(No Model.)

# U. E. BRUMBAUGH.

## LUMBER DRIER.

No. 441,278. Patented Nov. 25, 1890.

Fig. 2.

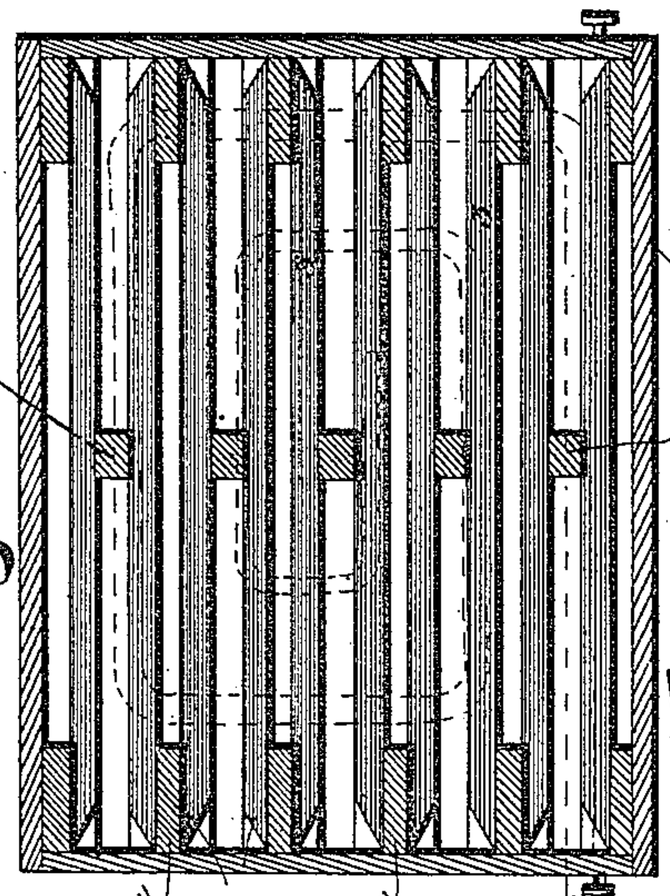



Fig. 3.

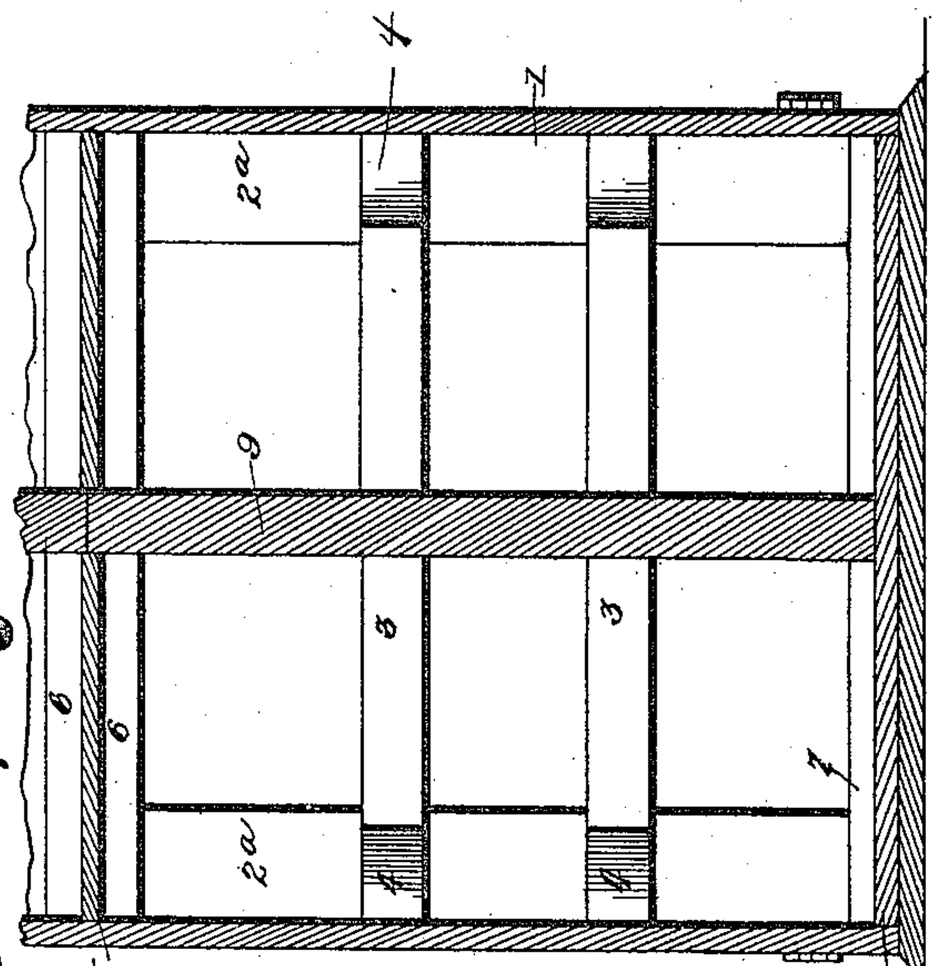
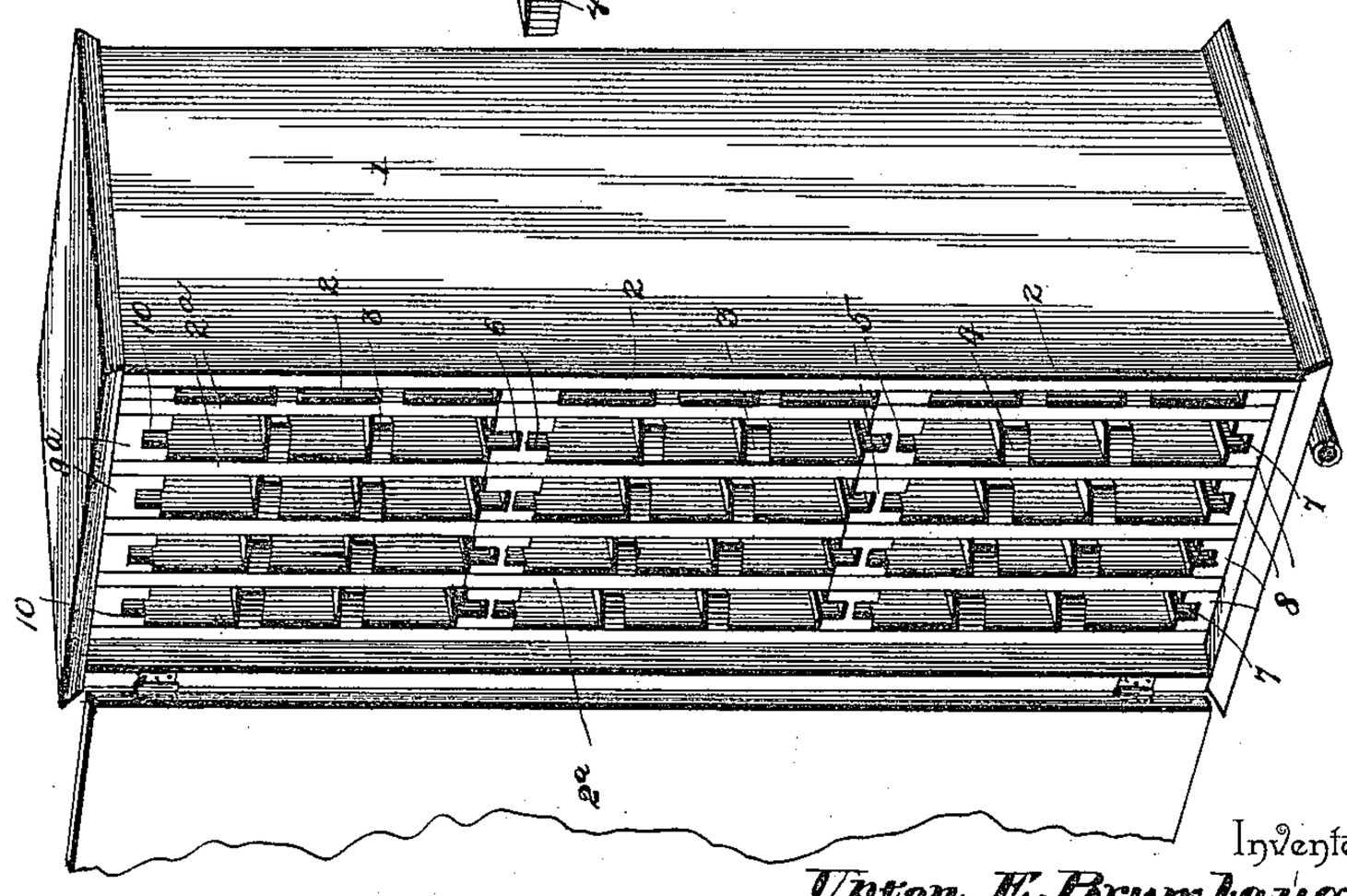



Fig. 4.


Fig. 1.

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# UNITED STATES PATENT OFFICE.

UPTON E. BRUMBAUGH, OF MARION, INDIANA.

## LUMBER-DRIER.

SPECIFICATION forming part of Letters Patent No. 441,278, dated November 25, 1890.

Application filed July 18, 1889. Serial No. 317,870. (No model.)

*To all whom it may concern:*

Be it known that I, UPTON E. BRUMBAUGH, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented a new and useful Lumber-Drier, of which the following is a specification.

This invention relates to lumber-driers, and particularly to that class especially designed for the drying of veneers.

The objects of the invention are to provide a drier of cheap and simple construction in which the compartments thereof are so constructed and arranged as to be adapted for the reception and drying of veneers of different sizes, and that in such a manner as to prevent any warping or twisting of the veneers during the drying operation, and in which the veneers are first dried at their centers and gradually and evenly toward their edges; furthermore, to provide means whereby a series of drier-sections constructed as mentioned may be successfully mounted one upon the other and combine to produce a successful drier, as above indicated.

With the above general objects in view the invention consists in certain features of construction hereinafter specified, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a drier constructed in accordance with my invention. Fig. 2 is a horizontal section taken through one of the drier-sections. Fig. 3 is a vertical longitudinal section taken through one of the drier-sections. Fig. 4 is a detail view of one of the cleats.

Like numerals indicate like parts in all figures of the drawings.

In practicing my invention a special case may be built for the reception of the drying-sections, hereinafter described, or I may utilize any ordinary room or building adapted for the purpose, which, it will be understood, is provided with suitable and convenient doors.

1 designates in this instance the outer case or casing, in which is located a series of three (or it may be a greater or less number) drying-sections 2. These drying-sections may be of any desired length and are constructed as follows: A series of vertical partitions $2^a$ are located at each end of the proposed section and suitably secured to the floor of the casing or room 1, said partitions being spaced a suitable distance apart, and those of one series occurring opposite those of the other series, as shown in Figs. 2 and 3. The opposite partitions $2^a$ are connected in pairs and at opposite faces or sides by pairs of opposite horizontal cleats 3. Any number of pairs may be employed for connecting each pair of partitions $2^a$; but two are sufficient. The ends of the cleats are flush with the outer sides of the partitions, and said ends are beveled, as at 4, so that the opposite entrances to the compartments formed by the partitions are flared to facilitate the insertion of the veneers, which when inserted are somewhat snugly embraced by the inner faces of the pairs of opposite cleats, which cleats are such a distance apart as to approximate the thickness of the veneers.

The compartments or spaces aforesaid are subdivided vertically by means of a series of divisional strips 9, located centrally between the ends of each compartment, forming opposite spaces, into which the veneers may be inserted, at each side of the section.

8 represents a series of guide-strips, one being located in and forming the bottom of each compartment, which strips are provided upon their upper faces and throughout their lengths with a groove 7, centrally located and in exact vertical alignment with the space between the cleats 3.

5 designates a series of upper guide-strips, each of which is located in and forms the top of a compartment. These strips are longitudinally grooved, as at 6, upon their upper and lower faces, said grooves being centrally located and in vertical alignment with the grooves in the lower guide-strips. This completes the drier-section, and a series of such sections are, as shown, piled one upon the other. In such an arrangement the divisional strips of the sections are in vertical alignment, so that the compartments also align.

The section above the lower section is not provided with the lower guiding grooved strip 8, as the upper groove 6 of the upper guiding-section 5 of the lower drying-section takes the place thereof, and in a similar man-

ner do the corresponding strips of the said section form the bottoms of the third and (in this instance) top section. The upper ends of the compartments of the top drying-section are provided with upper guide-strips $9^a$, having central longitudinal grooves 10 upon their under sides, similar to the strips 8, though inverted.

Any suitable system of drying-pipes may be located under, around, or over the sections or casing; but I prefer to employ the system herein shown, (dotted lines, Fig. 2,) which is of substantially convolute form, the pipe composing the system being gradually reduced from its supply to its discharge ends, and in this way the steam is maintained a longer period of time between the entering and discharge ends than if the pipes were of a uniform bore throughout their length.

By the above construction the veneers are held somewhat snugly in position. The drying commences at the centers, they being the most exposed, and gradually radiates to the edges, which are to some extent protected by the guiding-strips. It is apparent that any desired sizes of veneers may be successfully dried and that the capacity, form, and proportions of the drier may be changed to suit the wishes of the user.

In my experiments to produce a successful drier for veneers I tested the various driers now on the market and found that one great fault with them all is that none provide side projections or cleats, such as 3, to keep the veneer from warping. These cleats will hold the veneer straight while drying. It will be seen that I provide two sets of such closets between the guide-strips for the ends of the veneer sheets; but of course I do not wish to be limited to the number of cleats employed, as everything depends on the length of the lumber to be dried.

Having described my invention, what I claim is—

1. A drier-section consisting of opposite series of vertical divisional strips $2^a$, opposite pairs of cleats 3, connecting the series and having their ends oppositely beveled, central vertically-disposed divisional strips 9, located between each pair of cleats, and upper and lower top and bottom strips grooved centrally and longitudinally upon their inner faces, said grooves agreeing and in alignment with the spaces between the cleats, substantially as specified.

2. In a drier, the combination of a series of sections 2, arranged one upon the other, each consisting of opposite series of vertical partitions $2^a$, pairs of opposite horizontal cleats 3, connecting the partitions of one series with those of the other and having their ends upon adjacent sides beveled to form flared entrances to the several compartments formed by the partitions, a series of guide-strips 8, each centrally and longitudinally grooved upon its upper side, located in the bottoms of each compartment of the lower section, and similar inverted strips $9^a$ in each compartment of the uppermost section, and oppositely-grooved guiding-strips, as 5, located at the upper ends of each compartment of the lower and superimposed sections, with the exception of the said uppermost section, substantially as specified.

3. In a rack for drying lumber or veneers, the combination of pairs of guide-strips provided with oppositely-arranged grooves placed parallel to each other, substantially as described, and adapted to receive between them the sheets to be dried, the vertical partition-strips separating the sheets of lumber from each other, and the plurality of horizontal cleats 3, arranged in pairs and attached to the opposing sides of the partition-strips, so as to come on opposite sides of the sheets of lumber and hold them from warping, combined and arranged as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

UPTON E. BRUMBAUGH.

Witnesses:

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