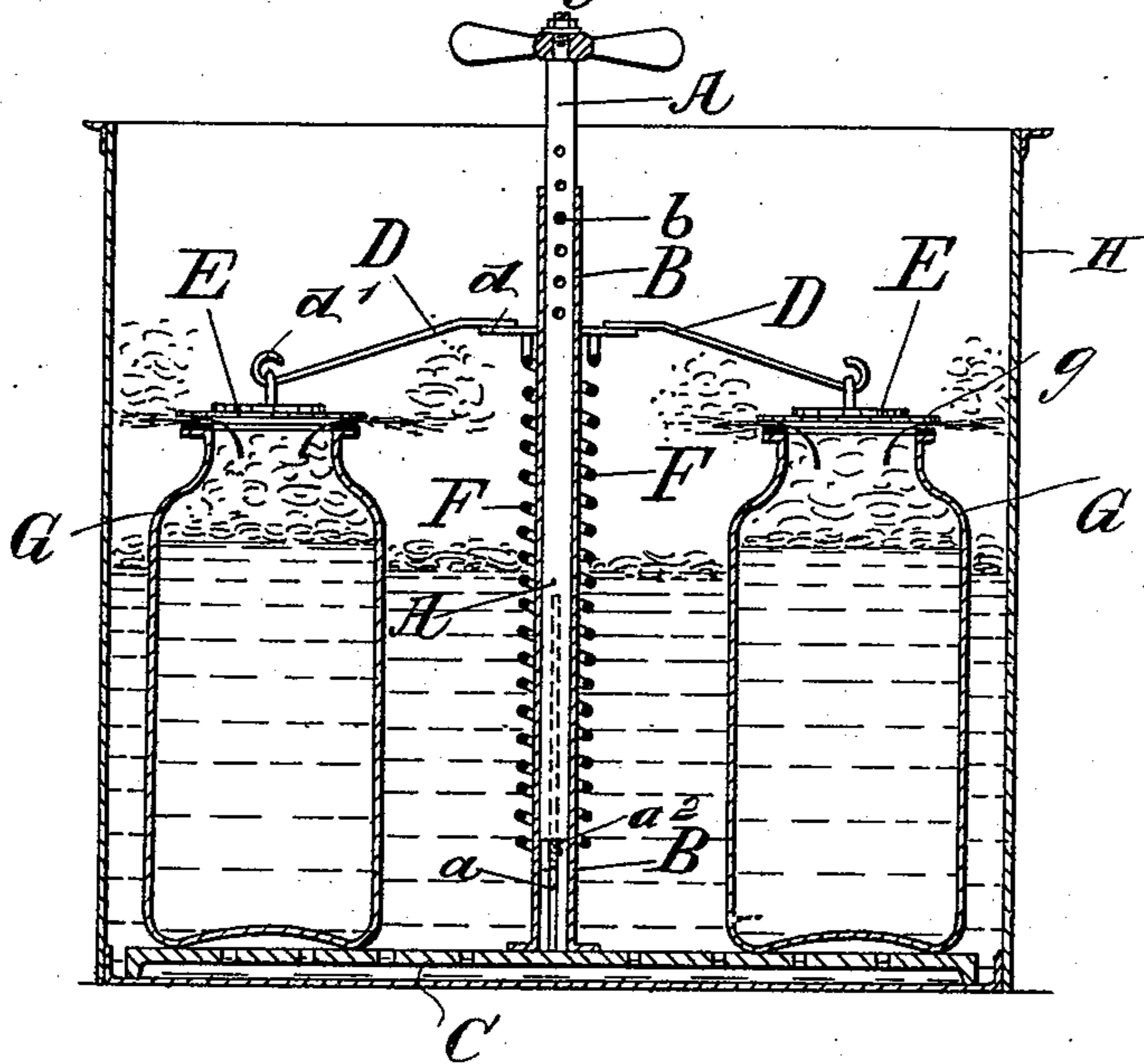


Fig. 4.



WITNESSES.

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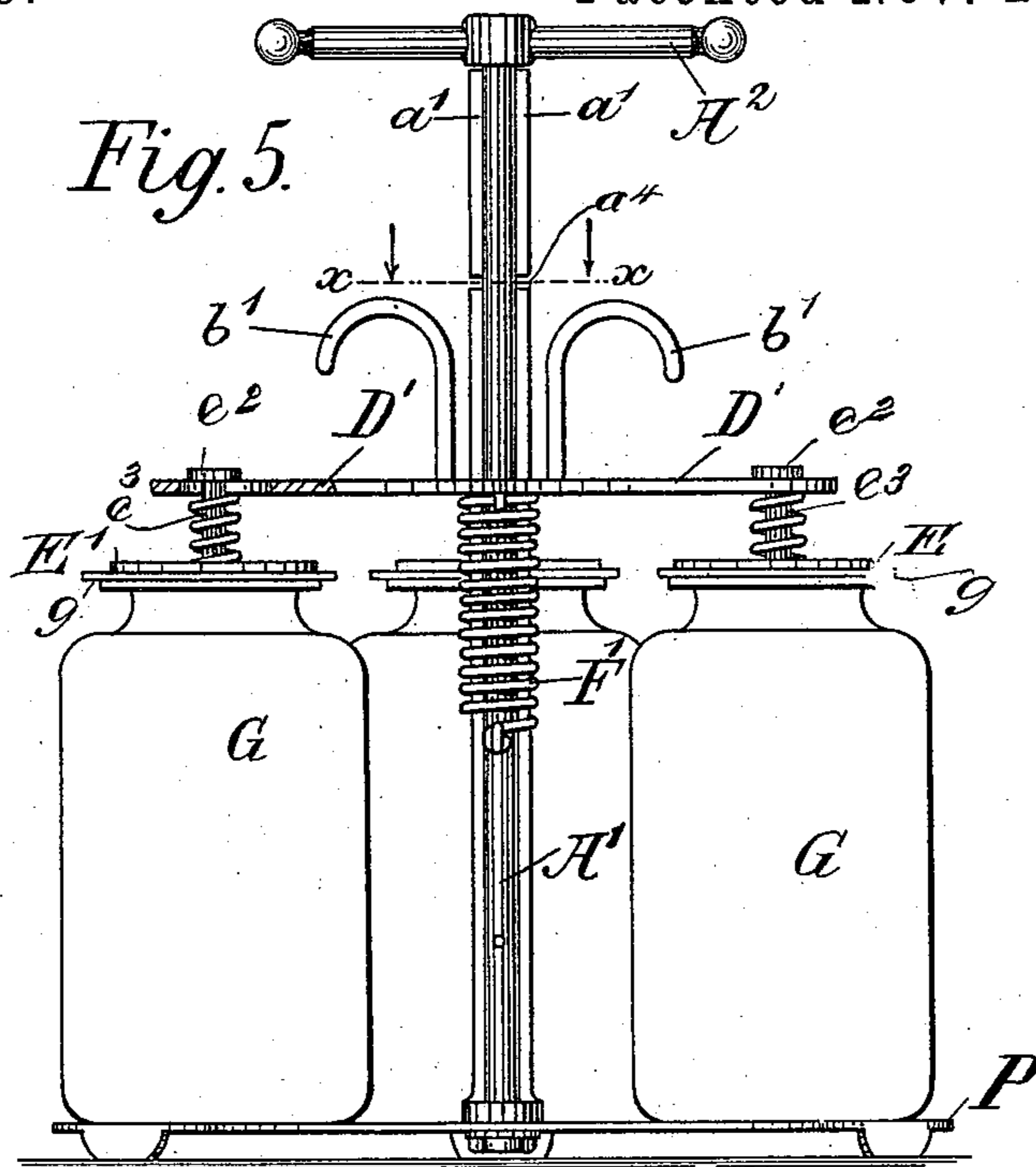
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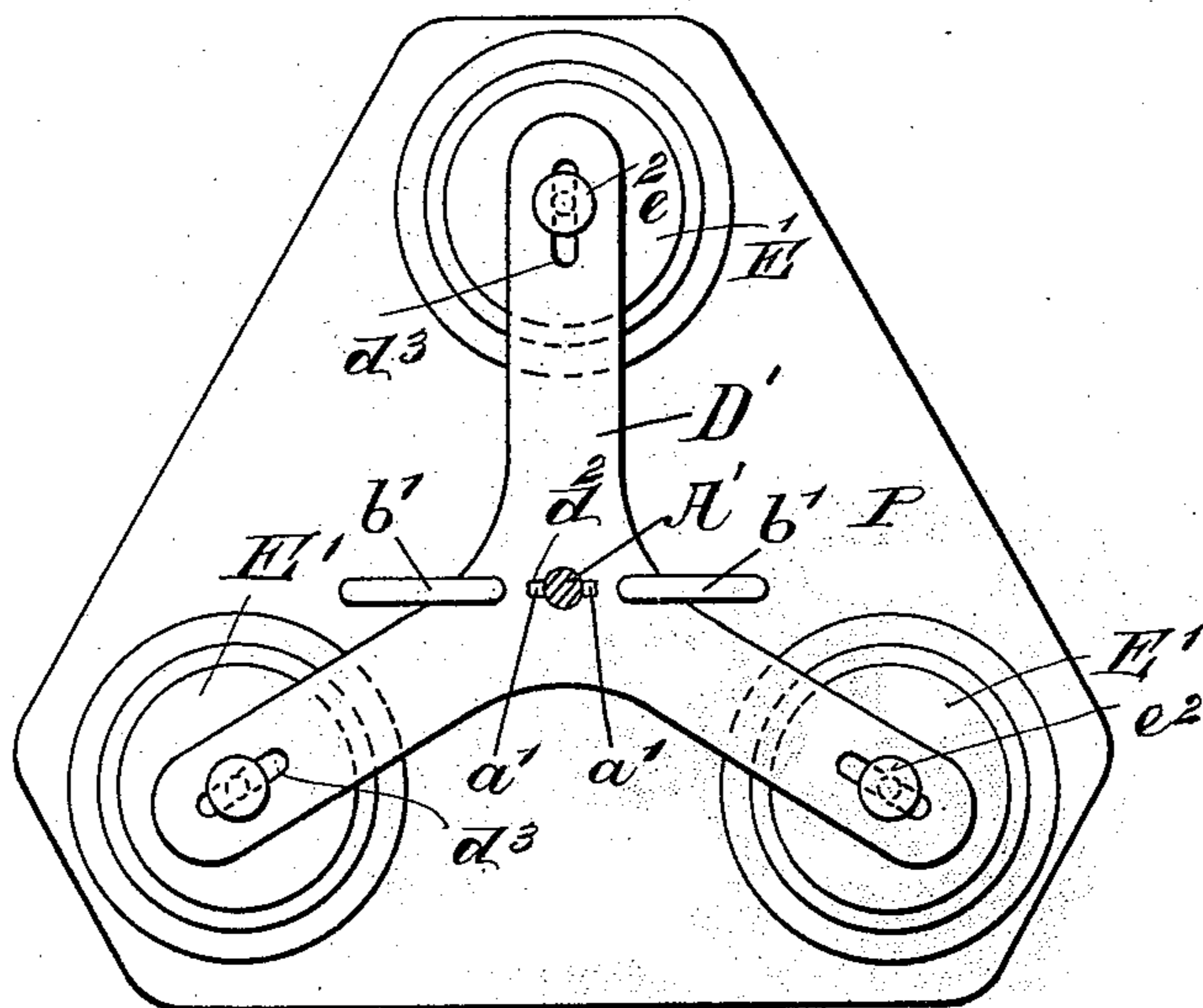
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*Fig. 6*



WITNESSES.

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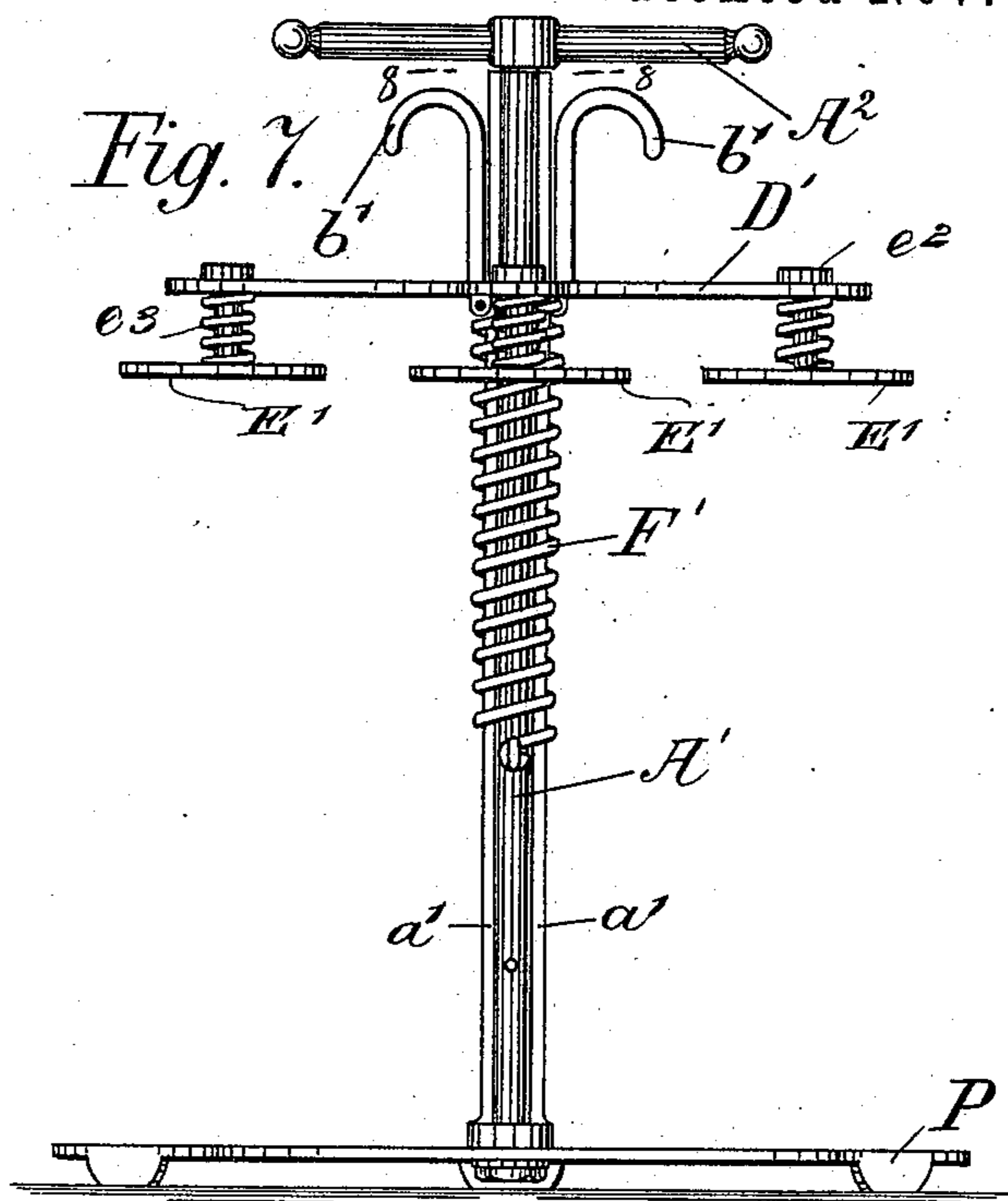
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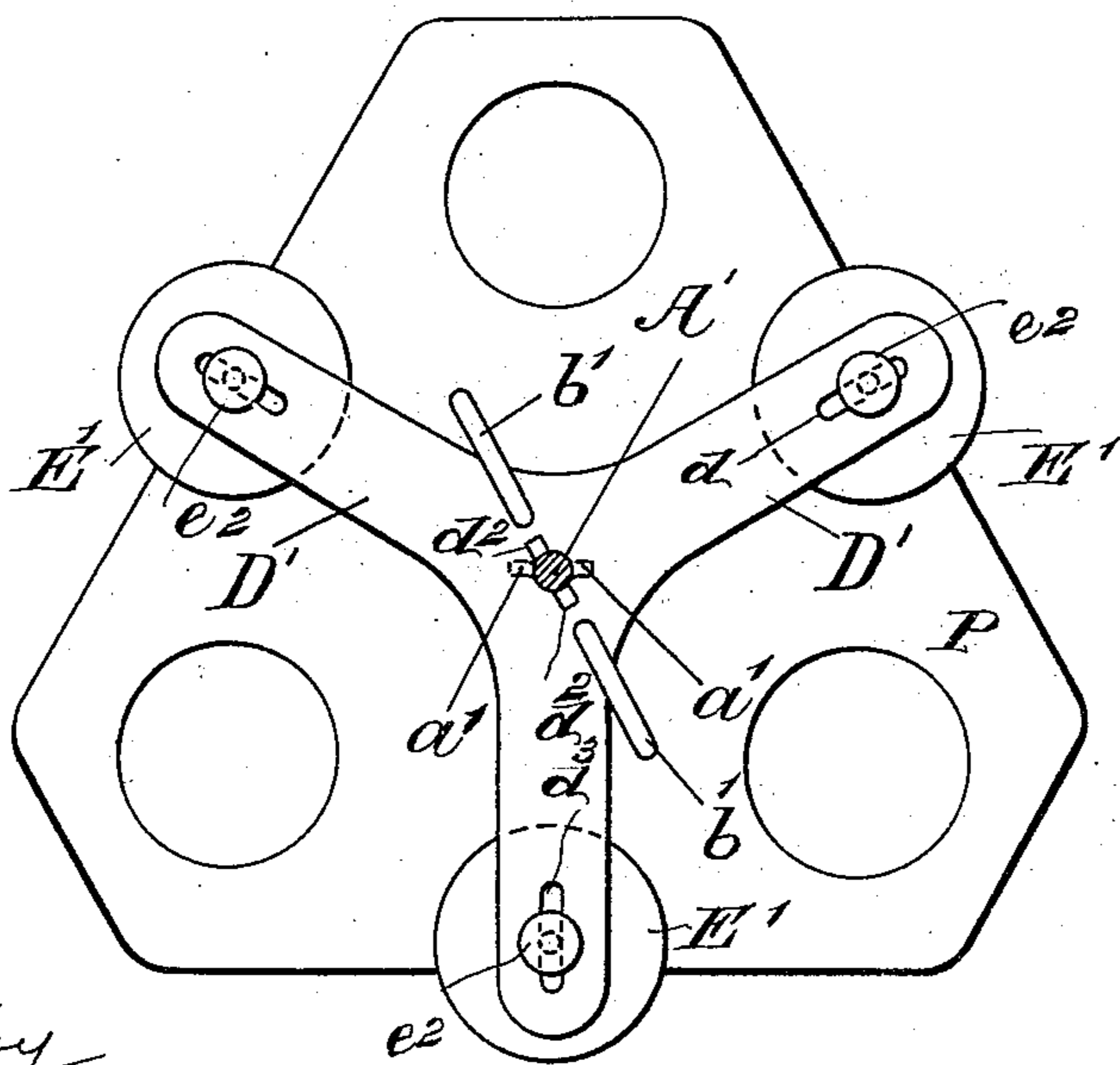
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*Fig. 8.*



WITNESSES.

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# UNITED STATES PATENT OFFICE.

ALBERT HÜSSENER, OF GELSENKIRCHEN, GERMANY.

APPARATUS FOR USE IN STERILIZATION OF MATERIALS IN BOTTLES, JARS, &c.

**SPECIFICATION** forming part of Letters Patent No. 529,619, dated November 20, 1894.

Application filed April 28, 1894. Serial No. 509,369. (No model.) Patented in Germany April 23, 1892, No. 66,898; in France August 17, 1892, No. 223,722; in Belgium September 21, 1892, No. 101,439, and in Austria-Hungary March 25, 1893, No. 48,474 and No. 72,024.

*To all whom it may concern:*

Be it known that I, ALBERT HÜSSENER, a subject of the King of Prussia, residing at Gelsenkirchen, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Apparatus for use in the Sterilization of Materials in Bottles, Jars, or other Vessels, (for which I have obtained Letters Patent in Germany, No 66,898, dated April 23, 1892; in Austria-Hungary, No. 48,474, tom. 43, fol. 957, and No. 72,024, tom. XXVII, fol. 891, dated March 25, 1893; in Belgium, No. 101,439, dated September 21, 1892, and in France, No. 223,722, dated August 17, 1892,) of which the following is a specification.

The object of this invention is the formation of an apparatus, by which I am enabled mechanically to close and make perfectly tight against the excess of the outer air by means of a plain flat cover, vessels of any shape intended for preserving articles of food, the said vessels and their contents having been previously sterilized by heating in a hot water bath. To this end the apparatus is so constructed and arranged, that it not only effects the closure of the vessels, but also during the process of sterilization exhausts the air from the interior of the vessels, without the atmospheric air outside being able to penetrate into the interior of the vessels, either during or subsequent to the process of sterilization.

The invention is shown in the accompanying drawings.

Figure 1 is a vertical section of the apparatus; Fig. 2, a plan view of same. Fig. 3 is a vertical section of the apparatus introduced into the water bath in a non heated condition, the covers being placed on the vessels. Fig. 4 is a similar section of the apparatus in a heated condition, while Fig. 5 is an elevation of a modified embodiment of my invention, showing the same applied. Fig. 6 is a sectional plan view, the section being taken on line  $x-x$ , Fig. 5. Fig. 7 is an elevation of such modified form arranged to receive the jars or the like; and Fig. 8 is a sectional plan view on line 8-8, Fig. 7.

In constructing an apparatus in accordance with my invention, the base plate C of suit-

ble shape is provided. Said plate is provided at the center with a tubular standard B, in which is fitted to slide a rod A. The lower end of rod A is provided with lateral arms  $a^2$  which move in oppositely formed vertical slots  $a$  in standard B, and to such arms there is secured the lower end of the spiral spring F, said spring surrounding the standard B. The upper end of the spring F is secured to a slide  $d$  fitted to slide on the standard B, and from such slide a series of arms D radiate and carry at their outer ends the suspended disks E, which are adapted to bear downward against the caps  $g$  of the jars or other vessels G, the disks usually being formed with an eye  $e$  on their upper sides that engages upturned, hook-like ends  $d'$  of arms D. The pin  $b$  serves to maintain the rod A in any given position in the standard B by being passed through a suitable aperture in said standard and entering any one of a vertical series of apertures  $a^3$  in the rod.

The manipulation of the apparatus is as follows: The rod A is raised as in Fig. 1 and after the jars G are placed in position the rod is lowered to bring the disks E down upon the closures  $g$  of the jars, and the rod is pressed further down thereby putting the spring F under tension and thus exerting a downward pressure on the disks and jar closures, the rod being secured in the lowered position by means of pin  $b$ . The apparatus, with the jars thus in place is now placed in a sterilizing vessel H, and the heat thereof will cause the spring to expand, the length of the spring being sufficient to effect this result, and thereby its tension will be relieved sufficiently to permit escape of the steam and hot air from the jars as indicated in Fig. 4. Upon removing the apparatus and the jars thereon, from the sterilizing vessel, the cooling of the spring will cause it to resume its normal tension and thereby maintain the jar closures pressed down until the jars and their contents cool and the external atmosphere pressure can act to maintain the jar closures in place.

In the form shown in Figs. 5 to 8 the base plate P is provided with a standard A' having a suitable cross handle A<sup>2</sup> at the top and

formed with vertical ribs  $a'$  at diametrically opposite points, and on the standard thus formed the many armed plate  $D'$  is fitted to slide, the plate being slotted as at  $d^2$  to receive the ribs  $a'$ . To the plate  $D'$  the upper end of the spring  $F'$  is secured and the lower end of the spring is suitably secured to the standard  $A'$ . On the upper side of the plate  $D'$  are secured the hand pulls  $b'$  by means of which the plate  $D'$  may be raised as shown in Fig. 7, and in order that the plate may be held in the raised position the ribs  $a^6$  are broken away as at  $a^4$  (Fig. 5) and when the plate  $D'$  is brought to this point it may be given a partial turn thereby bringing its slots  $d^2$  out of register with the ribs. In this form of apparatus also, I have shown the disks  $E'$ , as provided with headed stems  $e^2$ , that may be adjusted in radial slots  $d^3$  in plate  $D'$ , a spiral spring  $e$  being provided on each stem to maintain the disks in the adjusted position by the friction resulting from the pressure of such springs against the plate  $D'$ , as will be readily understood.

The manipulation of the modified form will be clear from the foregoing.

In both constructions the arms form holders for the jar covers, and are movable with the adjacent end of the spring, when the spring is distended by heat, while the opposite end of the spring may be held against movement.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In an apparatus for use in retaining the covers on jars or other vessels in the sterilization of materials, and for other purposes,

the same comprising a suitable support, holders for retaining in place the covers of the jars or other vessels, and a spring engaging the holders for causing the holders to exert a pressure on the covers, the holders and that end of the spring that acts on the holders being free to move in a direction opposite to the direction in which the pressive action of the holders is exerted, whereby the tension of the spring will be relaxed by heat during the sterilizing process and relieve the pressive action of the holders to permit escape of steam and air from the jars or like vessels, substantially as described.

2. The combination with a standard, of holders for retaining in place the covers of jars or other vessels, a spring arranged in connection with the standard and supporting the holders, and means for securing the opposite end of the spring, the holders and the end of the spring adjacent thereto being free to rise on the standard when the spring is distended, substantially as described.

3. The combination with a base adapted to receive jars or the like and a standard thereon, of holders for retaining the covers on the jars or the like, the holders being vertically movable on the standard and carrying disks at their outer ends, and a spiral spring on the standard, the spring engaging at its upper end with the holders, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT HÜSSENER. [L. S.]

Witnesses:

ALBERT LIEBER,  
WILHELM OTTO.