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E. J. LAWTON

DEVICE TO PREVENT WARPING IN DRYING LUMBER

Filed July 27, 1926

Fig. 1.

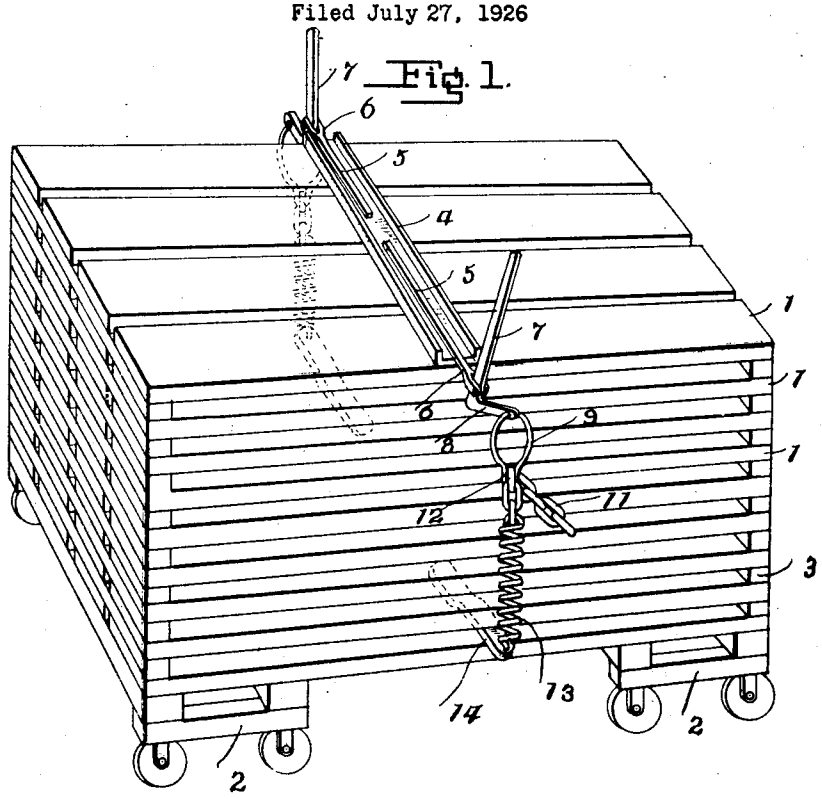


Fig. 2.

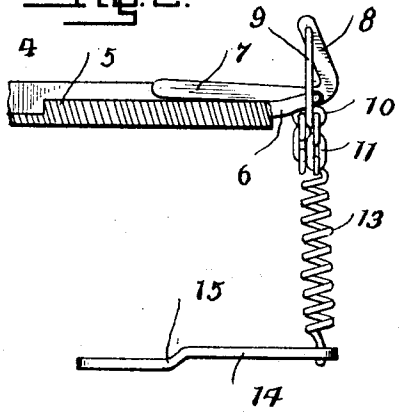
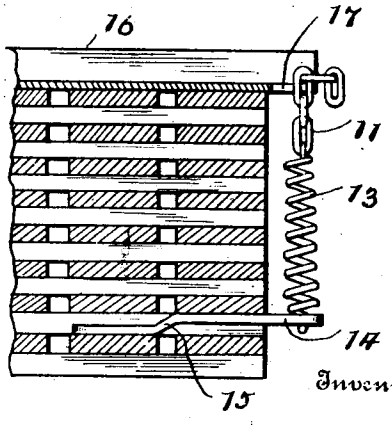


Fig. 3.



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DEVICE TO PREVENT WARPING IN DRYING LUMBER.

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This invention is a device for overcoming the tendency of lumber to warp while it is in the process of drying. When lumber is merely piled flat in the usual manner and subjected to the influence of heat in a kiln, the upper courses of the lumber are very apt to warp and, as a result, the commercial value of the product is lowered, causing a very considerable loss to lumber dealers. It is a particular object of the present invention to provide an inexpensive, easily applied and efficient device by the use of which pressure will be applied to the upper courses of the lumber and the tendency of the same to warp while drying will be overcome. The invention is illustrated in the accompanying drawing and will be hereinafter fully described, the novel features being particularly pointed out in the appended claims.

In the drawing:

Figure 1 is a perspective view of lumber piled for drying and having my invention applied thereto preparatory to being moved into the kiln;

Fig. 2 is a somewhat enlarged detail section showing the parts of the device in closed position, and

Fig. 3 is a view, similar to Fig. 2 but showing another form of the invention.

In the practice of the invention, the lumber is stacked in flat courses, as indicated at 1, upon trucks 2 which may be of any preferred construction, spacers 3 being disposed between the several courses of the lumber so that a circulation of air through and around the several courses will be permitted.

The body of my warp-preventing device consists of a beam or bar 4 which is preferably a channeled metal bar but, of course, may be of any suitable material and specific form. The bar is formed at its ends with longitudinally extending ribs 5 to reinforce the same, and these ribs have their ends projected beyond the ends of the beam, as shown at 6, to provide fulcrums for angle levers 7. The longer arm of each angle lever is intended to serve as a handle to permit the rocking of the lever in setting or releasing the device, while the lower arm 8 thereof is disposed at an angle somewhat less than a right angle to the longer arm and in the open position of the device projects laterally from the beam 4 and the pile of lumber, as shown in Fig. 1. At the end of the shorter arm 8 of the angle lever is hung a loop 9 which, in the position shown in Fig. 1, depends from the lever, and is of such dimensions that, when the lever is swung to the closed position shown in Fig. 2, it will pass over the arm 8 and depend therefrom at the inner side of the fulcrum or pivot pin 10. The loop 9 is intended to receive the chain 11 and is preferably provided with a flattened extension or eye 12 whereby a link of the chain may be fitted through the loop with its sides engaging against and between the sides of the said eye and relative movement of the chain will thus be prevented so that the chain will be held in the position of adjustment given it in applying the device. To the lower end of the chain 11 is attached a retractile spring 13 extending downwardly therefrom and having its lower end secured in any convenient or approved manner to one end of a base or retaining bar 14 which is adapted to be inserted between adjacent lower courses of the lumber.

It is thought the application of the attachment will be readily understood from the foregoing description, taken in connection with the accompanying drawing. The lever and the parts cooperating therewith are provided at both ends of the beam 4 and the beam is placed across the top of the pile of lumber with the levers swung outwardly, as shown in Fig. 1. The base or anchoring bars 14 are then inserted between lower courses of the lumber, after which the levers 7 are swung inwardly over the beam so as to lie upon the same between the side webs thereof, as shown in Fig. 2. When the levers are thus swung to closed position, the loops 9 swing over the lower arms 8 of the respective levers and the fulcrum extensions 6 so as to pass downwardly at the sides of the same and between the beam and the pivot pin, as shown in Fig. 2 and as previously stated. The springs 13 are thus put under tension and serve to hold the levers against accidental release as well as to exert such pressure upon the beam 4 that the upper courses of the lumber will be restrained against any warping or curling action, and when withdrawn from the kiln after the drying process has been completed will be found to be flat and in first-class marketable condition. It will be understood, of course, that, while I have illustrated only a single attachment applied to the pile of lumber, two or more attachments may be applied to any pile of lumber according to the dimensions of the same. It will also be understood that the anchoring

bars 14 may be engaged in the pile of lumber at any point in the height of the same so that breaking strain upon the springs will be avoided while at the same time they will be placed under sufficient tension to effectually restrain any tendency of the upper courses of the lumber to curl or warp. Ordinarily, the attachment I have invented need be applied only to the upper eight or ten courses of the pile of lumber as the weight of the superimposed lumber prevents warping in the lower courses. It will be understood, however, that, if desired, the device may be applied to lower courses and locked in position before upper courses are superimposed and the spacers 3 will be of sufficient height to prevent any interference between the beam 4 and the closed levers 7 with the superimposed courses of lumber.

By referring more particularly to Figs. 2 and 3, it will be noted that the anchor or base bar is bent or offset between its ends, as at 15, thereby obtaining an extended flat bearing against the opposed faces of the two boards with which it is in contact. A straight bar under the upward pull of the spring would be canted so that it would bear against the upper board at the outside edge thereof only, and experience has shown that such contact is insufficient to prevent warping under strong pressure and actually tends to pull the board out of shape while drying.

In Fig. 3, I have illustrated a lighter and less expensive device which can be employed satisfactorily in drying some kinds of lumber. In this form of the invention, the same anchor bar 14, spring 13, and chain 11 are used but the angle lever and loop are omitted. The beam 16 is a channel bar and has a central notch 17 in its end. With this arrangement, the channel and spring are drawn up by hand and the chain engaged in the notch 17, as indicated.

Having thus described the invention, I claim:

1. A device for resisting warping in flat stacked lumber while the same is drying comprising a beam to extend across and rest upon a pile of lumber to be supported solely thereby, anchoring bars manually engageable between lower courses of a pile of lumber through the sides thereof, and means carried by the ends of the beam and the outer ends of the anchoring bars for applying pressure to the beam.

2. A device for resisting warping in flat stacked lumber while the same is drying comprising a beam to extend entirely across and rest upon the top of a pile of lumber and be supported solely thereby, base bars to be engaged between lower courses of the pile of lumber through the sides thereof, locking levers fulcrumed at the ends of the beam, and yieldable connections at the sides of the lumber between the levers and the respective base bars whereby when the levers are moved to closed position tension will be applied thereto to hold the beam to the lumber.

3. A device for resisting warping in flat stacked lumber while drying comprising a beam to extend entirely across and rest upon and be supported solely by a pile of lumber, base bars to be engaged laterally between lower courses of the lumber from the sides thereof, angle levers fulcrumed at their angles on the ends of the beam, and a retractile spring at each side of the pile of lumber disposed between and connected with the respective base bar and with the outer end of the lever.

4. A device for resisting warping in flat stacked lumber while drying comprising a beam to extend entirely across and rest upon and be supported solely by a pile of lumber, base bars to be engaged laterally between lower courses of the pile of lumber from the outer sides of the same, an angle lever fulcrumed at each end of the beam, a loop carried by the outer end of the lever, a retractile spring attached to the base bar, and a chain attached to the upper end of the spring and adjustably engaged in the loop.

5. A device for resisting warping in flat stacked lumber while drying comprising a beam to extend entirely across and rest upon and be supported by a pile of lumber, anchoring bars to be engaged between lower courses of a pile of lumber from the opposite sides of the same, and means carried by the beam and the anchoring bars for applying pressure to the beam, the anchoring bars being each offset between its ends.

6. A device for resisting warping in flat stacked lumber while drying comprising a beam to extend entirely across and rest upon and be supported solely by a pile of lumber, anchoring bars engageable laterally between lower courses of the pile of lumber from the opposite sides thereof, and extensible pressure-applying connections between the respective anchoring bars and the beam at the sides of the pile of lumber.

7. A device for resisting warping in flat stacked lumber while drying comprising a beam to extend entirely across and rest upon and be supported solely by a pile of lumber, anchoring bars engageable between lower courses of the lumber from the sides thereof, and resilient adjustable connections at the sides of the pile of lumber between the beam and the respective anchoring bars for applying pressure to the beam.

8. A device for resisting warping in flat stacked lumber comprising a beam adapted to rest upon a pile of lumber, a base bar engageable between lower courses of the pile of lumber, an angle lever fulcrumed at its angle to the end of the beam, a loop pivotally attached to the outer arm of the angle lever and having a flattened pendent extension, a

chain engaged in the flattened extension of the loop and held thereby in set relation to the loop, and a yieldable connection between the chain and the base bar.

9. A device for resisting warping in flat stacked lumber comprising a rigid beam adapted to extend across and rest upon the stacked lumber, a base bar engageable between lower courses of the lumber, an angle lever fulcrumed at its angle on the end of the beam, the arms of the lever defining an angle less than a right angle, a loop pivotally attached to the outer shorter arm of the lever and having a flattened extension, the length of the loop being greater than the length of the arm, a chain passing through the loop and having its links engageable in the extension of the loop, and a resilient connection between the chain and the base bar, the outer arm of the lever swinging through the loop when the lever is rocked whereby the loop will depend from said arm between the end of the beam and the fulcrum of the lever to hold the longer arm of the lever down upon the beam and apply pressure to the lumber.

In testimony whereof I affix my signature.

ESTHER J. LAWTON. [L. S.]