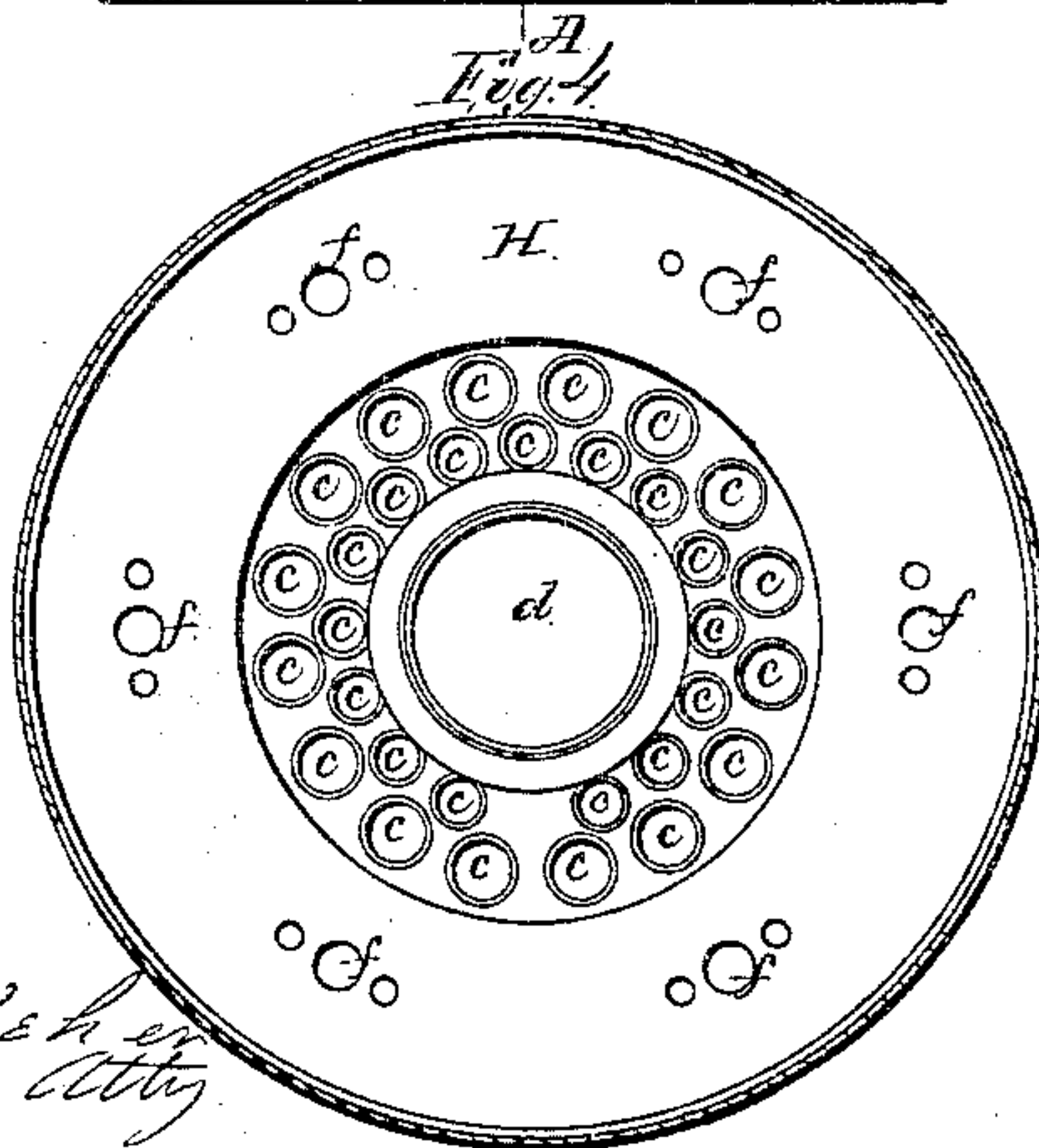
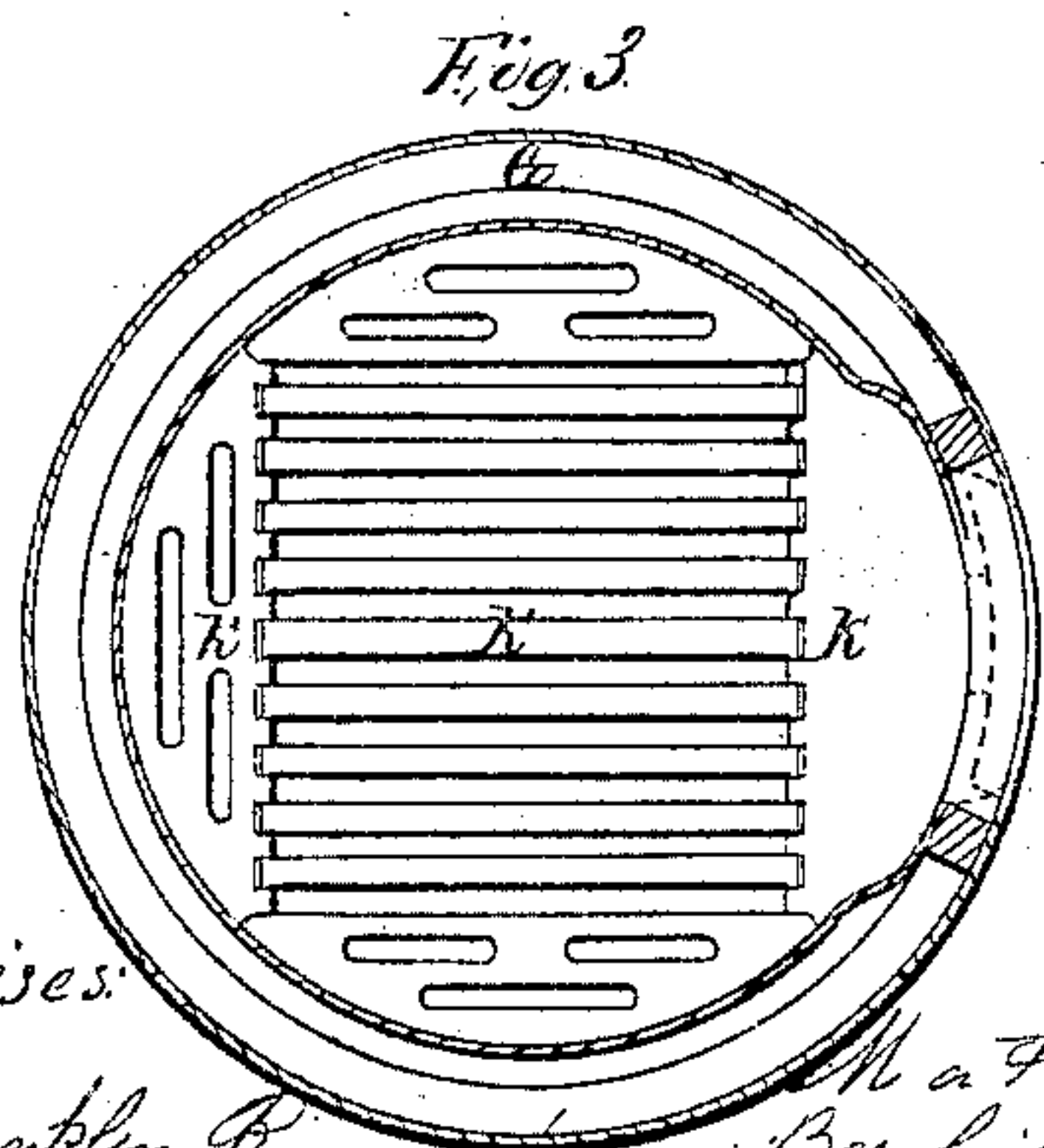
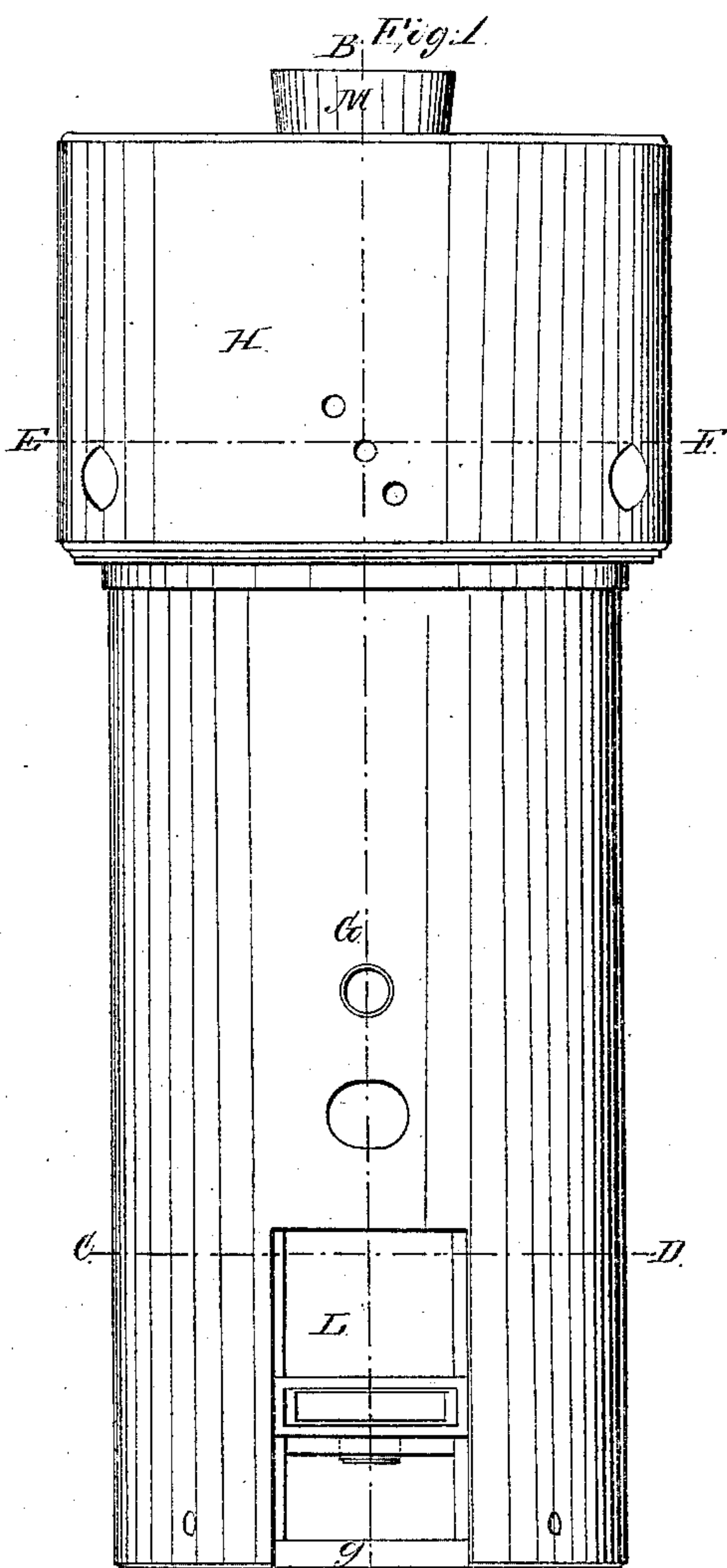
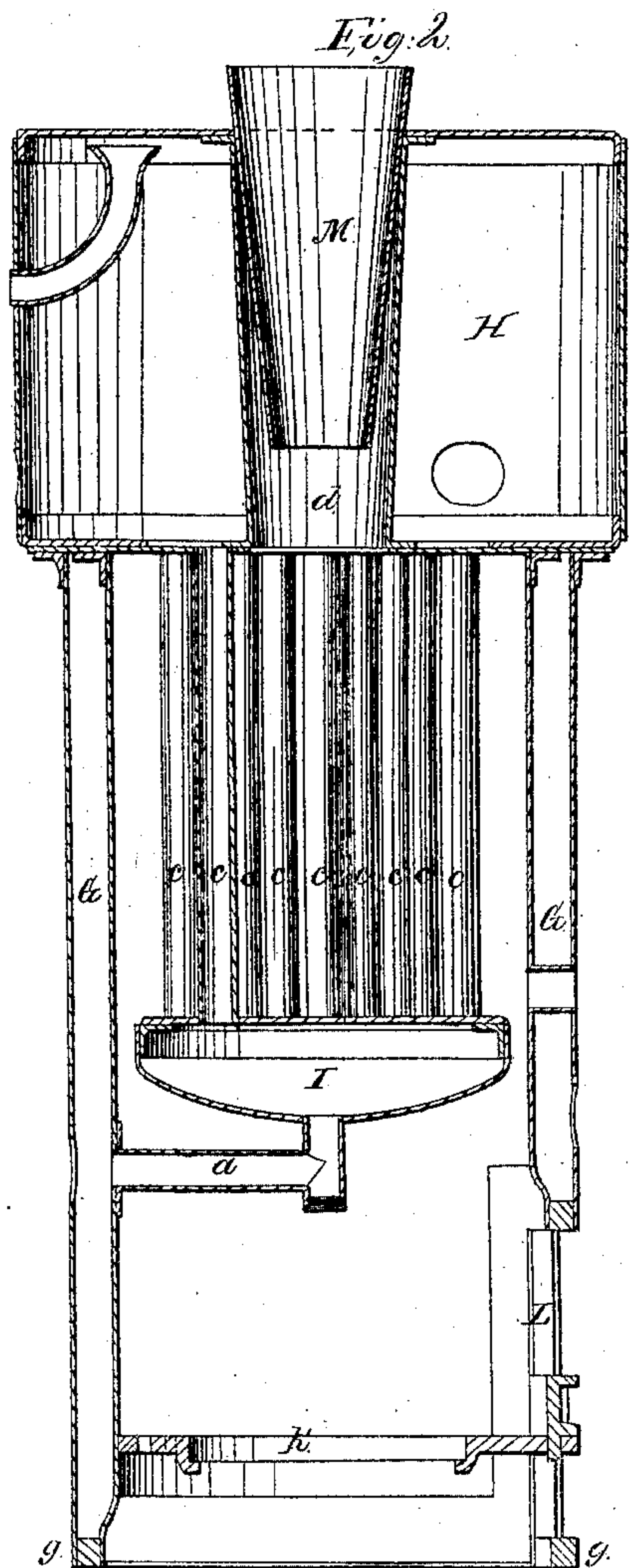


*M. Fletcher,*

*Steam-Boiler Water-Tube.*

*N<sup>o</sup> 56,396.*

*Patented July 17, 1866.*



*Witnesses:*  
*Franklin B. Farnham*  
*Charles B. Farnham*

*Inventor:*  
*M. Fletcher*  
*By his son and Atty*  
*Harman Fletcher*

# UNITED STATES PATENT OFFICE.

MATTHEW FLETCHER, OF LOUISVILLE, KENTUCKY.

## IMPROVEMENT IN STEAM-GENERATORS.

Specification forming part of Letters Patent No. 56,396, dated July 17, 1866.

*To all whom it may concern:*

Be it known that I, MATTHEW FLETCHER, of Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Vertical Steam-Boilers; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure I is a front view. Fig. II is an upright section from A to B. Fig. III is a bird's-eye view of a section from C to D. Fig. IV is a bird's-eye view of a section from E to F.

For ease of construction, and to facilitate the replacing of parts, I make my boiler in five parts. To delineate these parts I place them as follows: First, the fire-box or lower portion of the boiler G, Figs. I, II, III; second, the steam-drum H, Figs. I, II, IV; third, the round pan or vessel I, Fig. II; fourth, the series of tubes *c c c c*, &c., Figs. II, IV; fifth, the cone or separate smoke-pipe M, Figs. I, II.

G, Figs. II, III, is the water-space, formed of two large tubes riveted at the base to the base-ring *g* and at the top with angle-iron. In the internal part of the fire-box is a grate, K, and L the fire-door. H, Figs. I, II, IV, is the steam-drum, and is connected with the central part of the boiler by the water-passages *f f*, Fig. IV, and attached to the lower portion of the boiler by means of screws or bolts. I, Fig. II, is a round pan or vessel, and is connected to the water-leg in the lower part of the boiler by the pipe *a. c c c*, &c., Figs. II, IV, are the series of tubes, which have a flange

on each end, one flange to bolt to the round pan I and the other to the upper tube-sheet, H. *d*, Figs. II, IV, is the chimney, and M, Figs. I, II, is a cone or separate chimney, and keeps the flames from acting on the steam-space of the chimney, and can be conveniently replaced, and receives also the funnel or smoke-pipe.

I will describe the action of my boiler by first placing the red line from E to F as the water-line. The flames, on leaving K, act on the round pan I, and are dispersed against the inside of the fire-box G, and pass up and enter all around the series of tubes *c c c*, &c., and also strike the bottom part of the upper tube-sheet, and on passing up the chimney they would naturally sweep the sides of it, where the steam without water is, if it were not for the cone M standing off and leading the flames into the chimney-flue.

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

1. The arrangement of the vertical steam-boilers with the round pan I and water-leg *a*, as herein described, and for the purposes set forth.

2. The cone M in the chimney *d*, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name.

MATTHEW FLETCHER.

Witnesses:

JOS. CLEMENT,

PATRICK O'MALLEY.