(No Model.) 2 Sheets—Sheet 1.

H. G. WADLEY.

LUMBER HANDLING APPARATUS FOR DRYING KILNS.

No. 523,609. Patented July 24, 1894.

FIG. 4.

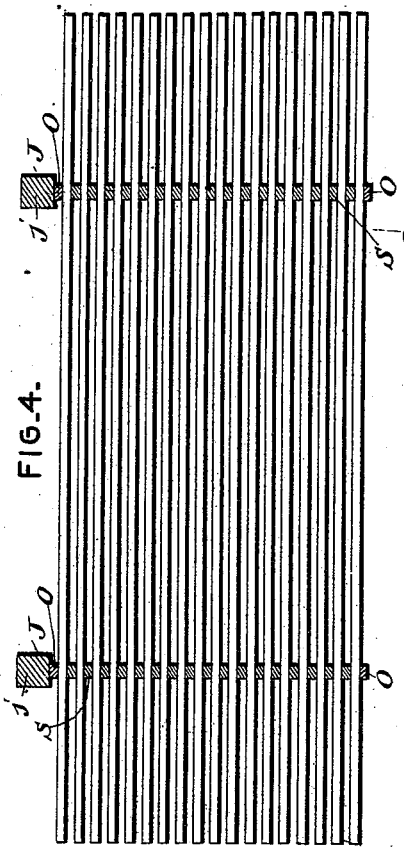

FIG. 5.

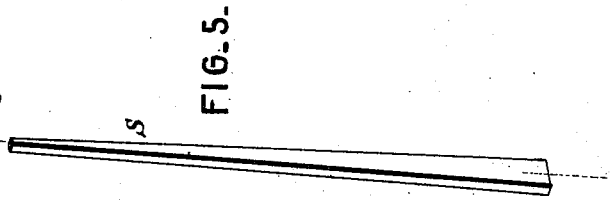

FIG. 1.

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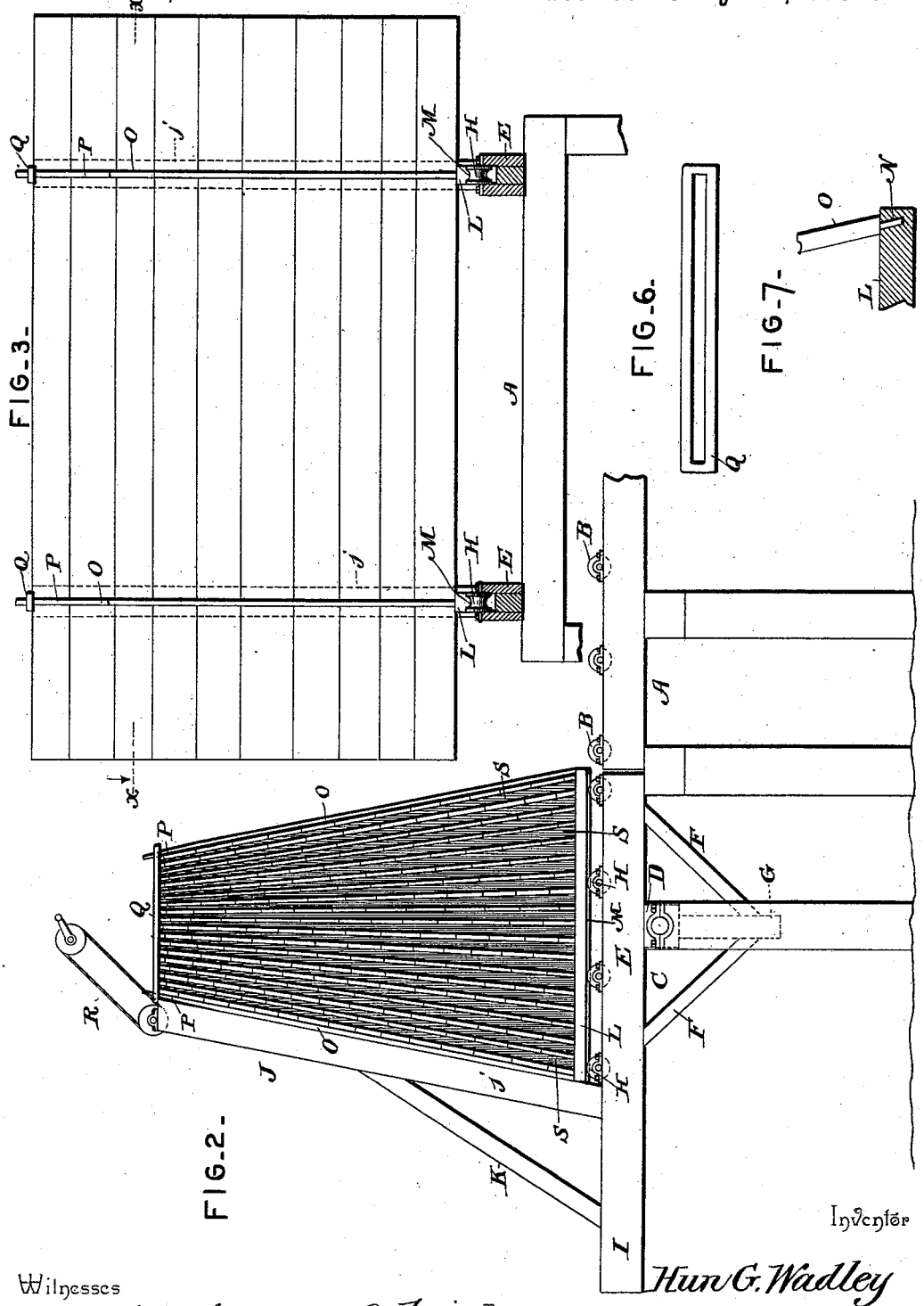

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UNITED STATES PATENT OFFICE.

HUN G. WADLEY, OF WYTHEVILLE, VIRGINIA.

LUMBER-HANDLING APPARATUS FOR DRYING-KILNS.

SPECIFICATION forming part of Letters Patent No. 523,609, dated July 24, 1894.

Application filed February 1, 1894. Serial No. 498,794. (No model.)

To all whom it may concern:

Be it known that I, HUN G. WADLEY, a citizen of the United States, residing at Wytheville, in the county of Wythe and State of Virginia, have invented a new and useful Lumber-Handling Apparatus for Drying-Kilns, of which the following is a specification.

This invention relates to lumber handling apparatus for lumber kilns; and it has for its object to effect certain improvements in that class of apparatus for handling lumber such as covered by Patent No. 506,286, granted to me October 10, 1893.

It has been found that lumber piled upon edge with a sufficient space intervening between the boards to allow a free passage of the heated air from the bottom to the top of the pile, will dry much more evenly and in less time than when piled flatwise or horizontally, and with this in view the present invention contemplates novel and efficient means for loading the lumber onto the truck for transportation to the drying kiln, and also a construction involving a specific form of lumber stack, which shall be best adapted to compensate for the shrinkage attendant upon the drying of the lumber, and which heretofore has caused the stack of lumber to lose its shape whereby it has become unmanageable.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of my improved lumber handling apparatus showing the tilting track frame in its tilted position for receiving the lumber to be transported. Fig. 2 is a side elevation of said tilting frame in its horizontal position showing the pile of lumber stacked and ready to be moved into the lumber kiln. Fig. 3 is a front elevation of the construction illustrated in Fig. 2. Fig. 4 is a sectional view on the line *x*—*x* of Fig. 3. Fig. 5 is a detail in perspective of one of the tapered spacing bars or sticks. Fig. 6 is a detail plan view of one of the slip links. Fig. 7 is a detail sectional view at one end of one of the truck bars.

Referring to the accompanying drawings, A represents a suitable track bed which ordinarily consists of a raised trestle to support the track above the ground, and on said track bed are journaled the parallel series of aligned grooved track wheels B, which form a wheel or roller track for the truck adapted to run thereover and carry the lumber to the kiln. The track bed A, leads to an ordinary lumber drying kiln, and beyond one end thereof is suitably mounted a tilting track frame C.

The tilting track frame C, turns on the pivot bolster D, which is mounted in suitable bearings just beyond one end of the main track bed A, and the opposite side stringers E, of said tilting track frame are suitably braced to the said pivot bolster by means of the inclined under truss braces F, extended from the lower sides of the said stringers and connected to the brace arms G, extended below the said pivot bolster. The side stringers E, of the tilting track frame C, carry the parallel rows or series of aligned grooved track wheels or rollers H, which are adapted to form continuations of the line of wheels or rollers on the main track bed, when the said tilting frame is brought to a horizontal position.

The opposite side stringers E, of the tilting track frame C, are extended at one end as at I, to provide portions to rest on the ground whereby the tilting frame may be held stationary in the tilted loading position, and at one side of the pivot of said tilting frame the same is provided with the upwardly extending forwardly inclined rest frame J, consisting of the connected uprights *j*, braced to the side stringers E, by the inclined braces K. This construction substantially completes the tilting track frame C, which together with the main portion of the track are adapted to support for travel thereon the opposite truck bars L.

The opposite truck bars L, are provided upon their lower edges with the narrowed ribs M, which take into the grooves of the wheels or rollers H and B, and are adapted to move over the said rollers to and from the drying kiln, and these opposite truck bars M, form the lumber truck for transporting the lumber and are adapted to be connected and supported properly in position by the lumber which is adapted to be stacked thereon. The opposite truck bars L, are provided near their opposite ends with the mortise openings N,

into which are fitted the lower ends of the inclined clamp bars O, which are slightly tapered as at P, at the outside of their top ends to loosely receive thereover the opposite ends of the substantially rectangular self-adjusting clamp links Q, which, together with the clamp uprights O, form the lumber clamps for each of the truck bars L.

As clearly illustrated in the drawings the upright clamp bars O, of each truck bar are inclined toward each other or are convergently disposed to form with the upper slip links Q, clamps having the shape of a truncated pyramid in side elevation, and this shape is therefore the shape of the stack of lumber embraced by the clamps.

In loading the truck with lumber, the tilting frame C, is lowered to its tilted position as shown in Fig. 1, of the drawings by means of a suitable rope or chain hoisting device R, conveniently arranged and connected with the upper outer end of the rest frame J, whereby the track frame may be easily and conveniently raised and lowered. The hoisting device R may be any suitable arrangement to accomplish the raising and lowering of the tilting frame C, and the illustration is intended to represent this device as simply consisting of oppositely arranged drums, and separate upper and lower ropes or chains connected at one end to one of the drums and winding and unwinding at the opposite end on the other drum, the ropes or chains being reversely arranged so that the same will be lengthened out and shortened simultaneously as the drums are operated, as will be easily understood without further description. With the track frame C, in its lowered tilted position the truck, consisting of the bars L and the clamps supported thereby, is disposed at an angle with the lower ends of the truck bars resting against the uprights *j* of the rest frame J, and the lower of the clamp bars O, also resting flat against the said rest frame uprights, and therefore in position to admit of the lumber being stacked on the truck bars in edgewise tiers.

In stacking the lumber on the truck bars and between the clamp uprights O, the usual edgewise manner of stacking is observed, and in order to provide for properly spacing the tiers of lumber to admit of a free circulation of the heated air there-between while in the kiln, I interpose between each tier of lumber the tapered spacing bars or sticks S. The tapered spacing bars or sticks S, are arranged with their lower ends resting directly on the truck bars L, with their upper narrowed ends extending out toward the top of the clamps. The said bars or sticks are of the same thickness throughout, but are formed in tapered widths which vary toward the center of the stack, where the sticks are tapered less so that the central tiers of lumber will be substantially perpendicular to provide for the proper inclination of the tiers of lumber at the sides of the central point of the stack.

Now by reason of employing the tapered spacing bars or sticks S, it will be seen by reference to Fig. 2, of the drawings that the stack or pile of lumber will have the appearance in side elevation of a truncated pyramid, as previously stated, and this shape has been found to provide the most stable manner of stacking the lumber edgewise, whereby the shape of the stack will remain unchanged as the lumber shrinks or dries. It is well known that as the lumber dries the boards necessarily shrink and in perfectly rectangular clamps will lose their shape and become unmanageable, whereas in the present improvement each tier of boards leans toward the center of the stack or pile so that the lumber braces itself and naturally keeps in shape as it is dried and shrunk. As the lumber dries and shrinks it will of course be understood that the clamp links Q, will settle or slip down over the upper ends of the bars O, and serve to securely hold the stack or pile of lumber together.

Without further description it is thought that the operation of the herein-described apparatus will be readily understood by those skilled in the art, it being of course understood that after the truck has been loaded in the manner described, the track frame is righted to a horizontal position in alignment with the main track and the truck with the stack of lumber thereon is slid into the lumber kiln in the ordinary manner.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a lumber handling apparatus, the combination with the main track; of a tilting track frame arranged at one end of the main track, a truck adapted to move over the main track and to be supported on the tilting track frame, and tapered lumber clamps supported on the truck and adapted to confine the stack of lumber, substantially as set forth.

2. In a lumber handling apparatus of the class described, the combination with the main track consisting of parallel series of aligned grooved track wheels or rollers; of a tilting track frame pivotally supported beyond the main track and provided with side stringer extensions adapted to rest on the ground when the frame is tilted and an upwardly extending and forwardly inclined rest frame, means for raising and lowering said tilting frame, and the truck consisting of the side truck bars provided upon their lower edges with narrow ribs moving over said grooved wheels or rollers, substantially as set forth.

3. In a lumber handling apparatus of the class described, the combination with the main track and the tilting track section; of

the lumber truck, convergent clamp arms extending above the truck, and a slip or clamp link adapted to loosely engage over the upper ends of the directly opposite clamp arms, substantially as set forth.

4. In a lumber handling apparatus of the class described, the combination with the main wheel or roller track and a similar tilting track section; of the opposite truck bars adapted to move over the wheels or rollers forming the track, and lumber clamps supported on each of said truck bars, said lumber clamps being tapered upwardly from the truck bars, substantially as set forth.

5. In a lumber handling apparatus of the class described, the combination with the main track and the tilting track section; of the opposite traveling truck bars, converging clamp bars arising from each of said truck bars and provided with tapered upper extremities, and substantially rectangular self adjusting clamp links adapted to engage over the upper tapered ends of said clamp bars to hold the stack of lumber in position, substantially as set forth.

6. In combination with a lumber truck for kilns and the lumber clamps thereon; of the spacing sticks or bars tapered toward their upper ends and adapted to be placed on the lumber truck and interposed between the edgewise tiers of sawed lumber to form a tapered stack for drying purposes, substantially as set forth.

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

H. G. WADLEY.

Witnesses:
JOHN H. SIGGERS,
H. C. YATES.