

(No Model.)

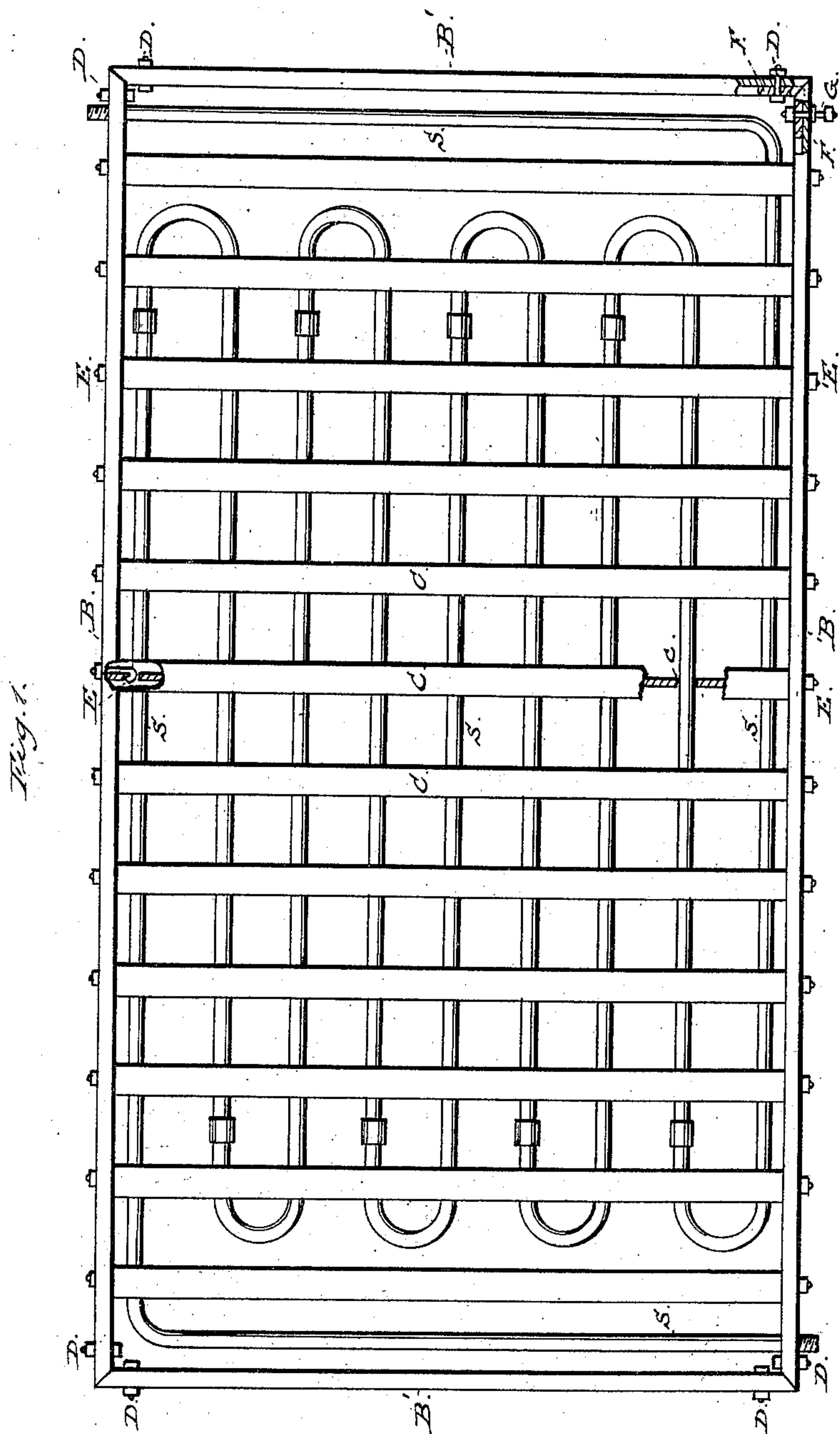
2. Sheets—Sheet 1.

H. J. MORTON.

LUMBER DRIER.

No. 311,442.

Patented Jan. 27, 1885.



Attest;
H. W. Howard
L. N. Rader,

Inventor;
Horace J. Morton
By F. H. Hall, Atty

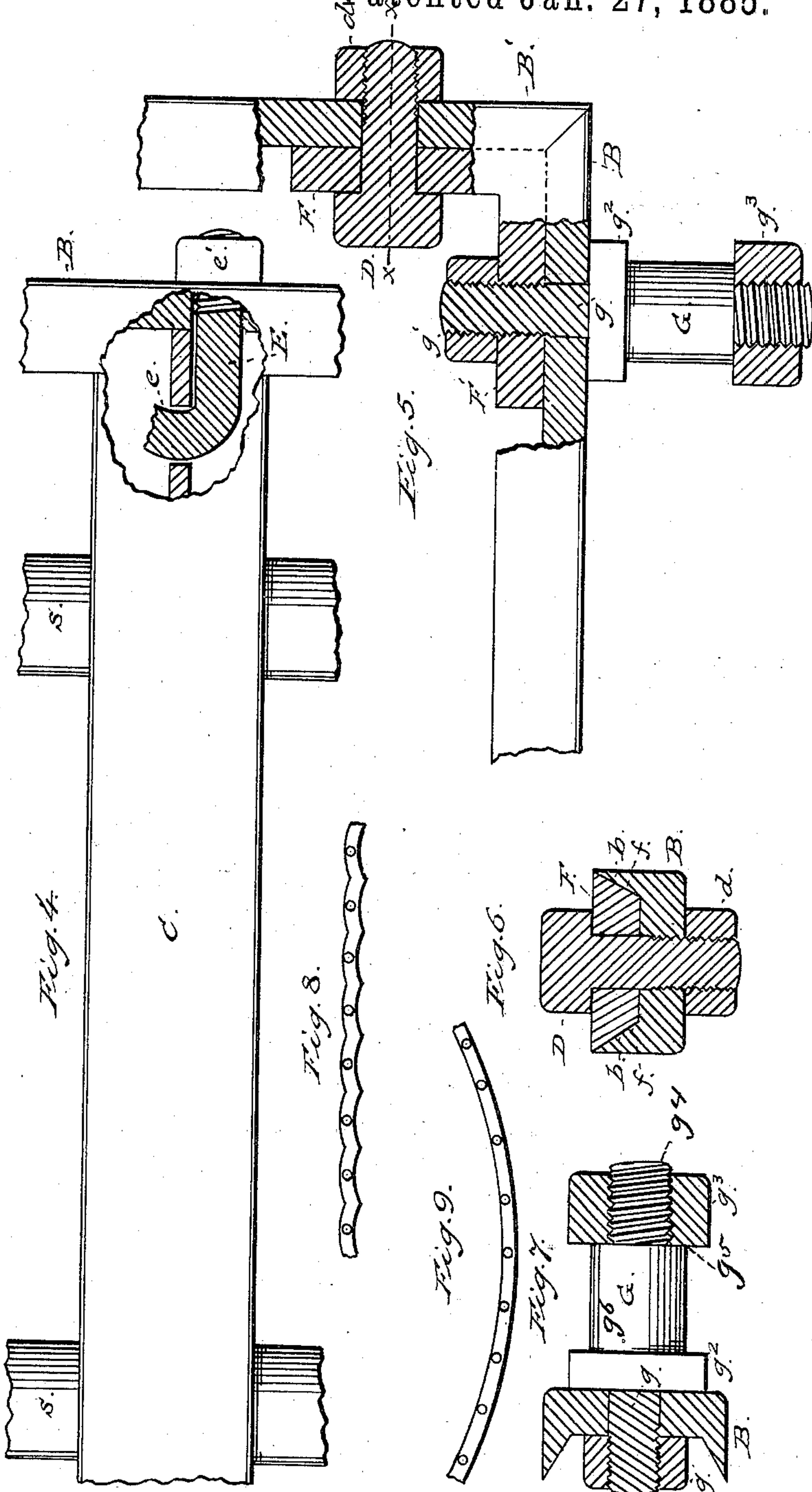
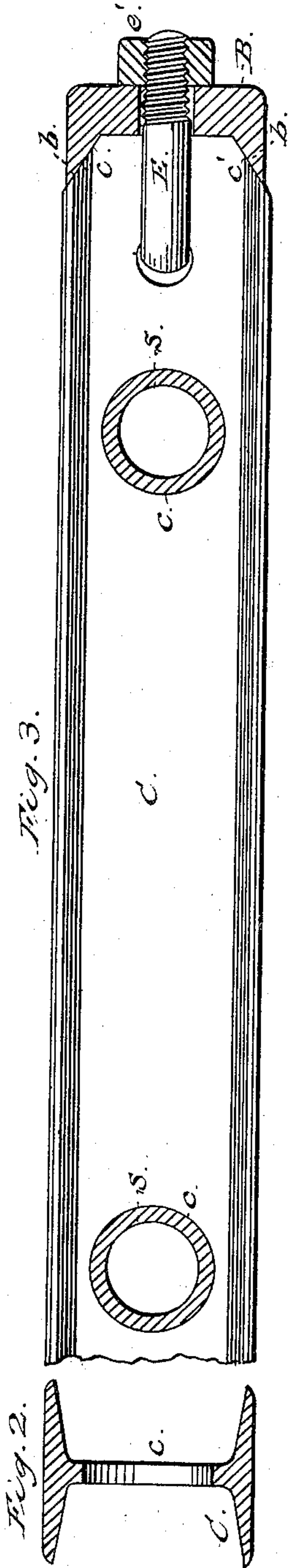
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H. J. MORTON.
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

HORACE J. MORTON, OF PULLMAN, ILLINOIS.

LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 311,442, dated January 27, 1885.

Application filed March 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, HORACE J. MORTON, of Pullman, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Lumber-Driers; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to that class of lumber-drying devices in which a series of horizontal platens are suspended one from the other, the vertical series thus formed being supplied with heat by a steam or other pipe which is tortuously arranged in each section and connects the several sections; and the novelty consists in the construction, arrangement, and adaptation of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

For convenience I will designate each section as a "platen," and will illustrate but one such complete platen, it being understood that the construction of each is similar, and that they are supported in vertical series. Serious trouble has existed in devices for this purpose as heretofore constructed, owing to the fact that the lumber being treated had an extended bearing upon the platens, and the moisture arising from the lumber would discolor the lumber at such points, the moisture not being evaporated quickly enough. The inequality of expansion and contraction, owing to such extended bearing, tends also to surface check and internally check the lumber while being treated.

This invention seeks to obviate these difficulties; and it consists, essentially, in a platen formed of longitudinal and transverse bars, preferably of metal, which may be galvanized, arranged at a distance apart, and secured together, the platen thus formed being perforated properly to support the heating-pipe. By this construction I provide an open platen upon which the lumber has a limited bearing, and which allows ready and constant evaporation of the saps.

The invention is illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a top plan view of one of the platens constructed according to my invention. Fig. 2 is a cross-section of one of the transverse bars. Fig. 3 is an elevation of a portion of one of such transverse bars, with the heating-pipes shown in section. Fig. 4 is a top plan view of a portion of same, broken to show the means of securing the cross-bars to the frame. Fig. 5 is a horizontal section, partly in elevation, showing the means of securing the corners of the frame. Fig. 6 is a cross-section on the line *xx*, Fig. 5. Fig. 7 is a detail view showing one of the suspending-studs, and Figs. 8 and 9 show the supporting-bars formed to treat barrel-staves.

The drawings illustrate what I consider the best manner of carrying out my invention, referring to which, *B* represents the side bars, and *B'* the end bars, which constitute the frame of my improved platen, the mitered ends of which are adapted to abut together, as shown. These bars are of channel-iron, and are illustrated in Fig. 6 in cross-section, having internal inclines, *b*. At the corner junctions (see Fig. 5) right-angled pieces *F*, having inclines *f*, and of depth equal to the channel in the bars *B B'*, are placed, and bolts *D* secure the two together by nuts *d*.

C designates the transverse bars, which are of double T-iron, having perforations at *c*, arranged at a uniform distance from the bearing-surface above and adapted to receive the heating-pipe *S*, and these bars have bevels *c'*, which correspond in angle with the inclines *b* of the channel-bars, against which they abut. A threaded bolt, *E*, having hook *e*, which engages a perforation in the web of the bars *C*, serves to secure the said bars to the frame by means of nuts *e'*. This construction, it will be observed, while it secures the parts firmly together by a single bolt at each end, makes a more than ordinary strong joint, for the reason that the widths of the upper and lower plates have a bearing a considerable distance upon the inclined top and bottom, *b*, of the channel, and the single bolt allows the bars to be readily disengaged. I have illustrated a double T-iron; but it is evident that a plain flat bar set edgewise would serve the purpose, the object being to give great resisting strength against

vertical strain with a minimum quantity of metal. The perforations afford a firm bearing for the pipes, and the spaces between the pipes are filled with the strengthening metal of the bars.

G designates a removable stud having a threaded shank, g , which secures it to the bars B by a nut, g' , and a collar, g^2 , which gives an extended bearing upon the outer face of said bars. From the body g^6 extends a threaded shank, g^4 , of smaller diameter than the body, to form a shoulder, g^5 . These studs are secured at proper distances apart, and serve to support the links which suspend one platen from another, the link being held loosely to the stud by the nut g^3 . These nuts g^3 , while they allow the ready removal of the platens from the supports or links, (not shown,) bear against the shoulders g^5 , so as not to crowd said supports.

S designates the heating-pipe, generally leading from a steam-generator, and the sections of which are secured by right and left hand couplings in the usual manner. The said pipe passes forward and back through the webs of the several supporting-bars C, and has flexible connections from one platen to another. The pipe at each end of the platen extends transversely of the platen and longitudinally with the platen between such transverse sections, as shown in Fig. 1. This divides the area of the platen equally and allows the connections between the platens to be made near diagonally-opposite corners. This arrangement of the pipe S, it will be observed, only necessitates a single perforation in each of the end bars C at diagonally opposite corners, and allows those bars to be made of full strength, which is an important feature of the platen.

Modifications in details of construction may be made without departing from the principle or sacrificing the advantages of my invention, the gist of which lies, essentially, in the open platen having means, substantially as specified, for supporting the steam or heating pipe. For instance, the bars C may be arranged lon-

gitudinally and secured to the ends of the frame, which, being curved, will allow lumber to be cured in bent form; or the bars, if transverse, may be formed as shown in Figs. 8 and 9; or, for instance, the shanks g of the studs G may be inserted through the bars B and F, instead of the bolts D.

What I claim as new is—

1. An open platen consisting of perforated iron bars set edgewise and secured rigidly to an external frame in parallel positions at a distance apart, and a steam or other heating pipe arranged tortuously and supported in the perforations of the said bars, all combined and arranged to serve as and for the purposes set forth.

2. In a platen, substantially as described, the combination, with the channel-bars B, of the removable studs G, having threaded shanks g , projecting through said channel-bars, collars g^2 , affording an extended bearing upon the outer surface of said bars, a body, g^6 , and a threaded shank, g^4 , of smaller diameter than the body, to form shoulder g^5 , all adapted to serve with the nuts g^3 , as and for the purposes set forth.

3. A platen for lumber-driers, consisting of a rectangular frame of channel-bars having inclines b , and a series of double T supporting-bars, C, arranged at intervals apart, and having bevels c' , as shown, whereby the said bars C will have a bearing in the channel-bars above and below equal to the entire width of the upper and lower plates of said bars C, as set forth.

4. In combination with the channel-bars having inclines b , and the double T supporting-bars C c' , the hook-bolts E and nuts e' , as and for the purposes set forth.

This specification signed and witnessed this 17th day of March, 1884.

HORACE J. MORTON.

Witnesses:

WILLIAM H. HALL,

WM. WALLACE STEWART.