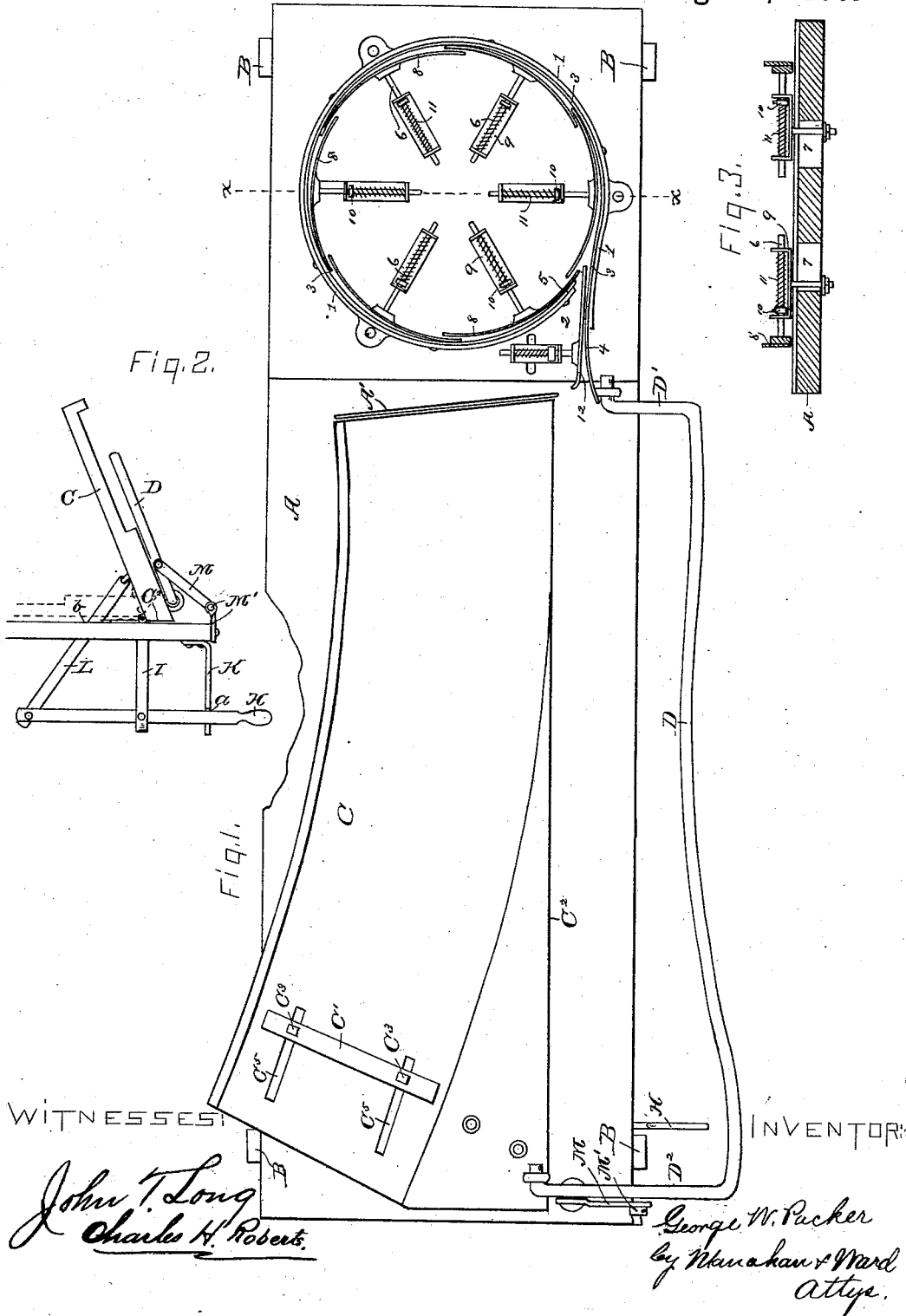


(No Model.)

G. W. PACKER.
BARREL MAKING MACHINE.

No. 347,370.

Patented Aug. 17, 1886.



UNITED STATES PATENT OFFICE.

GEORGE W. PACKER, OF ROCK FALLS, ILLINOIS.

BARREL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 347,370, dated August 17, 1886.

Application filed November 30, 1885. Serial No. 184,350. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PACKER, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Machines for Setting Up Staves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has reference to a machine for setting up the staves in barrels, tubs, firkins, and like vessels made of staves.

Hitherto the staves have been set up by hand, one or two at a time, and the operation required close application and great dexterity, or the staves would fall out of place before they were bound together by the truss-hoops. With the most skillful and careful operators the process was comparatively slow, while with my machine the staves are not only put more quickly in position to receive the truss-hoops, but the degree of skill requisite to conduct the operation is so small that boys or unskilled labor can be profitably employed at the work.

My machine consists of two departments—the first for gaging and erecting the staves in line, the second for holding the staves in a circle for the reception of the truss-hoops.

The first part consists of a hinged board or leaf and bar adapted to approach toward or recede from each other.

The second part consists of two concentric bands, the inner one in sections and adjustable radially, placed horizontally on edge.

In the drawings, Figure 1 is a plan, with board and bar open, of a machine embodying my invention. Fig. 2 is an end view of the gaging and erecting mechanism in upright position with the legs of the table removed. Fig. 3 is a section through *xx* of Fig. 1.

A is a long table suitably supported on the end legs, B B.

C is the gage-board, hinged transversely at its inner edge to the top of the table A.

D is the bar, the main portion of which is placed parallel with the board C. The ends D' and D² of the bar D are bent nearly at right angles with its main portion, and the inner extremities of such ends also hinged. The inner end, D', of the bar D is hinged to the top of the table A, and the outer end, D², thereof to the upper face of the board C, and near the inner edge of the latter. A lever, H, is suitably fulcrumed to a post, J, fastened to and projected downward from the under side of the table A, and adapted to be sprung into and held by a recess, *a*, in the pendant K, projected downward from the inner edge of the table A, when such lever is at the limit of its downward movement. A pitman, L, is pivotally attached at its lower end to the inner end of the lever H, and passed diagonally upward through a slot, *b*, in the table A, and its upper end hinged to the back of the board C. It is obvious that the downward movement of the front end of the lever H will force the board C from a flat to an erect position, resting on its inner edge, C². The board C is not permitted on turning edgewise to quite reach a vertical position, so that the staves will yet rest somewhat against the upper face of such board.

It is important that the folding of the bar D and board C shall be accomplished as quickly as possible, so as to hold the staves before the latter shall have time to be thrown out by the upward movement of such board. I accomplish this by hinging the end D² of the bar D to the upper surface of the board C, and giving such bar a fulcrum on the arm M, pivotally attached to the vertically-adjustable post M', attached to the table A under such bar D, and pivotally connected at its upper end to the latter. It will be observed that the space between the hinged end of the end D² and the point where such end is supported on the arm M is very short, so that when the board C is thrown up by the action of the pitman L, as aforesaid, (the movement of that part of such board where the arm D² is hinged being downward,) there is coincidently imparted to the bar D a quick upward movement, and such bar meets such board at the upper end of their respective arcs of movement.

A' is a gage-board attached transversely to

the table A at the inner end of the board C, and extending slightly above the latter when flat, against which the end staves rest when the staves are being placed on the board C.

5 Near the outer end of such board a second gage-board, C', is adjustably attached to the upper face of the board C by means of longitudinal slots C⁵ in the board C, and bolts C³, passed through such slots and the board C.

10 The space between the gage-boards A' and C' can thus be adjusted to equal the circumference of the cask desired to be set up. The board A' is preferably attached to the table A so as not to obstruct the passage of the

15 staves into the holding mechanism, as hereinafter described.

It is obvious that the selection of the requisite number of staves and those of the proper width, where the same are laid down as selected, is accomplished much more readily than where the operator is compelled to hold in position those already selected.

On the table A, at the end of the board C, is suitably seated the annular flange 1, having an opening, 2, adjacent to such board. An open band, 3, is placed on edge within the flange 1, and attached thereto by means of transverse bolts or rivets, the heads of which are countersunk in the inner surface of the

30 band 3. The band 3 is bent into a circle, with its ends projected past each other, and its longer end, 4, projected outside of its inner end, 5, and toward the bar D, so as to cover the interval between such bar and the flange

35 1. The end 5 extends in a direction from the board C.

Within the flange 1 and band 3 are radial arms 6, seated suitably in radial slots 7, formed in the table A. On the outer ends of the arms

40 6 are attached segmental bands 8, resting edge-wise on the frame A, and with their convex side against the inner face of the band 3. The end of each segmental band 8 is placed on the outside of the adjacent end of the next succeeding band 8, in line of the movement of the

45 staves, hereinafter described, so as to occasion no impediment to the progress of such staves. The bands 8 are made segmental rather than continuous, so as to adapt themselves to the

50 irregularity of the thickness of the staves. The arms 6 are seated in brackets 9, which latter consist of a flat center laid on the table A, and fastened thereto by short vertical bolts, which pass through such brackets into the radial slots

55 7, and are thus adapted to be adjusted radially for different-sized casks. The ends of the brackets 9 are turned upward and the arms 6 passed through such ends. A collar, 10, is formed on each arm 6, just inside of the outer

60 end of each bracket, and a coiled spring, 11, is placed around the arm 6, between such collar 10 and the inner end of the bracket 9, and thus the segmental bands 8 are held with a yielding force against the staves. The collar

65 10 is adjustable on the arm 6 by means of a set-screw, or there may be a nut screwed on a

thread formed on the arm 6, and thus the pressure of such arm outward be regulated as required.

The operation of my invention is as follows:

70 The gage-board C is set at a distance from the gage A' equal to the circumference of the cask to be set up, and the board C being flat the staves, in sufficient number to fill up the above interval, are laid bottom upward, and parallel with each other, on the board C. The last

75 stave is required to be pushed in endwise, as the interval therefor is wedge-shaped. This is more readily done with the board C lying down. The last stave is put in next the gage

80 A'. By forcing the lever H downward the board C is thrown upward, and coincidentally the arm D is thrown against the face of such board, as shown in Fig. 2. The lever H engages the recess a, and the staves are thus held

85 bottom upward in a nearly-vertical position. The operator then places his hand on the outer edge of the outside stave, and pushes the latter *seriatim* behind the long end 4 of the band 3, and between the latter and the seg-

90 mental bands 8, until such staves form a circle. The cask is held bottom upward between the band 3 and segmental bands 8. The truss-hoops are then forced on, and the friction (caused by the compression of the truss-hoops)

95 between the edges of the staves being greater than between the bands 3 and 8, the cask is readily lifted from the machine in shape and condition for the process of finishing. The outer end of the end 4 of the band 3 is flared

100 slightly outward, to assist the ingress of the staves. A short plate, 12, is placed adjustably in the interval between the board C and short end 5 of the band 3, opposite to and a short distance from the long end 4 of the band 3, to assist

105 in holding the staves against such end 4 in their transit from the board C. The board C can be used in its upright position wholly, a pin or other removable gage on its inner end being substituted for the gage A'; but it would be

110 less convenient in placing the staves in position. The outside flange, 1, is removable, and can be replaced with like flanges of different sizes, to be adapted to various-sized casks. So the segmental bands 8 may be seated on a

115 rotating plate pivoted at its center on the table A. The bands 8 may consist of a concentrically-coiled spring pressing at its exterior against the inner surface of the band 3, and as a substitute for the radial adjustment of the

120 arms 6, through the medium of the slots 7, the arms 6 may be seated on a removable plate, and such plates made of different sizes to suit casks of variant diameters. The flange 1 and bands 3 and 8 all converge upward, to have

125 the effect of giving the cask its proper shape when inverted therein and hold the staves closely together. The bar D can be operated very satisfactorily by grasping it or the board C with the hand, thus dispensing with the lever H and pitman L.

130

What I claim as my invention, and desire to

secure by Letters Patent of the United States, is—

1. The combination of the table A, the board C, hinged thereto, the bar D, suitably hinged to fold against said board, means for bringing said board and bar together, so as to support the staves between them, the outer fixed band, 3, having the elongated end 4, the elastic band 8, seated within such band 3, and a suitable path for the transit of the staves from said board and bar to the annular interval between said bands 3 and 8, substantially as shown, and for the purpose described.

2. The board C, provided with gages to indicate and hold the number of staves requisite for a cask, the fixed band 3, provided with the elongated end 4, the band 8, radially adjustable and seated within the band 3, and the plate 12, whereby a channel of communication is formed between said board and said bands, substantially as shown, and for the purpose described.

3. The combination of the table A, the board C, hinged thereto, the bar D, suitably hinged to fold toward said board C, the arm M, lever H, post J, and pitman L, whereby the board C and bar D are caused to swing or fold to-

ward each other, substantially as shown, and for the purpose described.

4. The combination of the board C, suitably hinged on the table A, and provided with the longitudinal slots C^s, the gage-board C', bolts C^s, and the transverse gage-board A', and means for holding the staves on such board C when erected, substantially as shown, and for the purpose mentioned.

5. The combination of the band 3, suitably seated on the table A, and provided with its elongated end 4, projected past its end 5, and the band 8, seated adjustably within said band 3, radial arms 6, and spring 11, adapted to give band 8 radial elasticity, whereby a channel is formed for lateral admission of the staves within said bands, and such staves held erect therein with a yielding degree of compression, substantially as shown, and for the purpose mentioned.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. PACKER.

Witnesses:

NETTIE V. PACKER,

WALTER N. HASKELL.