No. 676,819. Patented June 18, 1901.

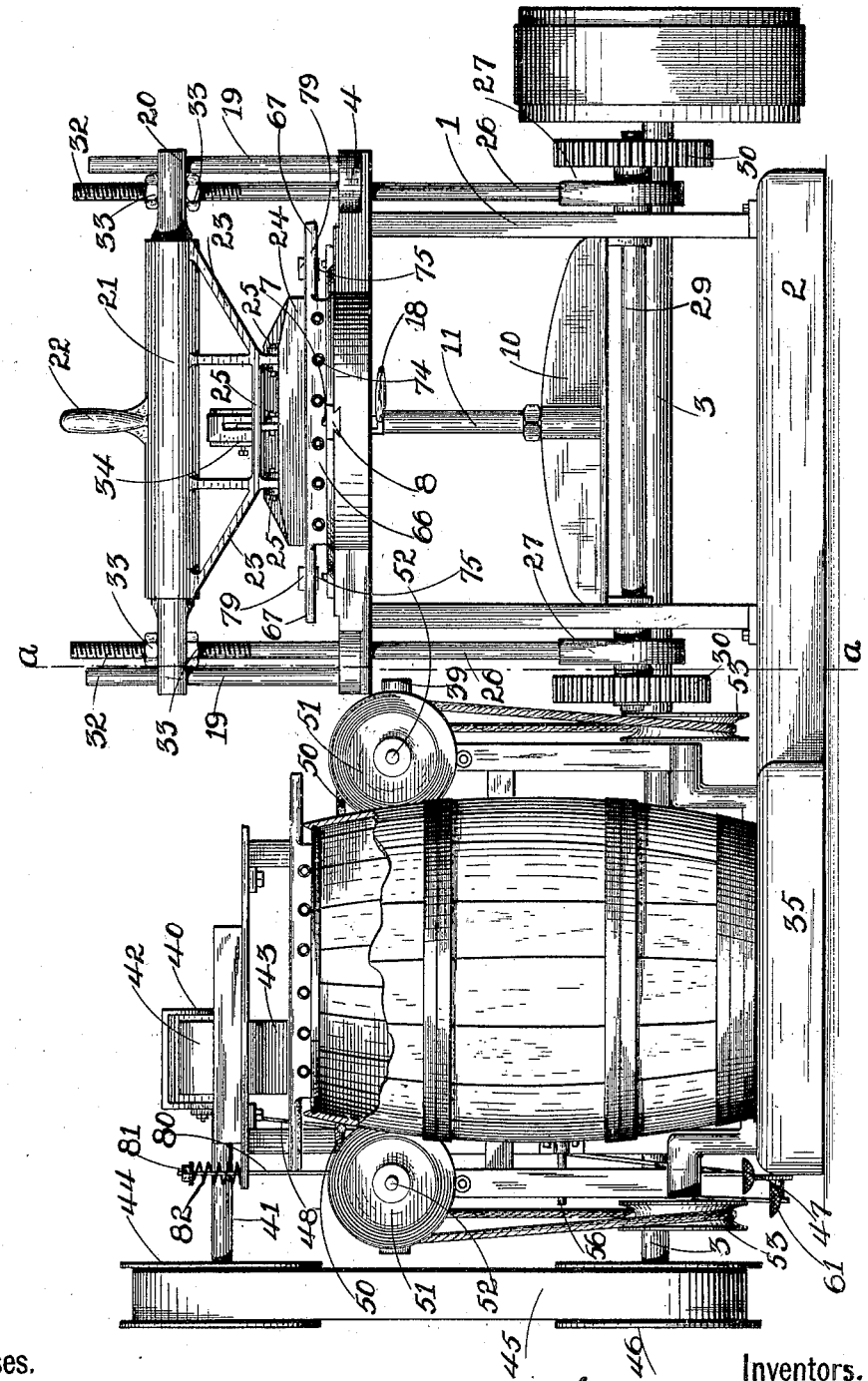
E. & B. HOLMES & E. F. BEUGLER.

MACHINE FOR HEADING-UP SLACK BARRELS.

(Application filed July 21, 1900.)

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.



Witnesses.

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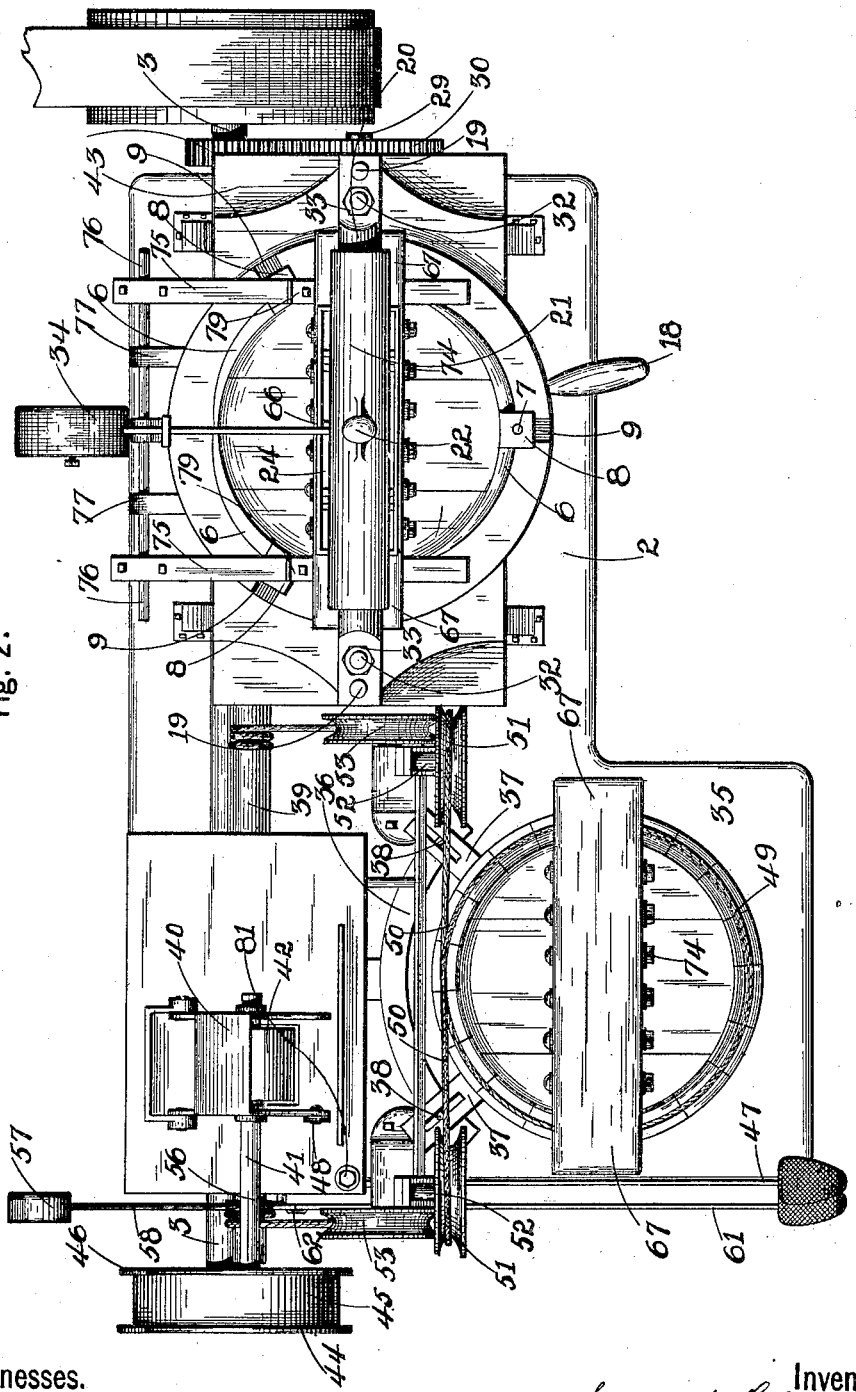
MACHINE FOR HEADING-UP SLACK BARRELS.

(No Model.) (Application filed July 21, 1900.) 4 Sheets—Sheet 2.

Fig. 2.



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No. 676,819. Patented June 18, 1901.

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MACHINE FOR HEADING-UP SLACK BARRELS.

(Application filed July 21, 1900.)

(No Model.) 4 Sheets—Sheet 3.

Fig. 3.

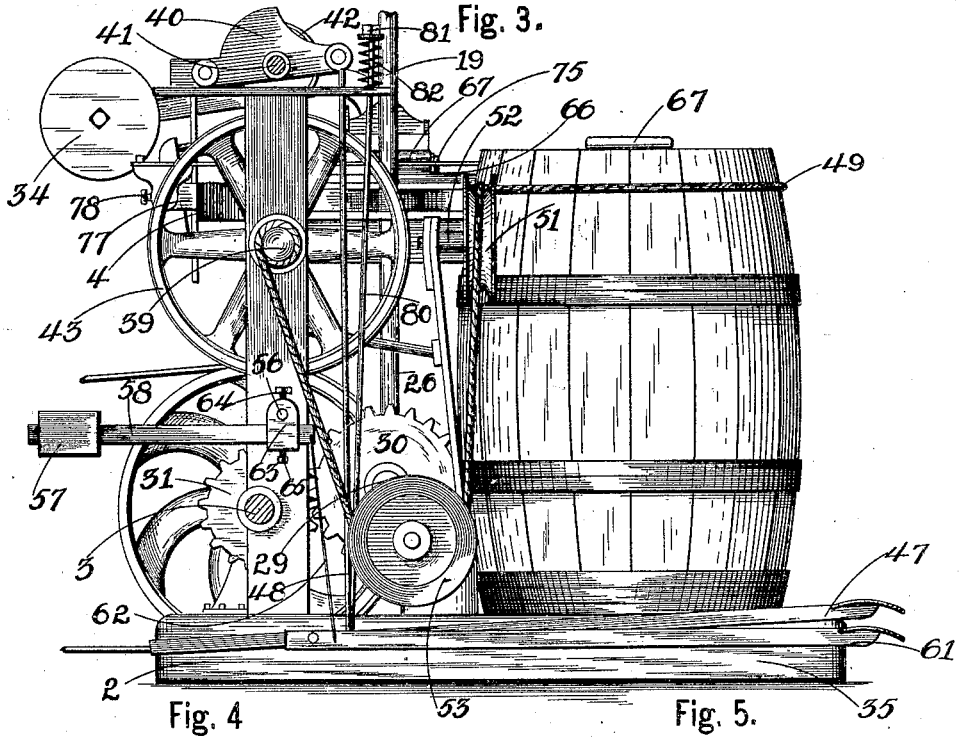


Fig. 4

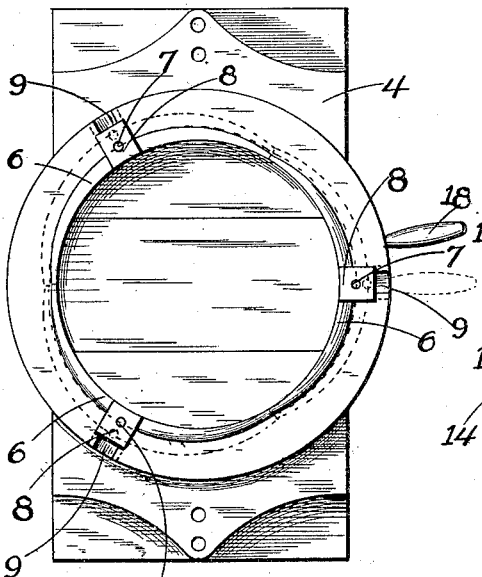
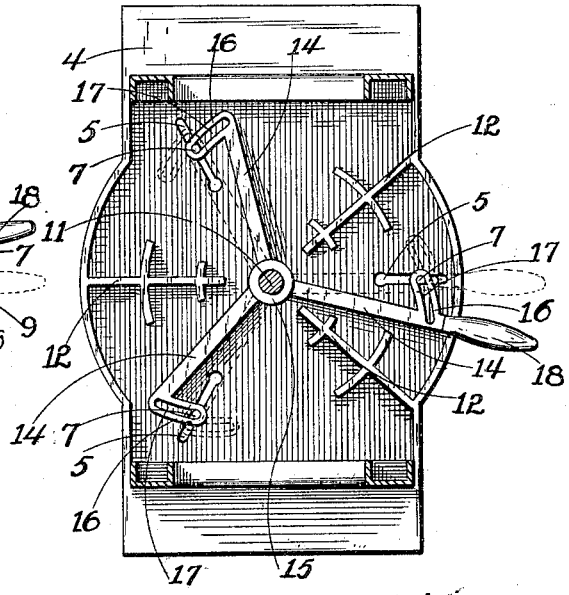


Fig. 5.



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MACHINE FOR HEADING-UP SLACK BARRELS.

(No Model.) (Application filed July 21, 1900.) 4 Sheets—Sheet 4.

Fig. 6.

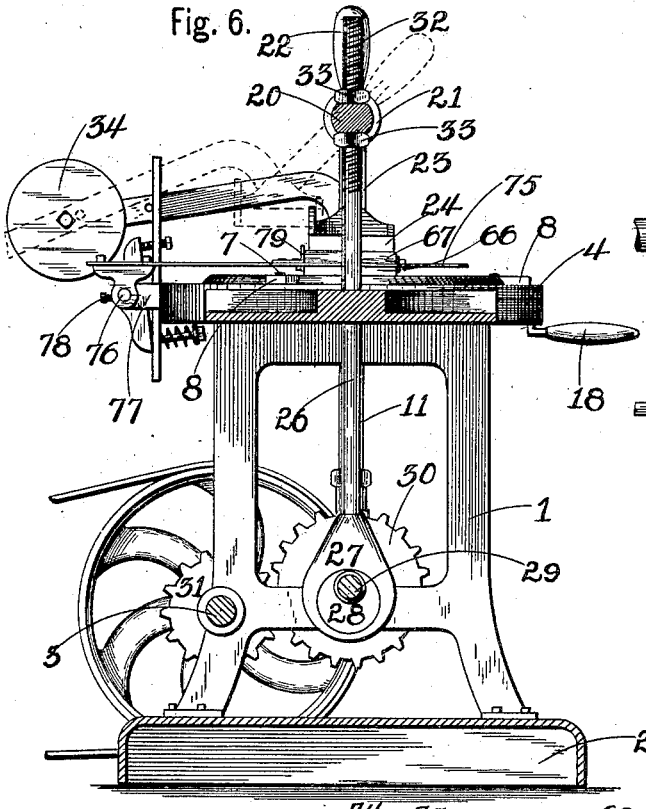


Fig. 7.

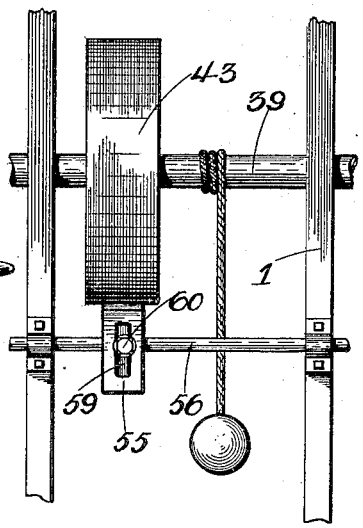


Fig. 8.

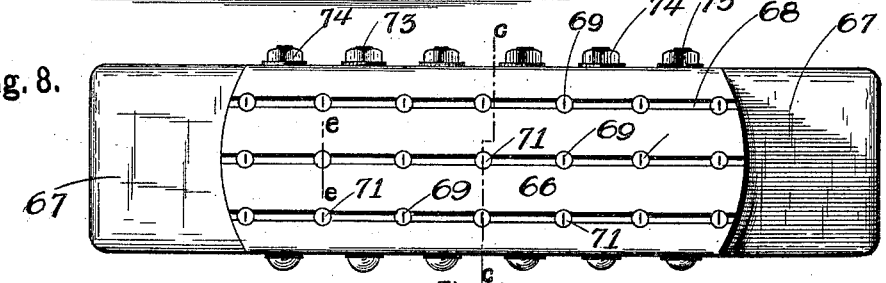


Fig. 9.

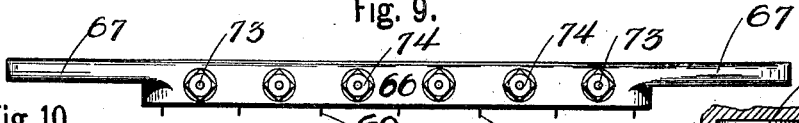


Fig. 10.

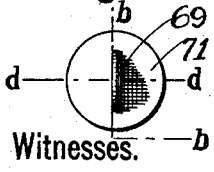


Fig. 11.

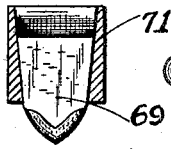


Fig. 12.

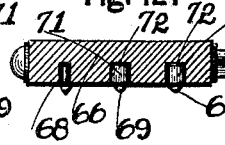


Fig. 13.

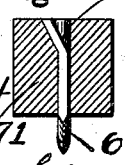
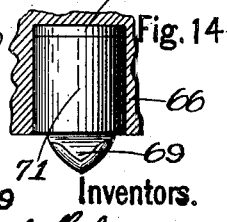


Fig. 14.



Witnesses.

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By A. J. Sangster Attorney.

UNITED STATES PATENT OFFICE.

EDWARD HOLMES, BRITAIN HOLMES, AND EDWIN F. BEUGLER, OF BUFFALO, NEW YORK, ASSIGNORS TO THE E. & B. HOLMES MACHINERY COMPANY, OF SAME PLACE.

MACHINE FOR HEADING UP SLACK BARRELS.

SPECIFICATION forming part of Letters Patent No. 676,819, dated June 18, 1901.

Application filed July 21, 1900. Serial No. 24,443. (No model.)

To all whom it may concern:

Be it known that we, EDWARD HOLMES, BRITAIN HOLMES, and EDWIN F. BEUGLER, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machines for Heading Up Slack Barrels, of which the following is a specification.

Our invention relates to an improved means for heading and hooping barrels in which the several pieces composing a barrel-head are assembled and temporarily maintained in an assembled condition by a spearing device, the heads being then placed in a barrel-mouth and fastened therein by exterior compression upon the staves and the forcing home of the upper hoops; and the object of the invention is to provide a comparatively simple and easily and rapidly operated means for this purpose.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The invention is susceptible to various changes in the form, proportion, and minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 represents a side elevation of our improved machine with a barrel, partly in section, in operating position. Fig. 2 is a top plan view. Fig. 3 is an end elevation. Fig. 4 is a detached top plan view of the barrel-head-assembling plate. Fig. 5 is a bottom view of the head-assembling plate. Fig. 6 is a transverse vertical section on line *a a*, Fig. 1. Fig. 7 is an enlarged fragmentary view to illustrate the construction of the friction-brake for retaining the rope encircling the barrel in its tightened position. Fig. 8 is an enlarged bottom view of the spearing device. Fig. 9 is a side elevation of the spearing device. Fig. 10 is an enlarged detached bottom view of one of the spear-blades and its metallic support. Fig. 11 is a section on or about line *b b*, Fig. 10. Fig. 12 is a section on or about line *c c*, Fig. 8. Fig. 13 is a section on or about line *d d*, Fig. 10. Fig. 14 is an enlarged fragmentary section on or about line *e e*, Fig. 8.

In referring to the drawings in detail like numerals designate like parts.

A supporting-frame 1 is mounted upon a base 2, and a horizontal driving-shaft 3 is journaled in said frame. At one end of the frame is a top plate 4, which is utilized as a barrel-head-assembling plate. This plate is provided with radial slots 5, preferably three in number, (see Fig. 5,) and a similar number of assembling-segments 6 are each provided with a pin 7, which extends through one of the slots. To prevent the segments from oscillating on the pins or moving vertically, each segment is provided with a wedge portion 8, which dovetails in a slideway 9 in the plate. (See Fig. 1.) A cross-bar 10 connects two frame portions beneath the plate, and a vertical rod 11 extends upward from said cross-bar and into connection with the plate at the common centering-point of the segments. The bottom of the plate is preferably formed substantially as shown in Fig. 5, and a series of radial ribs 12 extend downward at equal intervals and are provided with lateral rib portions 13, which form stops. A series of arms 14, corresponding in number to the segments and slots, are journaled at their common centering-point 15 on the rod 11, and each is provided at its outer end with an angular extension 16, having a slot 17, in which the pin of one of the segments engages. One of the arms is lengthened to form an operating-handle 18. A rod 19 extends vertically upward from each end of the plate 4, and a horizontal bar 20 is supported and has a vertical movement on said rods. A cylindrical portion 21 encircles the middle portion of the bar 20, which is circular in cross-section and swings loosely thereon. This portion 21 is provided with an operating-handle 22 and an oppositely-extending frame 23, to which a pressure-foot 24 is pivoted by the pins 25. The bar 20 is given an alternating vertical movement by the rods 26, which have collars

27 at their lower ends that loosely encircle cams 28, mounted on a horizontal shaft 29, said shaft having a spur gear-wheel 30, meshing with a spur gear-wheel 31 on the driving-shaft 3. The upper ends 32 of the rods are screw-threaded and pass through openings in the bar 20, the bar being held in position and adjusted on said rods by the jam-nut 33. The presser-foot and its swinging support are normally held in an inoperative position by the counterweight 34, substantially as shown in dotted lines in Fig. 6.

The means for compressing the staves consists of a rope adapted to encircle the upper portion of the barrel and mechanism for drawing the rope tightly around the barrel. The base 2 enlarges at the portion 35 to form a support for the barrel. A curved brace 36 forms a portion of the frame and longitudinally-slotted stops 37 are adjustably secured to the brace by bolts 38 and serve to support the barrel in position.

The mechanism for tightening the encircling rope consists of a driven shaft 39, journaled in the frame, a swinging frame 40, pivoted to the top portion of one end of the main frame, a shaft 41, journaled in said swinging frame and carrying a friction-wheel 42, arranged operatively with relation to a wheel 43, mounted on the driven shaft 39, a pulley 44 on the shaft 41, connected by a belt 45 to a pulley 46 on the driving-shaft 3, a foot-lever 47, pivoted at its rear end in the frame, and a rod 48, connecting the lever to the swinging frame and adapted to bring the friction-wheel 42 in frictional contact with the wheel 43 when the foot-lever is pressed down.

The rope or chain which compresses the staves has its middle portion 49 looped to encircle the barrel, and the ends 50 pass each other, then pass over the pulleys 51, mounted on short horizontal transverse shafts 52, journaled in the top portion of the frame, then extend downward and pass under the pulleys 53, mounted on short longitudinally-extending horizontal shafts 54, journaled in the lower portion of the frame, and finally upward, winding around the shaft 39. A brake device is employed to prevent backward movement of the shaft 39 and the loosening of the encircling rope, and is preferably formed as shown in Fig. 7, in which a friction-dog 55 is mounted on a rocking shaft 56 and is normally held in frictional engagement with the wheel 43 by the weight 57, mounted on the lever-arm 58. (See Fig. 3.) The dog 55 is provided with a longitudinal slot 59 to provide for adjustment, and is locked in its adjusted position by the bolt 60. The brake is released by the foot-lever 61, which is connected to the forward end of the lever-arm 58 by a rod 62. The lever-arm 58 passes through a slideway in a support 63, mounted on the shaft 56, and is adjustable in said slideway to vary the frictional pressure of the dog against the wheel 43. The support is locked to the shaft by the lock-bolt 64, and the lever-arm is locked in its adjusted position to the support by the bolt 65.

The spearing device consists of a wooden form having a center portion 66, which is thicker than the ends 67. The center portion is provided with a series of longitudinal slots 68, and a plurality of spear-blades 69, mounted in slots 70 in hollow soft-metal supports 71, are placed at suitable intervals in said longitudinal slots 68, the slots being enlarged to receive the metal supports. The preferable form of the spear-blades and their metal supports is shown in Figs. 10, 11, 12, 13, and 14, the blades tapering to their spearing-point (see Fig. 11) and being bent at their upper ends (see Fig. 13) to prevent their being drawn from the metal supports when in the form. A washer 72 is first placed in the bottom of the enlargements of the slots to prevent the blades from being pressed up into the wooden form, the blades and their supports are placed over the washers, rods 73 are passed transversely through the center portion, each rod extending between two rows of the blades, and lock-nuts 74 upon the rods are screwed tightly against the side of the center portion, which owing to the elasticity of the wood presses the walls of the slots closer to each other and firmly grips the supports between said slot-walls. Two spring-strips 75 are mounted on a rod 76, and the ends of the rod are rigidly supported in portions 77, attached to the frame, which has a certain range of adjustment, by means of the adjusting-screws 78, to provide for vertical adjustment of the spring-strips. The strips are provided with angle portions 79, which form stops or shoulders against which the spearing device is placed to arrange said spearing device in proper position centrally above an assembled barrel-head. The foot-lever 47 is held in its elevated position with a spring tension by means of a rod 80, having its lower end connected to the foot-lever and its upper end projecting through an opening in the top of the frame and provided with a top nut 81, a coil-spring 82 being interposed between the top of the frame and the nut 81. (See Figs. 1 and 3.) By this means the friction-wheel 42 is normally out of contact with the wheel 43, and is immediately lifted from frictional contact with said wheel 43 upon the removal of the pressure from the foot-lever 47.

The operation of the machine is as follows: A barrel being placed on the barrel-supporting portion of the base and the pieces of the head in the space between the assembling-segments, the handle 18 is moved from the position shown in dotted lines in Fig. 4 to the position shown in full lines, thereby moving the segments from the outer position, as shown in dotted lines in said Fig. 4, to their inner position, as shown in full lines, and properly assembling the parts of the barrel-head in position relatively to each other. The spearing device is now placed above the assembled head, being supported and centrally

arranged by means of the spring-strips 75 and their stops 79. The presser-foot 24 is now swung into operative position by moving the handle 22 from the dotted lines shown in Fig. 6 into the vertical position shown in full lines in said Fig. 6, and the spear-points are pressed into the assembled head, the presser-foot is returned to its inoperative position, and the spearing device and the assembled head are now taken by the operator and placed upon the open mouth of the barrel, the ends of the spearing device extending on each side of the barrel-mouth and the center being sufficiently within said mouth to arrange the assembled head on the same horizontal plane as the croze of the barrel. (See Fig. 1.) The foot-lever 47 is now pressed downward, bringing the friction-wheel 42 against the wheel 43 and winding the ropes or chain upon the shaft, thereby drawing the rope or chain around the barrel and exteriorly compressing the staves. The top hoops are driven into position and the barrel is removed.

In order to increase the rapidity of the operation, a head can be assembled in the assembling portion of the machine while a previously-assembled head is being placed in a barrel.

We claim as our invention—

1. A means for heading up barrels comprising mechanism for assembling the parts of a barrel-head, a spearing device for temporarily maintaining the head in assembled position and mechanism for forcing said spearing device into the parts of the barrel-head, comprising a horizontal rod arranged above the assembling mechanism and having an alternating vertical movement, and a swinging presser-foot having a handle for swinging it into and out of operating position.

2. Mechanism for assembling the parts of a barrel-head comprising a supporting-plate, assembling-segments movably mounted on said plate, and means for moving said segments.

3. Mechanism for assembling the parts of a barrel-head comprising a supporting-plate having radial slots, assembling-segments movably mounted on said plate and having pins extending into said slots, and means connected to said pins for moving said segments.

4. Mechanism for assembling the parts of a barrel-head comprising a supporting-plate having radial slots, assembling-segments movably mounted on said plate and having pins extending into said slots, means connected to said pins, and a multi-armed device for moving said segments having slotted connection with the pins of the segments.

5. Mechanism for assembling the parts of a barrel-head comprising a supporting-plate, assembling-segments movably mounted on said plate, and means for moving said segments radially toward or from a common center.

6. Mechanism for assembling the parts of a barrel-head comprising a supporting-plate having depressions radiating from a common center, assembling-segments having portions sliding in said depressions and means for moving said segments.

7. Mechanism for assembling the parts of a barrel-head, combined with a spearing device for temporarily maintaining the barrel-head in position while being placed in the barrel-mouth and mechanism arranged above the assembling mechanism for forcing said spearing device into the parts of said head to maintain it in assembled condition and comprising a swinging presser-foot and means for giving an alternating movement to said presser-foot.

8. Mechanism for assembling the parts of a barrel-head, combined with a spearing device for temporarily maintaining the barrel-head in assembled position while being placed in the barrel-mouth and mechanism for forcing said spearing device into the parts of said head and comprising a rod, a swinging presser-foot supported from said rod and means for giving an alternating vertical movement to said rod.

9. Mechanism for assembling the parts of a barrel-head, combined with mechanism for forcing a spearing device into the parts of said head and comprising a horizontal rod, a swinging presser-foot supported from said rod, a counterbalance-weight for normally maintaining the presser-foot in inoperative position, a handle for swinging said presser-foot into operative position, and means for giving an alternating vertical movement to said rod.

10. Mechanism for assembling the parts of a barrel-head, combined with mechanism for forcing a spearing device into the parts of said head to maintain it in assembled condition, and rods for guiding said spearing device into central position above the barrel-head.

11. Mechanism for assembling the parts of a barrel-head combined with mechanism for forcing a spearing device into the parts of said head to maintain it in assembled condition, rods for guiding said spearing device into central position above the barrel-head and means for adjusting said rods.

12. Mechanism for assembling the parts of a barrel-head, combined with a spearing device for temporarily maintaining the barrel-head in assembled position while being placed in the barrel-mouth and mechanism arranged above the assembling mechanism for forcing said spearing device into the parts of said head and comprising a horizontal rod, a swinging presser-foot supported from said rod, means for giving an alternating vertical movement to said rod, and a handle for swinging said presser-foot into and out of operating position.

13. A spearing device comprising a wooden base having a reduced end and a longitudinally-slotted middle portion, a plurality of

blades mounted in said slots and transverse rods for locking said blades in position.

14. A spearing device comprising a wooden base having a reduced end and a longitudinally-slotted middle portion, a plurality of soft-metal supports each having a hard-metal blade mounted in said slots.

15. A machine for heading barrels having mechanism comprising an encircling rope, a windlass having the rope ends attached thereto, a rocking shaft, a friction-dog mounted on the shaft, a weight for normally maintaining the friction-dog in frictional engagement with the windlass, and means for rocking the rocking shaft to release the friction-dog, as set forth.

16. A machine for heading barrels having mechanism comprising an encircling rope, a windlass having the rope ends attached thereto, a rocking shaft, a friction-dog mounted on said shaft, a support mounted on the rocking shaft and having a slideway, a weighted lever-arm passed through and adjustable in said slideway, and means for rocking the rocking shaft to release the friction-dog, as set forth.

17. A machine for heading barrels having mechanism comprising an encircling rope, a windlass having the rope ends attached thereto, a rocking shaft, a friction-dog mounted on said shaft, a weighted lever-arm adjustably secured to said support, and means for rocking the rocking shaft to release the friction-dog, as set forth.

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