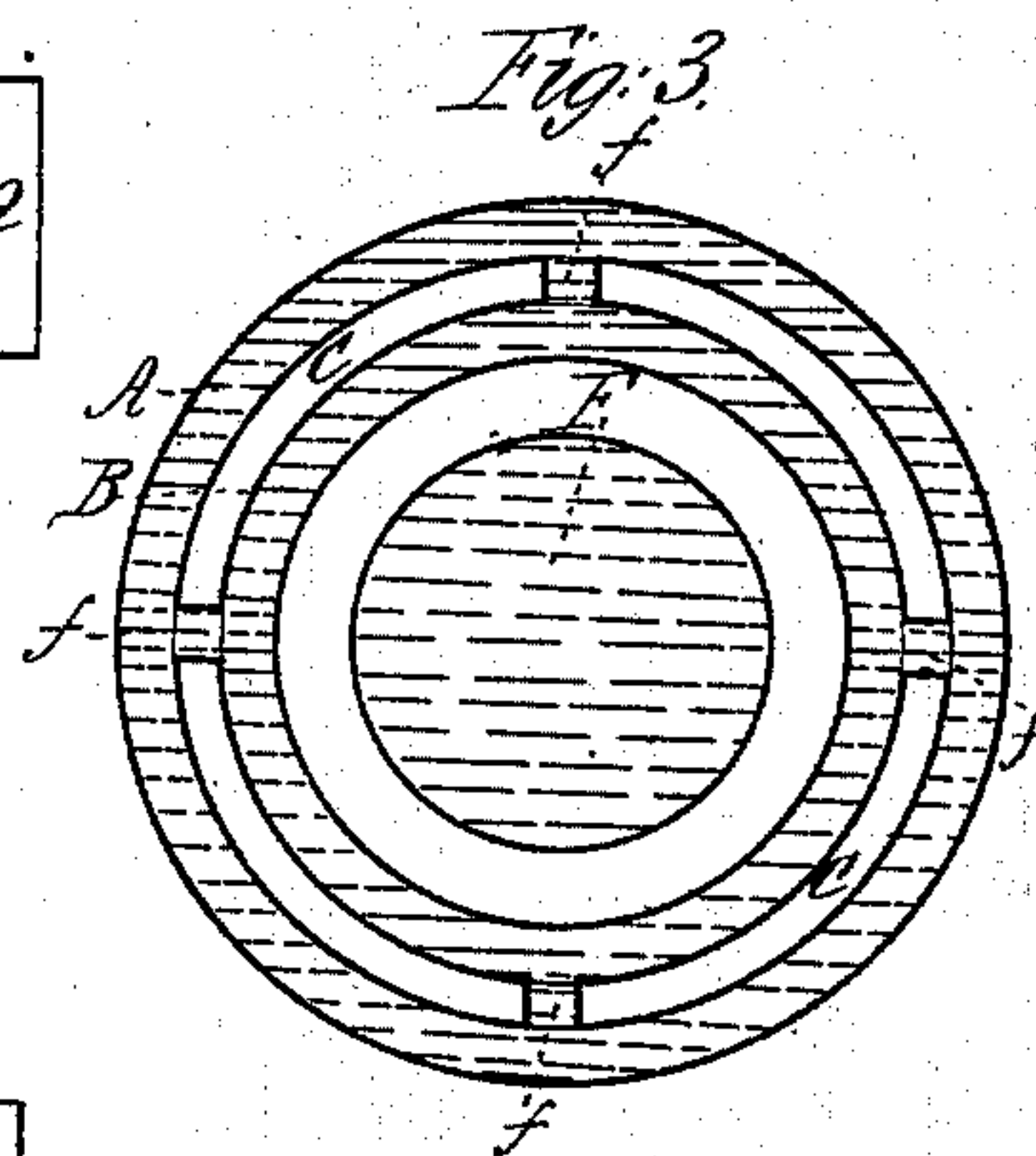
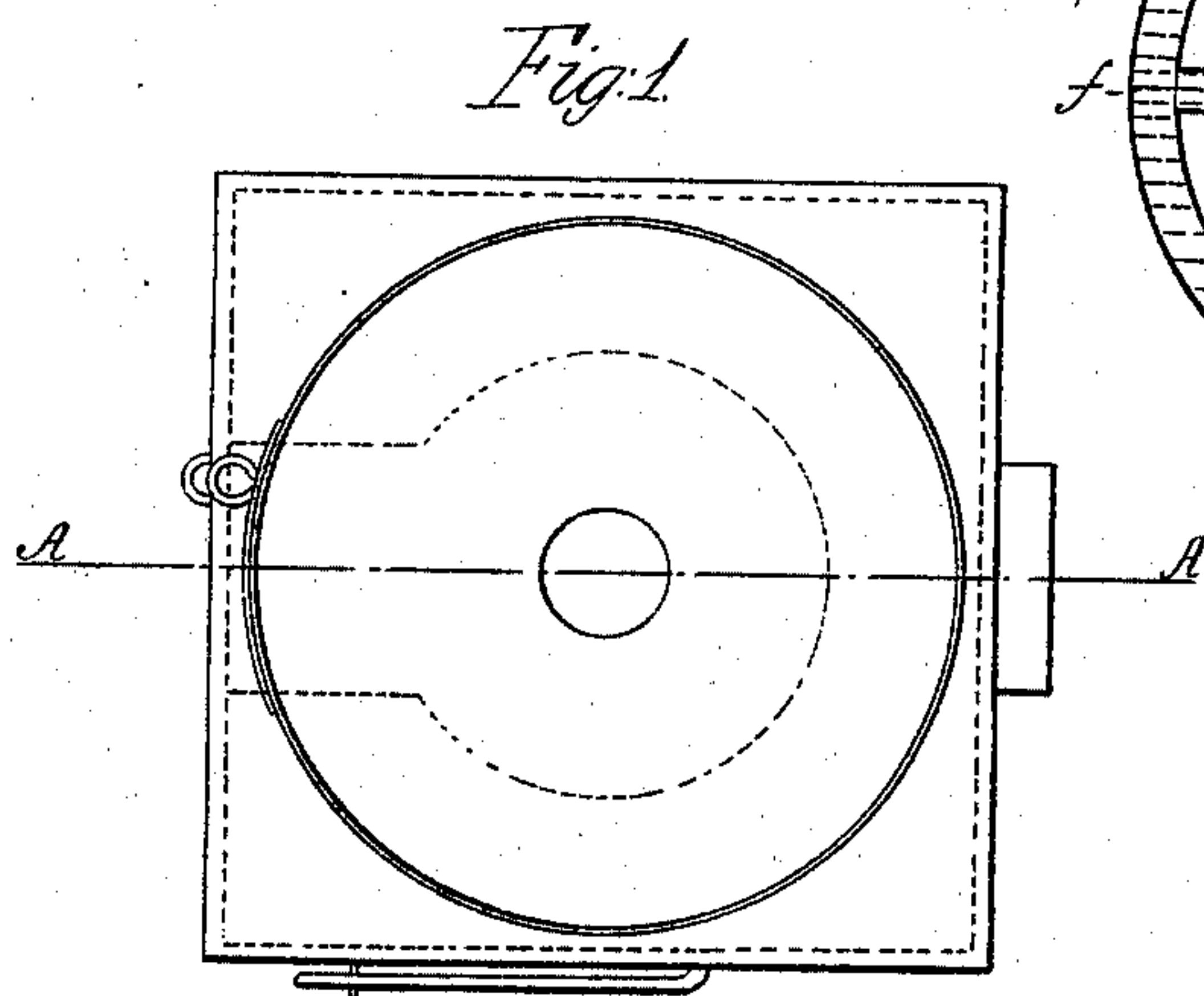
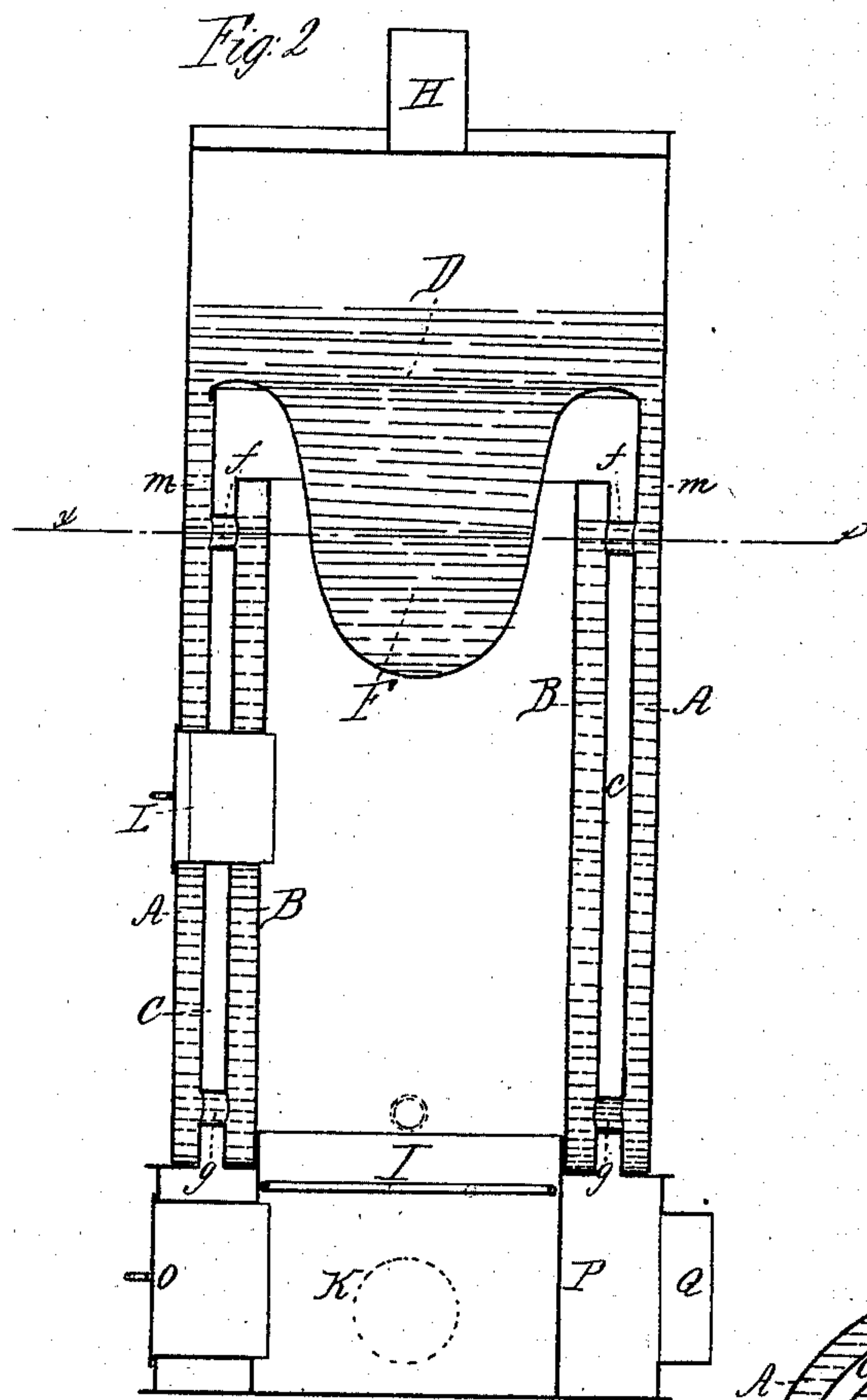


*B. F. Campbell,*  
*Steam-Boiler Water-Tube.*  
*N<sup>o</sup> 26,334.* *Patented Dec. 6, 1859.*



*Witnesses:*

*Sam. Cooper*  
*P. C. Twichman*

*Inventor:*

*B. F. Campbell*

# UNITED STATES PATENT OFFICE.

B. F. CAMPBELL, OF ROXBURY, MASSACHUSETTS.

## IMPROVEMENT IN STEAM-BOILERS..

Specification forming part of Letters Patent No. 26,334, dated December 6, 1859.

*To all whom it may concern:*

Be it known that I, B. F. CAMPBELL, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and Improved Boiler for Generating Steam, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a vertical section upon the line A A of Fig. 1; and Fig. 3, a horizontal section on the line X X, Fig. 2.

The object of this invention is to obtain a boiler for the generation of steam under a low pressure, to be used for heating purposes, that shall present a great amount of heating-surface in a small space, and that shall not be liable to be injured should the water within it, through the negligence of those having it in charge, fall below the proper level. These ends I have attained in an eminent degree; and in order that others skilled in the art may understand my invention, I will proceed to describe the manner in which I have carried it out.

My boiler is formed of two separate water-chambers, the one within the other. The exterior chamber A communicates with the interior one B by pipes or passages *f* and *g*, and between the two is a descending smoke-flue C. The chamber A communicates at the top with the body of the boiler D, and a current is established between the exterior and inte-

rior chamber, through the passages *f* and *g*. From the crown of the boiler descends the basin or receptacle F, immediately over the fire, the pipe H, which brings the water of condensation back to the boiler, being placed immediately over this basin. The fire is built upon the grate I and is fed through the door L, the draft entering by the door O to the ash-pit K. Surrounding the ash-pit is a smoke-box P, from which the products of combustion pass by the pipe Q.

By the above construction I obtain a large amount of heating-surface, and should the water at any time fall below the proper level—as, for instance, to *m*, Fig. 2—the basin F, which is in the hottest part of the furnace, will always remain full, being constantly replenished by the water of condensation, and the walls of the chamber A will be protected by the water which passes over the rim of the basin.

What I claim as my invention, and desire to secure by Letters Patent, is—

In the within-described boiler, the combination of the exterior water-chamber A and interior water-chamber B, the interposed smoke-flue C, and the basin F, the whole arranged to operate substantially as and for the purposes set forth.

B. F. CAMPBELL.

Witnesses:

SAM. COOPER,

P. E. TESCHEMACHER.