

(No Model.)

3 Sheets—Sheet 1.

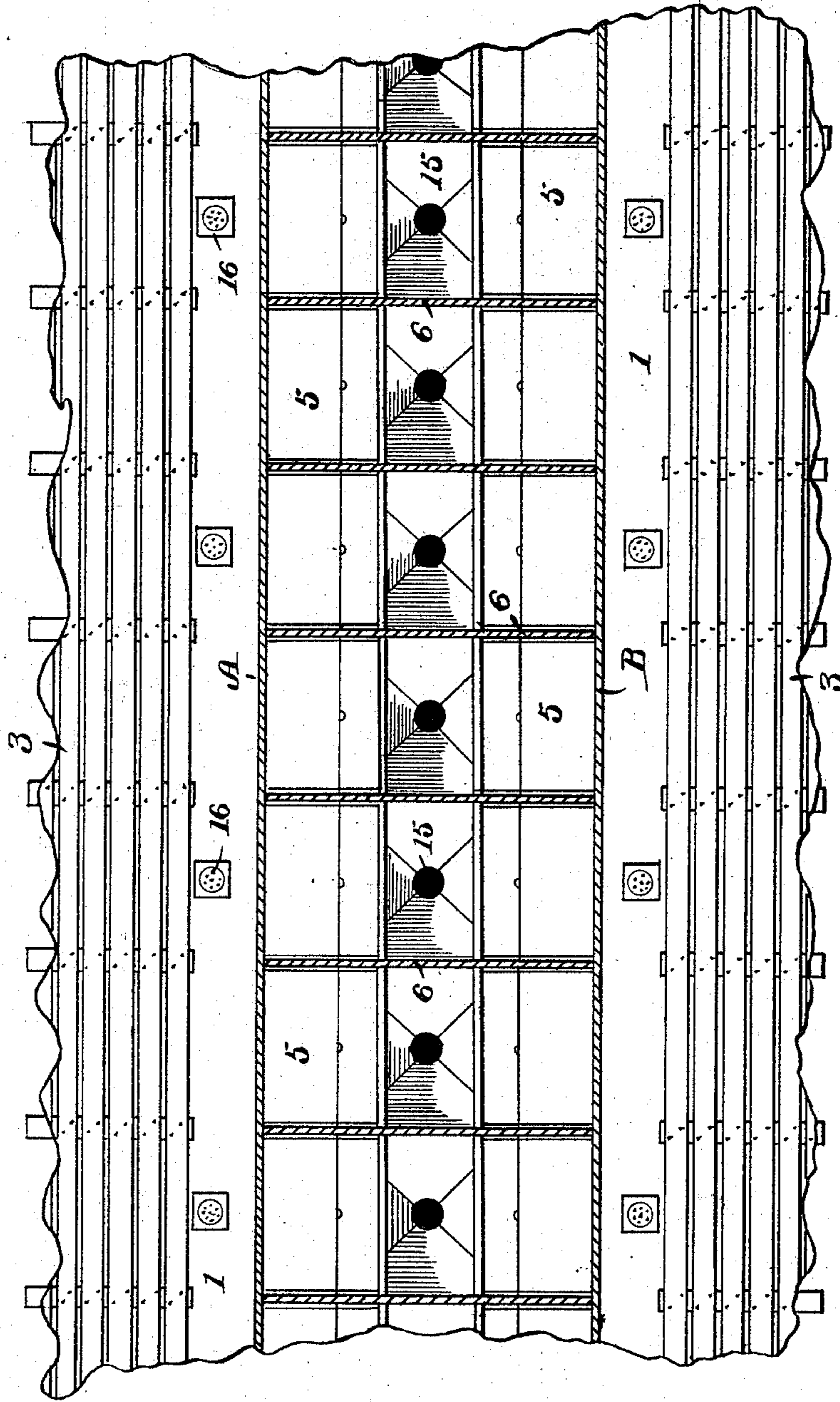
J. MARSHALL.

MEANS FOR CONVEYING STEAM FROM TUBS.

No. 573,340.

Patented Dec. 15, 1896.

Fig. 1.



Witnesses

R. H. Newman.

Harriet L. Slason.

Inventor

JAMES MARSHALL

By

Chamberlain & Newman

Attorneys

(No Model.)

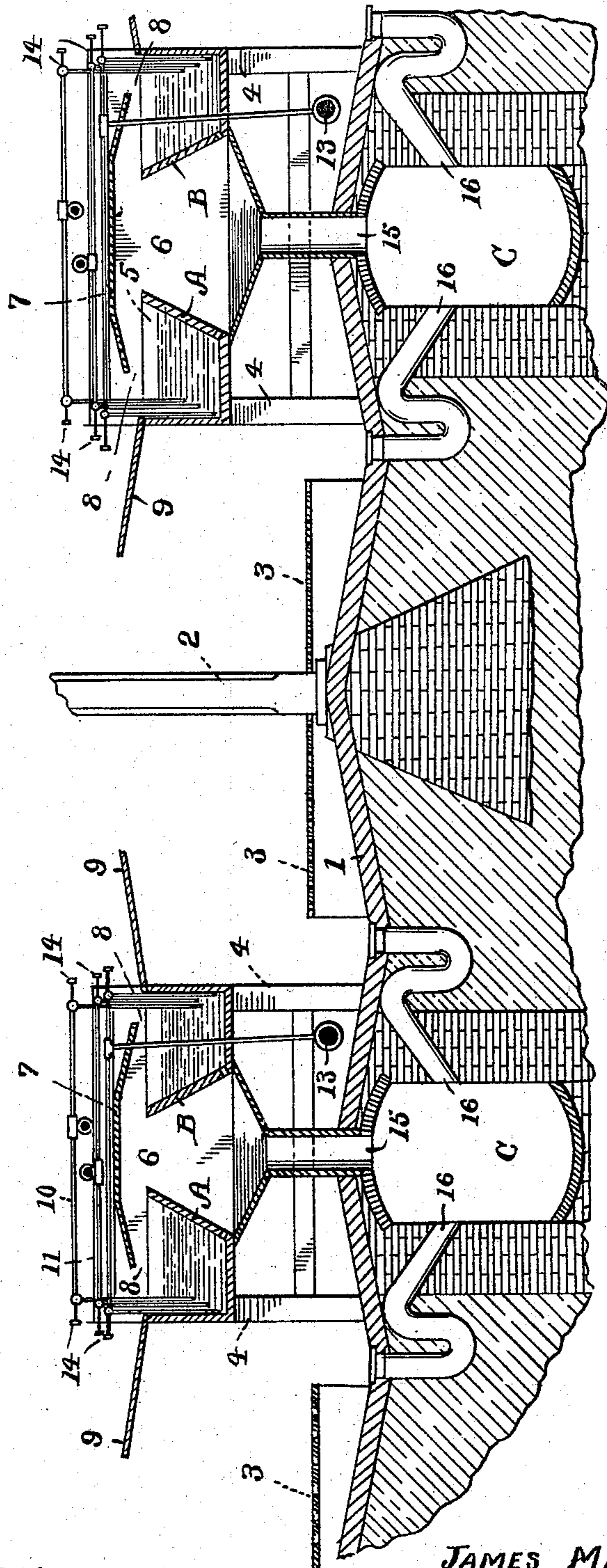
3 Sheets—Sheet 2.

J. MARSHALL.

MEANS FOR CONVEYING STEAM FROM TUBS.

No. 573,340.

Patented Dec. 15, 1896.



Witnesses

R. H. Newman

Harriet L. Plason.

Inventor

**JAMES MARSHALL**

Chamberlain & Newman Attorneys

(No Model.)

3 Sheets—Sheet 3.

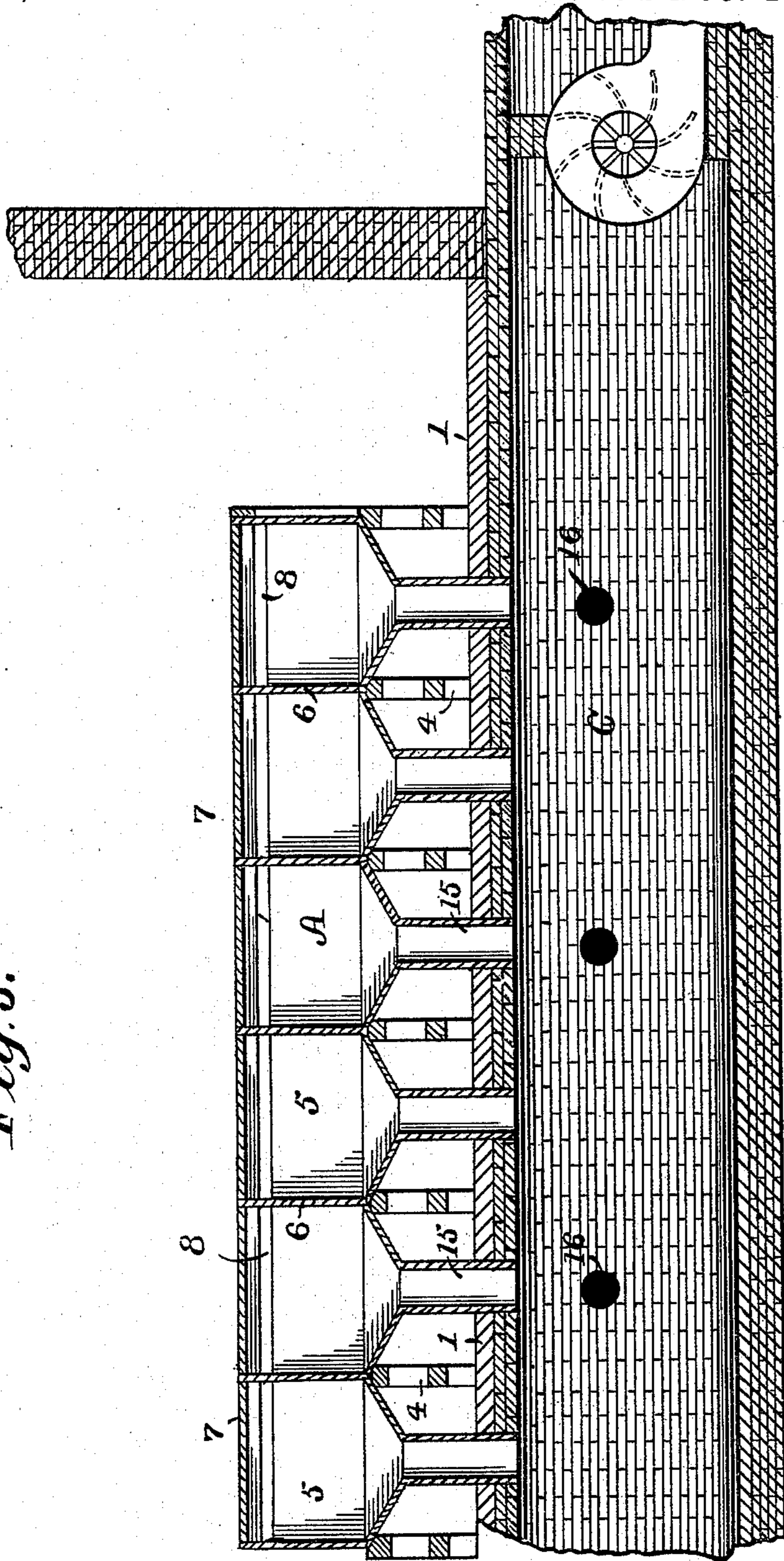
J. MARSHALL.

MEANS FOR CONVEYING STEAM FROM TUBS.

No. 573,340.

Patented Dec. 15, 1896.

Fig. 3.



Witnesses

R. H. Newman.

Harish L. Slason

Inventor

JAMES MARSHALL

By

Chamberlain & Newman Attorneys

# UNITED STATES PATENT OFFICE.

JAMES MARSHALL, OF FALL RIVER, MASSACHUSETTS.

## MEANS FOR CONVEYING STEAM FROM TUBS.

SPECIFICATION forming part of Letters Patent No. 573,340, dated December 15, 1896.

Application filed January 31, 1896. Serial No. 577,559. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES MARSHALL, a citizen of the United States, and a resident of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Means for Conveying Steam from Tubs, of which the following is a specification.

My invention relates to new and useful improvements in means for carrying off the surplus steam and odors from the sizing-tubs in a hat-factory.

Owing to the high temperature of the water required to scald hat-bodies in their sizing operations and the escape of steam from said water and bodies the numerous hat-factories throughout the country are more or less troubled with said escaped steam, which is of such enormous quantities as to completely fill the room, thus making it damp and unhealthy, besides being very inconvenient, in that it is impossible to see but a short distance.

It is the object of my invention, therefore, to provide means for relieving the above trouble which shall be thoroughly practical, compact, reliable, and whereby one or a series of tubs may be connected with a single vent and drain pipe, which is provided with means for creating a circulation of air, thereby forming a suction to draw out the steam in the tubs.

Upon the accompanying drawings, forming part of this specification, similar reference-characters denote like or corresponding parts upon the several figures, and of which—

Figure 1 shows a plan view of a double series of tubs provided with my improvements. Fig. 2 is a cross-section on line *x x* of Fig. 1 and showing two double series of tubs instead of one. Fig. 3 is a central vertical section on line *y y* of Fig. 1.

From the above figures it will be apparent that I preferably arrange my sizing-tubs in double rows in a straight line upon the bottom floor of the building and partition the same off in pairs and connect them separately with the drain-pipe. Each row of tubs is provided with a continuous sizing-board which extends along their entire length. Thus the attendants employed face each other while at their work.

Referring to the reference-characters upon the drawings, 1 indicates the floor of the building, which may be formed of cement, concrete, or any suitable material, and of such grades as may give the best results for proper drainage.

2 indicates posts to support the ceiling of the room, and 3 platforms upon which the operators stand while engaged in sizing the hat-bodies.

4 indicates a framework built upon the floor and so constructed as to have formed integral therewith and supported thereby two long series of tubs, A and B, the outer walls of which are preferably vertical and flush with the framework, while the inner walls are inclinedly constructed. These tubs are separated by intermediate walls 5 and are further provided with partitions 6, whereby a single tub of each series is connected with that of the opposite tub and whereby they are separately connected with the drain and used simultaneously. Immediately above the space between the two series of tubs and their partitions I provide a covering 7, which serves as a shield or deflector and covers about half of the inner top portion of said tubs, thus making only the outer portion thereof accessible to the operator and whereby the only air-inlet to the space between the tubs and the outlet-vent is through the opening which I indicate as 8, and which appears between the outer end of said covering 7 and the water-line of said tubs.

To the outer wall of the rows of tubs I attach an inclined operating-table 9, which is preferably formed continuous throughout the length of the series of tubs, and serves as means upon which the operators manipulate the hat-bodies in sizing the same. The tubs are each provided with a hot and cold water supply-pipe 10 and 11, respectively, each of which are fed from a larger pipe running lengthwise with said tubs, and which serve as a supply for the pipes 10 and 11 before mentioned. I also provide a third pipe 12, which is for the purpose of conducting steam from the main pipe 13 to the several tubs in substantially the same manner that the water is supplied thereto, and for the purpose of heating the same. It will further be observed that these several water and steam pipes are

provided with suitable valves 14, by means of which the several supplies are governed.

Beneath the floor of the building and in line with the tubs I form a large sewer or  
 5 vent C, one end of which extends through the outer foundation-wall of the building and empties into any suitable drain. Adjacent to the said terminus of this vent I place a  
 10 blast-fan D, by means of which I create a violent circulation within the vent-pipe C, thus causing a suction through the spaces 8 and the several vertical pipes 15 which connect  
 15 said vent-pipe with the several pairs of tubs and serve to cause the steam and odors from the water and hat-bodies of said tubs to be drawn into the vent and finally discharged from the building. I also connect with the  
 20 vent-pipe C suitable drain-pipes 16, which are provided with traps 17, the perforated mouth of which finishes flush with the top of the valleys of the floor 1, thereby relieving the same of all surplus water, thus serving to keep the same clean and dry at all times.

It is possible with the construction such as  
 25 I have shown and described to relieve a hat-factory of all steam, smoke, and odors which have previously existed in my factory and which now exist in the majority of factories in the country, and which are decidedly ob-  
 30 jectionable for many reasons.

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

1. In a device of the class described, the combination with a double series of sizing- 35  
 tubs, of a series of housings, partially covering pairs of said tubs, a main vent-pipe, arranged adjacent to said tubs, independent connections between said pairs of tubs and the main vent-pipe, means within said vent- 40  
 pipe whereby said steam and odors are carried off, substantially as described.

2. In a device of the class described, the combination with a series of sizing-tubs, of a main vent arranged adjacent to said tubs, 45  
 partitions whereby said tubs are partially inclosed, connections between said inclosure and the vent-pipe, and means for carrying off the odors through said pipe, substantially as described. 50

3. In a device of the class described, the combination with a double series of tubs, of a series of partitions between and dividing the same into pairs, an air-inlet opening above 55  
 said tubs, connections therefrom with a main vent-pipe having an air-blast therein, means whereby the several pairs of tubs may be disconnected from the main vent-pipe, substantially as described.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 25th day of January, A. D. 1896. 60

JAMES MARSHALL.

Witnesses:

JOHN C. CHAMBERLAIN,  
 C. M. NEWMAN.