

(No Model.)

A. S. NICHOLS.

APPARATUS FOR DRYING LUMBER.

No. 295,418.

Patented Mar. 18, 1884.

FIG. 1

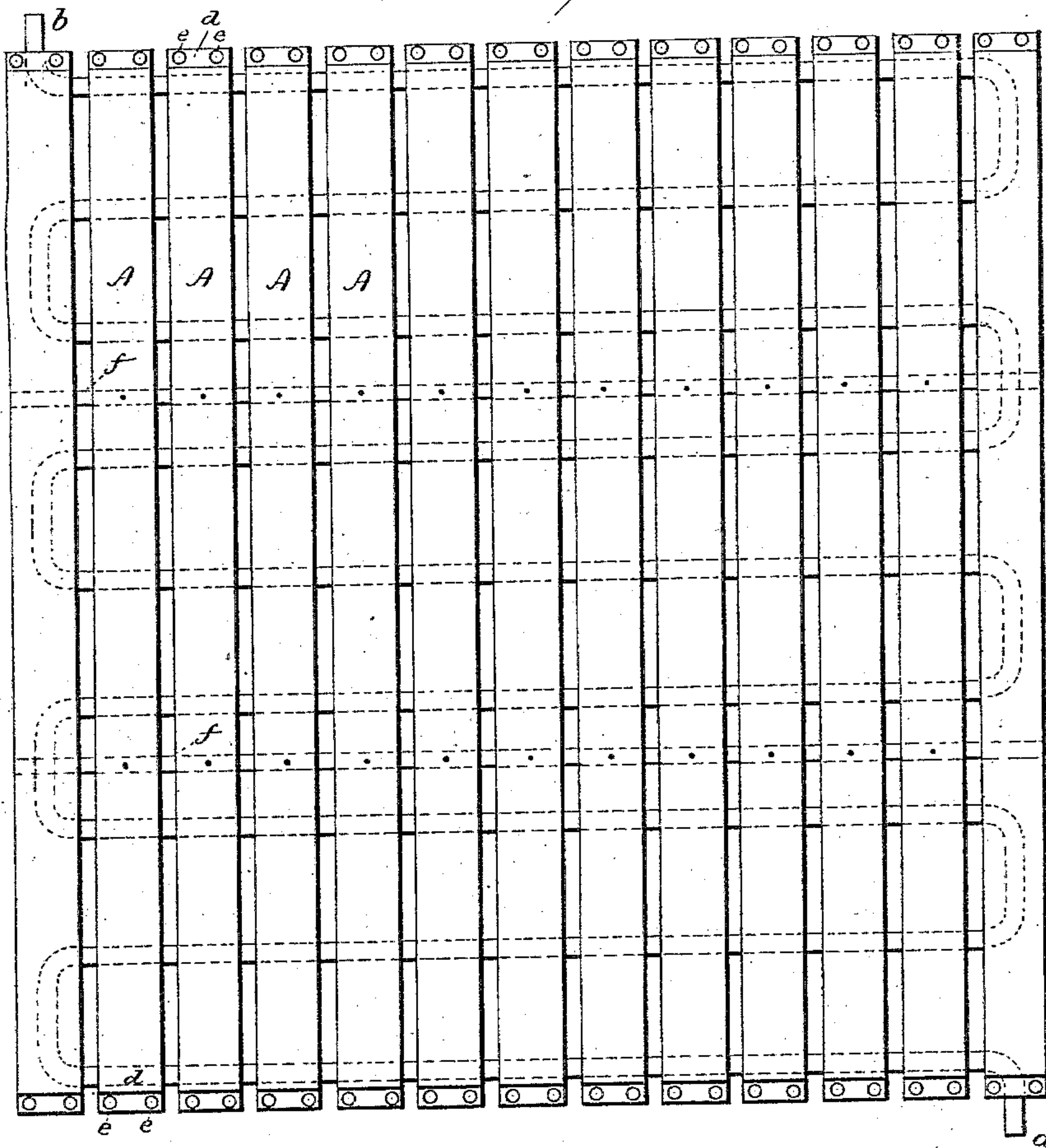
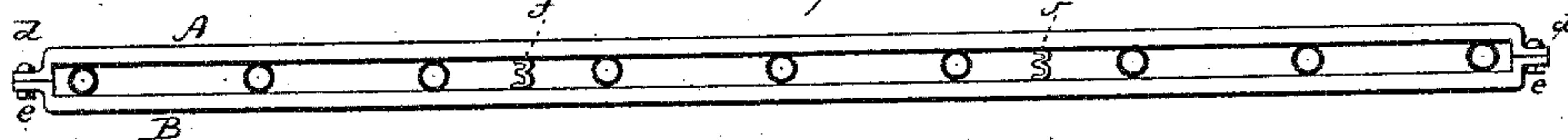


FIG. 2



FIG. 3



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APPARATUS FOR DRYING LUMBER.

SPECIFICATION forming part of Letters Patent No. 295,418, dated March 18, 1884.

Application filed September 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, AARON S. NICHOLS, of Pullman, in the county of Cook and State of Illinois, have invented a new Improvement in Lumber-Drying Apparatus; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view of a platen complete; Fig. 2, an edge view; Fig. 3, a transverse section.

This invention relates to an improvement in apparatus for drying lumber.

Previous to my invention lumber has been dried by means of platens composed of a pipe coiled in a horizontal plane, with a flat sheet-metal plate upon two sides of the coil, connected at the ends, this coil and plates forming one platen. The lumber has been arranged in layers alternating with these platens—that is to say, a layer of lumber, then a corresponding platen, then another layer of lumber and another platen, and so on, then steam or hot water permitted to circulate through the pipe in the platen and by its heat to dry the lumber; but because of the close platen the only circulation there can be through the lumber is that which may possibly enter between the pieces of lumber interposed between the platens, the platens themselves closely covering the surfaces of the lumber. The circulation therefore is very slight. The result of such heating of the lumber without circulation is to produce in the lumber what is known as “honey-comb”—that is, it to a great extent destroys the life and character of the lumber.

The object of my invention is to construct the platens so that there will be a more perfect circulation of air through the lumber, and thus produce the seasoning or drying to a very great extent by such circulation of air, and whereby the texture, nature, or character of the lumber is not affected; and the invention consists in platens composed of a flat coil of tubing inclosed in an open metal framework, in contradistinction to the closed plate heretofore employed, and as more fully hereinafter described.

I take tubing of suitable size, substantially such as heretofore used say—about one-half-inch steam-tubing—and form a flat coil of such tubes. This is done by a series of parallel lengths of tubes connected at opposite ends, the first run with the second, the second with the third, and so on, making a continuous and circuitous passage through the flat coil of tubing. Upon one side of this tubing I place a transverse series of parallel bars, A A, and corresponding parallel bars, B B, on the opposite side, connecting the series on one side with the series on the opposite side. These bars are narrow, and half-round in transverse section—that is to say, flat upon one side and rounded upon the opposite side, the flat sides being toward each other and arranged so as to leave a space between the several bars, as shown. These bars are also connected to the tubing, so as to form a complete flat platen. The platen and lumber are piled together in alternate layers and the tube of each platen connected with the supply of hot water or steam, in the usual manner, *a* representing the inlet, and *b* the outlet. The lumber is piled upon the platens so as to leave a space between the different pieces of lumber, and the spaces between the bars of the platen afford free circulation of air between the layers of lumber, it being understood that the lumber runs across the bars, so that the openings between the lumber cross the openings between the bars of the platen. The rounded or oval surface of the bars makes a small point of bearing between the lumber and the bar and permits the water to run off from the upper surface of the bar, and not to stand between the bar and the lumber. This slight contact of metal with the lumber prevents discoloration, which must occur where a broad surface of metal is exposed to the wood, and where the water can stand in contact with the wood. By this arrangement I obtain a perfect circulation of air, which admits of the free escape of the steam arising from the lumber, and the contact of the air with the lumber prevents honey-combing or any injurious effect upon the fiber or character of the lumber, so that lumber dried with my improved platens does not differ from that which is dried by circulation of air only, the heat, under this free circulation, having no deleterious effect upon it.

I make the strips or bars of which the surface of the platen is composed from galvanized iron, and to unite them at their ends I make an L-shaped bend, *d*, in each bar of a pair, the one the reverse of the other, so as to bring the two bends together, as seen in Fig. 3, the bends forming projecting flanges which come flat together, and through these flanges I introduce bolts *e*, which makes a simple and cheap construction for the bars.

To sustain the bars in their proper relation to each other and to the coil of pipe, I introduce corrugated bars *f* at right angles to the bars and running parallel with the tubing, and so as to cross the several bars, and to these transverse bars *f*, I rivet or otherwise secure the platen bars or strips, which makes a firm structure of the platen.

In the previous construction of platens, where a flat plate is used to cover the entire surface of the platens the size of the platen is limited by the size of sheet which can be obtained, whereas by the employment of bars I am enabled to make the size of the platen unlimited.

I claim—

1. The herein-described platen for drying lumber, consisting of a flat coil of tubing combined with transverse series of bars or strips arranged on opposite sides of said flat coil of tubing, the bars of the series arranged to leave an opening between them, the said coil of tubing constructed for connection with and discharge of a supply of steam or hot water, substantially as described.

2. The combination of a coil of tubing with transverse series of strips or bars, arranged on opposite sides of said flat coil, the bars constructed with their surface next the coils flat and the outside surface rounded, the bars arranged to leave an opening between them, and the said coil constructed for connection with and discharge of a supply of steam or hot water, substantially as described.

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Witnesses:

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