C. A. DENISON.

LUMBER STACKER.

APPLICATION FILED MAR. 5, 1910.

978,565.

Patented Dec. 13, 1910.

3 SHEETS—SHEET 1.

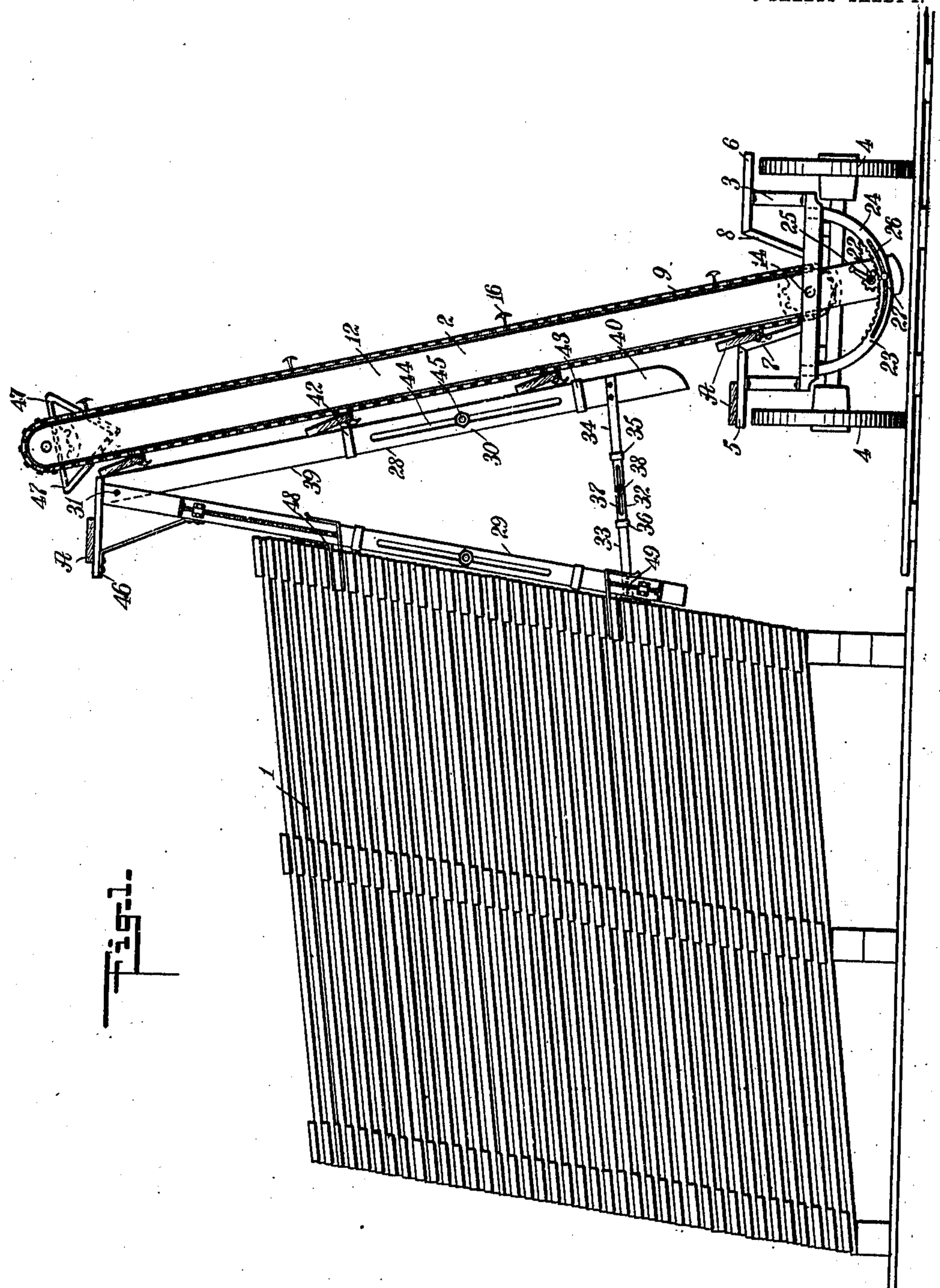


Fig. 1.

WITNESSES:

F. G. Hackenberg

R. Whiting.

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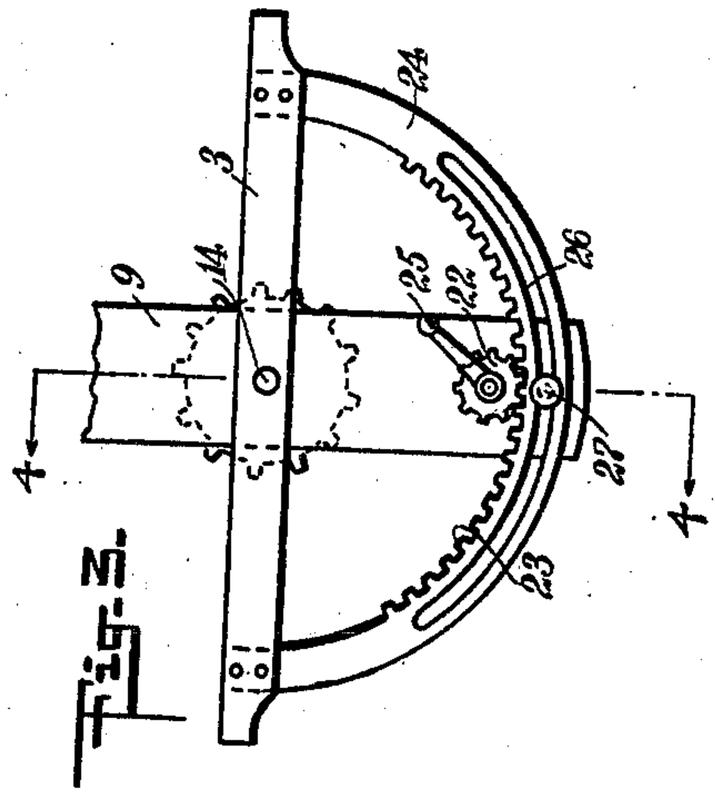


Fig. 3.

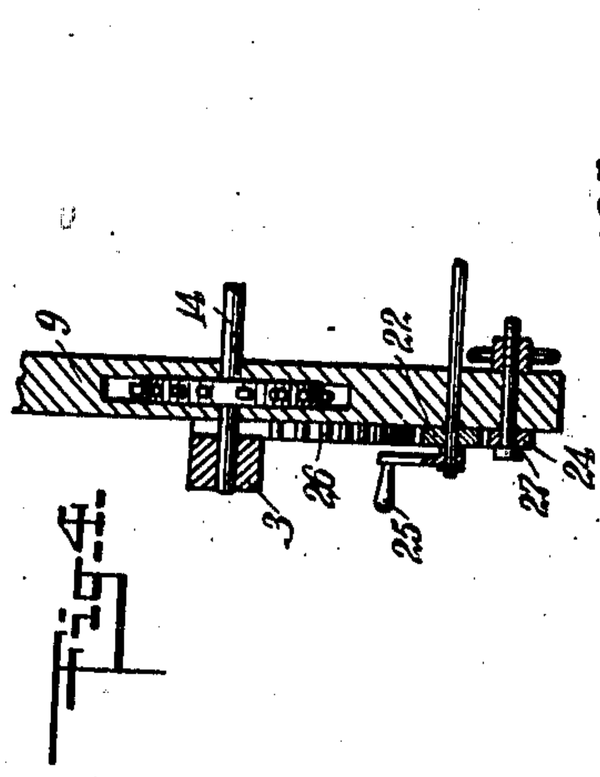


Fig. 4.

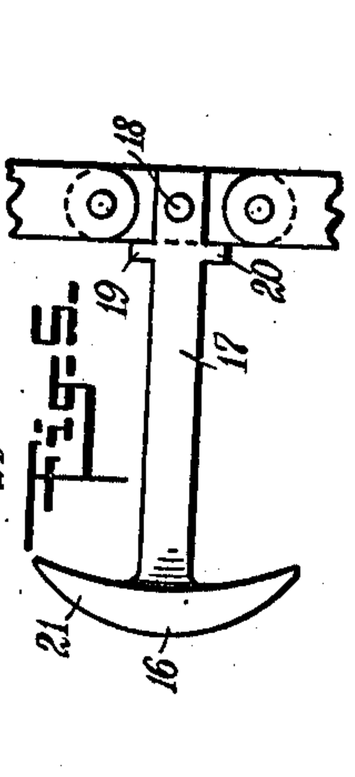


Fig. 5.

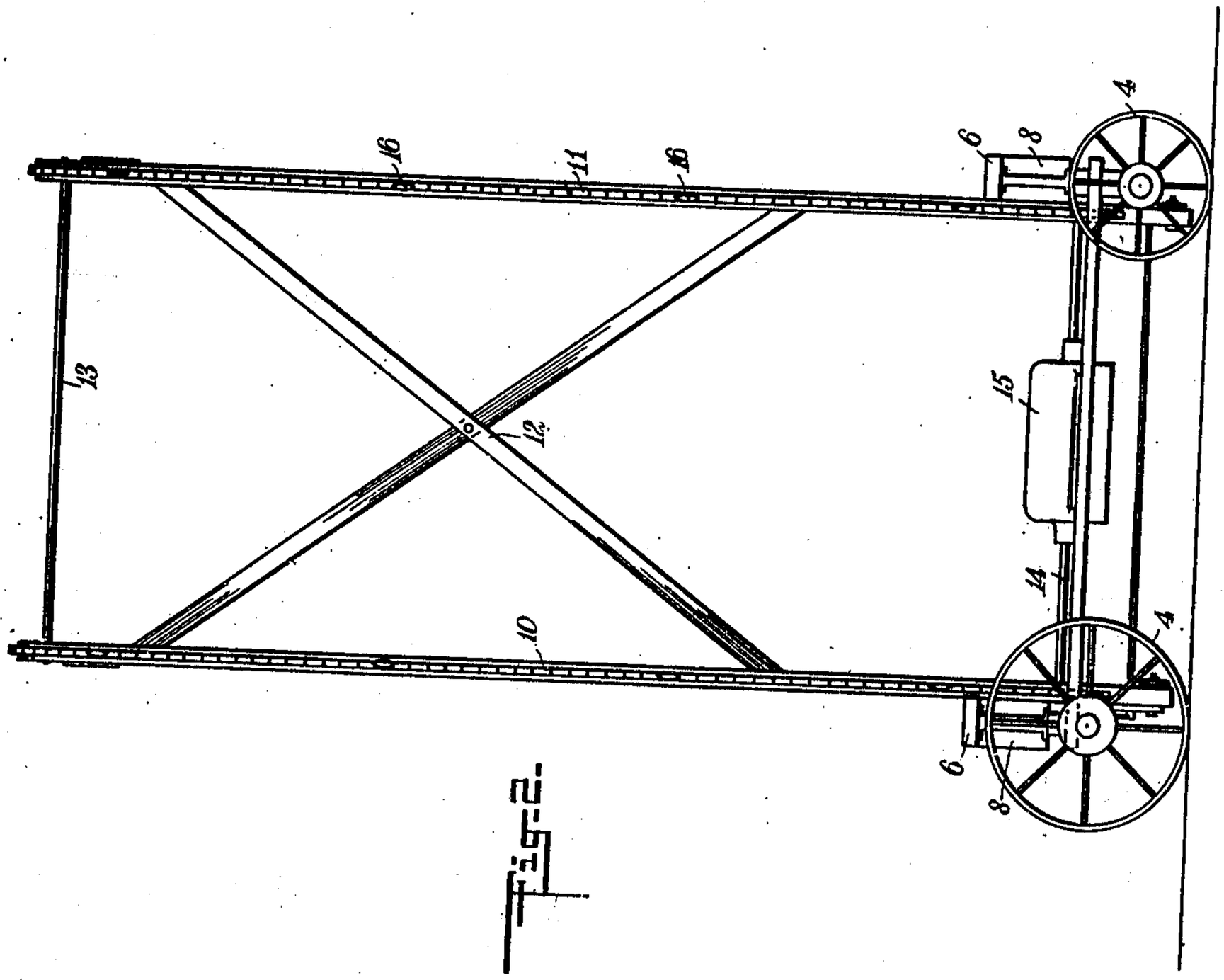


Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 8.

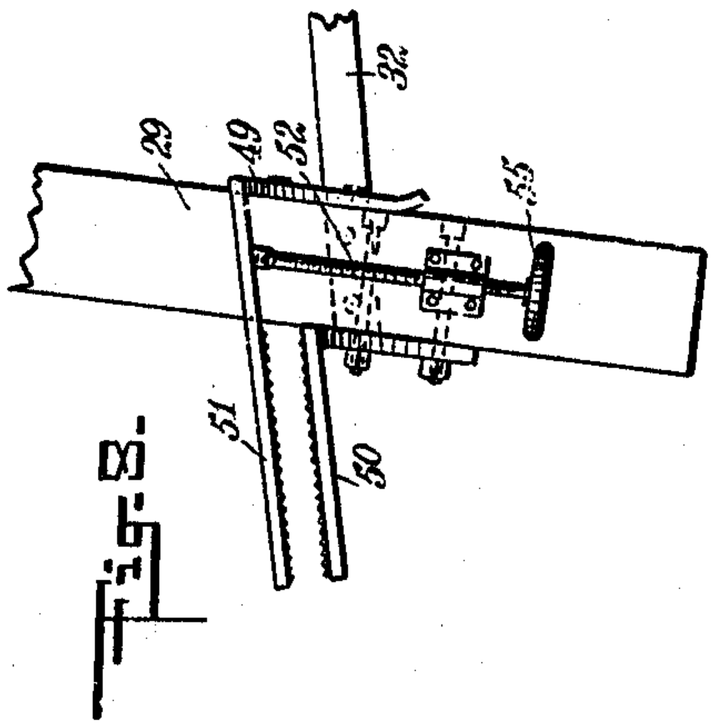



Fig. 10.

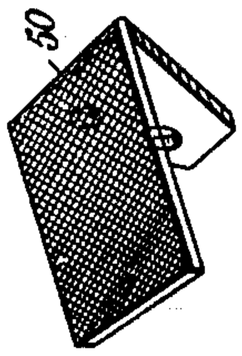



Fig. 9.

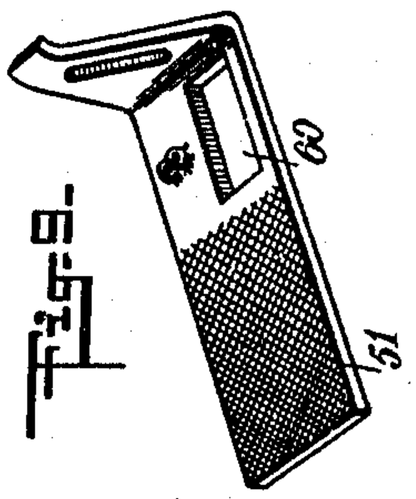



Fig. 7.

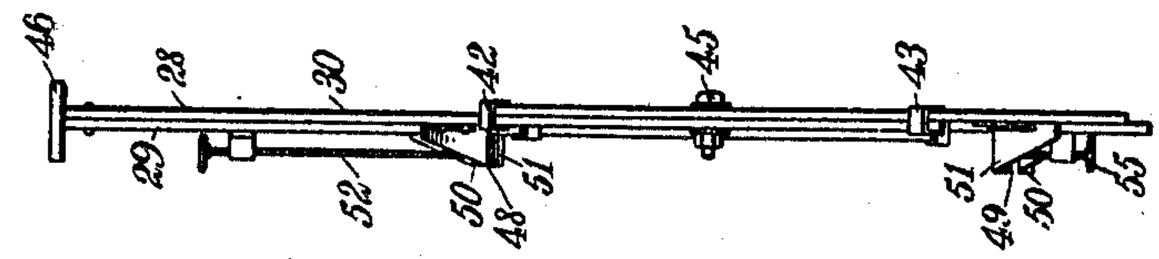
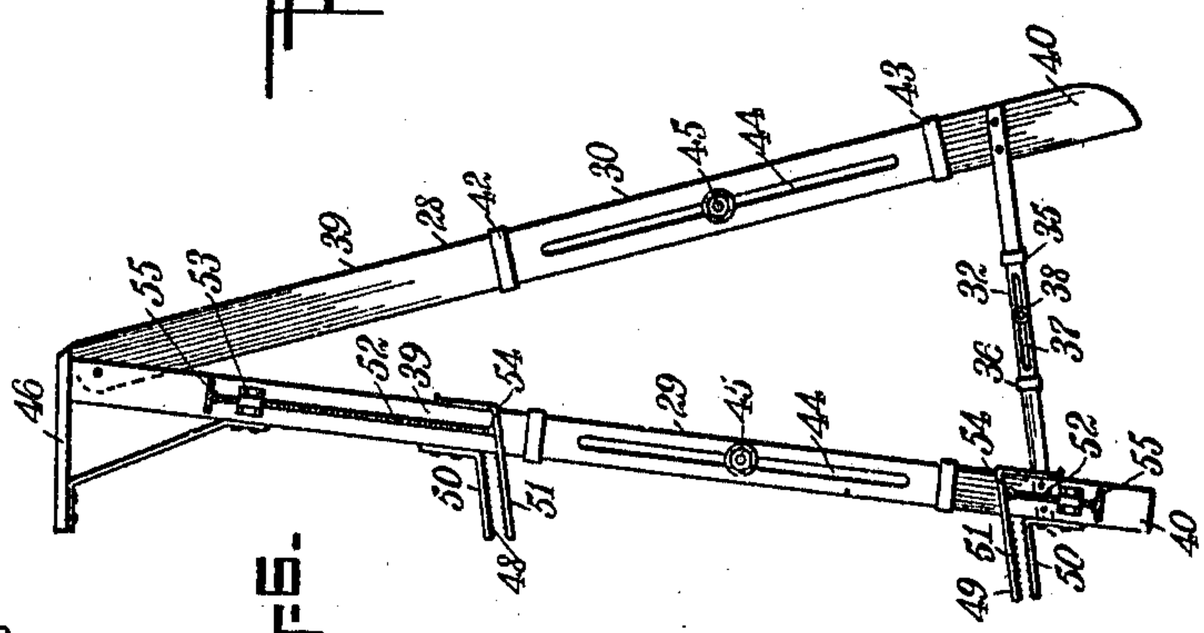



Fig. 6.




WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES ALBERT DENISON, OF LOCKPORT, LOUISIANA.

## LUMBER-STACKER.

978,565. Specification of Letters Patent. **Patented Dec. 13, 1910.**

Application filed March 5, 1910. Serial No. 547,580.

*To all whom it may concern:*

Be it known that I, CHARLES ALBERT DENISON, a citizen of the United States, and a resident of Lockport, in the parish of Lafourche and State of Louisiana, have invented a new and useful Lumber-Stacker, of which the following is a full, clear, and exact description.

This invention relates to a new and improved device for piling lumber in stacks, and is particularly adapted to be used when the stack has reached a height of six or seven feet when it is inconvenient to continue the piling by manual labor.

The object of this invention is to provide a device which will be simple in construction, inexpensive to manufacture, strong, durable, and easily manipulated.

A further object of this invention is to provide a lumber stacker which may be adjusted so as to pile on either side, and which is adjustable so that it may pile to various heights.

These and further objects, together with the construction and combination of parts will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side view in elevation; Fig. 2 is a front view in elevation; Fig. 3 is an enlarged detail view in elevation of the adjusting mechanism; Fig. 4 is a vertical section on the line 4—4 of Fig. 3; Fig. 5 is a fragmentary enlarged detail of one of the conveying hooks; Fig. 6 is a detached view in elevation of one of the skids in its extended position; Fig. 7 is a front view in elevation of one of the skids; Fig. 8 is an enlarged fragmentary view in elevation of the lower clamp on the skid; and Figs. 9 and 10 are detail perspective views of the clamp illustrated in Fig. 8.

Referring more particularly to the special features as illustrated in the drawings, 1 indicates the stack of lumber which is being piled by the stacker 2. The stacker 2 is provided with a carriage 3 which is preferably supported on wheels 4, so it may be carried about from place to place. The carriage 3 is provided with platforms 5 and 6 on each side thereof, which are adapted to aid in the loading of the lumber on to the stack. Extending downwardly at an angle to the platforms 5 and 6 there are provided aprons 7 and 8, which are adapted to guide the lumber into position on a conveyer 9. This conveyer 9 preferably consists of a pair of endless chains 10 and 11, spaced apart from each other and passing over sprockets rotatably supported at the top and bottom of the conveyer frame 12. The upper sprockets are connected by a shaft 13 so as to move in unison, and the lower sprockets are connected by a shaft 14 which is driven by a suitable reversible motor indicated at 15.

In order that the conveyer chains 10 and 11 may elevate the planks indicated at A, when they have been inserted between the conveyer 9 and either one of the aprons 7 or 8, they are provided with hooks 16 located at intervals and preferably arranged in pairs extending in horizontal alinement on the two chains. The particular form of these hooks 16 is more clearly illustrated in Fig. 5. It will be seen by referring to this view that each of these hooks consists of a shank 17 which is secured in any suitable manner between the links of the chain, as by means of a pin 18. In order that the hooks may not wabble up and down there are provided flanges 19 and 20 extending from opposite sides of the shank 17 and abutting against the body of the links of the chain. At the outer end of the shank 7 there is provided a crescent shaped barb 21 which extends above and below the shank 17 so as to engage a plank and secure it between the barb and the chain no matter in which direction the chain is moving. It will thus be seen that if the conveyer is rotated with the hooks passing upwardly on the right hand side, these hooks can just as readily grip a plank as when they are moving in the opposite direction.

In order that the conveyer 9 may be swung to different angles with respect to the carriage 3, so that it can pile a stack on either side of the carriage 3 and at different distances from the carriage 3, the shaft 14 which supports the conveyer 9 on the carriage 3 is pivoted to the carriage 3 in any suitable manner. For the purpose of swinging the conveyer 9 with respect to the carriage 3 there is provided a pinion 22, which is rotatably supported on the frame 12 and is adapted to engage a rack 23 on an arcuate member 24, which is secured in any well-

known manner to the carriage 3. The pinion 22 is provided with a suitable operating means such as the hand crank 25, whereby it may be rotated and thus swing the conveyer 9 back and forth with respect to the carriage 3. In order that the coöperation of the pinion 22 with the rack 23 may be positive and no unlimited motion of the conveyer allowed, the arcuate member 24 is provided with a circular slot 26 which is engaged by a pin 27 on the frame 12. It will thus be seen that the conveyer can be swung to either side of a vertical line and to various angles with the carriage 3, so that it can be used to pile lumber on either side of the carriage, and at varying distances from the carriage.

When the conveyer 9 is tilted over to a considerable angle with respect to the vertical line, the planks A will tend to fall off of the hooks 16. In order to retain the planks in position on the hooks 16 there is provided one or more skids 28 which are adapted to coöperate with the chains 10 and 11 to keep the planks on the hooks 16. These skids are adapted to be secured to the stack 1 in a manner to be hereinafter described, and if a plurality are used are spaced apart from each other a suitable distance. The skid 28 consists of a pair of legs 29 and 30 pivotally connected to each other at the top as indicated at 31, so that they may be collapsed into a small space when in use and may be extended out so as to vary the angle between them, and thus allow for variations in the form of the stack 1, and variations in the angle at which the conveyer 9 is stacking. When in their extended position the legs 29 and 30 are held apart by means of a brace 32, which consists of a pair of members 33 and 34 having collars 35 and 36 slidingly mounted on the opposite member. In order to lock the members in any adjusted position, one of them is provided with a slot 37 which is engaged by a bolt 38 on the other member which may be tightened up to secure the members 33 and 34 in relative positions of adjustment. The legs 29 and 30, similar to the brace 32, are each composed of two members 39 and 40 which are provided with collars 41 and 42 slidingly mounted on the opposite member so that the members can be adjusted relative to each other to allow for any height of stack. One of these members in each leg is also provided with a slot 44 which is engaged by a bolt 45 on the other member, whereby the members may be locked in any relative adjusted position by tightening the bolt 45. At the top of the skid 28 a suitably braced platform 46 is provided, which is adapted to receive the planks from the conveyer 9 when they reach the top of the skid. Ordinarily when the conveyer 9 is tilted to any considerable angle, the planks A will be automatically deposited on the platform 46, but when the conveyer is extended up vertically it is necessary to provide on each side thereof a cam bracket 47, which positively shunts the planks off on to the platform 46.

While the skid or skids 28 may be supported on the carriage 3, it is preferable to support them on the stack 1, and this is done in the following manner: On the leg 29 there are provided two clamps 48 and 49, spaced apart from each other and located adjacent the top and bottom of the skid. The particular form of these clamps is more clearly illustrated in Figs. 6 to 10. These clamps are similar and consist of a stationary jaw 50 and a movable jaw 51. The movable jaw 51 is provided with an opening 60, whereby it is slidingly mounted on the leg and is further connected thereto by means of a pin and slot connection. The movable jaw 51 is manipulated by a screw 52, which engages in a screw nut 53 secured to the leg 29. The screw 52 is pivotally secured at 54 to the movable jaw 51, and is provided at its opposite end with a suitable hand wheel 55 whereby it may be operated. The clamp 48 differs from the clamp 49 in that its hand wheel 55 is extended upwardly where it may be readily operated by the man on the top of the stack, while the hand wheel on the clamp 49 is extended downwardly where it may be readily operated by a man on the ground.

The operation of the device will be readily understood when taken in connection with the above description.

When the stack 1 has been piled to such a height as can be conveniently done, by men on the ground, one or more of the skids 28 are secured to the stack by inserting the jaws in the clamps 48 and 49 on each side of a pair of transversely extending planks which are spaced apart from each other the required distance. The serrated surfaces of the jaws are caused to grip these planks firmly by means of the screws 52. The leg 30 can be adjusted relatively to the leg 29 according to the angle at which the conveyer 9 is extended with respect to a vertical line, and according to the position of the stack. The legs are locked in this adjusted position by means of the bolt 38. The motor 15 is then started and the conveyer caused to lift the planks which are inserted between one of the aprons 7 and 8 and the chain. The skid 28 holds the planks on the conveyer hook until they reach the top where they are positively forced off by the cam bracket 47 on to the platform 46, where they can be removed by workmen on the pile and deposited in their proper position on the stack. As the height of the stack increases, the length of the skid can be adjusted by moving the members 39 and 40 relative to each

other and locking them in their new position. If it is desired to stack on the opposite side of the carriage, the conveyer 9 is swung over the means of the hand crank 25 so that it will incline in the opposite direction, and the motor is then reversed driving the conveyer in the opposite sense so that it will raise the planks on the opposite side of the device. The skid 28 can be readily changed to the stack on the opposite side of the carriage so that it will retain the planks on the hooks 16.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in the various changes, modifications and alterations which I may make within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a lumber stacker the combination with a support, of a conveyer adjustably connected with said support, and a skid disposed apart from and coöperating with said conveyer to retain the lumber on said conveyer.

2. In a lumber stacker the combination with a support, of a conveyer on said support, means on said conveyer for engaging planks, and means on said conveyer for positively disengaging said planks.

3. In a lumber stacker the combination with a frame, of a conveyer on said frame, said conveyer having a plurality of hooks thereon adapted to engage planks, and a cam bracket adapted to positively remove said planks from said hooks.

4. In a lumber stacker the combination with a frame, of a conveyer adjustable to either side of said frame; means on said conveyer for engaging planks, and means on each side of said conveyer for positively disengaging said planks from said means.

5. In a lumber stacker the combination with a support, of a conveyer on said support, said conveyer having a plurality of hooks thereon extending in opposite vertical directions adapted to support planks on said conveyer, means for operating said conveyer in either direction, and means for positively disengaging said planks from said hooks in whichever direction said conveyer is pivoted.

6. In a lumber stacker the combination with a support, of a conveyer on said support, said conveyer comprising a frame, a plurality of chains supported on said frame and adapted to operate in unison, and a plurality of hooks on said chains, said hooks being barbed in opposite directions so as to retain a plank on either side thereof.

7. In a lumber stacker the combination with a support, of a conveyer on said support, said conveyer comprising a frame, a plurality of chains mounted on said frame and adapted to operate in either direction in unison, a plurality of oppositely barbed hooks secured in pairs in horizontal alinement on said chains and adapted to engage a plank on either side, and cam brackets on each side of said conveyer adapted to positively disengage said planks from said hooks.

8. In a lumber stacker the combination with a support, of a conveyer adjustably connected to said support, means for adjusting said conveyer with respect to said support, means on said conveyer for engaging planks, and a skid adapted to be secured to a stack for retaining said planks on said second-mentioned means.

9. In a lumber stacker the combination with a support, of a conveyer pivotally connected to said support, a pinion on said conveyer, a rack on said support adapted to be engaged by said pinion, and means for rotating said pinion to adjust said conveyer to either side of said support.

10. In a lumber stacker the combination with a frame, of a platform on each side of said frame, an apron connected to each of said platforms, a conveyer adjustably supported on said frame between said platforms and said apron, a circular rack on said support, a pinion on said conveyer adapted to engage said rack, and means for rotating said pinion to adjust said conveyer.

11. In a lumber stacker the combination with a support, of a conveyer on said support adapted to elevate planks, a skid adapted to coöperate with said conveyer to retain said planks on said conveyer, said skids comprising a pair of legs adjustably connected together, and means for locking said legs in any adjusted position.

12. In a lumber stacker the combination with a support, of a conveyer on said support adapted to elevate planks, a skid adapted to coöperate with said conveyer to retain the planks on said conveyer, said skid comprising a plurality of legs adjustably connected together, said legs being adjustable as to length, and means for locking said legs in any adjusted position.

13. In a lumber stacker the combination with a frame, of a conveyer on said frame adapted to elevate planks, a skid adapted to coöperate with said conveyer to retain the planks on said conveyer, said skid comprising a plurality of relatively adjustable legs, means for locking said legs in their adjusted position, and means adapted to removably secure said skid to a lumber stack.

14. In a lumber stacker the combination with a support, of a conveyer on said support adapted to elevate planks, a skid adapted to coöperate with said conveyer to retain said planks on said conveyer, said skid comprising a plurality of members adjustable as

to length, and clamps on some of said members adapted to secure said skid to a lumber stack.

15. In a lumber stacker the combination with a support, of a conveyer on said support adapted to elevate planks, a skid adapted to coöperate with said conveyer to retain said planks on said conveyer, said skid comprising a plurality of relatively adjustable legs, said legs being adjustable as to length, a platform supported on said legs, means for locking said legs in any adjusted position, a plurality of clamps on one of said legs adapted to engage the transverse member of a stack to support said skid on said stack, each of said clamps comprising a stationary jaw, a slidingly movable jaw, and a screw for manipulating said movable jaw toward and from said stationary jaw.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES ALBERT DENISON.

Witnesses:

SCUDDAY C. FROST,

CHARLES A. POGLENGHI.