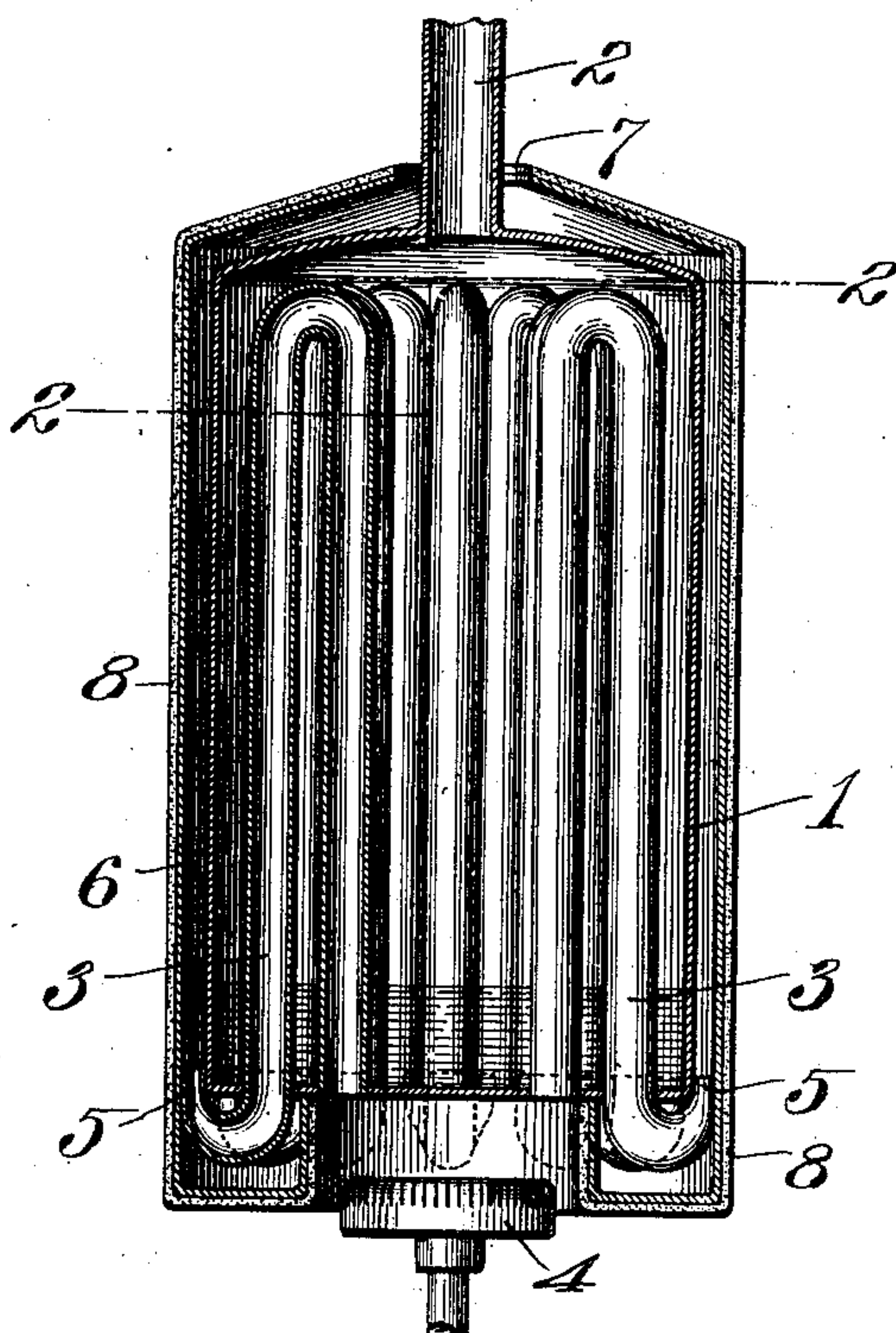


J. G. MASSIE.  
 GENERATOR AND SUPERHEATER.  
 APPLICATION FILED MAY 28, 1910.

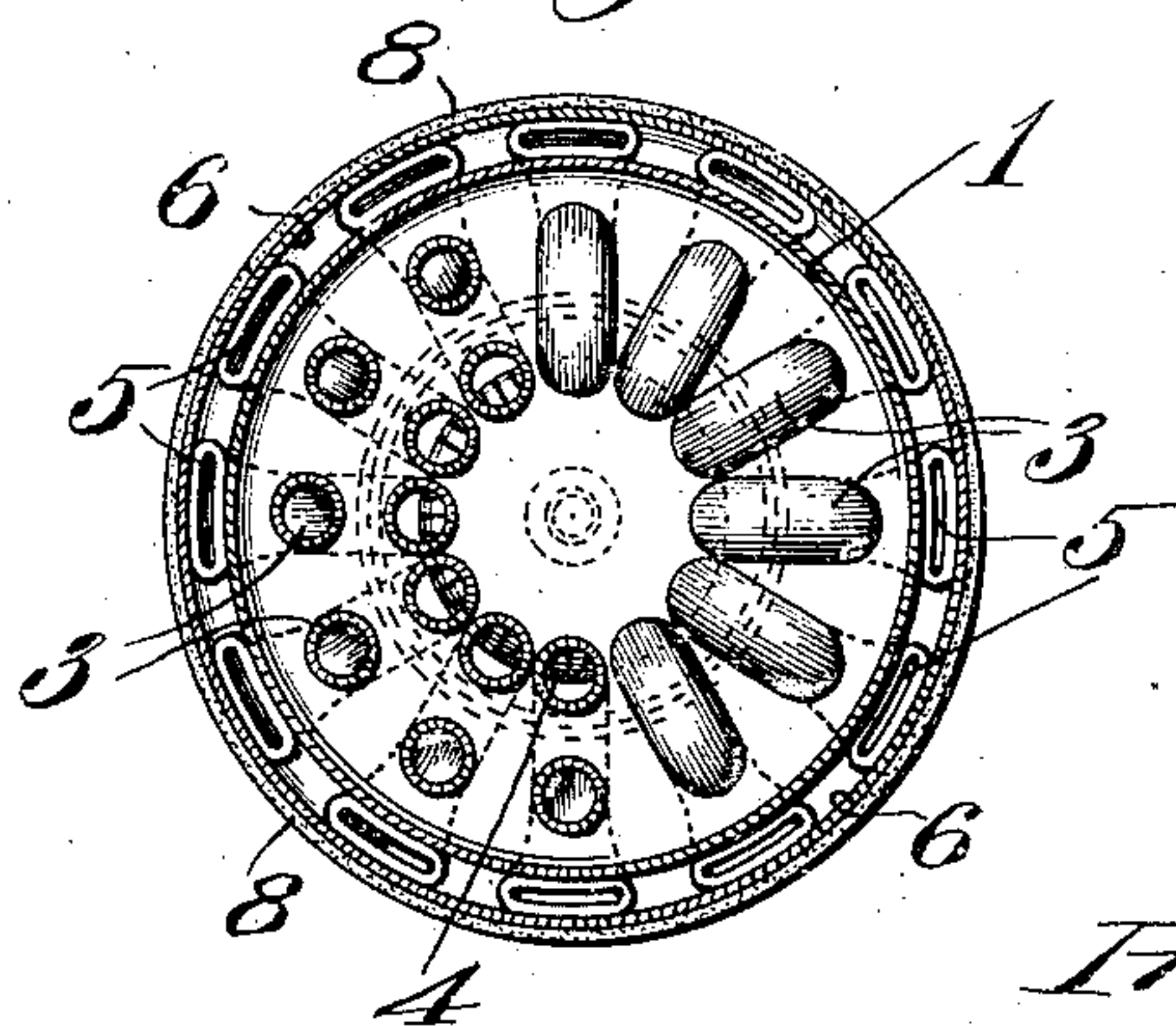
978,769.

Patented Dec. 13, 1910.

*Fig. 1.*



*Fig. 2.*



*Attest:*  
*Wm. H. Scott*  
*John C. Hall*

*Inventor:*  
*John G. Massie,*  
*by Rippey Kingland,*  
*Attys.*

# UNITED STATES PATENT OFFICE.

JOHN G. MASSIE, OF EAST ST. LOUIS, ILLINOIS, ASSIGNOR TO THE MASSIE GENERATOR AND RADIATOR CO., OF EAST ST. LOUIS, ILLINOIS, A CORPORATION OF ILLINOIS.

GENERATOR AND SUPERHEATER.

978,769.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed May 28, 1910. Serial No. 563,860.

*To all whom it may concern:*

Be it known that I, JOHN G. MASSIE, a citizen of the United States, residing at East St. Louis, Illinois, have invented a new and useful Generator and Superheater, of which the following is a specification.

This invention relates to steam generators and superheaters, and has for its object to provide a generator and superheater of highest efficiency and comprising a water tank having heat coils passing through the water and opening into a jacket which incloses the tank.

With this and other objects in view I have embodied my invention in a form which I prefer and illustrated the same in the accompanying drawings in which—

Figure 1 is a vertical sectional view, and Fig. 2 is a cross sectional view on the line 2—2 of Fig. 1.

The tank 1 contains the water from which the steam is to be generated, and has a pipe 2 for conveying the steam to its destination. Within the tank 1 a cluster of pipe coils 3 is arranged, each being substantially in the form of an inverted U. The inner legs of these coils fit into holes in the bottom of the tank, in annular series, above a burner 4 so that the flame from the burner will enter said pipes and subject the same to great heat. The outer legs of the pipes are also in annular series (Fig. 2), passing through the bottom of the tank and having their ends upturned against the wall of the tank as shown at 5. These upturned ends are compressed to form elongated outlets from said pipes, so that the heated air coming through said pipes will be directed against the wall of the tank in order to obtain the full benefit thereof. An incasing jacket 6 surrounds the tank 1 and incloses the protruding ends of the pipes 3, having close connection with the bottom of the tank in order to compel the incoming heated air to

pass upwardly to the outlet 7 at the top of the tank and jacket. The jacket is preferably covered with an asbestos wrapper 8 to prevent radiation of the heat.

A generator and superheater of this construction is of simple and inexpensive construction and of maximum efficiency.

I am aware that there may be variations and modifications in the construction and arrangement of the parts without the least departure from the spirit and scope of the invention. I do not restrict myself to specific features, but—

What I claim and desire to secure by Letters Patent is—

In a generator of the class described, a water tank having a steam outlet pipe leading centrally from its top, a jacket surrounding said tank and having its top, bottom and side walls spaced from said tank to provide a heat circulating space between the tank and jacket, the said jacket being provided with an opening in its top of greater diameter than the said steam outlet pipe and receiving the latter, an inturned annular flange formed on the bottom to provide an opening and also serving as a rest for said tank, inverted U-shaped hot air flues disposed radially within said tank, each flue having one end in communication with the opening in the bottom of said jacket and its opposite end being outwardly and upwardly bent to extend into the space between the side walls of the said tank and jacket, and means in communication with the air flues for supplying heated air thereto.

In witness whereof, I have signed this specification in the presence of two subscribing witnesses.

JOHN G. MASSIE.

Witnesses:

ARTHUR E. GOODMAN,  
L. C. KINGSLAND.