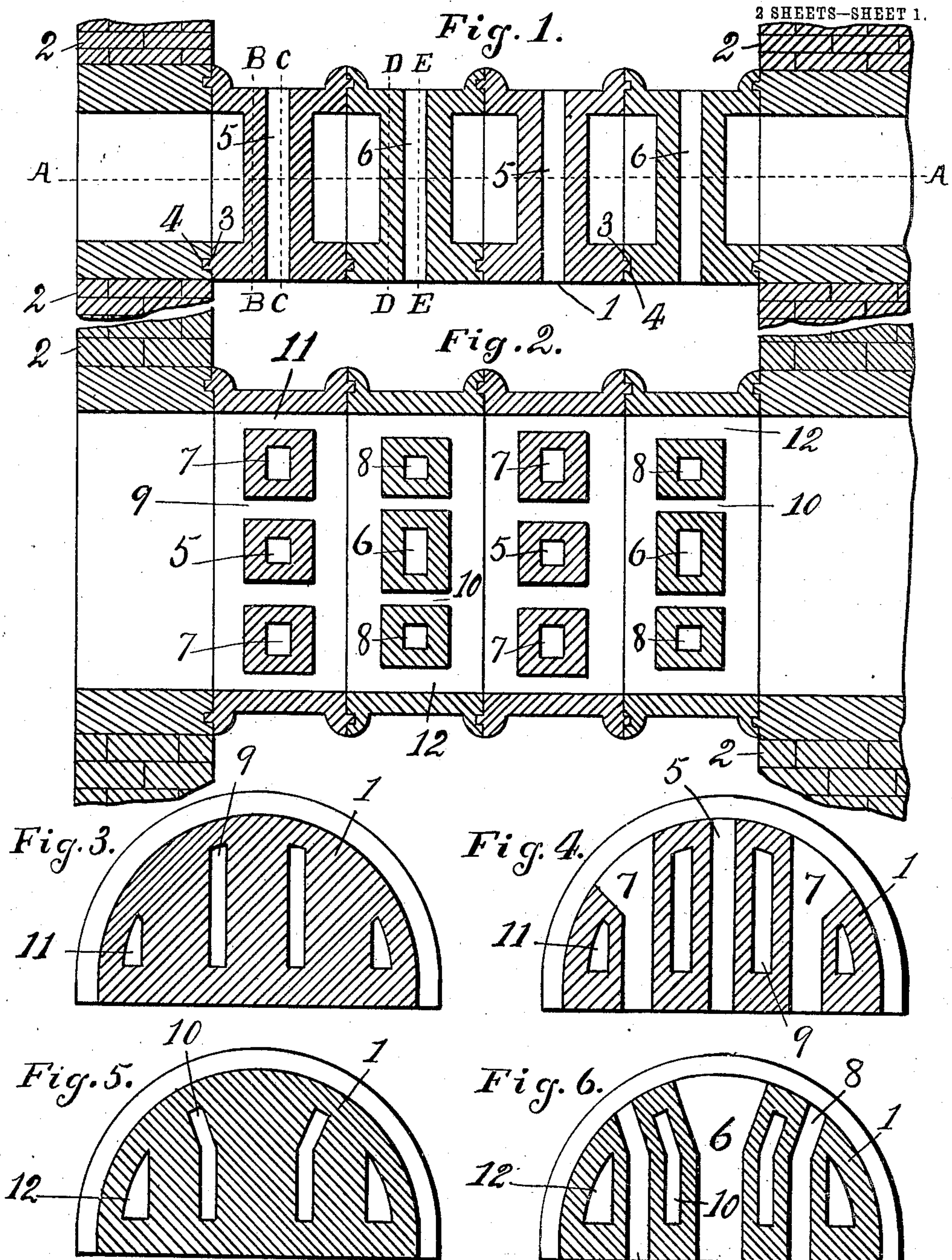


No. 828,493.

PATENTED AUG. 14, 1906.

P. MEYER.  
SUPERHEATER RETORT.  
APPLICATION FILED OCT. 28, 1903.



Witnesses  
K. Lockwood-Merino  
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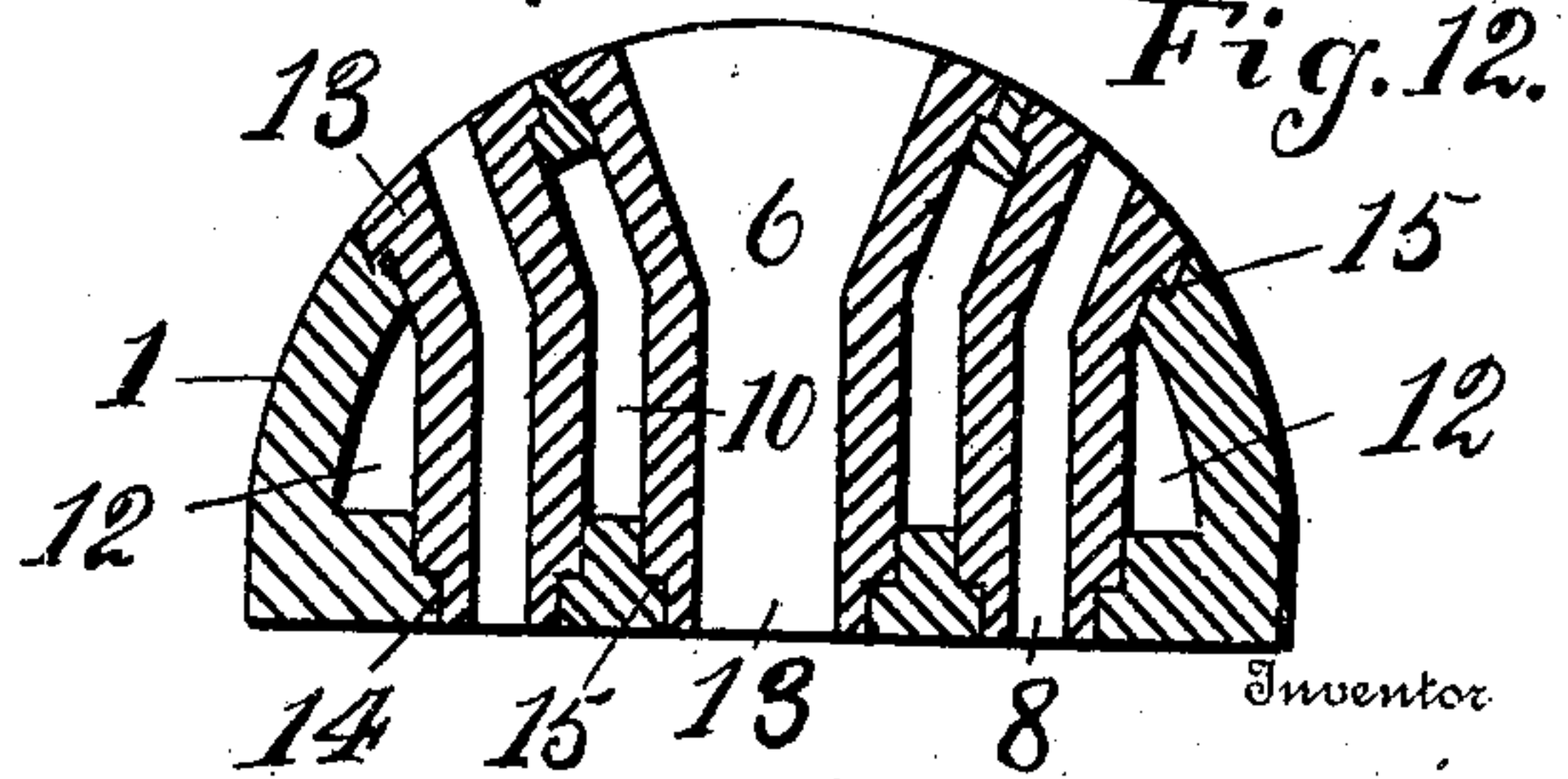
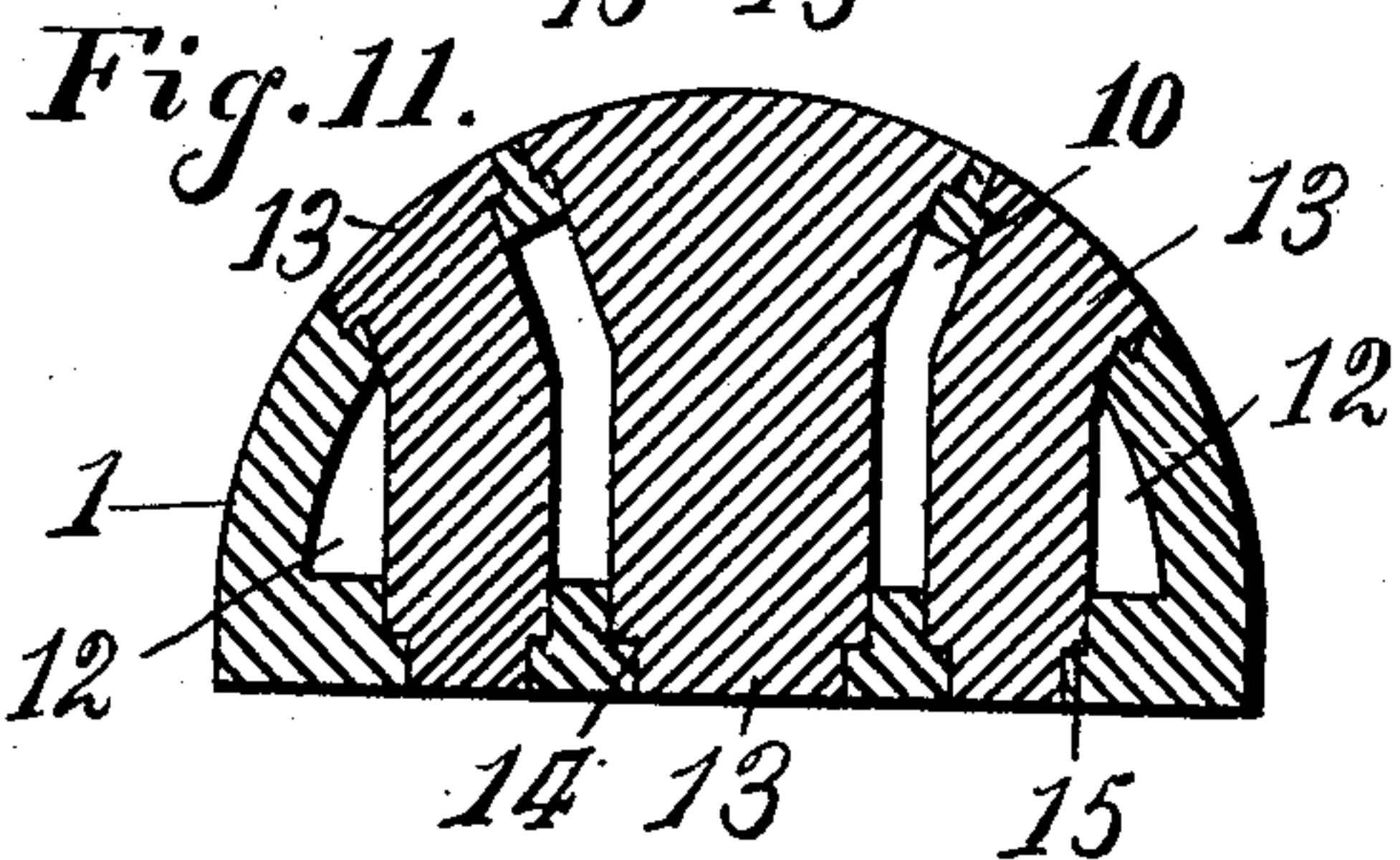
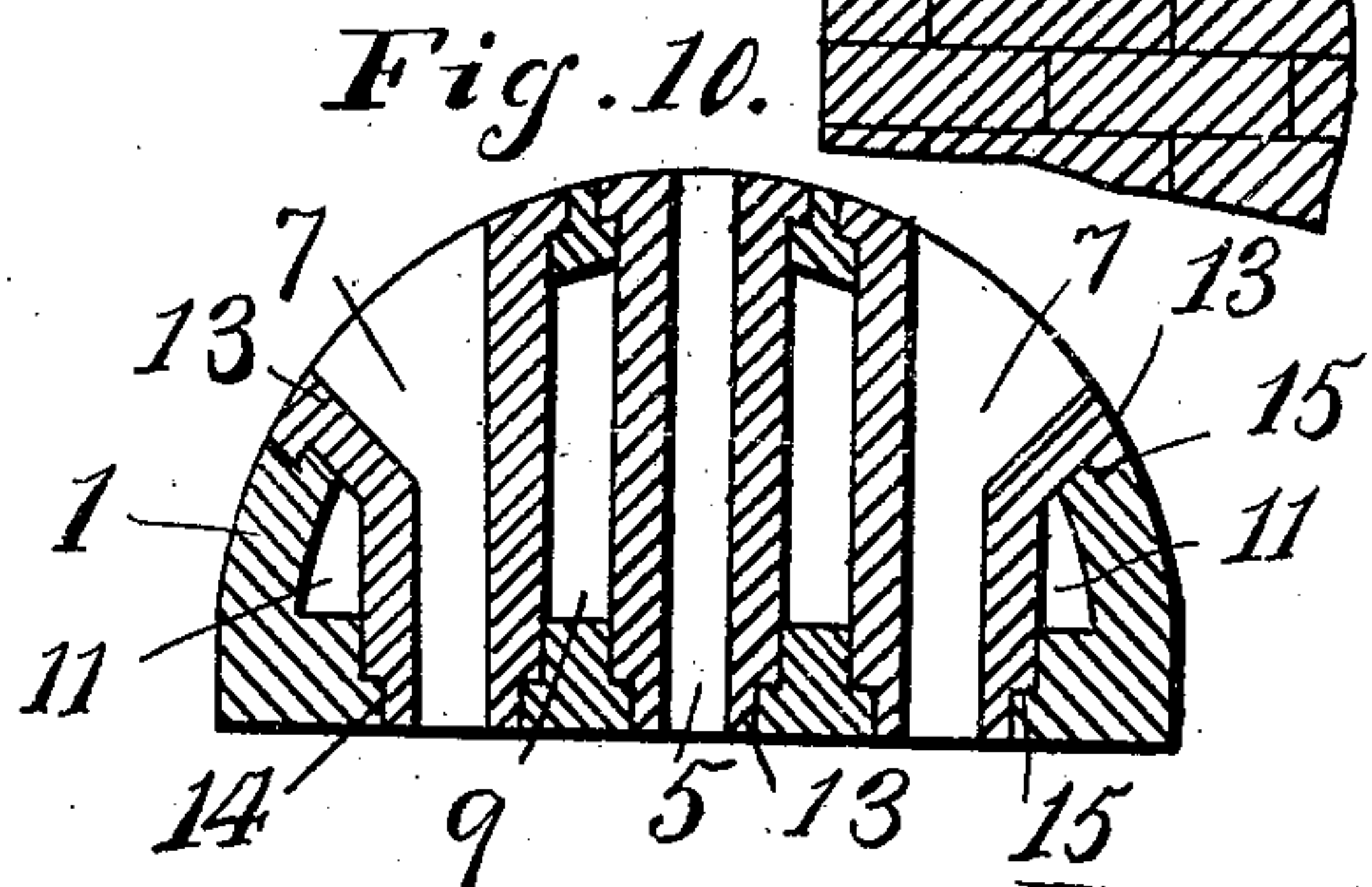
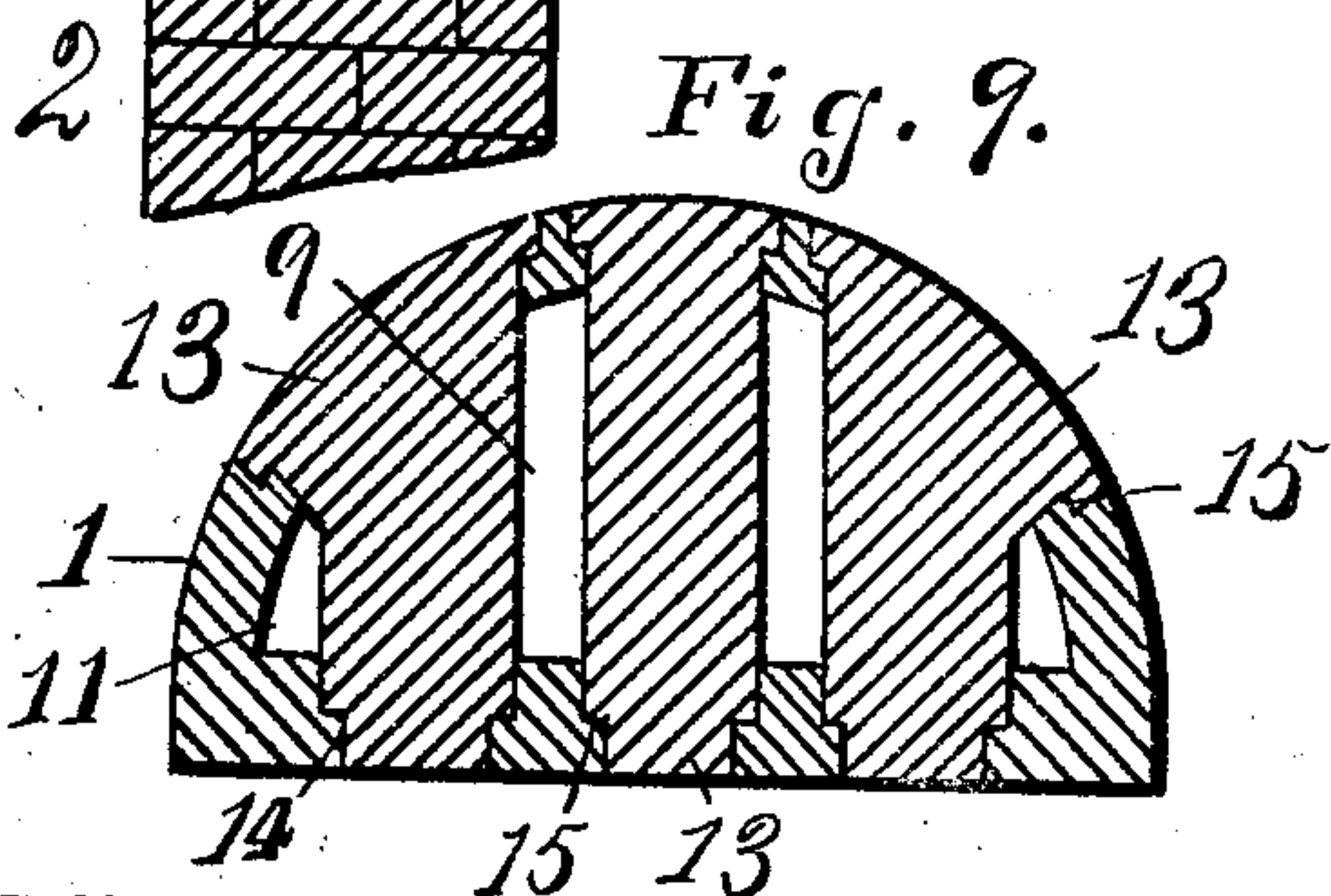
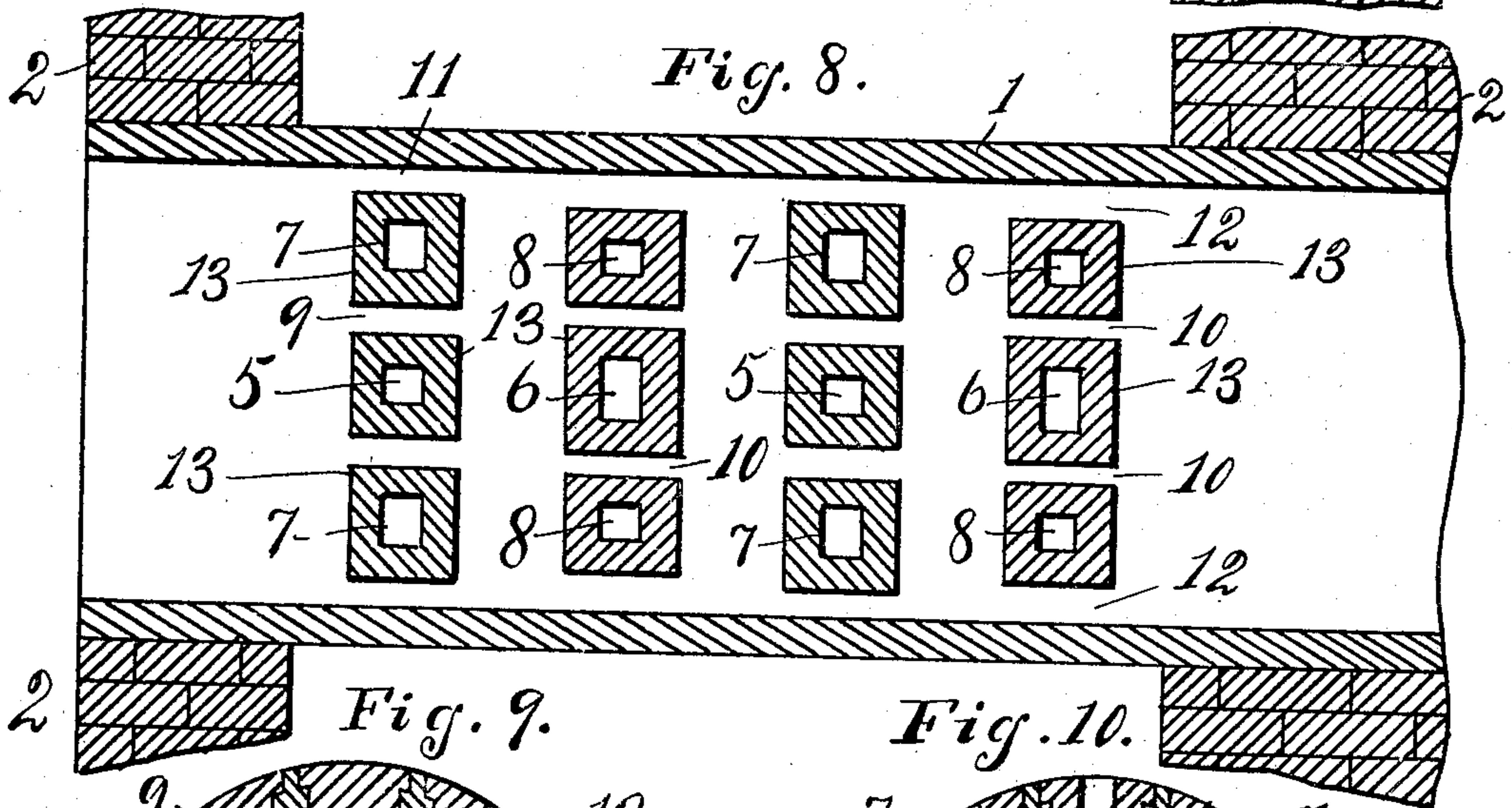
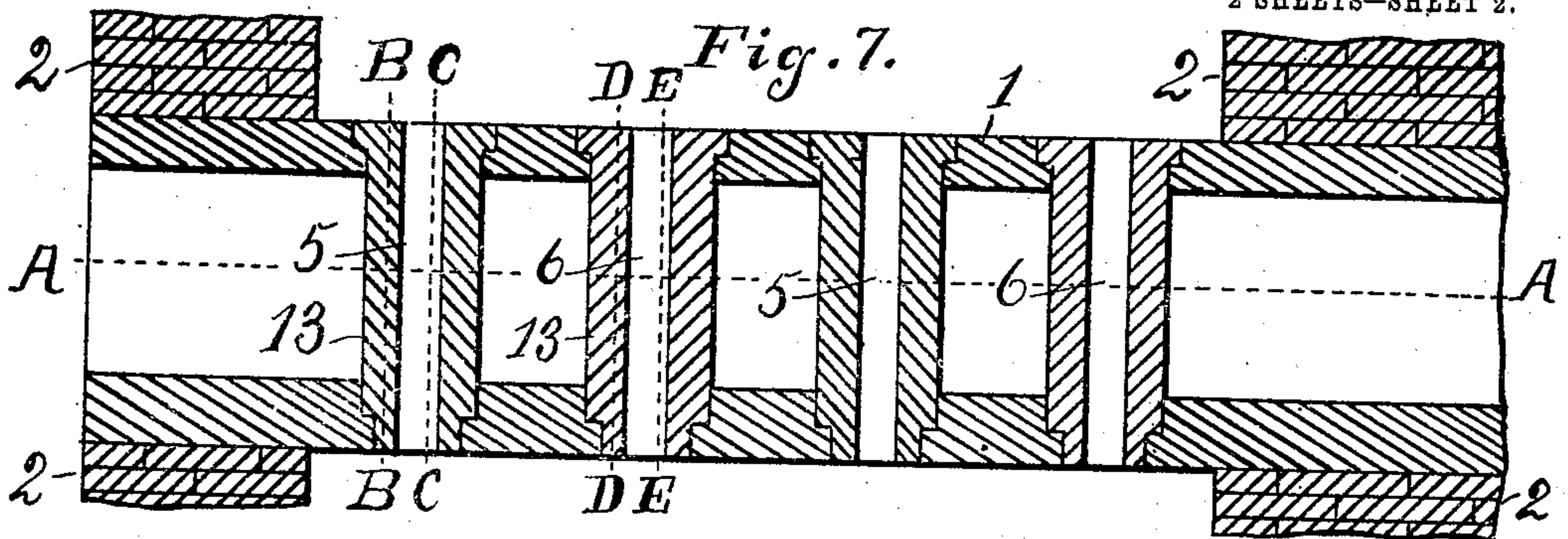


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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

PHILLIP MEYER, OF SANTA ROSA, CALIFORNIA.

## SUPERHEATER-RETORT.

No. 828,493.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed October 28, 1903. Serial No. 178,832.

*To all whom it may concern:*

Be it known that I, PHILLIP MEYER, a citizen of the United States, residing at Santa Rosa, in the county of Sonoma and State of California, have invented certain new and useful Improvements in Retorts, of which the following is a specification.

My invention relates to improvements in retorts provided with baffles, such as are used for superheating steam or other gases, the object of my invention being to provide apparatus of the character which while conveniently manufactured shall be very effective for this purpose.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of my improved retort in position in a furnace. Fig. 2 is a longitudinal horizontal section on the lines A A of Fig. 1. Figs. 3, 4, 5, and 6 are vertical cross-sections on the lines B B, C C, D D, E E of Fig. 1. Figs. 7 to 12 are views similar to Figs. 1 to 6 of a modified form of my apparatus, Figs. 9, 10, 11, 12 being taken on the lines F F, G G, H H, K K of Fig. 7.

Referring to the drawings, 1 represents the retort, and 2 the wall of the furnace. In Figs. 1 to 6 said retort is made in sections which fit end to end, alternate sections having tongues 3 and grooves 4 for making a tight joint with each other. Each section has one central and two lateral vertical flues for permitting the passage through the retort of the products of combustion of the furnace. These flues, however, differ in shape, size, and location in alternate sections. In one section the central flue 5 is of small and uniform cross-section, while in the next section the central flue 6 is of larger size and flares outwardly at the top. In the first section referred to the lateral flues 7 are comparatively large and flare outward at their top, while in the second section said lateral flues 8 are of uniform and small cross-section and do not flare at their end, although they bend outward. In consequence of this difference in the flue-passages through the retort-sections the passages for the steam within the retort also differ. There are four such passages—two inner and two outer. In the first sec-

tion referred to the inner passages 9 are of rectangular cross-section, their vertical sides being straight, while in the second section said inner passages 10 have their sides bent outward at the top, as shown. In the first section the outer passages 11 are considerably smaller than those, 12, in the second section. By reason of this construction a highly-tortuous path is given to the steam in its passage through the retort-sections and, moreover, the steam is well distributed and brought into contact with a large amount of heated surface. The construction and arrangement of the flues is also of the greatest advantage for absorption of heat from the products of combustion.

In the modification shown in Figs. 7 to 12 the shape and location of the flues and steam-passages is identical with those in Figs. 1 to 6; but the mode of assembling the parts differs. In this case the retort itself is made in one continuous piece, and the flues are made in separate pieces or baffles 13, which are let down into receptacles 14, formed in the retort. These pieces have shoulders 15, which rest in suitable sockets formed in the retort, and the form of the baffles corresponds to that of the flues which they contain, as will readily be seen.

I claim—

1. A retort having groups of flues entirely through the retort, each group being in substantially the same transverse plane, and comprising a central and two lateral flues, the central flue of one group being comparatively small and the lateral flues comparatively large, and the central flue of the next group being comparatively large, and the lateral flues comparatively small, and longitudinal passages in the retort between the central and lateral flues and between the lateral flues and the wall of the retort, said passages being thus given tortuous paths, substantially as described.

2. A retort having groups of flues entirely through the retort, each group being in substantially the same transverse plane, and comprising a central and two lateral flues, the central flue of one group being comparatively small and of uniform cross-section and the lateral flues comparatively large and flaring outward at the top and the central flue of the next group being comparatively large and flaring outward at the top, and the lat-

eral flues comparatively small, and of uniform cross-section but bent outward at the top, and longitudinal passages in the retort between the central and lateral flues and between the lateral flues and the wall of the retort, said passages being thus given tortuous paths, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PH. MEYER.

Witnesses:

A. E. CHARTRAND,  
C. NIELSEN.