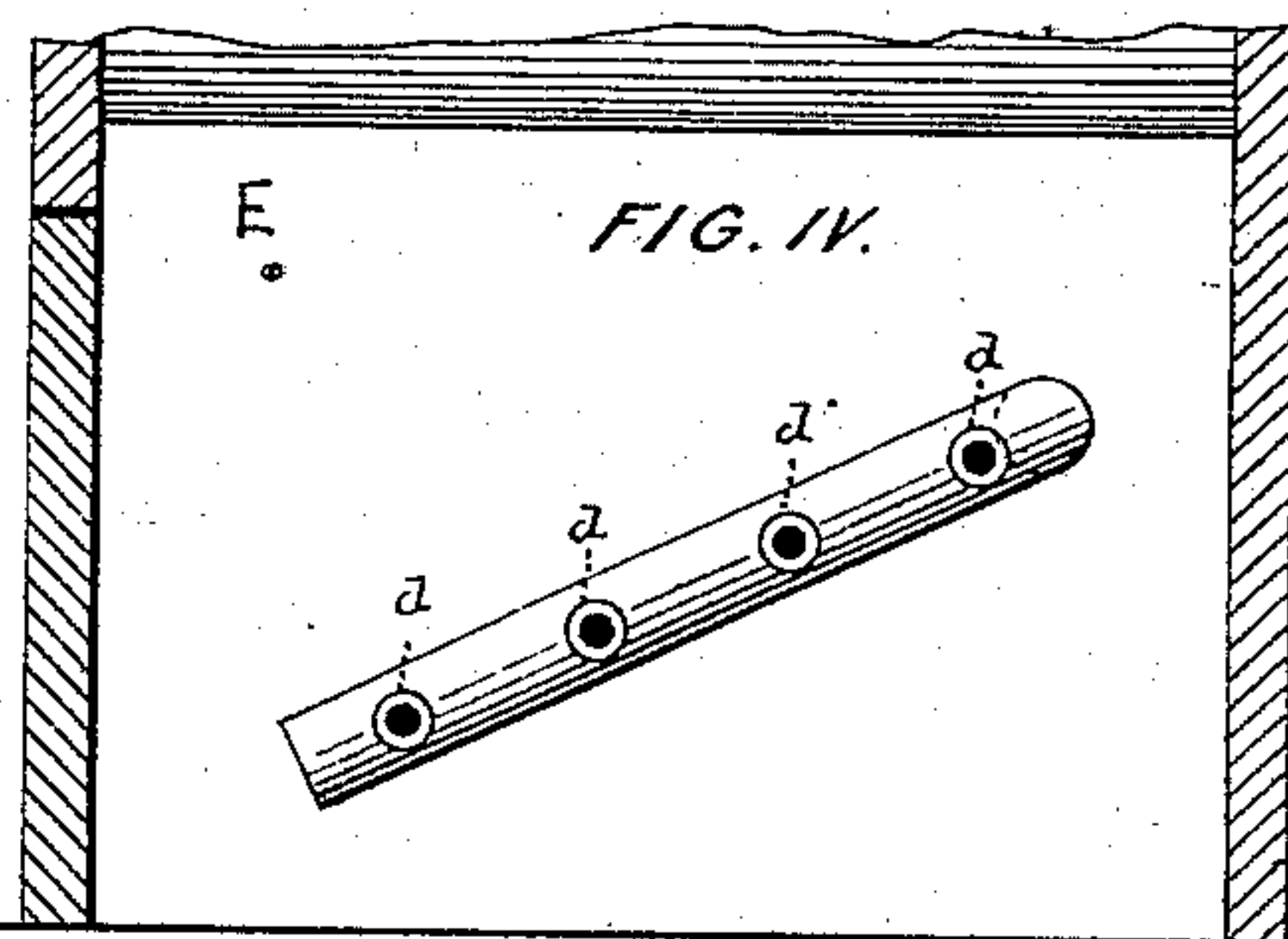
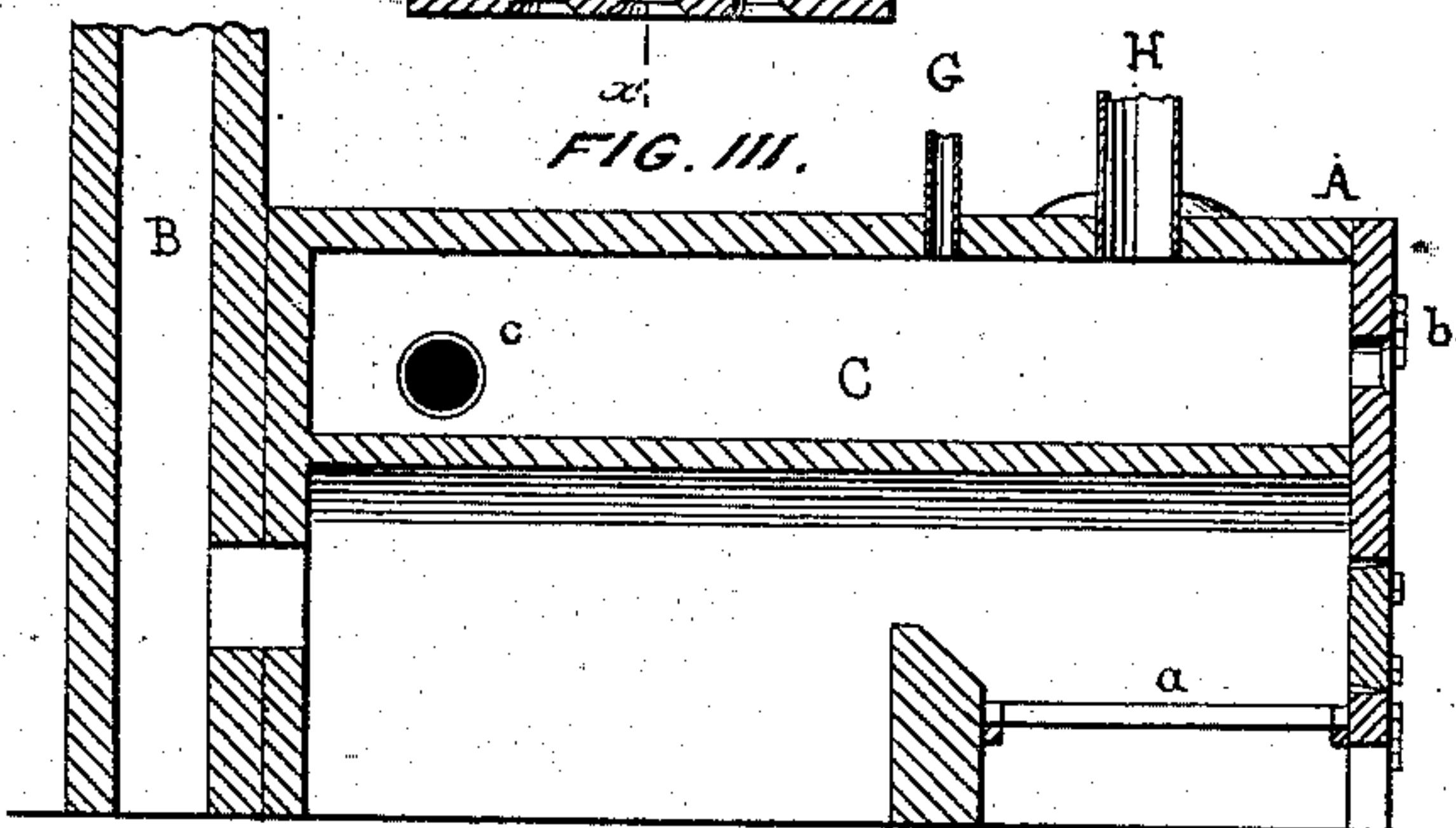
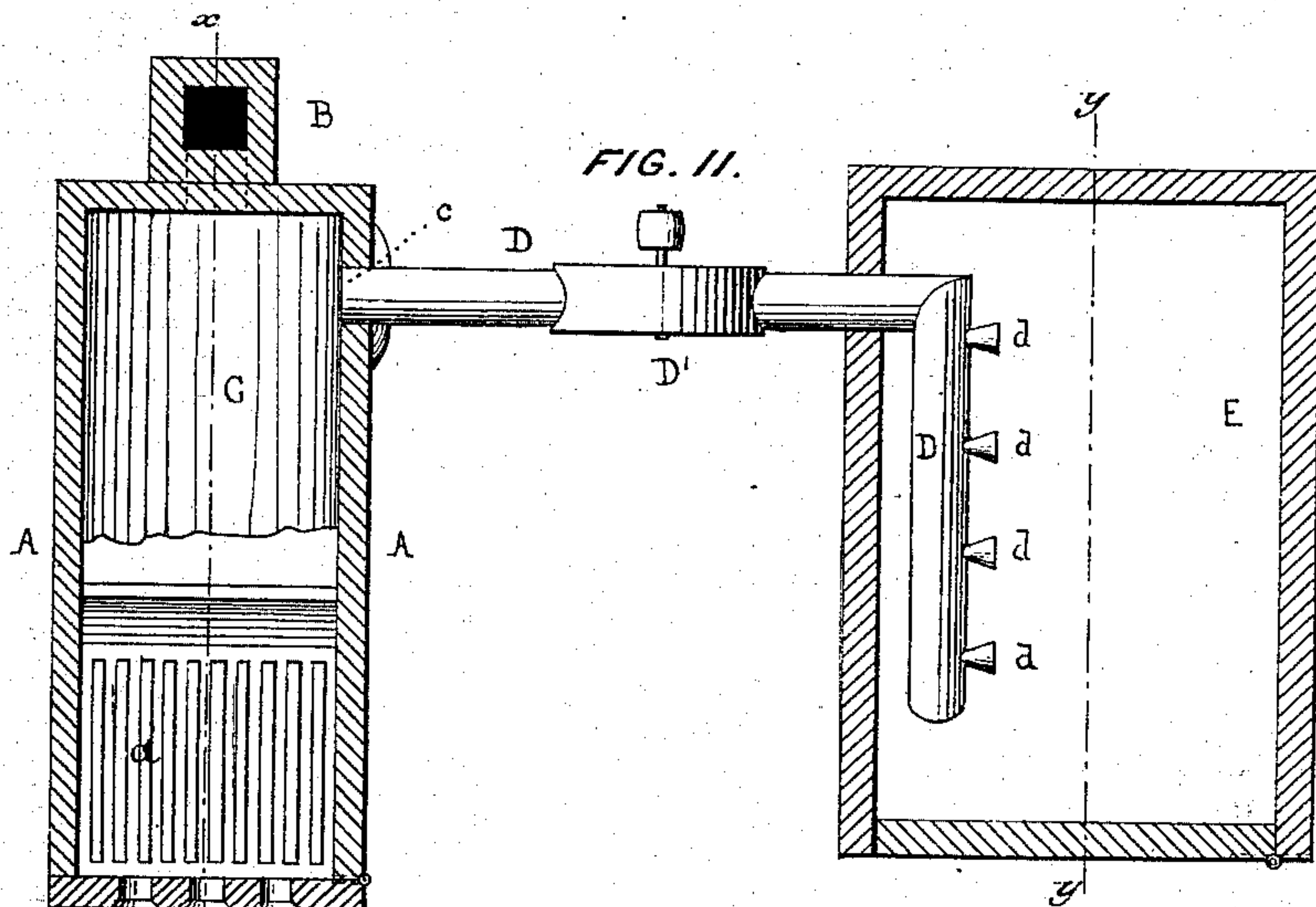
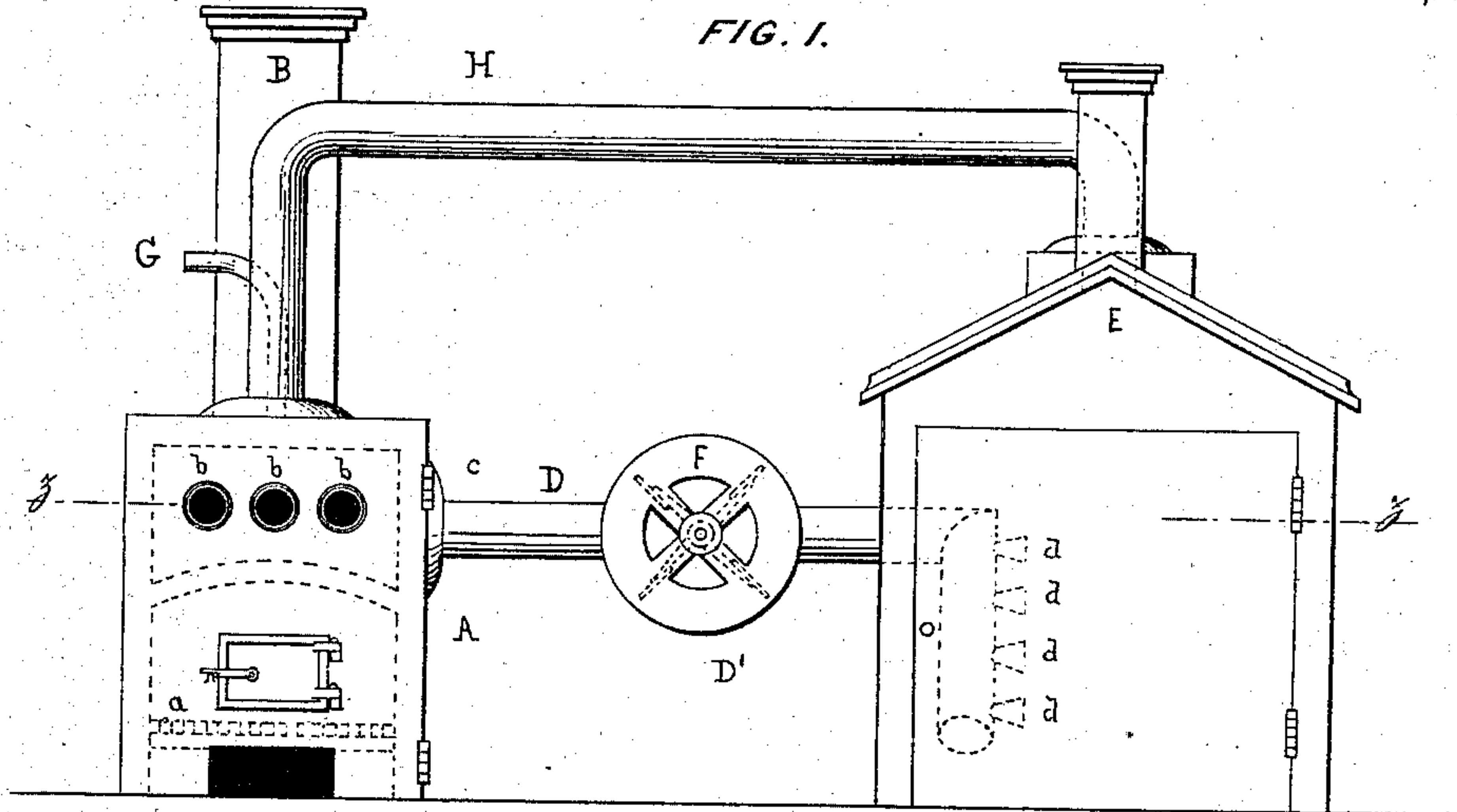


H. S. TAYLOR.  
Lumber-Driers.

No. 158,753.

Patented Jan. 12, 1875.



WITNESSES:

*A. H. Norris*  
Geo. W.ushing jr

INVENTOR:

*Harry S. Taylor*  
By *James L. Norris*  
Atty.



# UNITED STATES PATENT OFFICE.

HARRY S. TAYLOR, OF WILMINGTON, DELAWARE.

## IMPROVEMENT IN LUMBER-DRIERS.

Specification forming part of Letters Patent No. **158,753**, dated January 12, 1875; application filed July 30, 1874.

*To all whom it may concern:*

Be it known that I, HARRY S. TAYLOR, of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Lumber-Driers, of which the following is a specification:

This invention relates to that class of lumber-driers in which the lumber is placed within a chamber or building and heated air is introduced for drying the same; and the object of the invention is to furnish an effective means of drying the lumber, whereby all danger of the same becoming cracked or warped during the drying process is avoided.

This invention relates to certain apparatus for drying lumber; and it consists of certain improvements, which are hereinafter described, and pointed out in the claim.

In the accompanying drawing, Figure 1 represents a front view of the hot-air chamber and the drying-chamber, showing the hot-air and steam conducting pipe. Fig. 2 is a longitudinal section of the hot-air chamber and furnace and drying-chamber, and Figs. 3 and 4 are detached sectional views of the furnace and drying-chamber.

Referring to the drawings, the letter A represents the outside brick-work or structure of the hot-air chamber and furnace; B, the flue or chimney, and C an arched partition, dividing the furnace into an upper and a lower compartment, and in the latter is arranged the grate *a*, upon which the fire is built, and the upper compartment is used for the hot-air chamber. The front end of the air-chamber is provided with suitable valves or openings, *b*, for the admission of the air to be heated. The side wall of the air-chamber is provided with an opening, *c*, into which one end of the steam and air conducting pipe D is placed, said pipe extending to the drying chamber or house E, and projecting within the same, where it is provided with perforations, or laterally-projecting tubular extensions, *d*, for spraying the steam and air among the lumber. The said pipe D is provided with an enlarged chamber, D', within which is arranged a fan or blower, F, which is operated by suitable means, and serves to draw the heated air and steam from the hot-air chamber and force it into the drying-chamber.

In order to supply the hot-air chamber with a supply of steam, which commingles with the air in said hot-air chamber, I provide a pipe, G, leading from the latter to a suitable steam generator or boiler, and by which the steam is conveyed to the hot-air chamber.

In order to utilize the hot air I connect the top of the drying-chamber E with the hot-air chamber by means of a pipe, H, by which means the heated air, after having been used in the drying-chamber, rises and passes through said pipe back to the hot-air chamber, where it can be used again.

From the above description it will be seen that the hot air and steam are commingled together, and forced through the passage into the lumber-drying chamber by means of a fan or blower, by which means the lumber is kept sufficiently moist by the steam to prevent the hot air from cracking or warping the same while drying it.

The lumber is dried very rapidly by the above process, and with the same effect that a warm spring wind has on air-dried lumber, and is far more expeditious.

The lumber is conveyed into the drying-chamber by means of wheeled vehicles, or it may be simply laid in said chamber; but the vehicle will be the most expeditious, as much time is saved in moving the lumber.

I have found that hot air alone will not answer the object sought, as it cracks and warps the lumber, which objection is overcome by the employment of the steam to moisten it while it is being dried.

I claim as my invention—

The combination of the hot-air chamber C, arranged directly above the furnace, the pipe G, communicating with said chamber and with a steam-generator, and the pipe D, provided with a fan-blower, and connected with a removed or separate drying-chamber, for conveying the commingled and intermixed hot air and steam into the latter, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand.

HARRY S. TAYLOR.

Witnesses:

HENRY B. MORROW,  
ALBERT W. SMITH.