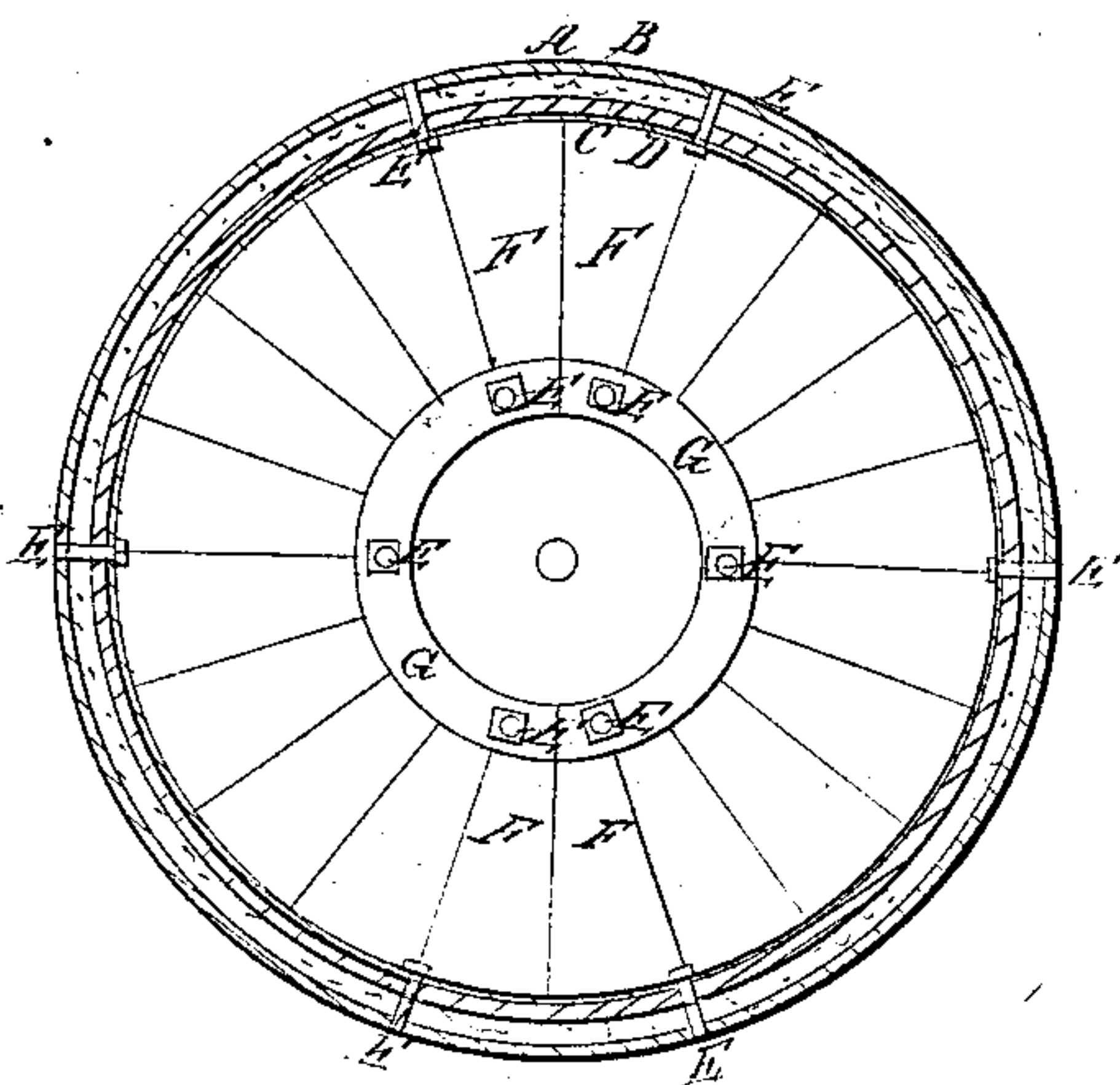
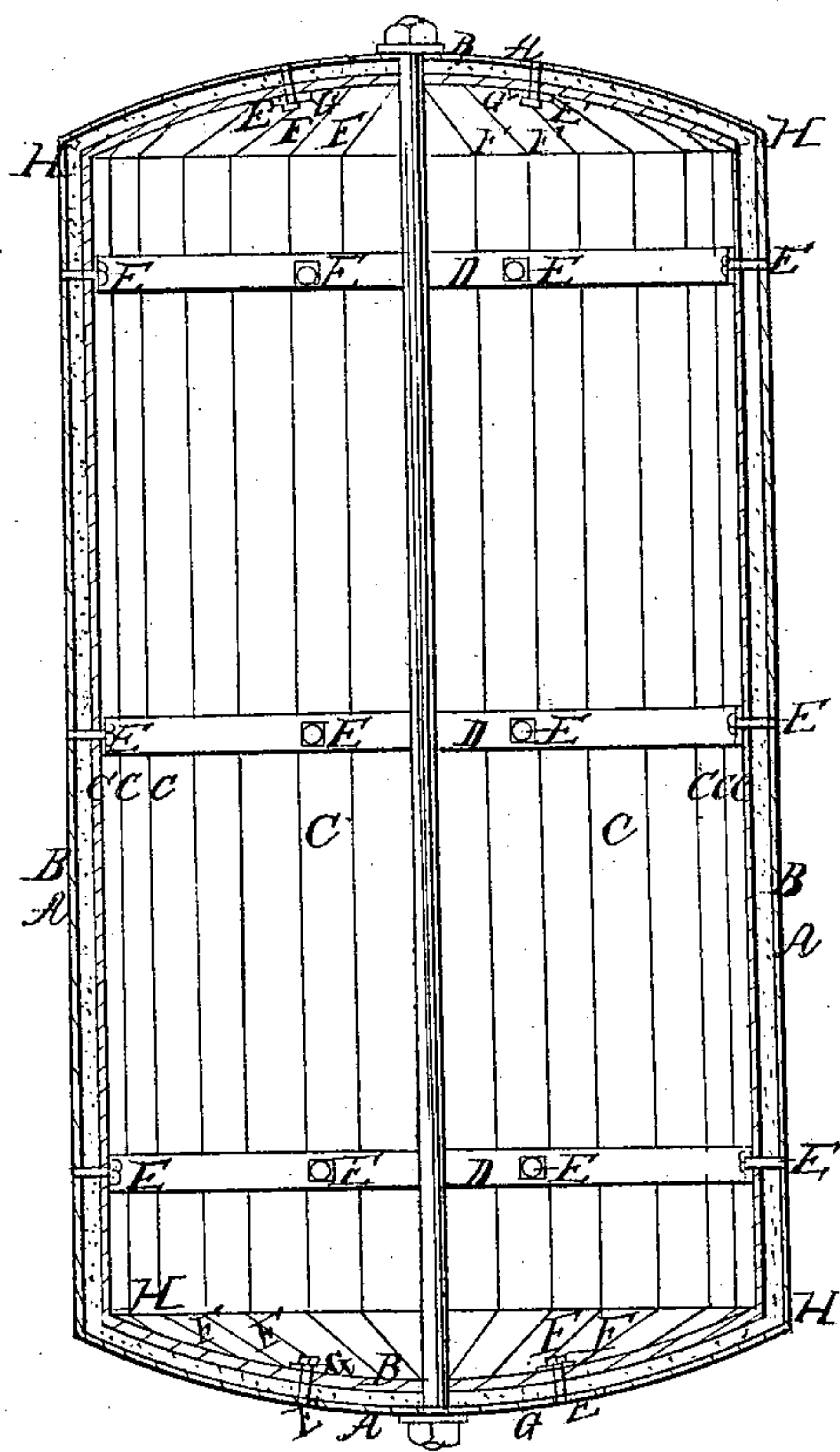
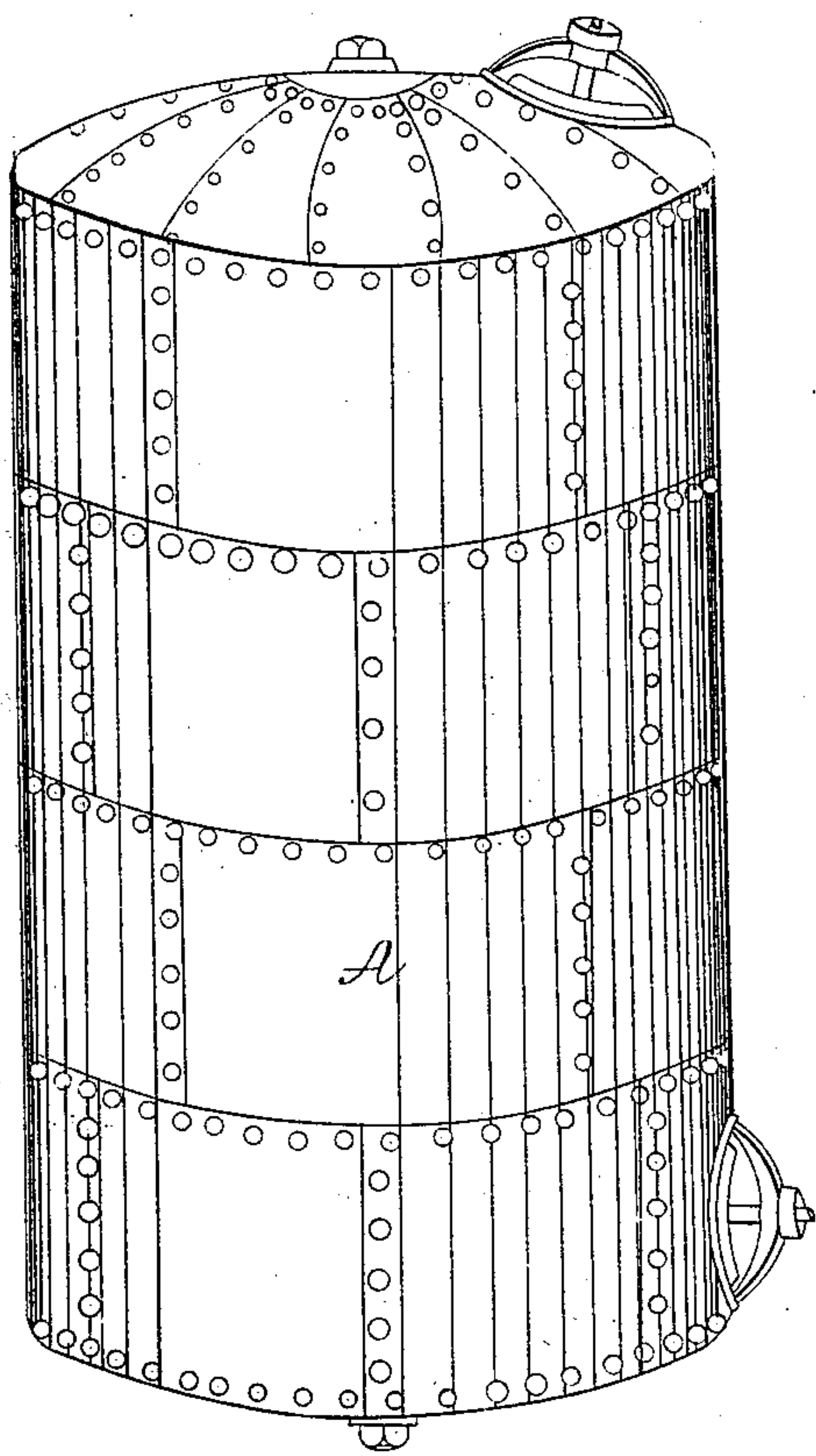


*M. Werk,*  
*Lining Metal Tanks with Wood,*  
*No 26,221,                      Patented Nov. 22, 1859.*



*Witnesses:*  
*J. S. Hewlett*  
*M. Schwartz*

*Inventor*  
*M. Werk*

# UNITED STATES PATENT OFFICE.

MICHAEL WERK, OF CINCINNATI, OHIO.

## IMPROVEMENT IN LINING TANKS FOR FATTY ACIDS.

Specification forming part of Letters Patent No. 26,221, dated November 22, 1859.

*To all whom it may concern:*

Be it known that I, MICHAEL WERK, of Cincinnati, Hamilton county, Ohio, have invented an Improvement in Machinery for the Manufacture of Fat Acids and for Rendering of Lard, Tallow, and Grease, of which the following is a specification.

This improvement consists in lining the tank or close iron vessel used in the manufacture of fat-acids, as also for rendering purposes, with wood and cement, the cement being used only for the purpose of backing up the wood when rough or riveted vessels are used, as represented by the accompanying drawings.

The advantage and benefit of this improvement are, first, the protection to the metal of the tank or vessel from the action of the chemical bodies used in the manufacture of fat acids and from the gases created by the action of chemicals and superheated steam upon fatty bodies; second, the retention of the heat within the tank or vessel, (wood being a non-conductor of heat,) thereby performing the operation quicker and with less fuel; third, having a closed metal tank lined with wood, any desirable heat can be obtained, according to the strength of the metal, without injuring the metal or oxidizing the same by chemical bodies, and without affecting in the least the material worked in said tank or vessel.

My mode of lining the tank or vessel is as follows, the same letters in each drawing referring to the same material used.

A is the iron shell of the tank.

B is a mixture of clean coarse sand and cement, one-half of one inch thick.

C C are wooden staves one and one-half inch thick, tongued and grooved together, and which are fastened to the iron shell A by iron rings D and bolts E, the rings D being made of iron one-half of one inch thick and one and one half inch wide. The bolts E E are made of one-half inch round iron, and are tapped into the iron shell of the tank, then pass through the cement B, wood C, and rings D, upon which the nut is screwed.

F F are pieces of wood one and one-half inch thick, cut wide at one end and narrow at the other end, to the top and bottom of the lining. The pieces F F are held to their places by the iron ring G and the bolts E E. The wide ends of the pieces F F, as also the ends of staves C C, are beveled off, as shown by letter H in the drawings, thus making a complete and solid lining inside the tank.

I do not claim the use of the shell of the tank for the above-named purposes as new; but

What I claim as new is—

The lining of the tank or metal vessel used with wood and cement in the manner set forth.

M. WERK. [L. S.]

Witnesses:

C. F. HANSELMANN,  
FREDK. GONLÉ.