

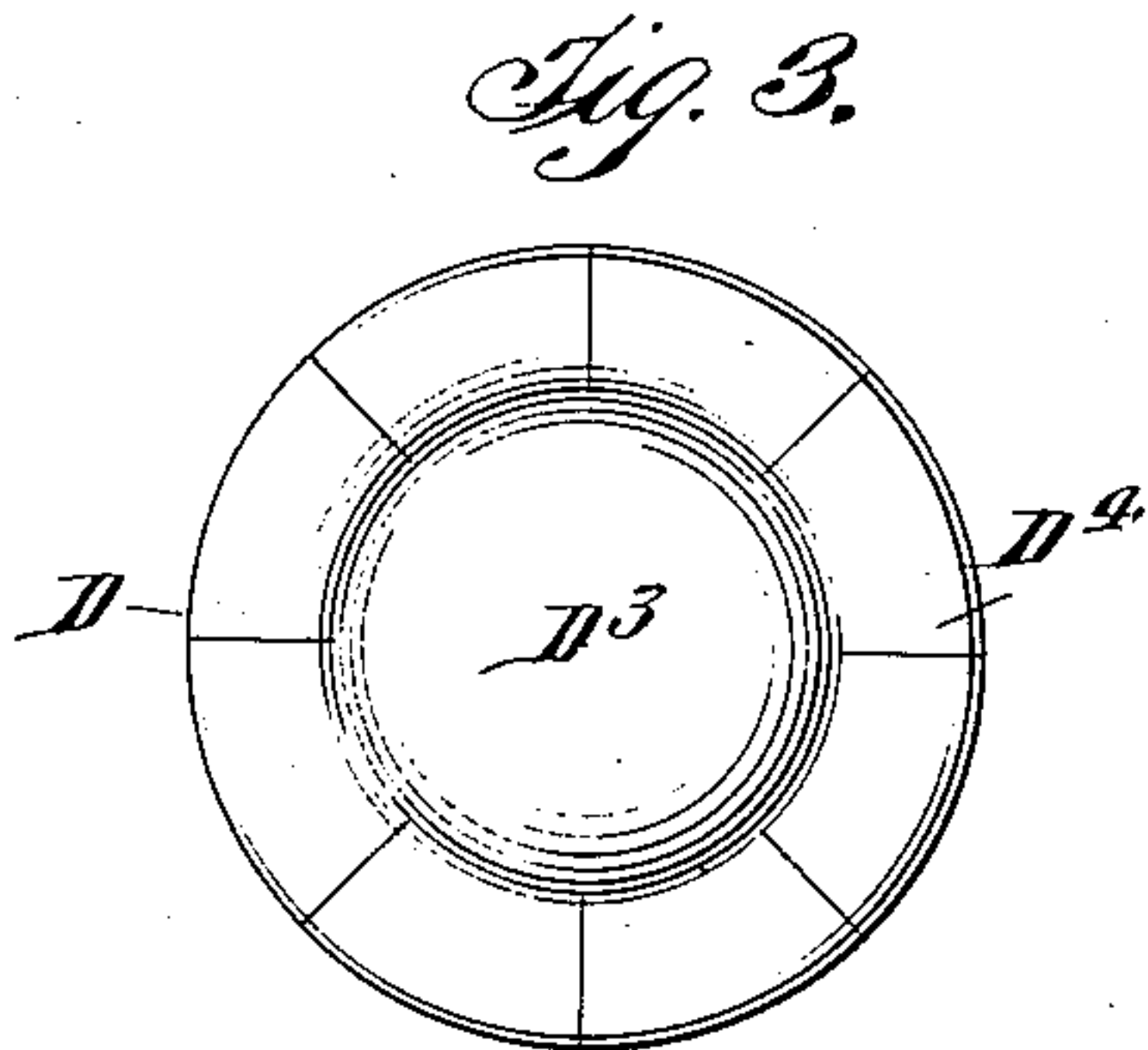
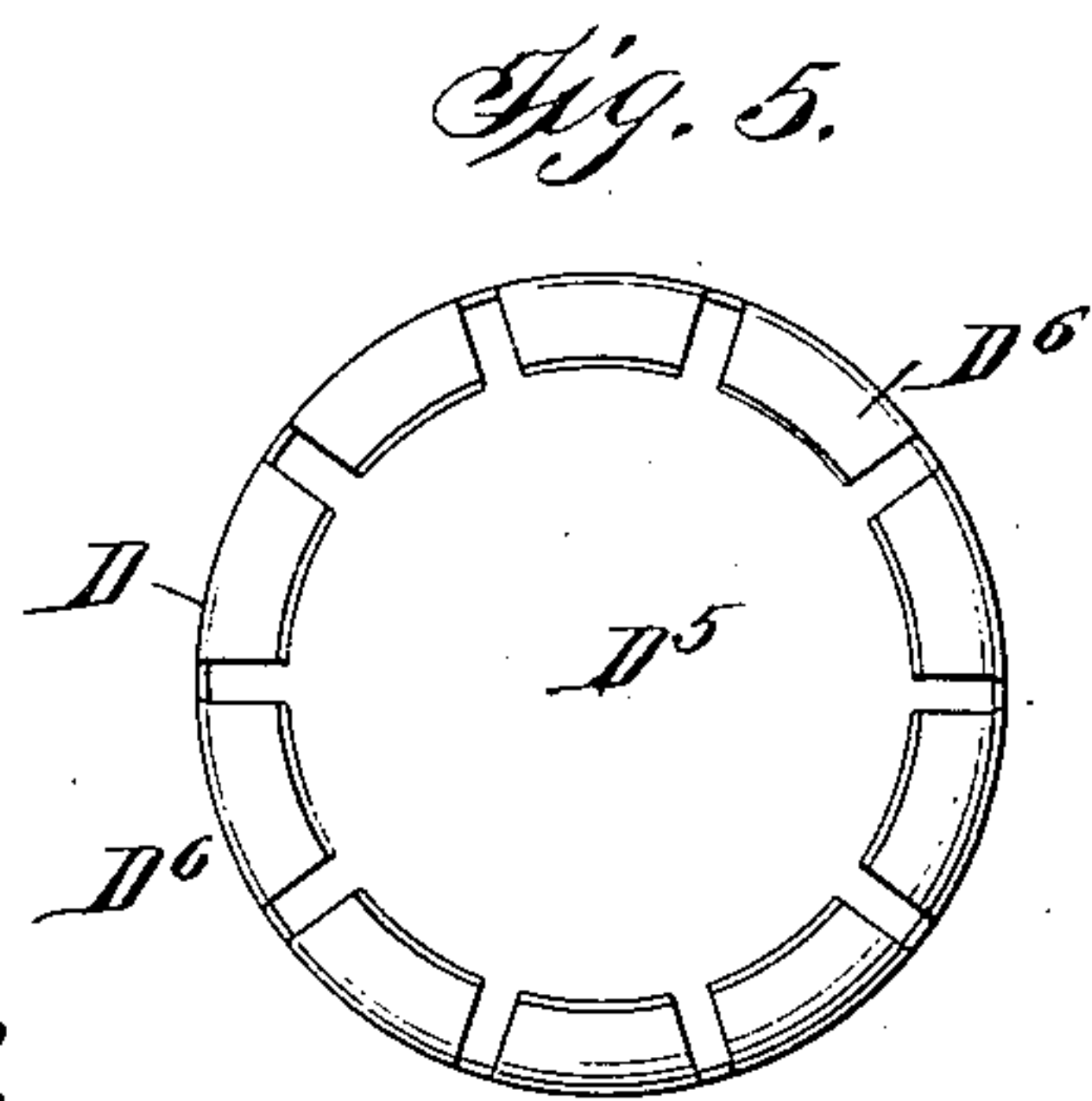
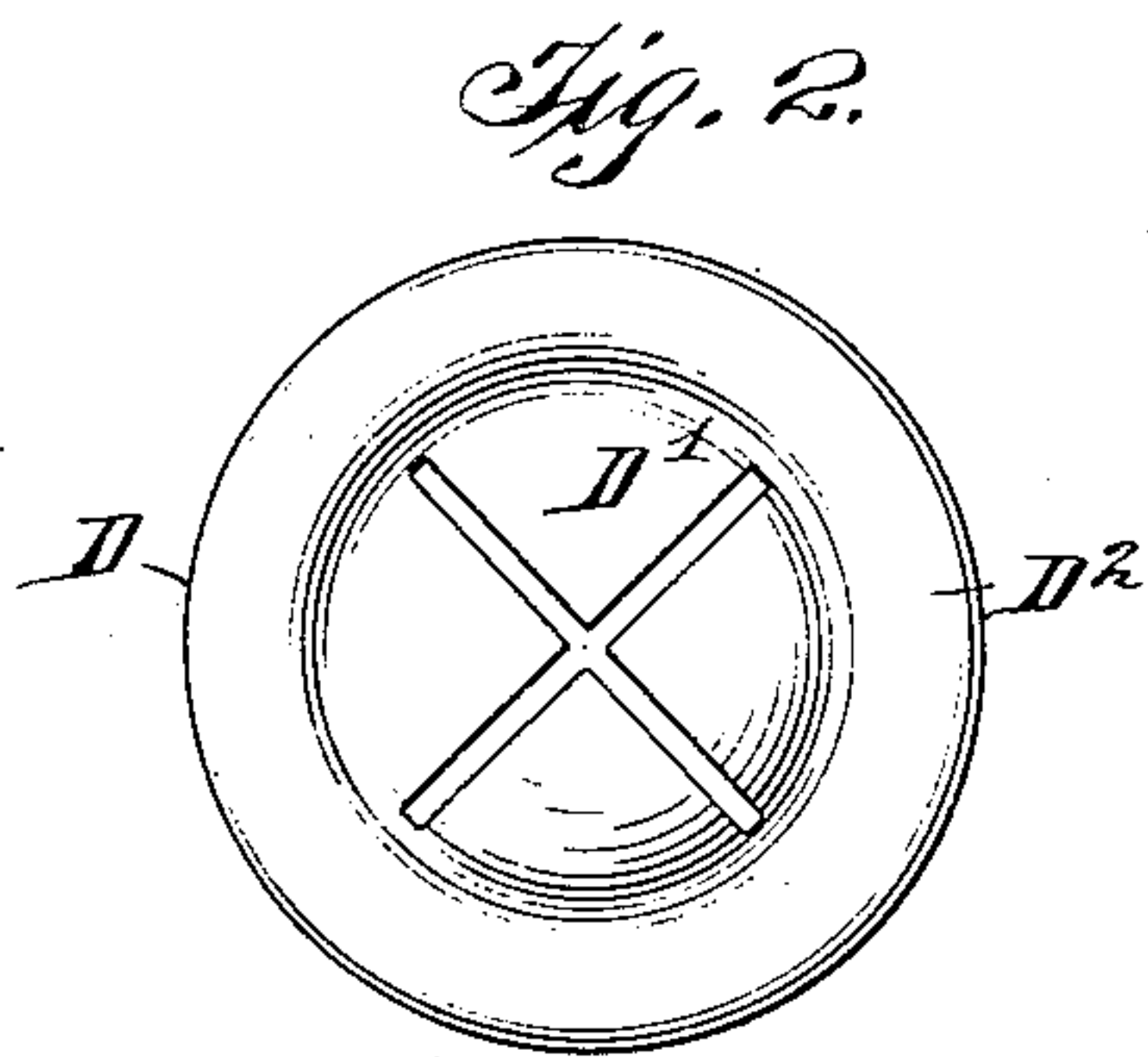
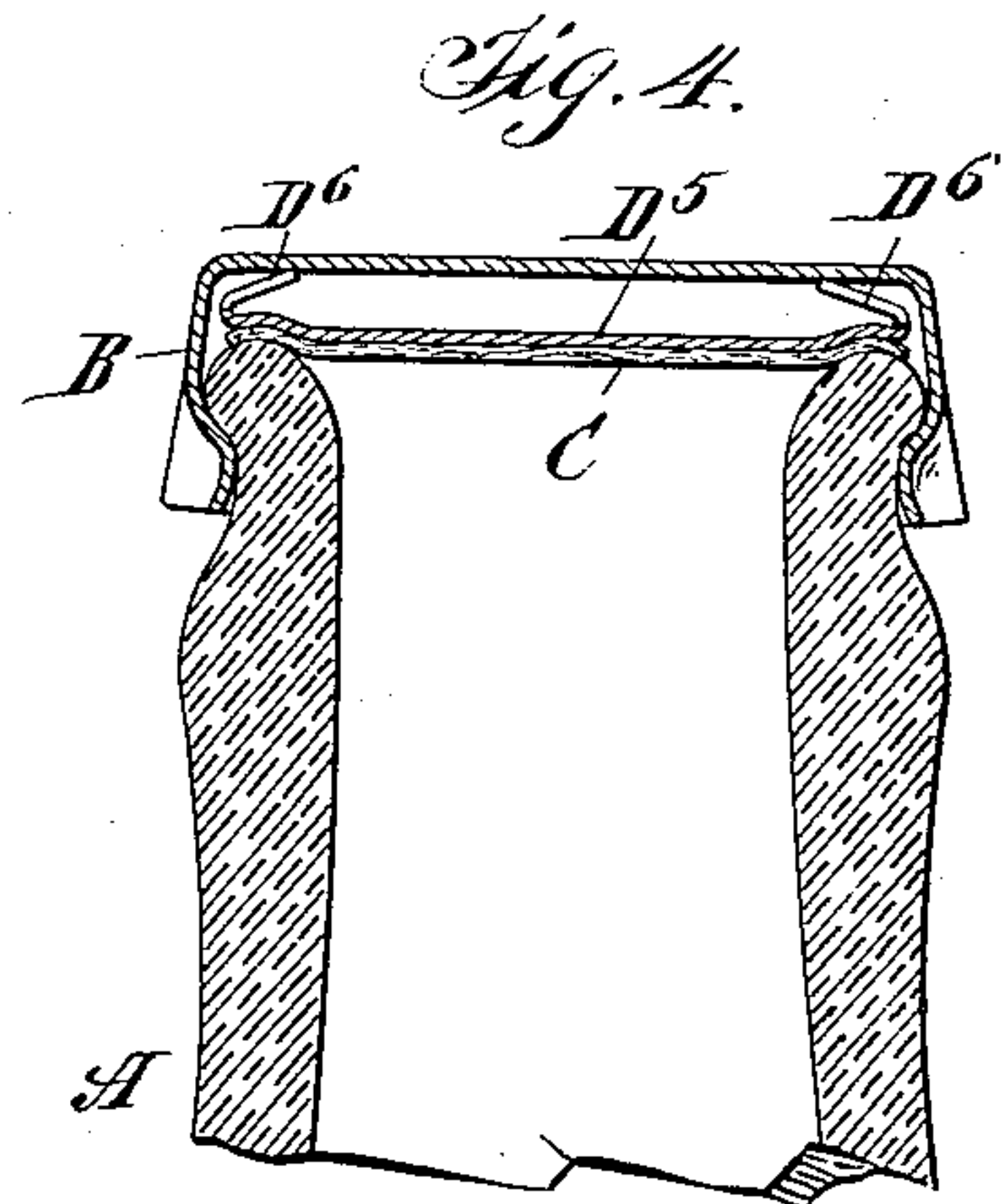
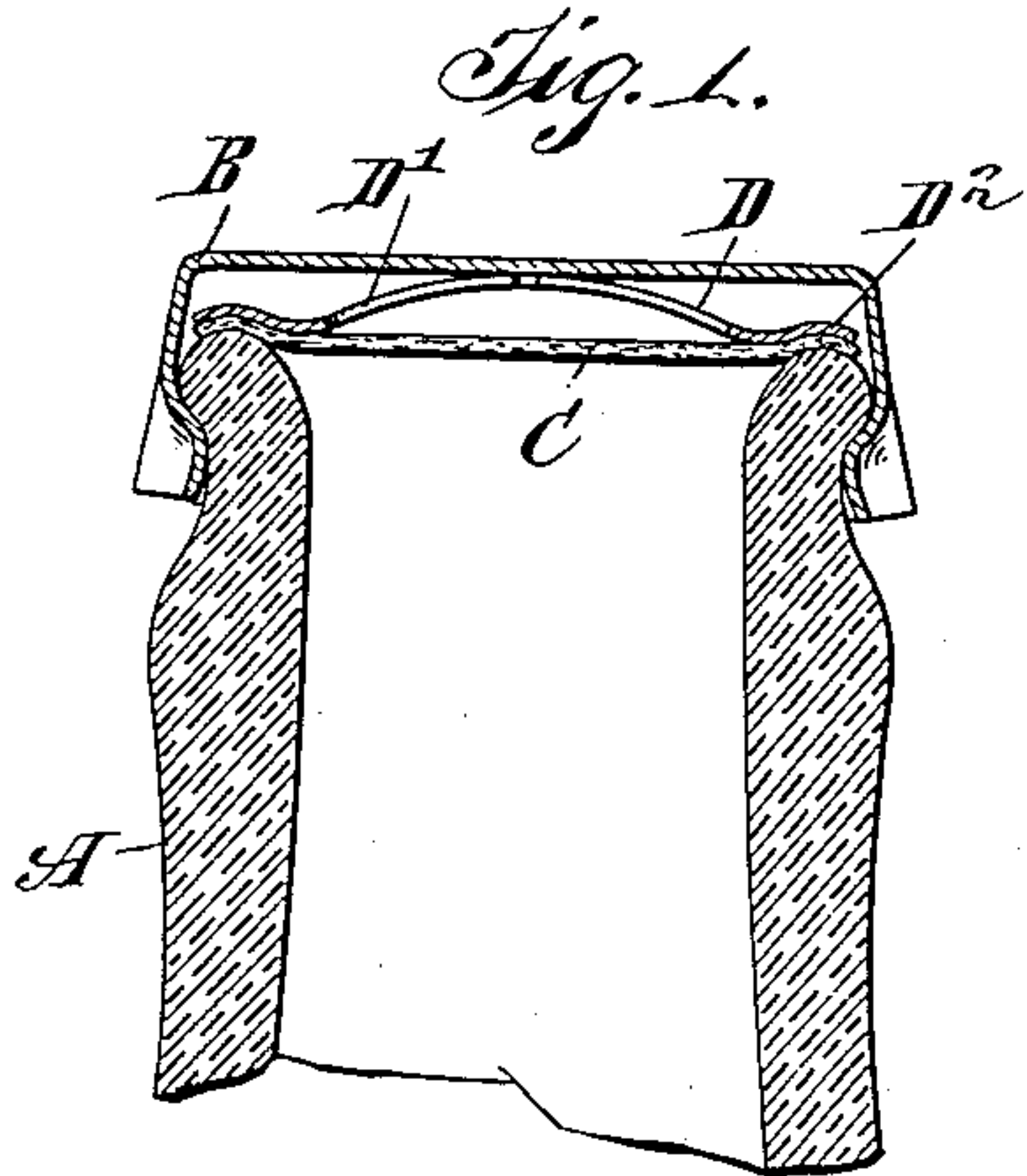
C. D. LOVE.

CLOSURE.

APPLICATION FILED APR. 29, 1909.

958,513.

Patented May 17, 1910.



WITNESSES

*L. Sanford*  
*Thos. Hoster*

INVENTOR  
*Clyde Darwin Love.*

BY *Munroe*

ATTORNEYS



# UNITED STATES PATENT OFFICE

CLYDE DARWIN LOVE, OF NEWARK, NEW JERSEY.

## CLOSURE.

958,513.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed April 29, 1909. Serial No. 492,828.

*To all whom it may concern:*

Be it known that I, CLYDE DARWIN LOVE, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Closure, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved closure for use on bottles and other packages, and arranged to insure perfect hermetic sealing of the package, by the use of a spring interposed between the cap and the closing disk and bearing annularly on the latter at a point opposite the support for the closing disk.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional side elevation of the improvement as applied; Fig. 2 is a plan view of the spring in disk form; Fig. 3 is a like view of a modified form of the same; Fig. 4 is a sectional side elevation of a modified form of the improvement as applied; and Fig. 5 is a plan view of the spring used in the construction shown in Fig. 4.

The neck A of a bottle or other package is closed by a suitable metallic cap B, of the crown or other type, and a closing disk C of paper or other suitable material is placed on the top of the neck A, and the closing disk C is firmly held to its seat by a spring D, in the form of a spring disk, interposed between the top of the cap B and the closing disk C. The spring disk D is preferably formed of a single piece of spring metal fashioned with a raised center D', slotted in a desired manner, such as indicated, for instance, in Fig. 2, to render the disk as resilient as possible. The disk D has its outer edge in the form of an annular bearing D<sup>2</sup> engaging the margin of the closing disk C at a point directly opposite the upper end of the neck A of the bottle or other package, so that when the several parts are assembled, as shown in Fig. 1, and the cap B is fastened to the neck A of the bottle, then the top of the cap B presses on the raised center D', so as to

cause the bearing D<sup>2</sup> to press upon the margin of the closing disk C and cause it to assume a curved shape and to be forced into firm contact with the upper end of the neck A of the bottle, to insure perfect hermetic sealing of the bottle.

Various forms may be given to the spring disk D, for instance, as shown in Fig. 3, the disk has a non-perforate raised center D<sup>3</sup> and a radially split bearing D<sup>4</sup>, and, as shown in Figs. 4 and 5, the spring disk D has a body portion D<sup>5</sup> overlying the closing disk C, and provided at its margin with upwardly and inwardly turned flanges D<sup>6</sup>, in contact with the top of the cap B secured to the neck A of the bottle. In either case shown and described the spring disk is pressed on by the cap B, so as to place the spring disk under tension, and to cause its marginal bearing to press the margin of the closing disk B in firm contact with the upper end of the neck A of the bottle or other package.

It is understood that the closing disk may be made of any suitable material, preferably, however, such as can be readily made water or moisture proof by any of the well known processes.

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

1. A closure for bottles and the like, comprising a cap, a closing disk of thin pliable material adapted to rest upon the bottle neck, and a spring in the form of a disk interposed between the cap and closing disk, said spring disk having a central raised portion engaging the cap and a concavo-convex rim resting upon the closing disk, the concavity of the rim being on the underside and the raised portion of the said spring disk being provided with slots arranged at angles to one another and intersecting at the center of the disk.

2. The combination with a bottle having the end of its neck rounded, of a thin flat closing disk of pliable material resting upon the bottle neck, a spring disk having a central raised portion and a concavo-convex rim resting upon the closing disk, the concavity of the rim being on the under side and

the raised portion being slotted, and a cap  
secured upon the bottle neck and engaging  
the raised portion of the spring disk, where-  
by the outer edge of the closing disk will be  
5 curved to correspond with the curvature of  
the end of the bottle neck and the rim of the  
spring disk.

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

CLYDE DARWIN LOVE.

Witnesses:

EDWARD L. RUHNO,  
LOUIS F. GEORGE.