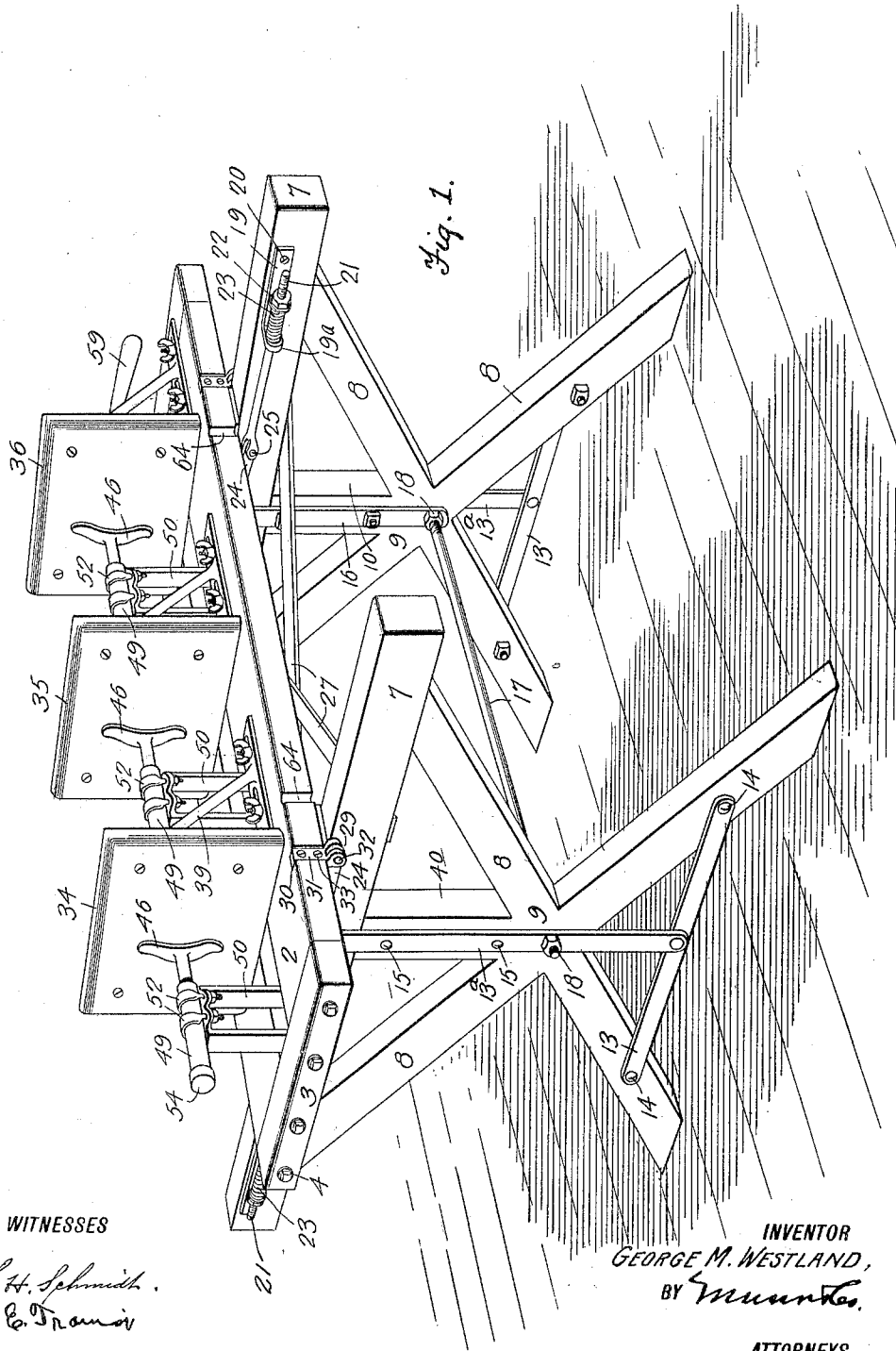


G. M. WESTLAND.
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APPLICATION FILED FEB. 1, 1912.

1,081,071.

Patented Dec. 9, 1913.

3 SHEETS—SHEET 1.

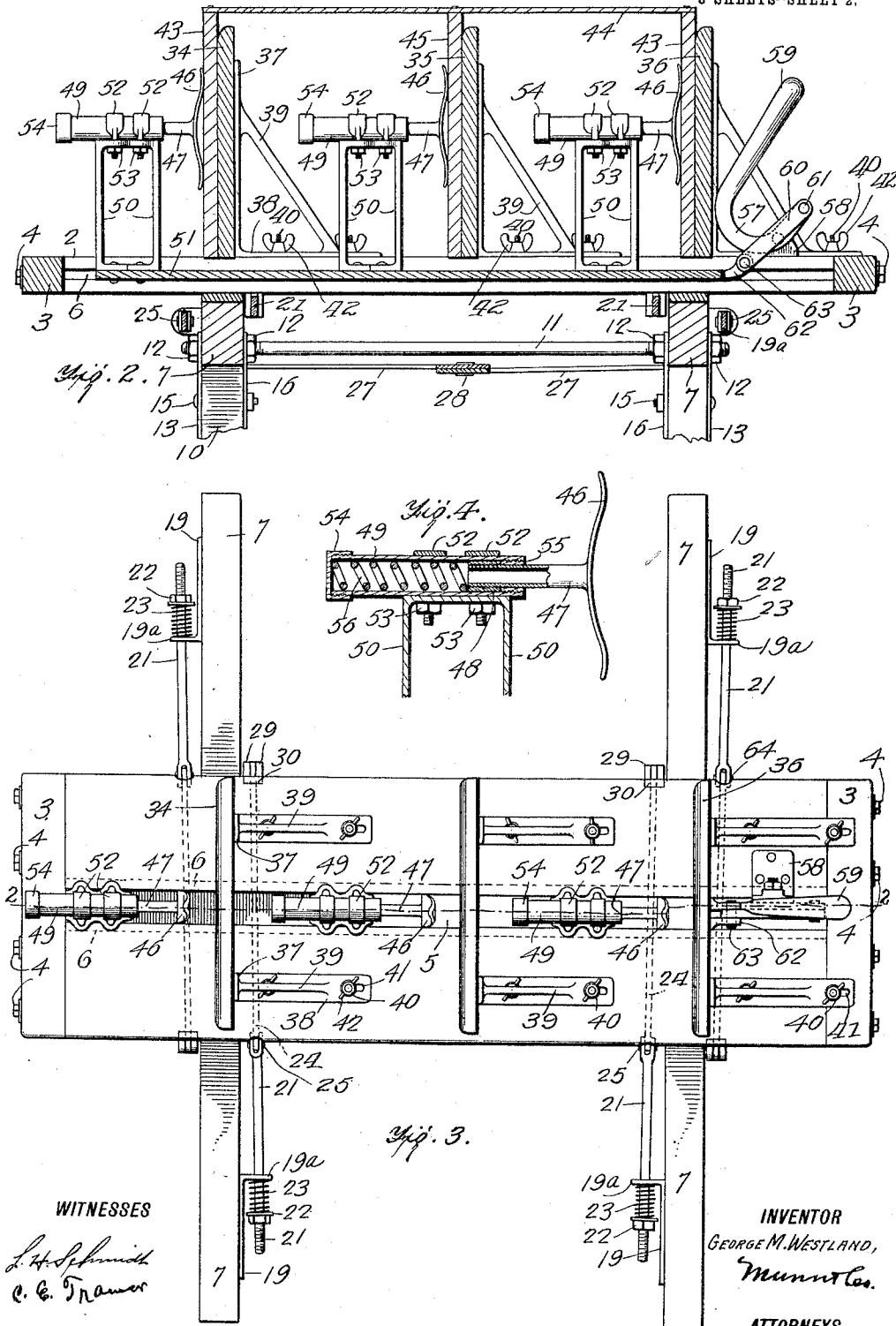


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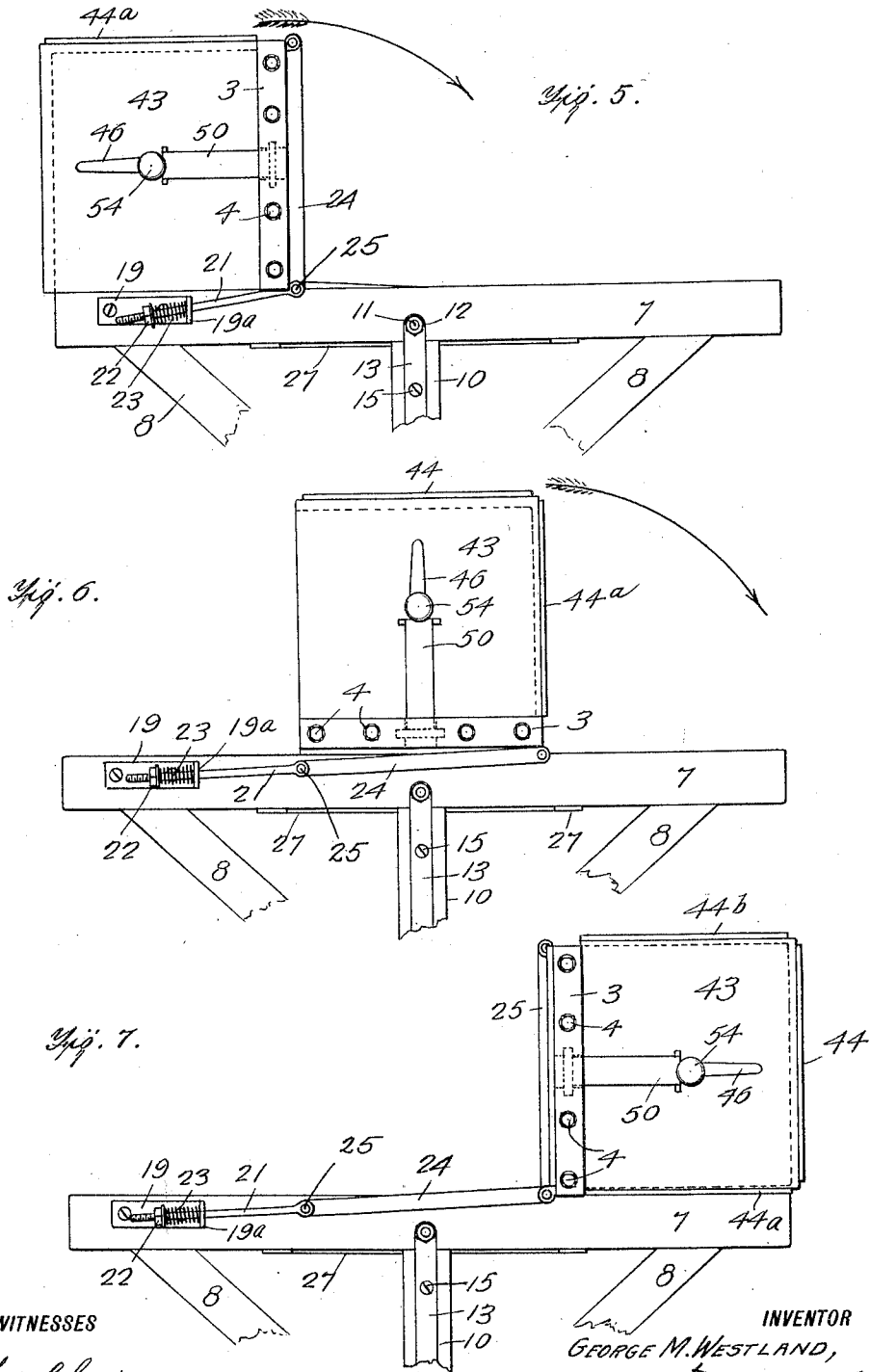


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3 SHEETS—SHEET 3.



WITNESSES

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BOX-MAKING MACHINE.

1,081,071.

Specification of Letters Patent.

Patented Dec. 9, 1913.

Application filed February 1, 1912. Serial No. 674,700.

To all whom it may concern:

Be it known that I, GEORGE MOODY WESTLAND, a citizen of the United States, and a resident of Wenatchee, in the county of Chelan, State of Washington, have invented a new and useful Improvement in Box-Making Machines, of which the following is a specification.

My invention is an improvement in box making machines, and has for its object the provision of a suitable holder for the work provided with means for indicating the proper placing of the parts of the box and for holding such parts in place and so arranged that while the holder is firmly held in place on the support yet it may be changed as to position, to bring the work into the successive various positions necessary for the different operations.

In the drawings: Figure 1 is a perspective view of the improvement; Fig. 2 is a section on the line 2—2 of Fig. 3; Fig. 3 is a plan view; Fig. 4 is an enlarged longitudinal section of one of the supports; Figs. 5, 6 and 7 are end views of the work holder in the different positions, Fig. 6 showing the first position, Fig. 5 the second position, and Fig. 7 the third position.

In the present embodiment of the invention, a table or base is provided, composed of laterally spaced plates 1 and 2, connected at their ends by crossbars 3, secured to the plates by bolts 4. A table is thus provided having a longitudinal slot or opening 5 extending from near one end of the table to near the other. Each plate 1 and 2 is longitudinally grooved on its inner edge to form a guideway 6. The table is supported in any suitable manner, in the present instance by crossbars 7, each of which is arranged near one end of the table and extends for a considerable distance on each side thereof. Each cross bar is connected to the upper ends of a pair of legs 8, the legs being crossed at 9, and a strut or brace 10 extends from the cross upwardly to engage the center of the adjacent bar 7.

The crossbars 7 are connected at their centers by a rod 11 threaded at both ends, each end being passed through an opening in the crossbar and being engaged by nuts 12, one on each side of the crossbar. A strap 13 con-

nects each pair of legs 8 below the cross, and a strap 13^a is connected to the center of each strap 13 and extends upwardly on the outer face of strut 10 to the rod 11. Each strap 13 is connected to the legs by screw bolts 14, or the like, and strap 13^a is secured to the strut 10 by screw bolts 15. A strap 16 is arranged on the inner face of each strut, and the bolts 15 pass through both straps 13 and 16. A rod 17 threaded at both ends connects the pairs of legs at the cross, each end of the rod passing through the legs and being engaged by nuts 18, one on each side of the cross. The rod 17 passes through both straps 13 and 16 at each end. Straps 27 are arranged in crossed relation between the bars 7 beneath the table, the ends of each strap being secured to the under faces of the bars, and the straps are connected at the cross by a bolt or rivet 28.

An angle plate 19—19^a is secured to each crossbar 7, one on each side of the table, by means of screws 20 or the like passing through the portion 19 of the plate and the crossbar. The portion 19^a of each angle plate extends outwardly and is perforated to receive a rod 21. The rod is threaded and is engaged by a nut 22 on the outer side of the portion 19^a, and a spring 23 encircles each rod between the plate and the nut. The inner end of each rod 21 is forked, and one end of a link 24 is received between the arms of the fork and is pivoted thereto by a bolt 25. The other end of each link is received between a pair of laterally spaced lugs 29 on a plate 30 secured in a recess or notch 31 in the edge of the table remote from the rod 21 to which the link is connected. A pivot pin 32 pivotally connects each link to the lugs, and the plates 30 are secured to the table by screws 33. It will be noted from an inspection of Fig. 3 that the rods 21 are arranged on the inner sides of bars 7 at one side of the table, and on the outer sides of the said bars at the other side of the table.

A plurality of guide or supporting plates 34, 35 and 36 are arranged in vertical position transversely of the table, and each plate is supported by a pair of triangular brackets to be described. Each of the said brackets consists of bars or portions 37 and 38 arranged at a right angle to each other, and

braced by an inclined bar 39. The bar 37 of each bracket bears against one face of the plate, and the bar 38 rests on the upper face of the table and is adjustably connected thereto by means of threaded stems 40 on the table passing through longitudinal slots 41 in the bar 38 and engaged by wing nuts 42.

The machine is especially adapted for making boxes for fruit, as, for instance, oranges, lemons, and the like, the said boxes consisting of end plates 43 and connecting longitudinal plates or boards 44. The boxes may, if desired, be provided with a central partition plate 45, dividing the box into two compartments. The plates or boards 43 and 45, if desired, are placed as shown in Fig. 2, a board 43 against each plate 34 and 36, and the board 45, when used, against plate 35. The boards are held in position by a cross head 46 on one end of a hollow stem 47 (Fig. 4). The arms forming the cross head are resilient and are curved toward the adjacent guide plate and then away therefrom in such manner that each cross head engages the board at two points. Each of the stems 47 is externally threaded at the end remote from the cross head (Fig. 4) and a sleeve 48 is threaded onto the said end.

A cylinder 49 is supported adjacent to each of the guide plates by means of substantially rectangular frames 50, each of which is secured at its lower end to a slide 51 moving in the grooves or guideways 6 of the table. The cylinders 49 are secured to the upper ends of the frames by clips 52, each clip engaging astride of the cylinder, the arms of the clip passing through openings in the frame and being engaged by nuts 53. Each of the stems 47 is slidable in one end of the adjacent cylinder, and a cap 54 closes the other end of the cylinder. A ring 55 is threaded into each cylinder at the end remote from the cap and acts as a stop to limit the outward movement of the stem. A spring 56 is arranged in each cylinder between the cap and the end of the stem and acts normally to press the cross head toward the adjacent guide plate.

The slide 51 is operated by means of a substantially U-shaped lever 57 pivoted to a bracket plate 58 secured to the table near one end of the slot. The lever is connected to the plate at the junction of one of the arms of the lever with the body, and a link 60 connects the said arm with the slide. One end of the link is pivoted to the lever at 61 and the other end is received between a pair of lugs 62 on the slide and is pivoted thereto by a pin 63. The other arm of the lever has a handle 59, and it will be evident that when the lever is swung toward the right of Fig. 2 the slide will be moved to the left of the said figure, carrying the cross

heads 46 therewith. When in the position of Fig. 2 the cross heads press the boards 43 and 45 against the guide plates.

In operation, the boards 43 are placed in position after the slide has been moved to the left of Fig. 2, and also the board 45, if a box having two compartments is to be made. The lever 57 is then operated to move the slide to the right of Fig. 2, and the cross heads press the boards firmly yet yieldingly against the guide plates. The boards 44 may now be placed and secured to boards 43 and 45. After the said boards 44 are secured in place, the table may be turned to either side to bring either side edges of boards 43 and 45 uppermost. The rods 21, links 25 and springs 23 permit this movement, as shown in Figs. 5, 6 and 7. The edges of the table are notched, as shown at 64, Figs. 1 and 3, to receive the rods 21. In Fig. 5 the table is turned to the left and is in vertical position. The bars 7 are so arranged that when in this position the boards 43 are directly above the said bars. After the table has been turned to the left the boards 44^a at the one side are secured in place. The table is then turned in the direction of the arrows, Figs. 5 and 6, to the position of Fig. 7, and the boards 44^b are secured to the other side edges of plates 43 and 45. Obviously, the boards 44^a could be placed first, followed by boards 44 and 44^b, so that the movement of the table would follow the steps of Figs. 5, 6 and 7. This order would be preferable, since the number of operations would be reduced. The table is held firmly on the support, yet in such manner that it may be held vertical with either edge upward.

I claim:—

1. In combination, a support, a table on the support, a plurality of guides arranged transversely of the table, a clamping means for coöperating with each guide, means for simultaneously moving the clamping means toward and from the guides, and means for connecting the table to the support to permit the table to rest in horizontal position on the support, or in vertical position with either edge upward, said means comprising a pair of links pivoted to each side of the table, said links being of a length equal to the width of the table, and the members of each pair extending transversely of the table beneath the same, a rod pivoted to the free end of each link, a slidable connection between each rod and the support, and a spring interposed in the connection.

2. In combination, a support, a table on the support, a plurality of guides arranged transversely of the table, a clamping means for coöperating with each guide, means for simultaneously moving the clamping means toward and from the guides, and means for

connecting the table to the support to permit the table to rest in horizontal position on the support or in vertical position with either edge upward, said means comprising a pair of links connected to each edge of the table, each of the said links lying transversely of the table beneath the same and be-

ing of a length equal to the width of the table, and a yielding connection between the free end of each link and the support.

GEORGE MOODY WESTLAND.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."