

No. 815,273.

PATENTED MAR. 13, 1906.

G. E. DIXON.

WATER HEATING ATTACHMENT FOR FURNACES.

APPLICATION FILED FEB. 16, 1905.

Fig. 1

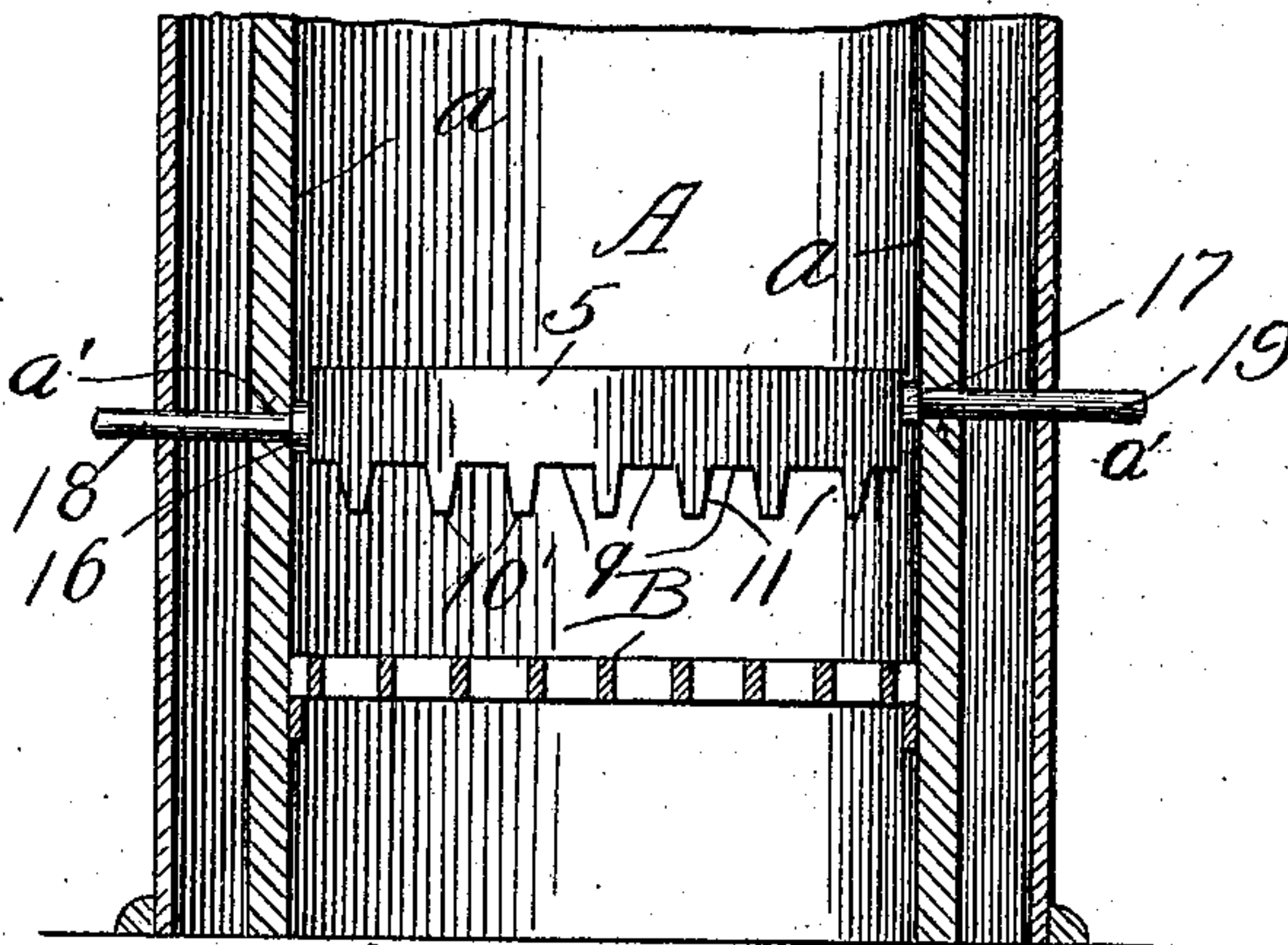


Fig. 2

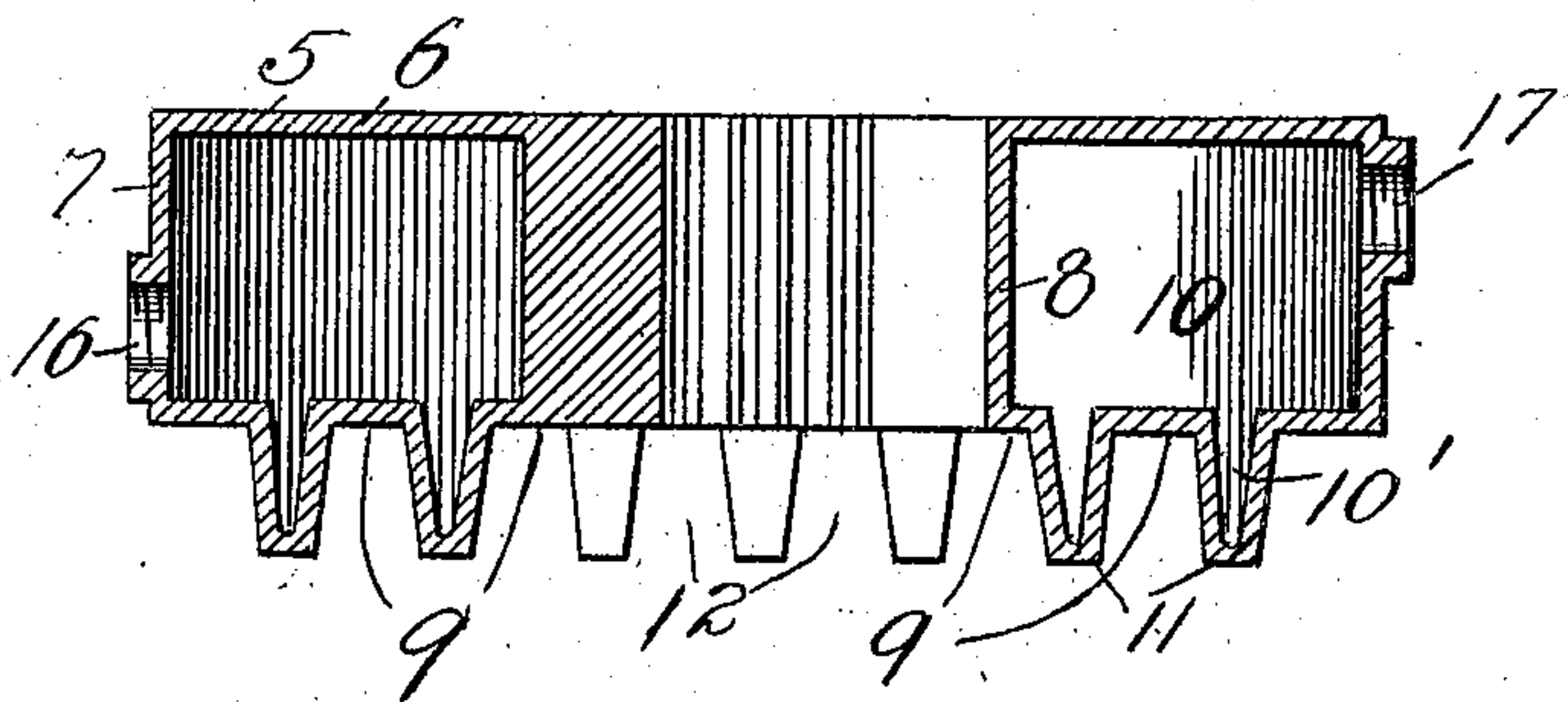
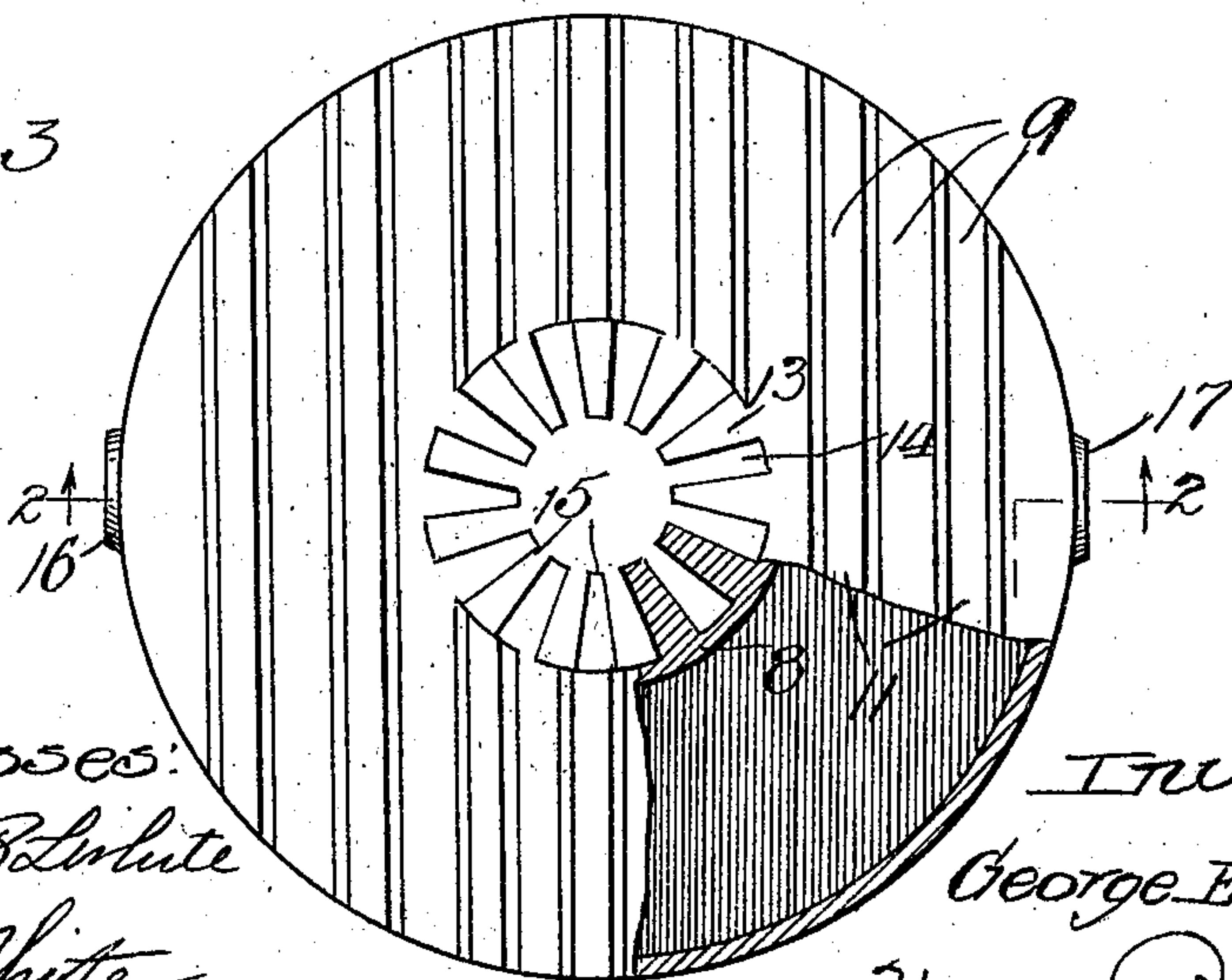


Fig. 3



Witnesses:  
Harry R. White  
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# UNITED STATES PATENT OFFICE.

GEORGE E. DIXON, OF CHICAGO, ILLINOIS.

## WATER-HEATING ATTACHMENT FOR FURNACES.

No. 815,273.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed February 16, 1905. Serial No. 245,861.

*To all whom it may concern:*

Be it known that I, GEORGE E. DIXON, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Water-Heating Attachments for Furnaces; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

One of the objects of my invention is to provide a water-heating attachment for furnaces which is simple in construction, efficient in operation, and of great durability.

In the drawings I have shown, in Figure 1, the application of a device embodying my invention in a diagrammatically-illustrated furnace. Fig. 2 is a section on line 2-2 of Fig. 3, and Fig. 3 is an elevation of the bottom of my device.

Throughout the drawings like characters of reference refer always to like parts.

The water-heater, or, as I term it in the trade, the "heat-economizer," comprises a shell 5, preferably of circular form in plan and vertically relatively thin, so as to form a relatively short cylinder, said shell preferably providing a flat top wall 6, a cylindrical side wall 7, a cylindrical inner wall 8, and a bottom wall 9, of configuration to be more specifically described, forming an annular chamber. The bottom wall 9 is interrupted by parallel transverse ribs 11, separated by suitable spaces 12, and each hollow-rib, as indicated at 10', opening into and constituting a continuation of the chamber 10. Preferably the walls 6, 7, 8, and 9 are walls of substantially the same thickness, although they may be varied in thickness, if required. From the inner circular wall 8 projects ribs 13 13, preferably solid and of tapering form, all converging toward the vertical axis of the casing, said ribs being separated at suitable distances to leave spaces 14 therebetween and all stopping, preferably, at equal distances from the axis of the casing to leave a central free opening 15. Inlet and outlet apertures 16 and 17,

preferably screw-threaded to receive suitable piping, are provided at opposite sides of the shell, the inlet-opening 16 being preferably near the bottom thereof and the outlet-opening 17 being near the top.

In use the device is suspended in the furnace by the inlet and outlet pipes 18 and 19, threaded into the apertures 16 and 17 and finding bearing in apertures *a' a'* in the side side walls *a a* of the furnace A, the economizer being located at a suitable point above the furnace-grate B. It will be apparent that the heat of the fire upon the grate B impinges upon the larger lower surface of the ribs 11 and rapidly heats the water therein and that the gases of combustion escape through the central opening 15 and the spaces 14, communicating heat to the large exposed surfaces of the vertical ribs 13 and through said ribs to the water within the chamber 10. By this arrangement I provide a very simple and efficient water-heater which may be readily attached to furnaces and which I find in practice does not lower the efficiency of the furnace for its usual work to any appreciable degree. Obviously the piping 18 19 may be run to any suitable source of the water-supply and, if desired, to any suitable receptacle for the heated water. These parts, however, are not shown.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

As an article of manufacture, a water-heater for furnaces comprising the annular shell of heat-conductive material provided with the hollow depending ribs 11 on its under side and with the converging solid ribs 13 surrounding its central opening, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE E. DIXON.

In presence of—

GEORGE T. MAY, Jr.,  
MARY F. ALLEN.