

(No Model.)

2 Sheets—Sheet 1.

J. W. PIVER.  
LUMBER DRIER.

No. 487,965.

Patented Dec. 13, 1892.

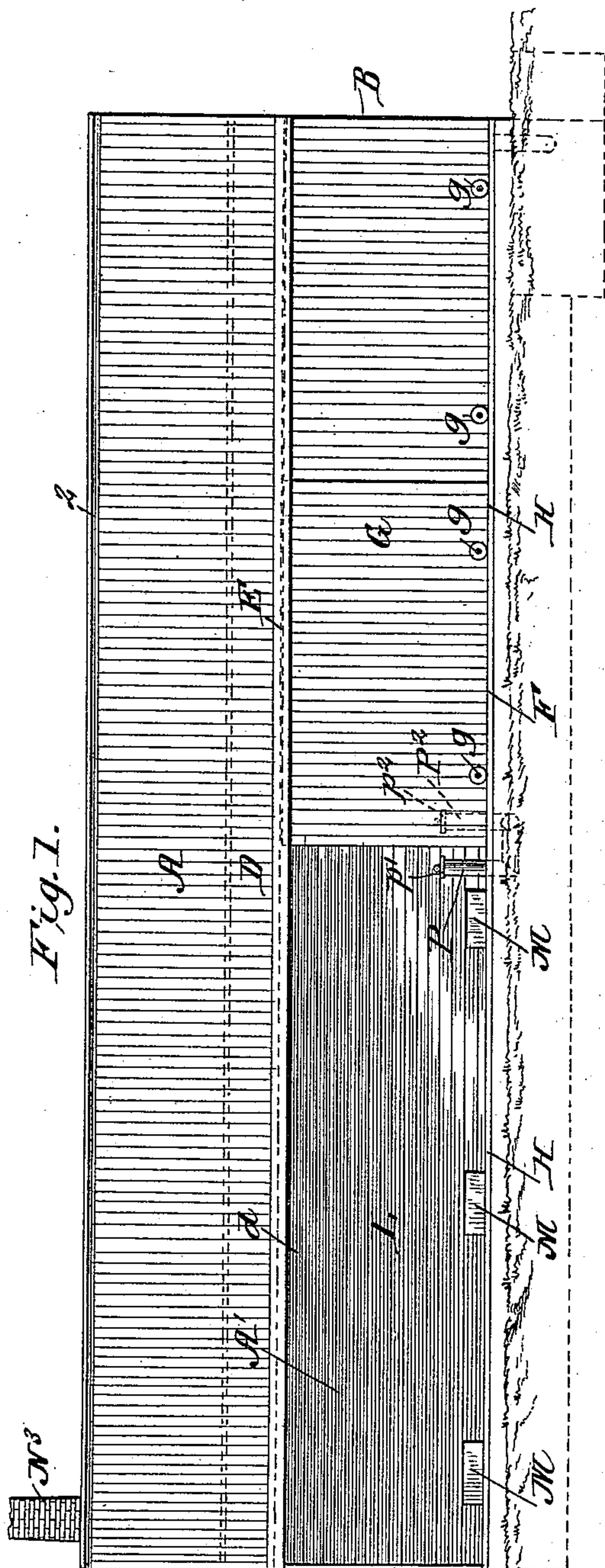


Fig. 7.

**WITNESSES:**

WITNESSES:  
Fred G. Dieterich B  
 P. B. Turpin

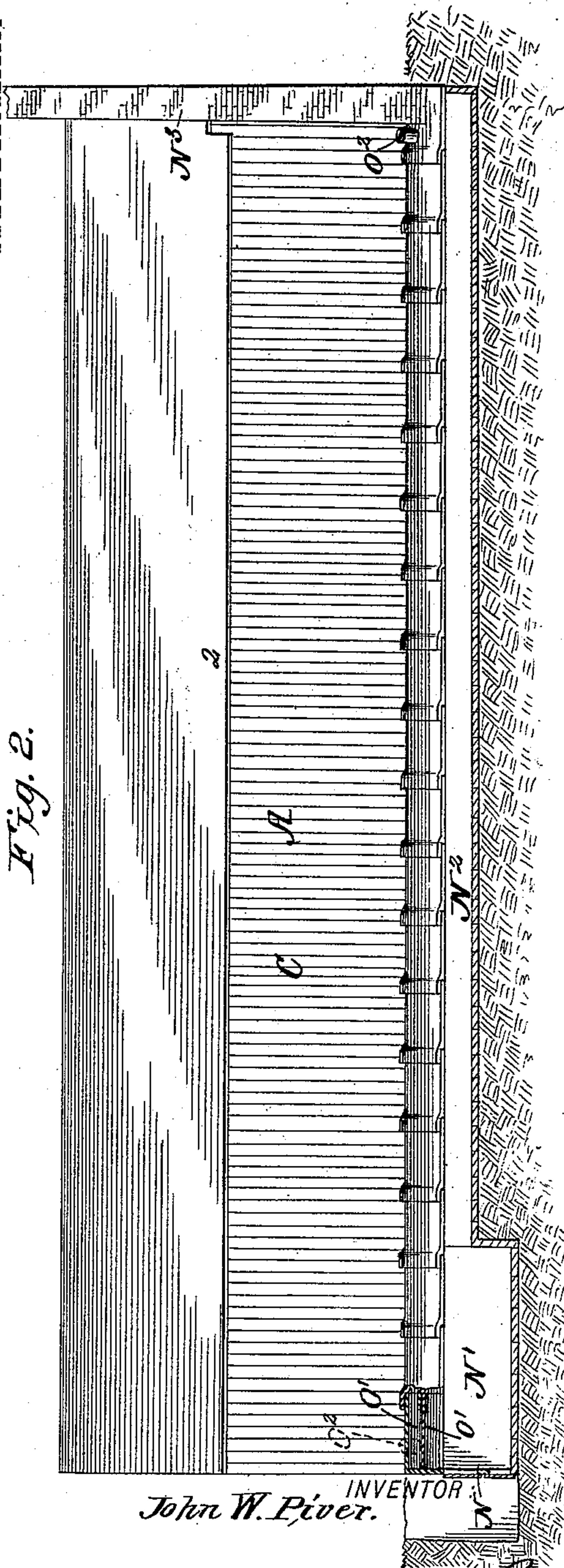


Fig. 2.

INVENTOR

*John W. Piver.*

BY

Mama L

ATTORNEYS.

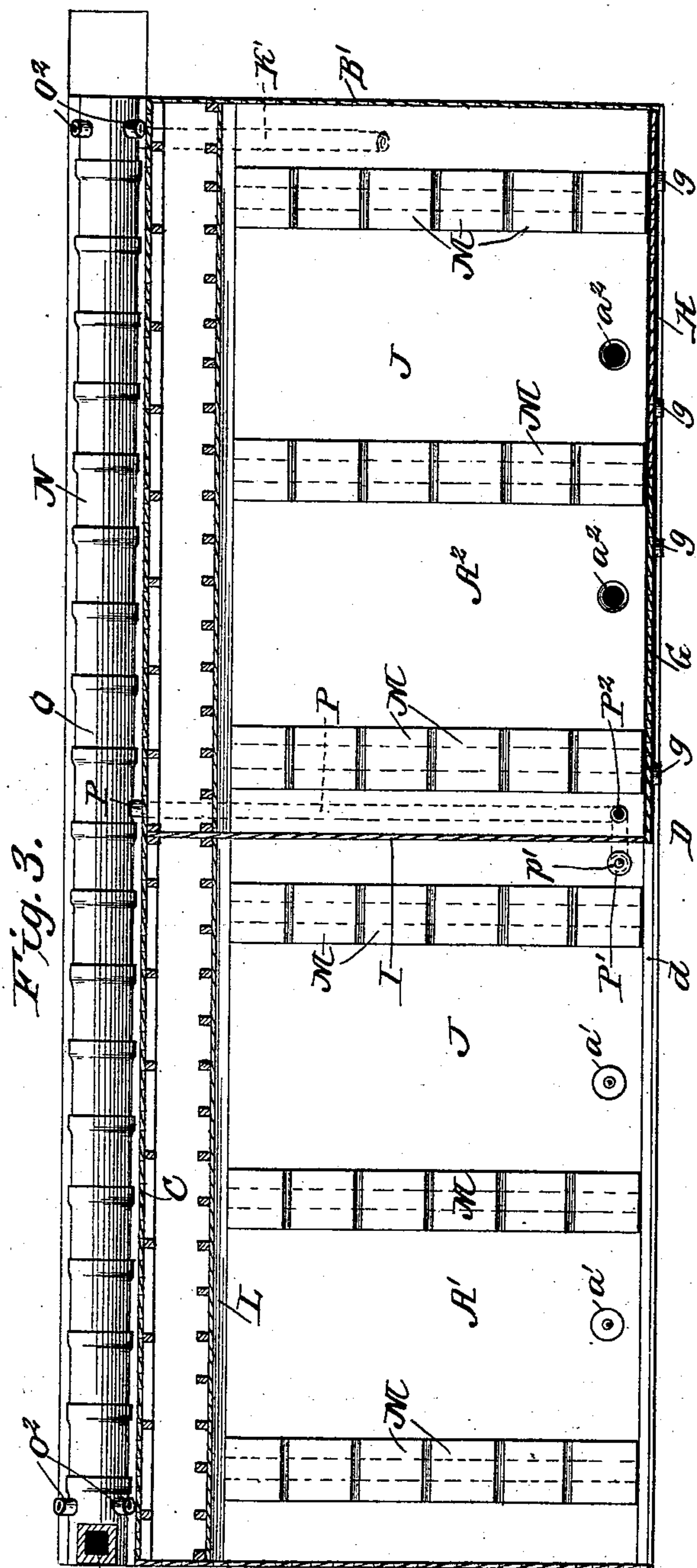
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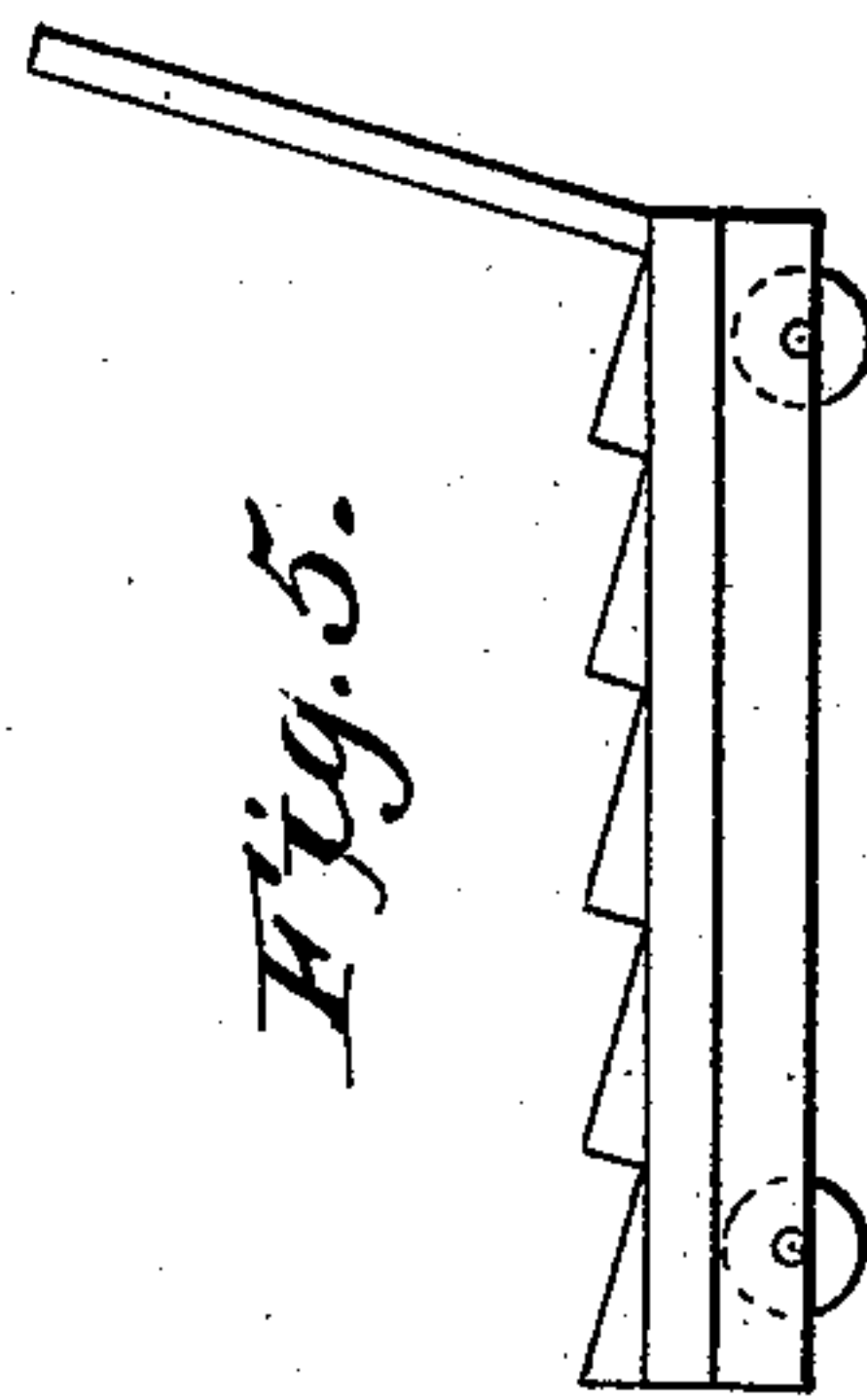


Fig. 5.

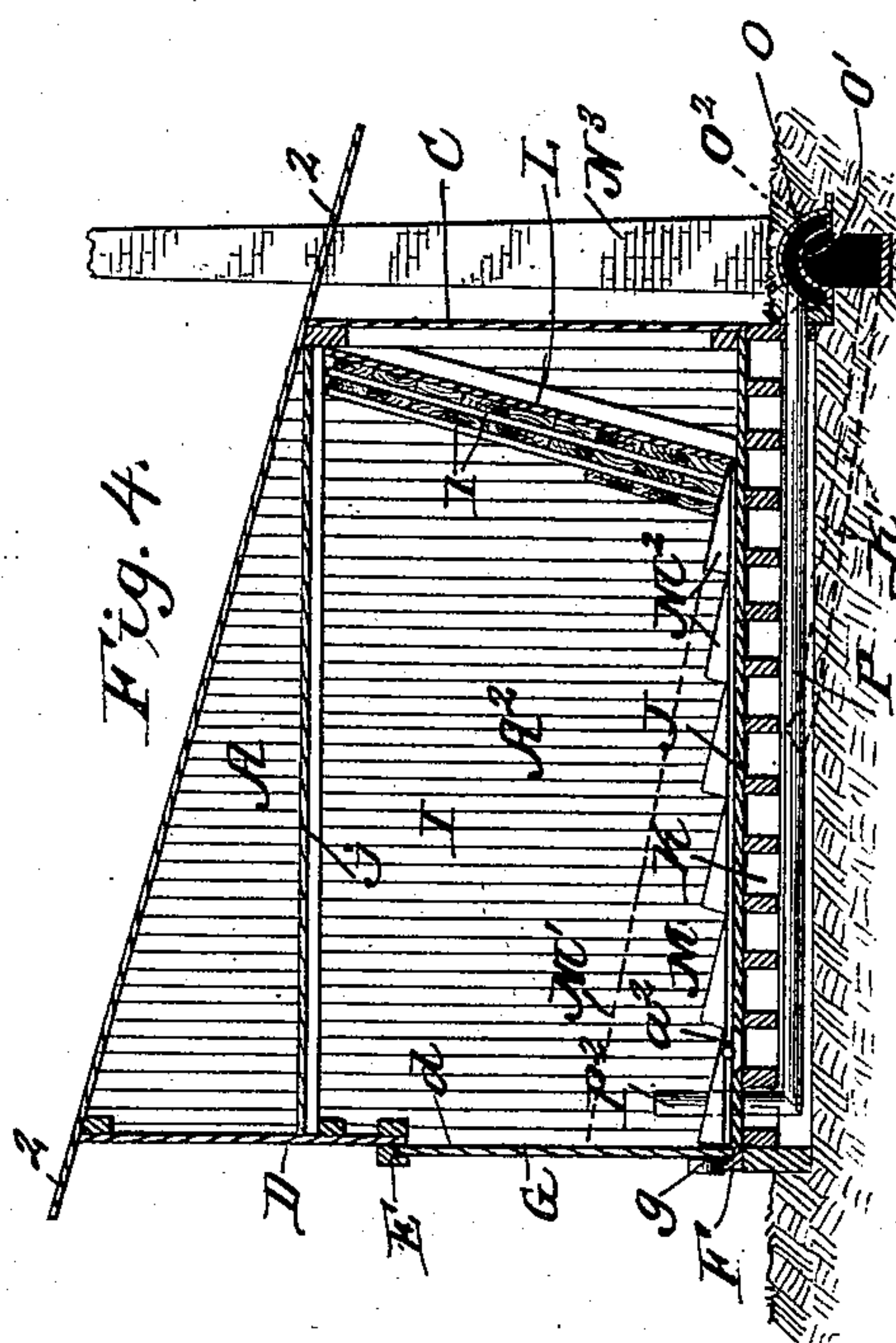


Fig. 4.

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ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOHN W. PIVER, OF AMERICUS, GEORGIA.

## LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 487,965, dated December 13, 1892.

Application filed August 14, 1891. Serial No. 402,685. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. PIVER, of Americus, in the county of Sumter and State of Georgia, have invented a new and useful  
5 Improvement in Lumber-Driers, of which the following is a specification.

My invention is an improvement in lumber-driers; and it consists in certain features of construction and novel combinations of  
10 parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figures 1 and 2 are elevations of the opposite sides of the apparatus. Fig. 3 is a horizontal sectional view. Fig. 4  
15 is a cross-sectional view, and Fig. 5 shows the lumber-support mounted on a truck.

In carrying out my invention I provide a house A, closed at its ends B B and side C and having its side D formed with a doorway-  
20 opening *d*, extending from end to end of the house, as shown. Guides E F are provided above and below the opening *d* to receive the sliding door G, which is preferably made in two sections, each having rollers *g* to run on  
25 the rail H, provided at the base of the doorway. These door-sections combined equal one-half of the length of the house, and the latter is divided centrally between its ends by a partition I, extending from the floor J to  
30 the ceiling *j* and forming the house into the two drying rooms or compartments A' A<sup>2</sup>, as shown. Below the floor J the house is closed in on all sides and is formed to provide an air space or chamber K, extending uninter-  
35 ruptedly through the length and breadth of the house. The doors G, it will be seen, are constructed of such size as to close the doorway to one of the rooms or compartments A' A<sup>2</sup> and leave the entrance to the other room  
40 unobstructed. The purpose of this is to enable one compartment to be emptied and re-filled while the lumber in the other is being dried, so that at all times at least one-half of the house may be utilized actively in the op-  
45 eration of drying.

Before passing to a description of the means for heating and conducting the air I will describe the manner of piling the lumber and the improved means for supporting the same.  
50 These include a side support L, inclined to the vertical and sloping back toward its up-

per end, and an inclined base-support M, inclined to the horizontal and arranged, preferably, at or about at right angles to the side support L, as shown. This base-support might  
55 be a single inclined surface, as indicated by dotted lines M' in Fig. 4; but it is preferred to form the support from the several blocks M', arranged in somewhat step form, as shown in Fig. 4, the lower rear edge of one block  
60 abutting the high front end of the next block. In practice I provide three rows of these blocks in each drying-room and arrange these blocks and rows as clearly shown in Fig. 3, one row  
65 being at the center of the room and the others at short distances from the ends of the room, the blocks of the several rows being supported upon pieces of scantling or similar timber.

In piling the lumber the first plank is  
70 placed edgewise on the base-support next the side support, and rests sidewise against the side support, and the succeeding boards are piled edgewise, as clearly shown in Fig. 4, to the ceiling. Several strips or cleats 1 are  
75 placed crosswise and in front of the first row of planks, another row of planks built up as shown, and so on until the room is filled, as will be understood from Fig. 4. By this  
80 construction I am able to pile the boards on edge without the use of racks having separate seats for each row of boards and without requiring the boards to be set endwise into the pile.

An especial advantage resulting from piling  
85 the lumber edgewise on an incline, as shown, is that I thereby combine the advantages of piling lumber vertically edgewise and horizontally flatwise, as the advantages of piling it edgewise are in no wise impaired, and I am  
90 able to utilize the weight of the boards to clamp or press the boards flatwise against each other to hold them out in proper shape so that the lumber will be dried in the desired flat condition, as the boards rest upon each  
95 other both edgewise and flatwise and are so dried straight at all sides and edges. It will be also understood that if a board be put in the pile warped either transversely or longitudinally the weight and pressure of the  
100 boards piled upon and against it will bring it back straight on all sides and edges and hold



it to such shape until the drying is completed; but by the construction as shown I am able to pile the lumber edgewise and to set it side-wise into and out of the pile, so that one man  
 5 can readily and quickly pile the lumber edge-wise into or remove it from the drying-room, and when filled the doors may be adjusted to close such compartment and the other room or compartment be filled or emptied, as re-  
 10 quired.

The roof of the house A pitches down toward the side opposite the doorway and extends at 2 past such side of the house and forms a shed over the furnace N, which has  
 15 its fire-box N' at one end of the house, and its flue or passage N<sup>2</sup> extends to the opposite end of the house, where it communicates with the uptake or chimney N<sup>3</sup>. Above the furnace and extending from end to end there-  
 20 thereof I form an air-heating chamber O, preferably composed of semicylindrical terra-cotta sections, the bottom sections O' being curved on a smaller arc than the upper ones to provide the intermediate air-space, as shown.

In practice the furnace is built to arrange the top of the air-chamber O flush with or slightly below the ground-surface, and earth is placed over the top of the chamber to retain the heat. Near the ends of the air-  
 25 chamber O, I provide air-inlets O<sup>2</sup>, and at or near the middle of such chamber I connect a tube or flue P, which extends below the floor of the house to a point nearly below the front end of the central partition, where it has  
 30 branches, one P' leading up into the room A', and the other P<sup>2</sup> leading up into the room A<sup>2</sup>, caps or valves p' p<sup>2</sup> being provided to close such branches or ports P' P<sup>2</sup>, as may be desired. In the operation of this construction  
 35 air enters the heating-chamber at O and is heated therein and passes through pipe or passage P and may be discharged from branch P' or P<sup>2</sup>, as may be desired. Thus to dry lumber in room A' the cap p' should be re-  
 40 moved and cap p<sup>2</sup> applied to its pipe P<sup>2</sup>, so that all the heat would be directed into the room A'.

To provide for instituting and maintaining the circulation of air, I shut off all air supply to the combustion-chamber of the furnace  
 45 except a connection with the air-chamber K, which connection is preferably effected by means of tube or flue K', as shown, such tube opening at one end into the air-space K and at the other end into the furnace, as will be  
 50 understood from Figs. 3 and 4. Openings a' a<sup>2</sup> are formed through the floor of rooms A' A<sup>2</sup> and may be closed by caps provided for such purpose, as shown. Thus if lumber is being dried in one of the compartments the  
 55 openings a' or a<sup>2</sup> of such compartment are left unobstructed, so that the natural draft of the furnace will draw air out of such compartment and so produce the circulation desirable to insure the passage of the hot air  
 60 from the air-chamber into the compartment

in which the lumber is being dried. If lumber is being dried in both rooms A' A<sup>2</sup>, it is only necessary to leave openings a' a<sup>2</sup> uncovered and to remove both the caps p' p<sup>2</sup>, when the circulation of the hot air in both the  
 70 rooms A' A<sup>2</sup> will be maintained.

In Fig. 5 I show the lumber-support on a truck, and it is manifest that where desired the support may be so mounted for convenience in moving the entire body of lumber.  
 75 It will also be understood that the apparatus may be used for drying fruit, bricks, and the like by properly adapting the drying-house for such purposes.

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

1. An improved lumber-support consisting of a side support inclined to the vertical and a base-support having its upper or bearing  
 85 surface inclined to the horizontal and at approximately right angle to the inclined side support, all substantially as set forth.

2. In a lumber-drier, the lumber-support herein described consisting of the side sup-  
 90 port inclined to the vertical and the base-support having its bearing-surface inclined to the horizontal and at approximately a right angle to the side support and formed of a series of step-like block-sections, substantially  
 95 as set forth.

3. In an apparatus substantially as described, the house having a drying-room provided with a floor and with an inclined side support for lumber and with a base-support in-  
 100 cluding a plurality of series of blocks having their upper surfaces inclined to the horizontal and strips of timber on which the series of blocks rest, all substantially as set forth.

4. In a lumber-drier, a lumber-support con-  
 105 sisting of a side support inclined to the vertical and the series of step-like blocks extended from said side support, the upper bearing-surfaces of the several said blocks being formed in parallel planes and at ap-  
 110 proximately a right angle to the side support, substantially as set forth.

5. The improved apparatus, substantially as described, comprising the house having a  
 115 drying room or compartment, a heater for said compartment, and a lumber-support arranged in said compartment and composed of a side support inclined to the vertical, and a base-support formed of a series of step-like blocks having their upper or bearing surfaces  
 120 inclined to the horizontal and arranged at approximately a right angle to the side support, all substantially as described, whereby lumber may be piled on said support in an edge-wise-inclined position, for the purposes set  
 125 forth.

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Witnesses:

F. G. OLVER,  
 T. H. TINSLEY.