(No Model.) 2 Sheets—Sheet 1.

T. MURPHY.

BARREL TRUSSING MACHINE.

No. 306,173. Patented Oct. 7, 1884.

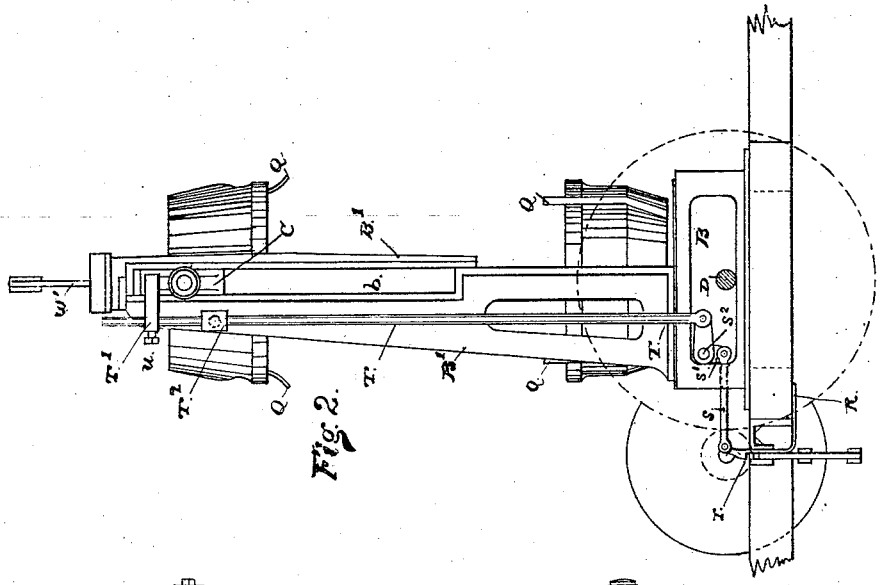

Fig. 2.

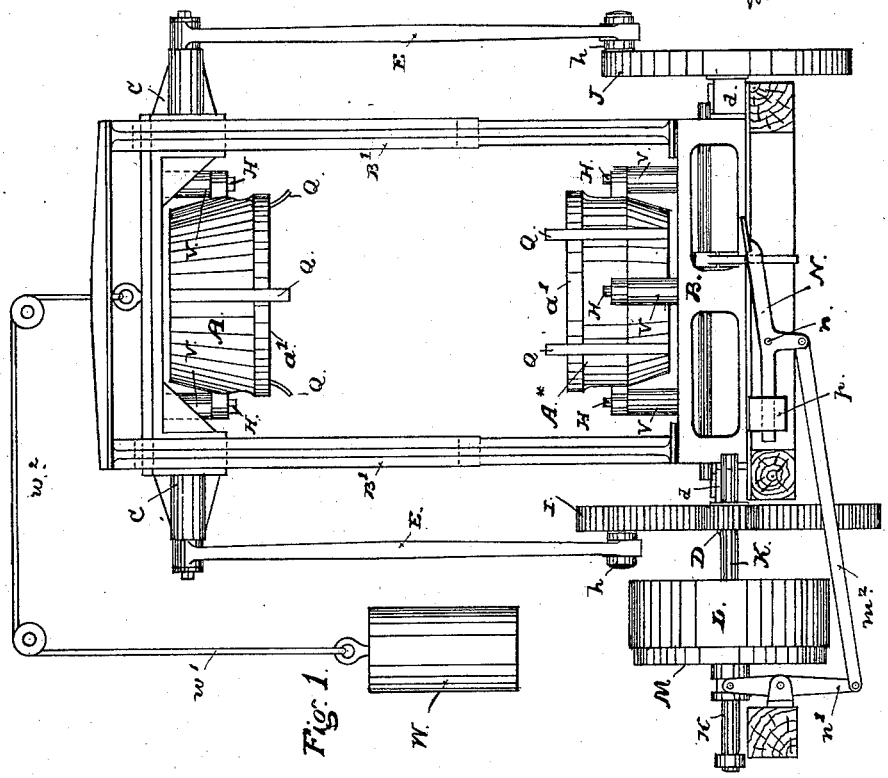

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

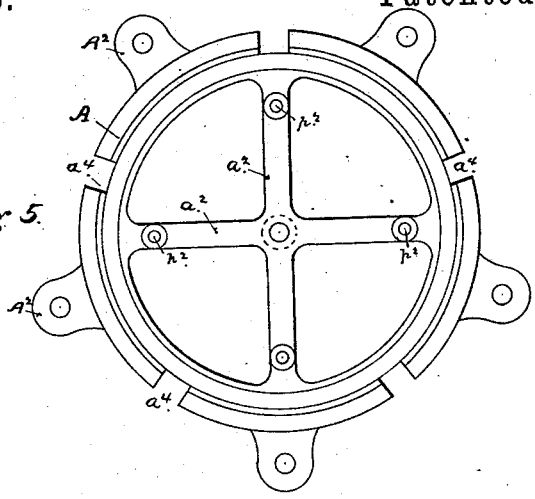


Fig. 3.

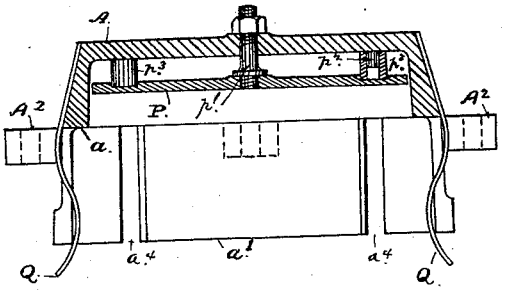
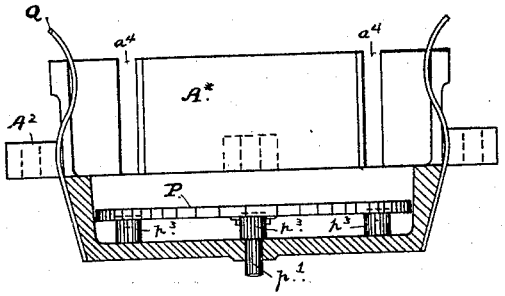


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS MURPHY, OF SAN FRANCISCO, CALIFORNIA.

BARREL-TRUSSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 306,173, dated October 7, 1884.

Application filed March 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MURPHY, a citizen of the United States, residing in the city and county of San Francisco, in the State of California, have invented certain new and useful Improvements in Machines for Trussing Kegs and Barrels; and I do hereby declare that the following is a full, clear, and exact description of my said invention and of the manner in which I proceed to produce, construct, apply, and use the same, the accompanying drawings being referred to by figures and letters.

My invention relates to machinery for trussing kegs and barrels; and it consists in certain novel construction and combination of parts and mechanism, as hereinafter described and pointed out.

The several points and features comprising my improvements are, first, a hoop-driver of novel form and action; second, an automatic stave-leveling device; thirdly, a centering device, and, fourthly, certain novel mechanism constituting a stop-motion. These parts and mechanism are shown in the accompanying drawings in the form of a machine for trussing barrels.

Figure 1 is a front elevation of the machine; Fig. 2, a side elevation taken from the right-hand side of Fig. 1, and with the crank-disk removed from the end of its shaft. Figs. 3 and 4 are sectional views of the upper and the lower or the movable and the stationary driver. Fig. 5 is a plan of the driver.

A is the driver having a continuous driving-edge, *a*, for the head-hoop and a like edge, *a'*, to engage the bilge-hoop. The space between these edges is equal to the distance to be left between the hoops when driven. The driver is substantially of cylindrical shape, but internally of two diameters, the difference between which produces the shoulder *a*, corresponding to the size of the barrel at the head and affording an opening in the top to let the ends of the staves clear the shoulder. This construction gives driving-edges that are practically continuous and bear against the edges of the hoops all round. Two of these drivers are employed, and in an upright machine they are placed within guides, one over the other, the lower one, A*, being fixed to the bottom of the frame, and the other one, A, fixed to a reciprocating cross-head held in slotted guides. Connecting-rods from two cranks on opposite ends of a rotating shaft at the bottom of the frame are attached to the outer ends of the cross-head, and constitute the means by which the movable driver is drawn toward the stationary one.

B is the bed, and B' B' the sides of the frame, in which are slotted guides *b b*, to take the cross-head C.

D is the actuating-shaft held in boxes *d d*, and receiving motion from a motor-shaft at hand through the medium of a belt and pulleys. On the ends of this shaft are the two cranks, *h h*, of which one is on a gear-wheel, I, and the other on a counterbalanced disk, J. A pulley-shaft, K, is geared into the shaft D by a pinion, as shown, and the pulley L upon it is connected with it by means of a friction-clutch, M. A shifting mechanism having a foot-lever, N, is provided at this point for stopping and starting the shaft. The lever is fulcrumed at *n*, and is connected with the clutch-lever *n'* by a connecting-rod, m^2. A counter-weight, *p*, is attached to the outer end of the foot to throw out the clutch when the operator removes his foot from the treadle at the other end. By such mechanism the movements of the driver are placed under complete control of the operator, and can be arrested at any point. In connection with this clutch and shifting mechanism is an automatic stop-motion device, the office of which is to throw off the power and arrest the movement of the cross-head at the end of each upward stroke. This device consists of a spring, R, fixed at one end to the bed-timber of the frame, and having a tooth or notch, *r*, on the free end, that projects over the end of the foot-lever N, so as to engage with and hold it down. This end of the spring is connected with an arm, *s'*, on a rock-shaft, s^2, to the end of which a crank, *t*, is fixed. From this crank a long rod, T, extends upward alongside the frame B', and carries an adjustable tappet, T', which projects over the line of movement of the cross-head. The tappet is held by a set-screw, *u*, and being adjustable upon the rod it can be placed to be struck sooner or later in the movement of the cross-head, as required. The movement of the rod thus pro-

duced turns the rock-shaft and draws back the spring R clear of the foot-lever, when the weight *p* acts to throw off the clutch. The cross-head and driver are counterbalanced by a weight, W, and a connecting-cord, *w'*, turned over pulleys w^2. This permits the cross-head to be arrested and held at any point. In a machine where the drivers are set to work horizontally this counter-balance is not required.

P is an automatic leveling device fixed in the driver to act against the ends of the staves, and Q is a centering device that brings the barrel into line when it is first set into the machine between the drivers. This leveling device is a yielding head, P, set in the open end of the driver, and confined by a center post, *p'*, that takes into and moves in a socket in the cross-arms a^2 a^2 of the driver. Short guide-pins p^2 projecting from these arms serve to hold cylindrical springs p^3 behind the head. The centering device is formed of several springs Q, fixed at one end to the driver-body, and from this point bending downward and also inward through slots a^4 a^4, that are cut through the sides of the driver. The free ends of these springs have a strong curve inward to bring them within the inner surface of the driver, and they also extend below the rim. As the end of the barrel enters the driver, and before the driving-edges come down to the hoops, these springs, coming in contact with the edges of the barrel, bring it into line and accurately center it under the driver. Bolts H pass through lugs A^2 on the sides of the driver-body and take into the part to which the driver is fixed. In the movable driver this part is the cross-head C, and in the fixed one it is the bed. Rubber springs V are interposed between the driver and the frame at their points of fastening, as shown, so that a somewhat yielding or elastic instead of a rigid bearing for the devices is obtained.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for trussing kegs and barrels, a combined driver and leveler having two ledges for engaging two different hoops, and a leveling device mounted therein consisting of a plate or disk secured to the driver by means of a screw-bolt and nut, and having elastic material or springs interposed between said disk and driver, by means of which the barrel shall first be leveled by the yielding disk and then have the hoops driven, as set forth.

2. A head for guiding, leveling, and trussing barrels, consisting of the driver A, having the two ledges *a* and *a'* and yielding disk or plate P, and the curved spring-guides Q extended out through the openings in the driver, and adapted to receive the barrel between them and guide it into the driver, substantially as set forth.

3. The combination, with the driver-head and means for vertically reciprocating the same, of a clutch and its operating mechanism, consisting of a foot-lever and connections, the spring-catch R *r*, for engaging the foot-lever, the rock-shaft s^2, and connections to the spring-catch, the upright rod T, connected to the rock-shaft at the lower end, and provided with the tappet T^2 at or near the top for engagement with the driver-head, operating as a stop mechanism, substantially as set forth.

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Witnesses:
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